City of San Diego
PLANNING DEPARTMENT

Environmental & Resource Analysis Division
619-235-5200

FINAL PROGRAM
ENVIRONMENTAL IMPACT REPORT

Project No. 438188
SCH No. 2014111068

SUBJECT: CITY COUNCIL Approval of the Pure Water San Diego Program (Pure Water Program). The Pure Water Program is the City of San Diego Public Utilities Department (PUD) proposed program to provide a safe, secure, and sustainable local drinking water supply for San Diego. Advanced water purification technology will be used to produce potable water from recycled water. The Pure Water Program consists of the design and construction of new advanced water treatment facilities, wastewater treatment facilities, pump stations, transmission lines, and pipelines.

FINAL DOCUMENT August 8, 2016:

In response to comments received during public review and City staff input subsequent to distribution of the Draft Program Environmental Impact Report (PEIR), minor revisions, clarifications and/or additions have been made to the document which do not change the conclusions of the Final PEIR regarding the project's potential environmental impacts and required mitigation. As defined in CEQA Section 15088.5, these revisions, clarifications or additions to the document - which are shown in strikeout/underline format, do not represent "significant new information" and therefore, recirculation of the Draft PEIR is not warranted. No new significant environmental impacts would occur from these modifications, and similarly, no substantial increase in the severity of environmental impacts would occur.

Additionally, in accordance with CEQA Section 15089, responses to comments received during the public review period of the Draft PEIR have been included in this final document and are located immediately after these Conclusions.

BACKGROUND:

The City of San Diego (City) and its regional partners face significant issues with water supply and wastewater treatment. Water is critical to the health, safety, and quality of life of people living in the San Diego region. Currently eighty five percent (85%) of the ~~region's~~ City's water supply is imported. The region's reliance on imported water causes our water supply to be vulnerable to impacts from shortages and susceptible to price increases beyond our control. As sources of local water supply are few, we have explored non potable and potable reuse options of treated water. Water reuse is proven, safe, reliable, and is currently in use in other communities in the United States and around the world.

A decision must be made regarding the future treatment process at the City of San Diego's Point Loma Wastewater Treatment Plant (PLWTP). The PLWTP operates with a Clean Water Act (CWA) Section 301(h) modified National Pollutant Elimination Discharge System (NPDES) permit which allows the City to operate without full secondary treatment. The modified

permit expired on July 30, 2015. PUD submitted a new permit application and is working with the Environmental Protection Agency (EPA) as well as with local environmental groups to gain support for the concept of "secondary equivalency" within the Clean Water Act - a plan to meet modified treatment standards that would be the same as if the existing 240 million gallon per day (mdg) PLWTP were converted to secondary treatment standards.

The Pure Water Program is a significant water and wastewater Capital Improvement Program that will create 83 million gallons per day of locally controlled water and reduce flows to the PLWTP which would reduce total suspended solids discharged, and recycle a valuable and limited resource that is currently discharged to the ocean.

The Pure Water Program is a twenty year program that will involve the planning, design, and construction of new advanced water treatment facilities, wastewater treatment facilities, pump stations, and pipelines. The Pure Water program will also include property and easement acquisition, discretionary permitting, facility startup, testing, operation and maintenance of new facilities, and significant public education and community engagement.

APPLICANT: **CITY OF SAN DIEGO – PUBLIC UTILITIES DEPARTMENT**

CONCLUSIONS:

Based on the analysis conducted for the project described in the subject block above, the City has prepared the following Final Program Environmental Impact Report (PEIR) in accordance with the California Environmental Quality Act (CEQA) to inform public agency decision-makers and the public of the significant environmental effects that could result if the project is approved and implemented, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project (State CEQA Guidelines Section 15121). As further described in the attached Final PEIR, the City has determined that the project would have ~~a significant~~ environmental effects, that would be less than significant with mitigation incorporated on the following areas(s): **Land Use, Air Quality/Odor, Health and Safety, Biological Resources, Noise, Historical Resources, Hydrology and Water Quality, Paleontological Resources, Public Utilities, Visual Effects and Neighborhood Character, Geology/Soils, and Transportation, Circulation and Parking.**

MITIGATION, MONITORING AND REPORTING PROGRAM:

A Mitigation Framework is identified within each issue area discussion in the PEIR to reduce environmental impacts. The Mitigation, Monitoring and Reporting Program is fully contained in Chapter 12 of the PEIR.

RECOMMENDED ALTERNATIVES FOR REDUCING SIGNIFICANT IMPACTS

Based on the requirement that alternatives reduce significant impacts associated with the proposed project, the PEIR considers the following Project Alternatives which are further detailed in the Executive Summary and Chapter 11 of the PEIR:

1. No Project/No Build
2. Post Office Site Alternative
3. Alternative Reservoir Augmentation Alternative

Under CEQA Guideline Section 15126.6(e)(2), if the No Project Alternative is the environmentally superior alternative, the Final PEIR must also identify which of the other alternatives is environmentally superior. The Final PEIR identified the Alternative Reservoir Augmentation Alternative as the environmentally superior alternative which was based on a comparison of the alternatives' overall environmental impacts which would be slightly reduced when compared to the other alternatives, and because it would meet all of the Program objectives.

PUBLIC REVIEW DISTRIBUTION:

Individuals, organizations, and agencies that received a copy or notice of the Draft PEIR and were invited to comment on its accuracy and sufficiency is provided below. Copies of the Final PEIR, the Mitigation Monitoring and Reporting Program and any technical appendices may be reviewed in the office of the Planning Department, or purchased for the cost of reproduction.

RESULTS OF PUBLIC REVIEW:

( ) No comments were received during the public input period.

( ) Comments were received but did not address the accuracy or completeness of the Draft Program Environmental Impact Report (PEIR). No response is necessary and the letters are attached at the end of the Final PEIR.

(X) Comments addressing the accuracy or completeness of the Draft Program Environmental Impact Report (PEIR) were received during the public input period. The letters and responses are located immediately after the PEIR Distribution List.

Alyssa Muto, Deputy Director
Planning Department

February 10, 2016
Date of Draft Report

August 8, 2016
Date of Final Report

Analyst: Myra Herrmann

DISTRIBUTION OF DRAFT ENVIRONMENTAL IMPACT REPORT:

Copies of the Draft EIR were distributed to the following individuals, organizations, and agencies:

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Marine Corps Recruit Depot Facilities Div. (14)
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U. S. Fish and Wildlife Service (23)
USDA Natural Resources Conservation Services (25)
Army Corps of Engineers (26)
Cleveland National Forest (29)
Bureau of Reclamation (30)

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California Environmental Protection Agency (37A)
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California Coastal Commission (47)
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Water Reliability Coalition
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City of Escondido Utilities Department
Fallbrook Public Utility Dist
Helix Water District
Lakeside Water District
City of National City
City of Oceanside
Olivenhain MWD
Otay Water District
Padre Dam MWD
Pendleton Military Preservation
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Rainbow MWD

Ramona MWD
Rincon Del Diablo MWD
San Dieguito Water District
Santa Fe Irrigation District
South Bay Irrigation District
Sweetwater Authority
Vallecitos Water District
Valley Center MWD
Vista Irrigation District
Yuima MWD

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Pure Water Working Group
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City Council District 4
City Council District 6
City Council District 7
City Council District 8
City Council District 9
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San Diego Regional Chamber of Commerce - Chanelle Hawken
NAIOP/BOMA - Craig Benedetto
Asian Business Association - David Kodama
Hospital Association of San Diego and Imperial Counties - Dimitrios Alexiou
League of Women Voters of San Diego - Donna Bartlett-May
Building Industry Association of San Diego - Eric Armstrong
Navy Region Southwest - Fred Speece
Qualcomm - Gail Welch

SDG&E - Grant Frost
CONNECT - Greg McKee
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San Diego County Medical Society - James Beaubeaux
Asian Pacific American Coalition - Jantima Danford
San Diego Audubon Society - Jim Peugh
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Food & Beverage Association of San Diego - Stephen Zolezzi
San Diego County Taxpayers Association - Theresa Andrews

PURE WATER
SAN DIEGO PROGRAM

FINAL
PROGRAM ENVIRONMENTAL IMPACT REPORT

City Project No. 438188
SCH No. 2014111068

Lead Agency:

The City of San Diego
Planning Department
~~Environmental and Resource~~Environment and Policy Analysis Division
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August 2016

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APPENDICES

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
AADF	annual average daily flow
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ACOE	U.S. Army Corps of Engineers
ADRP	Archaeological Data Recovery Program
ADT	average daily trips
AF	acre-feet
AFY	acre-feet per year
AIA	Airport Influence Area
ALUCP	airport land use compatibility plan
AME	Archaeological Monitoring Exhibit
APCD	Air Pollution Control District
AQMD	Air Quality Management District
Assembly	City of San Diego Assembly on Water Reuse
AWPF	advanced water purification facility
BAAQMD	Bay Area Air Quality Management District
BCR	Biological Constraints Report
BI	Building Inspector
BMP	best management practice
BOD	biochemical oxygen demand
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CBC	California Building Code
CAFE	Corporate Average Fuel Economy
Cal-Am	California American Water Company
CalARP	California Accidental Release Prevention
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen	California's Green Building Standards
CalOSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAWRP	Central Area Water Reclamation Plant
CCC	California Coastal Commission
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CDPH	California Department of Public Health

Acronym/Abbreviation	Definition
CDRAWPF	Camino del Rio Advanced Water Purification Facility
CEC	California Energy Commission
CECs	chemicals 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
CH	Critical Habitat
City	City of San Diego
CM	Construction Manager
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CO	Commercial Office
CoTier	County Subarea Plan Tier
CPA	Community Plan Area
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CSVR	Consultant Site Visit Record
CV	Commercial Visitor
CVTier	Chula Vista MSCP Subarea Plan
CWA	Clean Water Act
CY	cubic yards
dB	decibel
dBA	A-weighted decibel
DDW	Division of Drinking Water
DEH	County of San Diego Department of Environmental Health
Demonstration Project	Water Purification Demonstration Project
DIF	development impact fee
DoD	Department of Defense
DPR	Department of Park and Recreation
DTSC	Department of Toxic Substances Control
EIR	Environmental Impact Report
EISA	Energy Independence and Security Act of 2007
EOC	Emergency Operations Center
EPA	U.S. Environmental Protection Agency
EPP	essential public projects
ER	Ecological Reserve
ESA	Endangered Species Act (federal)
ESD	Environmental Services Department
ESL	Environmentally Sensitive Lands
FAA	Federal Aviation Administration
FERC	Federal Energy Regulatory Commission

Acronym/Abbreviation	Definition
FGC	California Fish and Game Code
GHG	greenhouse gas
GIS	geographic information system
gpcd	gallons per person per day (capita)
GWP	Global Warming Potential
HDPE	high-density polyethylene
HFCs	hydrofluorocarbons
HMBP	Hazardous Materials Business Plan
HOA	homeowners association
HP	Hardline Preserve
HRG	Historical Resources Guidelines
I-	Interstate
IAP	Independent Advisory Panel
IBC	International Building Code
IGP	Industrial General Permit
INRMP	Integrated Natural Resources Management Plan
IPCC	Intergovernmental Panel on Climate Change
IRP	Integrated Water Resources Plan
ISO	California Independent Service Operator
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
kW-hr/MG	kilowatt hours per million gallons
LCP	local coastal program
L_{eq}	equivalent sound level
LID	Low Impact Development
LOS	level of service
LRWRP	Long-Range Water Resources Plan
LSI	Langelier Saturation Index
MBC	Metropolitan Biosolids Center
MBR	membrane bioreactor
MCAS	Marine Corps Air Station
MCRD SD	Marine Corps Recruit Depot, San Diego
MCL	maximum contaminant level
Metro System	Metropolitan Sewerage System
MF	microfiltration
MG	million gallons
MGD	million gallons per day
mg/L	milligrams per liter
MHPA	Multi-Habitat Planning Area
ml	milliliter
MLD	Most Likely Descendent
MMC	Mitigation Monitoring Coordination
MMRP	mitigation monitoring and reporting program
MMT	million metric tons

Acronym/Abbreviation	Definition
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
mpg	miles per gallon
MPO	metropolitan planning organization
MS4	municipal separate storm sewer system
MSCP	Multiple Species Conservation Program
MT	metric ton
MV	Mission Valley
MVPD	Mission Valley Planned District
MW	megawatts
MWD	Metropolitan Water District of Southern California
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NAS	Naval Air Station
NCAWPF	North City Advanced Water Purification Facility
NCCP	Natural Community Conservation Plan
NCWRP	North City Water Reclamation Plant
NEPA	National Environmental Policy Act
NHTSA	National Highway Traffic Safety Administration
NL	notification level
NOLF	Naval Outlying Field
NOP	Notice of Preparation
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
NTC	Naval Training Center (NTC Park)
NWI	National Wetlands Inventory
NWR	National Wildlife Refuge
OE/AAA	Obstruction Evaluation/Airport Airspace Analysis
ORP	oxidation reduction potential
OSHA	Occupational Safety and Health Administration
PAMA	Pre-Approved Mitigation Area
PDP	priority development project
PEIR	Program Environmental Impact Report
PFC	perfluorocarbon
PG&E	Pacific Gas & Electric
PI	Principal Investigator
PLECA	Point Loma Ecological Conservation Area
PLOO	Point Loma Ocean Outfall
PME	Paleontological Monitoring Exhibit
PLWTP	Point Loma Wastewater Treatment Plant
ppm	parts per million
PPV	peak particle velocity
Program	Pure Water Program

Acronym/Abbreviation	Definition
PUD	Public Utilities Department
PS1, PS2	Pump Station No. 1, Pump Station No. 2
PWS	public water system
RAQS	Regional Air Quality Strategy
RCNM	Roadway Construction Noise Model
RCP	Regional Comprehensive Plan
RE	Resident Engineer
RFS	Renewable Fuel Standard
RGF	Regional Growth Forecast
RO	reverse osmosis
ROD	reservoir outfall/discharge structure
ROW	right-of-way
RPO	Resource Protection Ordinance
RPSTI	regional public safety and training institute
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SANBIOS	SanBIOS Species Record
SANDAG	San Diego Association of Governments
SAP	Subarea Plan (MSCP)
SB	Senate Bill
SBAWPF	South Bay Advanced Water Purification Facility
SBOO	South Bay Ocean Outfall
SBSPF	South Bay Solids Processing Facility
SBWRP	South Bay Water Reclamation Plant
SCIC	South Coastal Information Center
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SDCWA	San Diego County Water Authority
SDFD	San Diego Fire-Rescue Department
SDG&E	San Diego Gas and Electric
SDIA	San Diego International Airport
SDPD	San Diego Police Department
SDSU	San Diego State University
SDWA	Safe Drinking Water Act
SIP	State Implementation Plan
SoCalGas	Southern California Gas
SPAWAR	Space and Naval Warfare
SR-	State Route
SUSMP	Standard Urban Stormwater Management Plan
SWP	State Water Program
SWRCB	State Water Resources Control Board
SWPPP	Stormwater Pollution Prevention Plan
TAC	toxic air contaminant

Acronym/Abbreviation	Definition
TCP	Traffic Control Plan
TEA-21	Transportation Equity Act for the 21st Century
TOC	total organic carbon
TOPO	topographic maps
TRVRP	Tijuana River Valley Regional Park
TSS	total suspended solids
TT	treatment technique
UF	ultrafiltration
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UV	ultraviolet
UV/AOP	ultraviolet light/advanced oxidation
UV/ClO	ultravioloet light with hypochlorite
UV/H_2O_2	ultraviolet light with hydrogen peroxide
UWMP	Urban Water Management Plan
VD	vegetation data
VdB	velocity decibel
VMT	vehicle miles traveled
VOC	volatile organic compound
VPHCP	Vernal Pool Habitat Conservation Plan
VPI	vernal pool inventory
WFBP	wastewater forcemain and brine pipeline
WMP	Waste Management Plan
WRP	water reclamation plant
WTP	water treatment plant
WQIP	Water Quality Improvement Plan

LETTERS OF COMMENT AND RESPONSES

This section of the Final PEIR presents copies of comments on the Draft PEIR (PEIR) received in written form during the public review period, and it provides the City of San Diego's responses to those comments. Each comment letter is lettered and the issues within each comment letter are bracketed and numbered. Comment letters are numbered to correspond with the bracketed comment letters.

The City's responses to comments on the PEIR represent a good-faith, reasoned effort to address the environmental issues identified by the comments. Under the California Environmental Quality Act (CEQA) Guidelines, the City is not required to respond to all comments on the PEIR, but only those comments that raise environmental issues. See CEQA Guidelines Section 15088, subd. (a). Case law under CEQA recognizes that the City need only provide responses to comments that are commensurate in detail with the comments themselves. In the case of specific comments, the City has responded with specific analysis and detail; in the case of a general comment, the reader is referred to a related response to a specific comment, if applicable.

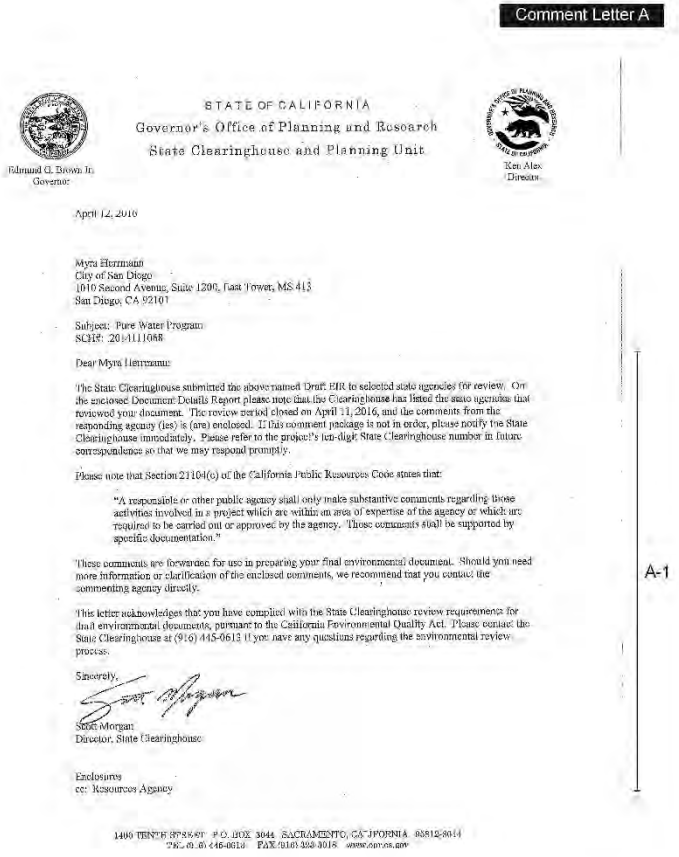
List of Agencies and Individuals that Commented on the DPEIR

This section contains all written comments received during the public comment period as well as responses to these comments. Table 1 provides an index to commenters and comment letters.

Table 1
Commenters and Comment Letters

Comment Letter	Date Received	Commenter
A	April 12, 2016	State Clearinghouse
B	March 24, 2016	California Department of Transportation
C	April 11, 2016	California Department of Fish and Wildlife
D	April 11, 2016	County of San Diego
E	April 11, 2016	SANDAG
F	April 7, 2016	Metro Wastewater Joint Power Authority
G	April 11, 2016	Padre Dam Municipal Water District
H	March 5, 2016	San Diego County Archaeological Society
I	March 17, 2016	Peninsula Community Planning Board
J	April 8, 2016	Lozeau Drury, Labor Union No. 89
K	March 21, 2016	Pala Tribal Historic Preservation Office
L	February 25, 2016	Rincon Band of Luiseno Indians
M	April 11, 2016	Scott Andrews
N	April 11, 2016	John Stump
O	April 11, 2016	Shelli E. Craig, Save Everyone's Access
P	April 11, 2016	Raymond Paulson

Comment Letter A



STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

April 12, 2016

Myra Herrmann
City of San Diego
1010 Second Avenue, Suite 1200, East Tower, MS 413
San Diego, CA 92101

Subject: Pure Water Program
SCH#: 2014111068

Dear Myra Herrmann:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on April 11, 2016, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

"A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

A-1

Response to Comment Letter A

State Clearinghouse
April 12, 2016

A-1 This comment lists the state agencies to whom the Draft PEIR was submitted for review and acknowledges that the City has complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. No further response is required.

Document Details Report
State Clearinghouse Data Base

SCH#	2014111068
Project Title	Pure Water Program
Lead Agency	San Diego, City of
Type	EIR Draft EIR
Description	Note: Review Per Lead The Pure Water Program would use advanced water purification technology to produce potable water from recycled water and provide a safe, reliable, and cost-effective drinking water supply for San Diego. The Pure Water Program consists of the design and construction of new advanced water purification facilities and a new water reclamation plant; upgrades to existing water reclamation and wastewater treatment facilities; and design and construction of new pump stations and pipelines. The following Program components are currently contemplated as comprising the entirety of the Pure Water Program; however, Program components are subject to change during future project-level design.

Lead Agency Contact

Name	Myra Herrmann
Agency	City of San Diego
Phone	(619) 446-5372 *Fax*
email	
Address	1010 Second Avenue, Suite 1200, East Tower,
City	MS 413 *State* CA *Zip* 92101 San Diego

Project Location

County	San Diego
City	
Region	
Lat / Long	
Cross Streets	Citywide
Parcel No.	
Township	*Range* *Section* *Base*

Proximity to:

Highways	I-5, I-15, I-805,SR-52,SR-94 905
Airports	Lindbergh Field, Miramar
Railways	San Diego Trolley
Waterways	Pacific Ocean, San Diego Bay, Mission Bay, San Diego River, Lake Murray, San Vicente Reservoir,
Schools	Multiple
Land Use	Various Land uses, Z & GP D: Intersect with the program elements.
Project Issues	Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Flood Plain/Flooding; Noise; Public Services; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife; Growth Inducing; Landuse; Cumulative Effects; Geologic/Seismic; Aesthetic/Visual
Reviewing Agencies	Resources Agency; Cal Fire; Department of Fish and Wildlife, Region 5; Department of Parks and Recreation; Department of Water Resources; Resources, Recycling and Recovery; Caltrans, District 11; Air Resources Board; State Water Resources Control Board, Division of Drinking Water; State Water Resources Control Board, Division of Financial Assistance; State Water Resources Control Board, Division of Water Quality; Regional Water Quality Contro Board, Region 9; Native American Heritage Commission; State Lands Commission
Data Received	02/10/2016 *Start of Review* 02/10/2016 *End of Review* 04/11/2016

Note: Blanks in data fields result from insufficient information provided by lead agency.

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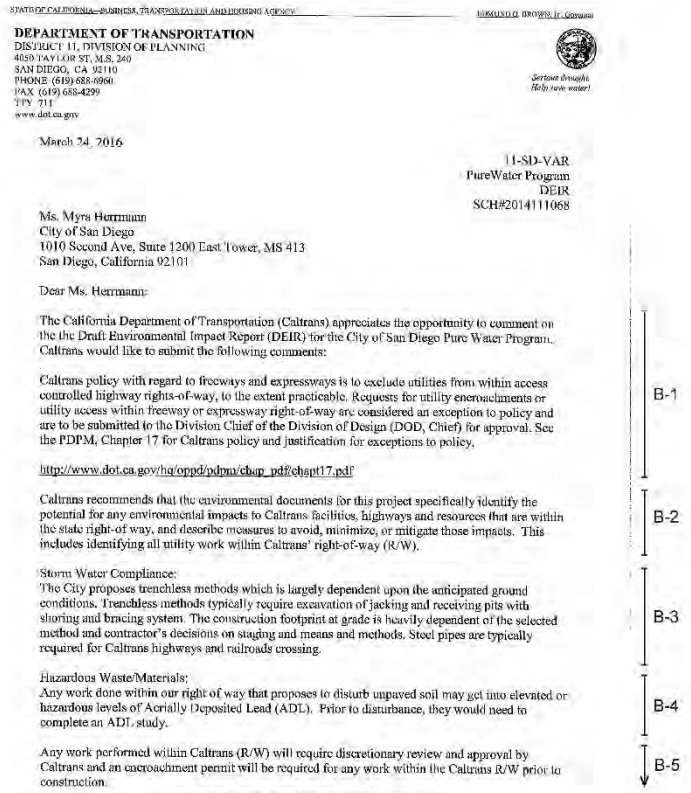
Comment Letter B



STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 11, DIVISION OF PLANNING
4050 TAYLOR ST, M.S. 240
SAN DIEGO, CA 92110
PHONE (619) 688-6960
FAX (619) 688-4299
TTY 711
www.dot.ca.gov

Serious drought. Help save water!

March 24, 2016

11-SD-VAR
PureWater Program
DEIR
SCH#2014111068

Ms. Myra Herrmann
City of San Diego
1010 Second Ave, Suite 1200 East Tower, MS 413
San Diego, California 92101

Dear Ms. Herrmann:

The California Department of Transportation (Caltrans) appreciates the opportunity to comment on the the Draft Environmental Impact Report (DEIR) for the City of San Diego Pure Water Program. Caltrans would like to submit the following comments:

Caltrans policy with regard to freeways and expressways is to exclude utilities from within access controlled highway rights-of-way, to the extent practicable. Requests for utility encroachments or utility access within freeway or expressway right-of-way are considered an exception to policy and are to be submitted to the Division Chief of the Division of Design (DOD, Chief) for approval. See the PDPM, Chapter 17 for Caltrans policy and justification for exceptions to policy.

http://www.dot.ca.gov/hq/oppd/pdpm/chap_pdf/chapt17.pdf

Caltrans recommends that the environmental documents for this project specifically identify the potential for any environmental impacts to Caltrans facilities, highways and resources that are within the state right-of way, and describe measures to avoid, minimize, or mitigate those impacts. This includes identifying all utility work within Caltrans' right-of-way (R/W).

Storm Water Compliance:
The City proposes trenchless methods which is largely dependent upon the anticipated ground conditions. Trenchless methods typically require excavation of jacking and receiving pits with shoring and bracing system. The construction footprint at grade is heavily dependent of the selected method and contractor's decisions on staging and means and methods. Steel pipes are typically required for Caltrans highways and railroads crossing.

Hazardous Waste/Materials:
Any work done within our right of way that proposes to disturb unpaved soil may get into elevated or hazardous levels of Aerially Deposited Lead (ADL). Prior to disturbance, they would need to complete an ADL study.

Any work performed within Caltrans (R/W) will require discretionary review and approval by Caltrans and an encroachment permit will be required for any work within the Caltrans R/W prior to construction.

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

B-1
B-2
B-3
B-4
B-5

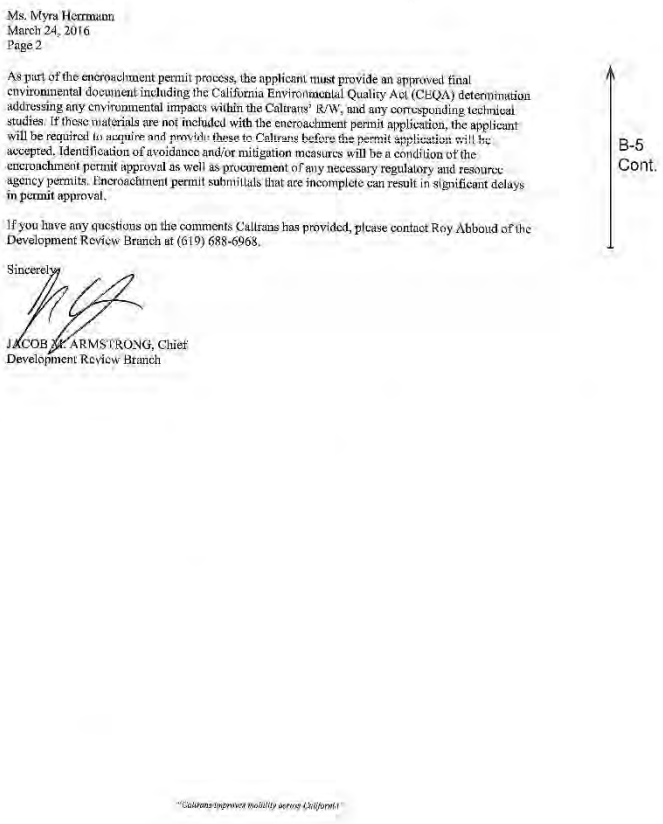
Response to Comment Letter B

California Department of Transportation
Jacob M. Armstrong
March 24, 2016

B-1 Comment noted.

B-2 As stated in the PEIR, Chapter 1.0, the PEIR is intended to evaluate the potential components of the Program at a general programmatic level. It is not intended or structured to evaluate project-level impacts associated with future implementation of any of the treatment facilities or pipelines, although the PEIR may provide information and analyses that could be used in conjunction with future project-level environmental reviews of such improvements. Any subsequent activities proposed for the Program, such as approvals and implementation of individual components of the Program, will be further evaluated separately under individual project-level CEQA/National Environmental Policy Act (NEPA) review processes.

B-3 As discussed in Section 5.7.7, compliance with the Construction General Permit requires that a SWPPP be prepared. The SWPPP would list BMPs used to protect stormwater runoff, including erosion controls, sediment controls, tracking controls, wind erosion control, non-



Ms. Myra Herrmann
March 24, 2016
Page 2

As part of the encroachment permit process, the applicant must provide an approved final environmental document including the California Environmental Quality Act (CEQA) determination addressing any environmental impacts within the Caltrans' R/W, and any corresponding technical studies. If these materials are not included with the encroachment permit application, the applicant will be required to acquire and provide these to Caltrans before the permit application will be accepted. Identification of avoidance and/or mitigation measures will be a condition of the encroachment permit approval as well as procurement of any necessary regulatory and resource agency permits. Encroachment permit submittals that are incomplete can result in significant delays in permit approval.

B-5 Cont.

If you have any questions on the comments Caltrans has provided, please contact Roy Abboud of the Development Review Branch at (619) 688-6968.

Sincerely,

JACOB M. ARMSTRONG, Chief
Development Review Branch

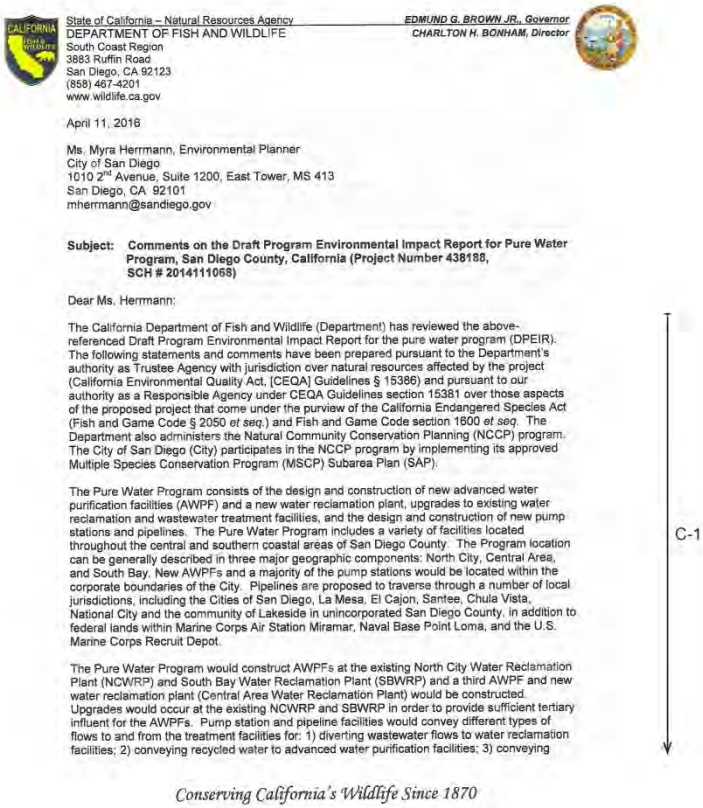
"Caltrans improves mobility across California"

stormwater management, and proper materials and waste management. See also mitigation measures MM-HYD-1 and MM-HYD-2.

B-4 The City agrees to prepare an Aerially Deposited Lead study as part of the right-of-way permit application prior to the start of construction for any areas where excavation will occur in unpaved areas within Caltrans ROW.

B-5 Comment noted.

Comment Letter C



State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

April 11, 2016

Ms. Myra Herrmann, Environmental Planner
City of San Diego
1010 2nd Avenue, Suite 1200, East Tower, MS 413
San Diego, CA 92101
mherrmann@sandiego.gov

Subject: Comments on the Draft Program Environmental Impact Report for Pure Water Program, San Diego County, California (Project Number 438188, SCH # 2014111068)

Dear Ms. Herrmann:

The California Department of Fish and Wildlife (Department) has reviewed the above-referenced Draft Program Environmental Impact Report for the pure water program (DPEIR). The following statements and comments have been prepared pursuant to the Department's authority as Trustee Agency with jurisdiction over natural resources affected by the project (California Environmental Quality Act, [CEQA] Guidelines § 15386) and pursuant to our authority as a Responsible Agency under CEQA Guidelines section 15381 over those aspects of the proposed project that come under the purview of the California Endangered Species Act (Fish and Game Code § 2050 *et seq.*) and Fish and Game Code section 1600 *et seq.* The Department also administers the Natural Community Conservation Planning (NCCP) program. The City of San Diego (City) participates in the NCCP program by implementing its approved Multiple Species Conservation Program (MSCP) Subarea Plan (SAP).

The Pure Water Program consists of the design and construction of new advanced water purification facilities (AWPF) and a new water reclamation plant, upgrades to existing water reclamation and wastewater treatment facilities, and the design and construction of new pump stations and pipelines. The Pure Water Program includes a variety of facilities located throughout the central and southern coastal areas of San Diego County. The Program location can be generally described in three major geographic components: North City, Central Area, and South Bay. New AWPFs and a majority of the pump stations would be located within the corporate boundaries of the City. Pipelines are proposed to traverse through a number of local jurisdictions, including the Cities of San Diego, La Mesa, El Cajon, Santee, Chula Vista, National City and the community of Lakeside in unincorporated San Diego County, in addition to federal lands within Marine Corps Air Station Miramar, Naval Base Point Loma, and the U.S. Marine Corps Recruit Depot.

The Pure Water Program would construct AWPFs at the existing North City Water Reclamation Plant (NCWRP) and South Bay Water Reclamation Plant (SBWRP) and a third AWPF and new water reclamation plant (Central Area Water Reclamation Plant) would be constructed. Upgrades would occur at the existing NCWRP and SBWRP in order to provide sufficient tertiary influent for the AWPFs. Pump station and pipeline facilities would convey different types of flows to and from the treatment facilities for: 1) diverting wastewater flows to water reclamation facilities; 2) conveying recycled water to advanced water purification facilities; 3) conveying

C-1

Conserving California's Wildlife Since 1870

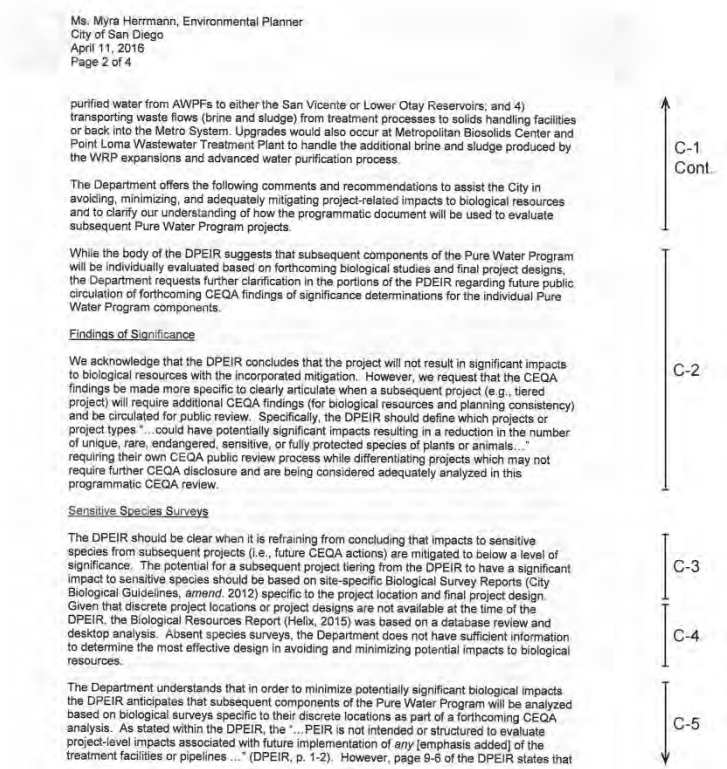
Response to Comment Letter C

California Department of Fish and Wildlife
Gail K. Sevrens
April 11, 2016

C-1 Comment noted. This comment accurately summarizes the project description as presented in the DPEIR.

C-2 As stated in the PEIR, Chapter 1.0, the PEIR is intended to evaluate the potential components of the Program at a general programmatic level. It is not intended or structured to evaluate project-level impacts associated with future implementation of any of the treatment facilities or pipelines, although the PEIR may provide information and analyses that could be used in conjunction with future project-level environmental reviews of such improvements. Any subsequent activities proposed for the Program, such as approvals and implementation of individual components of the Program, will be further evaluated separately under individual project-level CEQA/National Environmental Policy Act review processes.

C-3 The DPEIR concludes that all impacts to sensitive species are mitigated to below a level of significance at the Program level through implementation of the



Ms. Myra Herrmann, Environmental Planner
City of San Diego
April 11, 2016
Page 2 of 4

purified water from AWPFs to either the San Vicente or Lower Otay Reservoirs; and 4) transporting waste flows (brine and sludge) from treatment processes to solids handling facilities or back into the Metro System. Upgrades would also occur at Metropolitan Biosolids Center and Point Loma Wastewater Treatment Plant to handle the additional brine and sludge produced by the WRP expansions and advanced water purification process.

The Department offers the following comments and recommendations to assist the City in avoiding, minimizing, and adequately mitigating project-related impacts to biological resources and to clarify our understanding of how the programmatic document will be used to evaluate subsequent Pure Water Program projects.

While the body of the DPEIR suggests that subsequent components of the Pure Water Program will be individually evaluated based on forthcoming biological studies and final project designs, the Department requests further clarification in the portions of the PDEIR regarding future public circulation of forthcoming CEQA findings of significance determinations for the individual Pure Water Program components.

Findings of Significance

We acknowledge that the DPEIR concludes that the project will not result in significant impacts to biological resources with the incorporated mitigation. However, we request that the CEQA findings be made more specific to clearly articulate when a subsequent project (e.g., tiered project) will require additional CEQA findings (for biological resources and planning consistency) and be circulated for public review. Specifically, the DPEIR should define which projects or project types "...could have potentially significant impacts resulting in a reduction in the number of unique, rare, endangered, sensitive, or fully protected species of plants or animals..." requiring their own CEQA public review process while differentiating projects which may not require further CEQA disclosure and are being considered adequately analyzed in this programmatic CEQA review.

Sensitive Species Surveys

The DPEIR should be clear when it is refraining from concluding that impacts to sensitive species from subsequent projects (i.e., future CEQA actions) are mitigated to below a level of significance. The potential for a subsequent project tiering from the DPEIR to have a significant impact to sensitive species should be based on site-specific Biological Survey Reports (City Biological Guidelines, *amend*. 2012) specific to the project location and final project design. Given that discrete project locations or project designs are not available at the time of the DPEIR, the Biological Resources Report (Helix, 2015) was based on a database review and desktop analysis. Absent species surveys, the Department does not have sufficient information to determine the most effective design in avoiding and minimizing potential impacts to biological resources.

The Department understands that in order to minimize potentially significant biological impacts the DPEIR anticipates that subsequent components of the Pure Water Program will be analyzed based on biological surveys specific to their discrete locations as part of a forthcoming CEQA analysis. As stated within the DPEIR, the "...PEIR is not intended or structured to evaluate project-level impacts associated with future implementation of *any* [emphasis added] of the treatment facilities or pipelines ..." (DPEIR, p. 1-2). However, page 9-6 of the DPEIR states that

C-1 Cont.

C-2

C-3

C-4

C-5

adopted Mitigation Framework. Mitigation Framework measure MM-BIO-1 requires that:

> "all projects which could have potentially significant impacts resulting in a reduction in the number of unique, rare, endangered, sensitive, or fully protected species of plants or animals shall be analyzed in accordance with the CEQA Significance Thresholds, which require that site-specific biological resources surveys be conducted in accordance with City of San Diego Biology Guidelines (2012) and MSCP Subarea Plan."

As such, all Program components evaluated in the PEIR will be further analyzed during future project-level review prior to concluding whether or not impacts to sensitive species are less than significant.

C-4 Comment noted; the City will continue to make future project-level CEQA documentation available to CDFW for review.

C-5 Refer to Response C-2. The DPEIR makes conservative assumptions regarding impact significance. At the program level of CEQA analysis, the mitigation framework provided as part of the

"... the Program's individual impacts related to biological resources would be less than significant with the incorporation of mitigation." This statement appears ambiguous and potentially contrary to the DPEIR's previous assertion that specific projects would be subsequently and individually assessed.

C-5 Cont.

Impacts to Sensitive Habitat or Sensitive Natural Communities

The Department recommends subsequent projects tiering from the DPEIR document their CEQA significance determinations for impacts to sensitive habitats and sensitive natural communities based on site-specific habitat mapping. According to the DPEIR, "[t]his Program-level analysis is based upon a conceptual design only, and specific locations for each facility are not known or confirmed to a project-level or design-level of detail." The DPEIR should specify that subsequent CEQA documents tiering from the DPEIR shall demonstrate which findings of significance are adopted from the DPEIR and which additional, if any, findings of significance are necessary and unique to the location and design of the subsequent CEQA action.

C-6

Consistency with Existing Plans

To demonstrate conformance with existing regional plans, the DPEIR should include a table or section identifying each potentially significant impact, associated mitigation measure, and a brief description of how the included mitigation measure conforms to the respective regional plan's requirements. The Pure Water Program spans multiple land use jurisdictions each with their own biological resource planning documents. Mitigation Measure MM-BIO-1 should be revised to specify that the CEQA significance thresholds for subsequent project features proposed within each jurisdiction should be evaluated in the context of whether the mitigation measure successfully implements each of the respective plans (e.g., Regional MSCP, City of San Diego MSCP SAP, and City of Chula Vista SAP).

C-7

C-8

Recreational Fishing Collapse

The DPEIR should analyze how the conveyance of purified water from AWPFs to San Vincente and Otay reservoirs would impact public recreational fishing opportunities. Mixing purified water into the San Vincente Reservoir and Otay Reservoir would "...increase the hypolimnetic anoxia period..." (p. 5.4-67) and has the potential to negatively impact sport fishing opportunities and sport fishing stocking efforts. The Department's primary concerns are as follows: blending of treated waters (post AWPF) with existing fisheries reservoirs will increase anoxic conditions, to the detriment of fish and benthic invertebrates; uncertainty for creating nutrient-poor oligotrophic reservoirs with the potential for fish die offs; fish entrapment via pumping operations, resulting in larval and juvenile fish mortality during pumping operations or water transfers; and uncertainty regarding a decrease in total dissolved solids, reduction in diatoms and chlorophyll levels.

Through current fisheries management practices, San Diego is a prominent bass fishing locale. The ramifications of and actions that have the potential to diminish local fishery values should be given careful consideration. Currently, the Department partners with the City and others to stock farm-raised fish. The Department provides hatchery stocked fish to improve fishing potential and increase species diversity. The Department believes that the proposal to mix purified water within fishing reservoirs could negatively impact sports fishing opportunities within local reservoirs, lead to overfishing of adjacent sport fishing opportunities, and potentially affect the Department's ability to effectively continue its stocking program at San Vincente and Otay reservoirs.

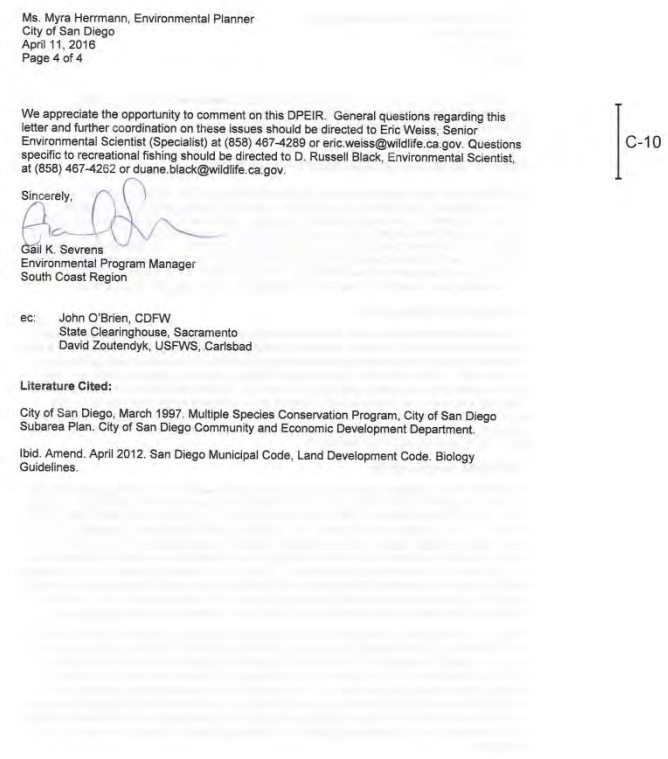
C-9

DPEIR identifies the steps and procedures to be followed for subsequent project-specific analysis, ensuring that all potential impacts would be reduced to below a level of significance.

C-6 Please refer to Response C-2. The DPEIR intends that all Program components will be evaluated further under an individual project-level environmental review process and that separate CEQA significance determinations will be made at that time based on site-specific biological information and confirmed project-level details.

C-7 The DPEIR includes an evaluation of the Program component's consistency with applicable regional plans in Section 5.1, Land Use (see specifically Sections 5.1.7-5.1.9) and includes mitigation measures MM-LU-3 through MM-LU-9, which outline the specific requirements of each regional plan. A summary is also provided in Sections 5.4.16 through 5.4.18. Please also refer to Response C-2.

C-8 Please refer to Response C-7. In addition, as disclosed in Section 5.4.18 of the DPEIR, implementation of Mitigation Framework measures MM-BIO-1 and MM-LU-3 through MM-LU-9 would reduce potential conflicts with provisions of adopted local habitat conservation plans or policies protecting



Ms. Myra Herrmann, Environmental Planner
City of San Diego
April 11, 2016
Page 4 of 4

We appreciate the opportunity to comment on this DPEIR. General questions regarding this letter and further coordination on these issues should be directed to Eric Weiss, Senior Environmental Scientist (Specialist) at (858) 467-4289 or eric.weiss@wildlife.ca.gov. Questions specific to recreational fishing should be directed to D. Russell Black, Environmental Scientist, at (858) 467-4262 or duane.black@wildlife.ca.gov.

C-10

Sincerely,

Gail K. Sevrens
Environmental Program Manager
South Coast Region

ec: John O'Brien, CDFW
State Clearinghouse, Sacramento
David Zoutendyk, USFWS, Carlsbad

Literature Cited:

City of San Diego, March 1997. Multiple Species Conservation Program, City of San Diego Subarea Plan. City of San Diego Community and Economic Development Department.

Ibid. Amend. April 2012. San Diego Municipal Code, Land Development Code. Biology Guidelines.

biological resources. As such, the Mitigation Framework measures included in the DPEIR already provide the revisions requested by the commenter.

C-9 As discussed in Section 5.4 of the DPEIR, Biological Resources, the mixing of purified water into San Vicente Reservoir would result in slight changes to water quality that are not expected to have adverse effects on sensitive species. It is not anticipated that introducing purified water into San Vicente or Otay Reservoir will diminish game fish populations or impact recreational fishing opportunities. Purified water will be a portion of the water stored in the reservoir. Local runoff and imported water from the Colorado River or northern California will continue to be a significant part of the water in either reservoir. Thus, from the perspective of managing fisheries in the reservoir, water quality conditions will not be substantially changed. Opportunities for sport fish stocking will remain unchanged.

In San Vicente and Otay Reservoirs existing conditions are that the hypolimnion is anoxic most of the year [approximately 10 months]. The existing conditions are that the anoxic hypolimnion does not support fish or invertebrates. Adding purified water to the reservoir will not change the

THIS PAGE INTENTIONALLY LEFT BLANK	depth or lateral extent of the anoxic hypolimnion and, thus, will not change the area of habitat suitable for fish or invertebrates. Fish die offs from nutrient-poor conditions are not expected. As stated above, in either San Vicente or Otay Reservoir there will continue to be other sources of water in the reservoir. These other waters will have sufficient nutrients to sustain primary production [i.e., algae, the base of the food chain] at substantial levels. Modeling of San Vicente Reservoir shows levels of chlorophyll [a measure of primary production] to be unchanged from historic conditions. At both San Vicente and Otay Reservoirs, the infrastructure for withdrawing water and the rates of withdrawal will remain unchanged from pre-project conditions. At these reservoirs there are no pump intakes. Rather, water is withdrawn via gravity outflow through ports located deep in the reservoir. The potential for fish entrapment has always been very slight and will remain unchanged. As explained above, chlorophyll levels should remain substantially unchanged when purified water is added to the reservoirs. While purified water has lower total dissolved solids, it will be blended with other sources of water in the reservoir. There is no evidence that

THIS PAGE INTENTIONALLY LEFT BLANK	total dissolved solids in the blended water will be a negatively affect sport fish species. Please also refer to Response to Comment C-2. All Program components will be evaluated further under an individual project-level environmental review process and separate CEQA significance determinations will be made at that time based on site-specific biological information and confirmed project-level details. **C-10** Comment noted.

Comment Letter D

MARK WARDLAW
DIRECTOR
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5510 OVERLAND AVENUE, SUITE 310, SAN DIEGO, CA 92123
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April 11, 2016

Myra Herrmann
City of San Diego – Planning Department
1010 2nd Ave, Suite 1200, East Tower, MS 413
San Diego, CA 92101

Via E-mail: PlanningCEQA@sandiego.gov

COMMENTS ON THE DRAFT PROGRAM EIR FOR THE PURE WATER PROGRAM (PROJECT #438188)

The County of San Diego (County) has reviewed the Draft Program Environmental Impact Report (PEIR) for the PURE Water Program and appreciates this opportunity to comment. County Planning & Development Services (PDS), the Department of Public Works (DPW), and the Department of Parks & Recreation (DPR) have the following comments regarding the PEIR. Please note that the County is not taking a position on this project. Encroachment into the County right-of-way or park property would require coordination and authorization. D-1

General Planning

1. Please identify how deep the excavation will be for both the open trench and trenchless construction methodologies and revise accordingly. D-2
2. The noise section does not analyze impacts from trenchless tunneling. Please analyze noise and vibration impacts from trenchless tunneling and revise accordingly. D-3
3. Page 5.2-31, Mitigation Measure AQ-1:
   a. The mitigation measure does not include trackout control BMPs. Please add the requirement of trackout controls. Rumble plates should be installed at all entrances and exists.
   b. Identify if fueling will occur on-site. If fueling will occur on-site, please add discussion regarding the requirement for appropriate BMPs and monitoring of fueling areas. D-4

Response to Comment Letter D

County of San Diego
Joseph Farace
April 11, 2016

D-1 Comment noted; it is also noted that any encroachment into County right-of-way or park property would require County coordination and authorization.

D-2 As stated in the DPEIR, Chapter 1.0, the DPEIR is intended to evaluate the potential components of the Program at a general programmatic level. The Program facilities described in the DPEIR are conceptual in nature and will be implemented over a 20-year time frame. Detailed information regarding the depth of open trench and trenchless construction excavation is not available at this time; project specifics and detailed construction methodologies will be developed for each of the Program components at the time of future project-level environmental review.

D-3 Section 5.8, Noise, of the DPEIR has been revised to include trenchless tunneling in the construction scenario for the analysis of construction noise impacts. As described in the FPEIR, estimated noise levels during trenchless tunneling construction at a distance of 50 feet would range from 85 dBA Leq to 74 dBA

April 11, 2016
Ms. Herrmann
City of San Diego

4. Page 5.13-6 Operation: Please identify the locations where the pipe would be above ground. According to the following sentence, "All pipelines would be located underground to the extent feasible; any segments of pipeline that may be located aboveground would be designed in such a way as to not disrupt circulation movements." D-5

5. Page 11-16 and Table 11-2: The Alternate Reservoir Augmentation Alternative land use analysis discussed on page 11-16 is not consistent with Table 11-2. Please revise accordingly. D-6

Biology

1. Please clarify why the impact analysis for Biological Resources is limited to 500 feet on each side of the proposed pipeline alignments and 300 feet of the conceptual facility locations and revise accordingly. D-7

2. Page 5.1-74, San Vicente Purified Water Pipeline: Please revise the following sentence accordingly as underground drilling and/or microtunneling has the potential to impact and destroy mature riparian woodland through the disturbance and destruction of the root beds of riparian tree species such as oaks, "Routing the proposed pipeline around the southern coast live oak riparian forest in northwest San Vicente Creek, or using an appropriate method such as auger boring/pipe jacking, horizontal directional drilling, or microtunneling at this location would avoid potential conflicts with County RPO wetland buffer requirements that prohibit destruction of mature riparian woodland." D-8

3. Table 5.4-2, Table 5.4-4, Table 5.4-6: If possible, please include acreages of each habitat type that will be impacted within the North City, Central Area and South Bay components. D-9

4. Page 5.4-67, ROD at San Vicente Reservoir: Please revise the following sentence to include discussion of the presence of golden eagle at San Vicente Reservoir, "Sensitive birds associated with open water reported historically from San Vicente Reservoir include osprey (*Pandion haliaetus*), bald eagle (*Haliaeetus leucocephalus*), and belted kingfisher (*Ceryle alcyon*); however, the latter two species were not observed during surveys conducted for the Carryover Storage and San Vicente Dam Raise Project." D10

5. Page 9-6, Biological Resources: Please revise the following sentence to state that impacts would be below a level of significance, "On an individual basis, with implementation of Mitigation Framework measures MM-LU-3 through MM-LU-10 and MM-BIO-1 through MM-BIO-3, the Program would not impact unique, rare, endangered, sensitive, or fully protected species of plants or animals; sensitive D-11

2

Leq. Similar to open trenching construction methods, trenchless tunneling methods could result in an exceedance of construction noise standards, resulting in a potentially significant impact. However, mitigation measure MM-NOI-1 would reduce potentially significant impacts to below a level of significance. Revisions made to the Final PEIR are for clarification purposes only and do not result in any changes to the significance conclusions presented in the document. Also refer to Response D-2.

D-4 No significant impacts were identified related to fugitive dust; therefore, additional mitigation measures are not required. It should be noted, however, that subsequent projects would be required to implement Best Management Practices (BMPs) in accordance with the City's Storm Water Standards during construction-related activities and identified in a project-specific SWPPP. Furthermore, specific BMP's would be the responsibility of the contractor.

Materials such as diesel fuel, gasoline, etc. that could spill or leak are evaluated in the DPEIR in Section 5.3, Health and Safety and Section 5.7, Hydrology and Water Quality. As discussed in Section 5.3.7, "Federal, state and local regulations control the transportation, use, storage, generation, and disposal

April 11, 2016
Ms. Herrmann
City of San Diego

habitats or natural communities....." because the mitigation measures listed above state "below a level of significance". D-11 Cont.

Parks & Recreation

1. The figures within the PEIR do not show property ownership overlain with the proposed project. Please include a figure which shows property ownership, specifically all County Parks and Preserves. Analysis of impacts to County Parks and Preserves cannot be done without an exhibit showing County land designation overlain with the proposed project. Please prepare a figure. D-12
2. Existing figures that do show ownership are not consistent in terms of depicting County of San Diego owned lands. Please revise accordingly. D-13
3. If possible, please prepare and include a figure showing open trenching areas and trenchless tunneling areas. D-14
4. Please include a list of all County Parks and Preserves and associated project impacts to each specific Park and Preserve within the PEIR. We understand that this is a PEIR so please include the maximum possible area of impacts. D-15
5. Page 5.1-81, Otay Reservoir Booster Station and South Bay Influent Pump Station: D-16
   a. Construction of the Otay Reservoir Booster Station on Otay Lakes County Park will take designated Park land. DPR will require compensation or land under Public Resources Code Sections 5400-5409 (Public Park Preservation Act of 1971) for loss of Park land. The PEIR should include discussion of replacement of loss of Park land due to the construction of the Booster Station on Otay Lakes County Park.
   b. The document states, "County lands in the site are in Otay Lakes County Park, but designated as Take-Authorized Area in the County MSCP Subarea Plan." Even though the Park is designated as "Take-Authorized Area" analysis of impacts to the property under the California Environmental Quality Act (CEQA) and preparation of MSCP findings is still required.
6. Page 5.1-82, County Preserve Easement Restrictions and 5.4-49, Other Approvals: D-17
   a. Identify which County preserves would (or are expected) to be impacted by the proposed San Vicente Purified Water Pipeline alignment. In addition, the descriptions of the proposed project impacts in both of these paragraphs are not consistent. Please revise accordingly.
   b. Please change "Hardline Preserve lands" to state "MSCP Preserve lands" and revise accordingly. D-18

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of hazardous materials to minimize potential health and environmental hazards that could occur through accidental spills or leakage". The Program would incorporate leak and spill containment measures to minimize the risk of upset. As discussed in Section 5.7.7, compliance with the Construction General Permit requires that a SWPPP be prepared. The SWPPP would list BMPs used to protect stormwater runoff, including erosion controls, sediment controls, tracking controls, wind erosion control, non-stormwater management, and proper materials and waste management. See also mitigation measures MM-HYD-1 and MM-HYD-2.

D-5 Please refer to Response D-2.

D-6 The discussion of land use impacts associated with the Alternate Reservoir Augmentation Alternative has been clarified on page 11-16 of the Final PEIR to explain that impacts would be slightly reduced when compared to the proposed Program, and Table 11-2 has been revised accordingly. Revisions made to the Final PEIR are for clarification purposes only and do not result in any changes to the significance conclusions presented in the document.

D-7 The City decided that a study area of 500 feet on each side of the proposed pipeline and 300 feet of the conceptual facility locations for the biological

April 11, 2016
Ms. Herrmann
City of San Diego

7. Page 5.14-4, Parks: Program components will also be located within County Parks and Preserves. Please list the names of all County Parks and Preserves where Program components would be located within. D-19

8. Please identify if the proposed project would require the closure or partial closure of any County Park or Preserve during construction. In addition, please identify if trails or portions of trails within Preserves would need to be closed. Please revise accordingly. D-20

9. The Noise mitigation measures need to include a requirement that County residents who live within 250 feet of a Park or Preserve are notified in advance of construction activities in those Preserves and Parks. Please revise accordingly. D-21

Groundwater

The project may generate offsite water quality impacts to groundwater resources. Groundwater is an important water source to private wells within County lands including well users within the San Diego River Valley Groundwater Basin. The PEIR should study water quality impacts to local groundwater supplies/private wells and provide mitigation measures as necessary. D-22

Flood Control

The proposed alignments of the water and wastewater pipelines will impact San Diego County Flood Control District drainage facilities (in particular, but not limited to, the Los Coches Flood Control Channel, Wing Avenue Flood Control Channel, and the Sweetwater River Flood Control Levee System). Detailed design documentation must be submitted to PDS (Land Development division) for review to ensure that there are no impacts to San Diego County Flood Control District facilities. D-23

Watershed Protection Program

1. The project may generate potential storm water quality impacts onto unincorporated County of San Diego lands; therefore, the project may need to consider the following items: D-24

   a. Compliance with the recently adopted San Diego Municipal Storm Water Permit Order No. R9-2013-0001, (as amended by Order Nos. R9-2015-0001 and R9-2015-0100). The project may consider implementing permanent Site Design, Storm Water Treatment, and Hydromodification Management pollutant control and flow control Best Management Practices (BMPs) in accordance with the County's BMP Design Manual.

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resource analysis was appropriate based on the programmatic nature of the analysis and the biological resources being analyzed. A smaller study area was chosen for the facility sites since their locations are more fixed, whereas a larger study area was chosen for the pipeline alignments since there is a greater likelihood of the location shifting. No revisions to the FPEIR are required.

D-8 Please refer to Response D-2. Detailed information regarding the acreages of each habitat type to be impacted by Project components is not available at this time and will be provided during project-level environmental review.

D-9 Please refer to Response D-2. Specific acreages of impacts to each habitat type within the study area are not yet known.

D-10 Page 5.4-67 of the FPEIR has been revised to include in the discussion the presence of golden eagle at San Vicente Reservoir. The sentence now reads:

"Sensitive birds associated with open water reported historically from San Vicente Reservoir include osprey (*Pandion haliaetus*), bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*) (foraging only), and belted kingfisher (*Ceryle alcyon*);

April 11, 2016
Ms. Herrmann
City of San Diego

b. Construction BMPs and associated plans for conformance with the County of San Diego' Grading Ordinance, Watershed Protection Ordinance and State of California's Construction General Permit. D-24 Cont.

The County appreciates the opportunity to participate and comment on this project. We look forward to providing additional assistance at your request. If you have any questions regarding these comments, please contact Danny Serrano, Land Use/Environmental Planner, at (858) 694-3680, or via email at Daniel.Serrano@sdcounty.ca.gov D-25

Sincerely,

Joseph Farace, AICP
Group Program Manager
Advance Planning Division

e-mail cc:
Michael De La Rosa, Policy Advisor, Board of Supervisors, District 1
Adam Wilson, Policy Advisor, Board of Supervisors, District 2
Keith Corry, Policy Advisor, Board of Supervisors, District 3
Melanie Wilson, Board of Supervisors, District 4
Chris Livoni, Policy Advisor, Board of Supervisors, District 5
Megan Jones, Group Program Manager, LUEG
Jim Bennett, Land Use/Environmental Planner, Planning & Development Services
Eric Lardy, Land Use/Environmental Planning Manager, Planning & Development Services
Marcus Lubich, Park Project Manager, Department of Parks & Recreation
Jennifer Price, Land Use/Environmental Planning, Department of Parks & Recreation
Jeff Kashak, Land Use/Environmental Planner, Department of Public Works

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however, the latter three species were not observed based on surveys conducted for the Carryover Storage and San Vicente Dam Raise Project."

Revisions made to the Final PEIR are for clarification purposes only and do not result in any changes to the significance conclusions presented in the document.

D-11 Page 9-7 of the FPEIR has been revised to clarify that the Program "is not anticipated to" result in impacts to biological resources with incorporation of the Mitigation Framework measures. Revisions made to the Final PEIR are for clarification purposes only and do not result in any changes to the significance conclusions presented in the document.

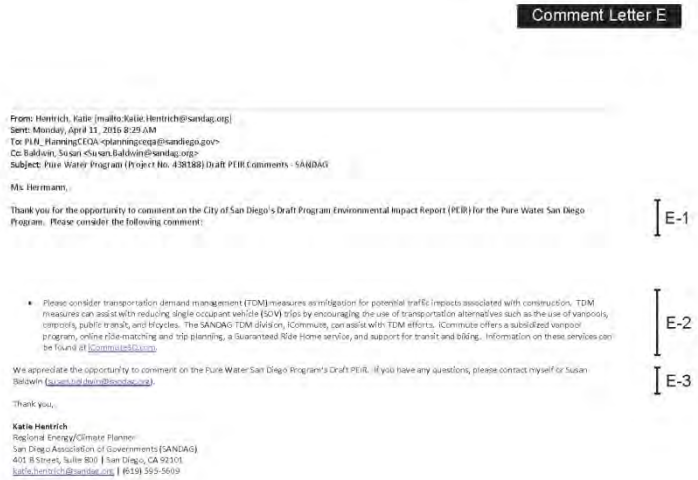
D-12 A map specific to County Parks and Preserves and the proposed Program has not been prepared. As proposed, the South Bay Component purified water pipeline would traverse the Otay Ranch Preserve within the City of Chula Vista (i.e., on City of Chula Vista jurisdictional lands). The South Bay Component purified water pipeline would not traverse the Otay Ranch Preserve within the County of San Diego.No other proposed Program components would be located on or traverse other County of San Diego Parks or Preserves. The South Bay Component (AWPF and WRP) is located adjacent to the Tijuana River Valley

THIS PAGE INTENTIONALLY LEFT BLANK	Regional Park (TRVRP) and outside of park boundaries. The wastewater forcemain to the South Bay Influent Pump Station is proposed to be aligned along existing roads adjacent to but outside of the TRVRP boundaries. **D-13** A detailed discussion of the Program including on-site and surrounding land uses is provided in Section 5.1 of the DPEIR, Land Use. For each primary Program component, including purified water pipelines, a table has been provided and identifies the jurisdiction, community plan area/planning areas/neighborhood, and general plan land use designation that the Program component would traverse and/or be located in. **D-14** Please refer to Response D-2. Project specifics including the location of open trenching areas and trenchless tunneling areas and detailed construction methodologies will be developed during the planning and design phase for each of the Program components and will be evaluated at the time of future project-level environmental review is conducted in accordance with CEQA Guidelines Section 15004. **D-15** Please refer to Response D-12. **D-16** The Otay Reservoir Booster Station would be located on developed land owned by the City of San Diego within

THIS PAGE INTENTIONALLY LEFT BLANK		the fenced boundary of the existing Otay Water Treatment Plant. The booster station and associated construction activities would not occur in Otay Lakes County Park. Pages 5.1-81 (under the heading "Otay Reservoir Booster Station and South Bay Influent Pump Station") and 5.1-82 of the Final PEIR have been revised to clarify the location of the Otay Reservoir Booster Station. Revisions made to the Final PEIR are for clarification purposes only and do not result in any changes to the significance conclusions presented in the document.
	D-17	The proposed San Vicente Purified Water Pipeline and associated construction activities would not occur within a County Hardline Preserve. The County's Oakoasis Preserve is located approximately 0.2 mile east of the proposed San Vicente Reservoir outfall/discharge structure and the Lakeland Linkage Preserve is located approximately 0.6 mile east of the San Vicente Purified Water Pipeline south and east of SR 67. Page 5.1-82 of the Final PEIR, County Preserve Easement Restrictions, has been revised to clarify the location of the San Vicente Purified Water Pipeline. Revisions made to the Final PEIR are for clarification purposes only and do not result in any changes to the significance conclusions presented in the document.
	D-18	Section 5.1, Land Use, and Section 5.4, Biology, of

THIS PAGE INTENTIONALLY LEFT BLANK	the Final PEIR has been revised. Program components would not be located in MSCP Preserve lands. Revisions made to the Final PEIR are for clarification purposes only and do not result in any changes to the significance conclusions presented in the document. **D-19** Please refer to response D-12. **D-20** Please refer to response D-12. Construction activities occurring near the boundary of a County Park or Preserve are not anticipated to require the closure or partial closure of a County Park or Preserve and associated facilities/amenities. **D-21** Please refer to response D-12. As Program components are not proposed to be located in County Parks and Preserves, the noise mitigation measures do not necessitate revision. **D-22** Comment noted. Potential impacts to groundwater resources are addressed in Section 5.7 of the DPEIR (see pages 5.7-24 through 5.7-26) and mitigation measure MM-HYD-4 is provided (see page 5.7-29). **D-23** Comment noted. The City will coordinate with the County during design of future program components and prior to subsequent project-level CEQA analysis.

THIS PAGE INTENTIONALLY LEFT BLANK	**D-24** Comment noted. Requirements of the San Diego Municipal Storm Water Permit Order No. R9-2013-0001, as amended by Order No. R9-2015-0001 and Order No. R9-2015-0100, are discussed on page 5.7-14 of the DPEIR. Low-impact development (LID) designs and water quality BMPs would be implemented in accordance with the City's Storm Water Standards Manual, as discussed on page 5.7-19 of the DPEIR, and mitigation measure MM-HYD-2 requires implementation of source control BMPs, treatment control BMPs, and LID features appropriate for the site conditions of each Program component (see page 5.7-22). **D-25** Comment noted.



Comment Letter E

From: Hentrich, Katie [mailto:Katie.Hentrich@sandag.org]
Sent: Monday, April 11, 2016 8:29 AM
To: PLN_PlanningCEQA <planningceqa@sandiego.gov>
Cc: Baldwin, Susan <Susan.Baldwin@sandag.org>
Subject: Pure Water Program (Project No. 438188) Draft PEIR Comments - SANDAG

Ms. Hermann,

Thank you for the opportunity to comment on the City of San Diego's Draft Program Environmental Impact Report (PEIR) for the Pure Water San Diego Program. Please consider the following comment: E-1

- Please consider transportation demand management (TDM) measures as mitigation for potential traffic impacts associated with construction. TDM measures can assist with reducing single occupant vehicle (SOV) trips by encouraging the use of transportation alternatives such as the use of vanpools, carpools, public transit, and bicycles. The SANDAG TDM division, iCommute, can assist with TDM efforts. iCommute offers a subsidized vanpool program, online ride-matching and trip planning, a Guaranteed Ride Home service, and support for transit and biking. Information on these services can be found at iCommuteSD.com. E-2

We appreciate the opportunity to comment on the Pure Water San Diego Program's Draft PEIR. If you have any questions, please contact myself or Susan Baldwin (susan.baldwin@sandag.org). E-3

Thank you,

Katie Hentrich
Regional Energy/Climate Planner
San Diego Association of Governments (SANDAG)
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katie.hentrich@sandag.org | (619) 595-5609

Response to Comment Letter E

SANDAG
Katie Hentrich
April 11, 2016

E-1 Comment noted.

E-2 Potentially significant impacts related to construction traffic are mitigated to less than significant through implementation of MM-TRA-1, which requires the preparation of a traffic control plan. Additional mitigation is not required to reduce potential impacts. Please also refer to MM-AQ-1, which includes a measure to encourage carpooling by all construction workers as a best management practice to reduce construction-related emissions.

E-3 Comment noted.

Comment Letter F

METRO WASTEWATER JPA

276 Fourth Avenue, Chula Vista, CA 91910, 619-476-2587

Jim Peasley, Chair

April 7, 2016

Myra Herrmann, Environmental Planner
City of San Diego – Planning Department
1010 2nd Avenue, Suite 1200
East Tower, MS 413
San Diego, CA 92101

Subject: Comments on the Draft Environmental Impact Report for the Pure Water Program (438188/SCH No. 2014111068)

Dear Ms. Herrmann:

The Metropolitan Wastewater Joint Powers Authority (Metro JPA) is a coalition of municipalities and special districts that share in the use of the City of San Diego's regional wastewater facilities. These agencies collectively account for approximately 35 percent of the system's upkeep and capital costs. F-1

The Metro JPA has reviewed the City of San Diego's (City's) Pure Water Program Environmental Impact Report (PEIR). As a regional commission, Metro JPA fully supports the goals and objectives of the Pure Water Program to address regional wastewater issues while producing a new drought resistant source of water supply for the public benefit. F-1

Metro JPA is also supportive of other regional projects that are being planned or contemplated to achieve the same goals and objectives of the Pure Water Program. These projects may serve as replacement for a portion of project requirements within the Pure Water Program to achieve the secondary equivalency. Therefore, the PEIR should include some discussion of these projects and how they may affect the deployment of the Pure Water Program project elements. F-2

Consideration of these other regional projects would allow the Metro JPA to support ongoing collaboration and encourage efficient deployment of projects that will help with the secondary equivalency at a regional level. Encouraging collaboration and continual partnership to find the best solutions for the entire region will help to ensure our wastewater ratepayers are protected. F-2

We appreciate the opportunity to comment on the Draft PEIR. Questions regarding this letter and further coordination on these issues should be directed to Mr. Greg Humora, Metro TAC Chair. F-3

Sincerely,
Metro JPA Commissioners

The Joint Powers Authority Proactively Addressing Regional Wastewater Issues

Chula Vista • Coronado • Del Mar • El Cajon • Imperial Beach • La Mesa • Lemon Grove Sanitation District
National City • Otay Water District • Poway • Padre Dam Municipal Water District
County of San Diego, representing East Otay, Lakeside/Alpine, Spring Valley & Winter Gardens Sanitation Districts

Response to Comment Letter F

Metro Wastewater JPA
April 7, 2016

F-1 Comment noted.

F-2 The East County Advanced Water Purification Program (ECAWPP) is the only regional project that the City is aware of that is being planned or contemplated to achieve similar goals and objectives as the Pure Water Program. While the ECAWPP may complement the City's Pure Water Program, the City does not view it as a replacement for a portion of the Pure Water Program requirements, based on the stated objectives of the Program as noted in the DPEIR. In the 2015 301(h) NPDES modified permit renewal application, the City established the goal of producing 83 MGD of purified water by December 31, 2035, with interim targets of 15 MGD by December 31, 2023 and 30 MGD by December 31, 2027. Other regional projects that enhance these production volumes would provide similar benefits in terms of wastewater flow reduction and additional water supply.

While the City believes that the approach to the cumulative impact analysis is appropriate and in compliance with CEQA (see Chapter 9.0, Cumulative

THIS PAGE INTENTIONALLY LEFT BLANK	Impacts), the FPEIR has been revised to reflect a hybrid approach by also including relevant, and reasonably foreseeable projects. As such, the ECAWPP has been included as a cumulative project and an analysis of potential cumulative effects with the Pure Water Program has been added to Chapter 9.0, Cumulative Impacts, of the FPEIR. Revisions made to the FPEIR are for clarification purposes only and do not result in any substantial changes in the analysis or changes to the significance conclusions presented in the document. **F-3** Comment noted.

Comment Letter G

PADRE DAM

An Everyday Essential

PlanningCEQA@sandiego.gov

April 11, 2016

Myra Herrmann, Environmental Planner
City of San Diego – Planning Department
1010 2nd Ave., Ste. 1200, East Tower, MS 413
San Diego, CA 92101

RE: COMMENTS ON CITY OF SAN DIEGO'S DRAFT PEIR FOR PURE WATER SAN DIEGO PROGRAM PROJECT NUMBER 438188

This letter outlines Padre Dam Municipal Water District's (District) comments on the City of San Diego's (City's) Pure Water San Diego Draft Program Environmental Impact Report (PEIR). The District is a Participating Agency in the Metropolitan Wastewater System and a member of the Metropolitan Wastewater Joint Powers Authority (Metro JPA) and fully supports the goals and objectives of the Pure Water Program to comprehensively address regional wastewater issues while producing a new source of drought- resistant water supply for the public benefit. The District is also a member agency of the San Diego County Water Authority (SDCWA) and recognizes the significant regional benefit that Pure Water provides in enhancing water supply reliability to all 3.1 million people in the SDCWA service area. G-1

At the December 11, 2014 public meeting, Director of Engineering & Planning for the District commented on the potential relationship between the Pure Water Program and the East County Advanced Water Purification Program (ECAWPP) and requested the City address the potential relationship within the PEIR. G-2

The intent of this comment letter is to make the City aware that the ECAWPP could offload up to 20 million gallons per day (MGD) from the Point Loma Wastewater Treatment Plant (PLWTP), and that such an offload would reduce the amount of offload that would need to be achieved by the City consistent with the Draft PEIR Chapter 3 Project Description, Section 3.3 Project Objectives 1-6. The ECAWPP would achieve the same goals and objectives as the Pure Water Program, and may serve as a replacement for a portion of the project requirements within the Pure Water Program to achieve the required secondary equivalency. G-3

As part of its previous effort to identify comprehensive wastewater treatment and water supply alternative, in 1990 the City analyzed a similar east county reuse project in the Draft Environmental Impact Report for the Santee Basin Water Reclamation Project for the Clean Water Program of Greater San Diego based on the project identified in the 1989 Water Reclamation and Reuse Conceptual Master Plan for modifications to the Metropolitan Sewerage System. G-4

The Draft PEIR briefly references the fact that the District's water recycling facility offloads flows before reaching the Metro System (page 2-8), but the interrelationship of the District's activities with the proposed Pure Water Program are not addressed G-5

Page | 1 of 7

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Response to Comment Letter G

Padre Dam Municipal Water District
Albert C. Lau, P.E.
April 11, 2016

G-1 The City of San Diego appreciates Padre Dam Municipal Water District's review of the Draft Programmatic Environmental Impact Report (DPEIR) and acknowledges the District's role in the Metropolitan Wastewater System, Metro JPA, and San Diego County Water.

G-2 In compliance with Section 15082 of the CEQA Guidelines, the City's Planning Department circulated the NOP and Scoping Letter to interested agencies, groups, and individuals. Comments received during the NOP public scoping period and meetings were considered during the preparation of this PEIR and are included in Appendix A of the PEIR.

G-3 The City acknowledges that the District completed a Planning Study January 27, 2016 for the East County Advanced Water Purification Program (ECAWPP). The DPEIR was released for public review on February 10, 2016 and was already in final production when the Planning Study was released, and therefore, only included a preliminary discussion of the

In the remainder of the document. The District requests that the PEIR include additional discussion of the proposed ECAWPP (and other applicable projects), and how they may affect the deployment of the Pure Water Program project elements. Additional specific comments are provided below (with text quoted from the PEIR in italics)

Chapter 2, Environmental Setting, Project Background, and Regulatory Setting

The following revisions should be made to more accurately describe the ECAWPP:

Page 2-8, under the heading Additional Water Reclamation Capacity:

The Padre Dam Municipal Water District began operating an Advanced Water Purification Demonstration Project in April 2015 at the ~~Ray Stover~~ Ray Stoyer Water Recycling Facility to evaluate treatment strategies needed to meet the requirements for a full scale potable reuse project. The Advanced Water Purification Demonstration Project is currently ~~producing~~ processing approximately 100,000 gallons of water per day for demonstration and testing purposes. In addition, the District has completed East County Advanced Water Purification (AWP) Program planning study in a collaborative partnership between the Helix Water District, County of San Diego, and City of El Cajon. The planning study evaluated the feasibility to capture the majority of the wastewater generated within East San Diego County within these four participating agencies' service areas and abandon the current practice of directing flows to Point Loma Wastewater Treatment Plant via Mission Gorge Pump Station. Diverted sewer flow would be directed to Ray Stoyer WRF for advanced treatment to generate a source of up to 17,400 AFY (15.5 MGD) of new potable water. It is envisioned that the full-scale potable reuse project would be executed in three phases. Phase 1 would include expansion of the Ray Stoyer WRF from 2 MGD to 6 MGD and construction of a 2.2 to 3.5-MGD capacity AWP facility. The AWP effluent would either recharge the Santee Basin aquifer or augment water supply at Lake Jennings, owned and operated by the Helix Water District. Phase 2 would include expansion of the WRF to 15 MGD, producing additional 6.9 MGD of purified water for surface water augmentation at Lake Jennings. Phase 3 would expand the WRF capacity to 21.0 MGD, increasing the surface water augmentation capacity at Lake Jennings by additional 5.1 MGD. Altogether, the East County AWP Program would offload up to 21 MGD from Point Loma WWTP and generate 15.5 MGD of new water supply. The first phase of the Program is planned to be completed by 2020 while Phase 2 completion time is by 2024 (Padre Dam Municipal Water District 2016).

Page 2-17– end of first paragraph

In the 2014 Cooperative Agreement, the City committed to implementation of the Program and diverting 100 mgd of sewer flows from PLWTP and production of 83 MGD of potable reuse regionally by 2035.

Page 2-17-second paragraph

Implementation of the Program would off-load the PLWTP by removing flows and constituents upstream. This diversion would reduce the amount of water, total ~~dissolved~~ suspended solids, and biochemical oxygen demand discharged to the ocean.

Page | 2 of 7

G-5 Cont.

G-6

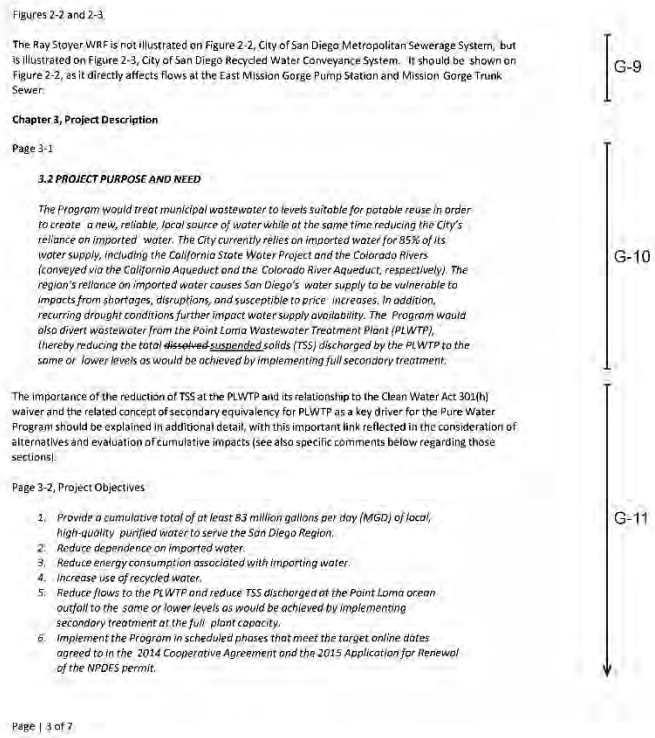
G-7

G-8

District's ECAWPP on page 2-8. See Response to comments F-2, G-5 and G-6. The discussion on page 2-8 and 2-9 has been updated to include additional details regarding the ECAWPP.

The City also notes that the Planning Study for the ECAWPP identifies a preferred project alternative that would produce approximately 15.5 MGD of purified water and would include sludge digestion at Sycamore Landfill, thereby reducing wastewater flows to the Point Loma Wastewater Treatment Plant (PLWTP).

However, while the ECAWPP may complement the City's Pure Water Program, the City does not view it as a replacement for a portion of the Pure Water Program requirements, based on the stated objectives of the Program as noted in the PEIR. In the 2015 301(h) NPDES modified permit renewal application, the City established the goal of producing 83 MGD of purified water by December 31, 2035, with interim targets of 15 MGD by December 31, 2023 and 30 MGD by December 31, 2027. Additional cumulative projects that enhance these production volumes would provide similar benefits in terms of wastewater flow reduction and additional water supply, but would not be relied upon to meet the objectives of the program.



Figures 2-2 and 2-3

The Ray Stoyer WRF is not illustrated on Figure 2-2, City of San Diego Metropolitan Sewerage System, but is illustrated on Figure 2-3, City of San Diego Recycled Water Conveyance System. It should be shown on Figure 2-2, as it directly affects flows at the East Mission Gorge Pump Station and Mission Gorge Trunk Sewer.

Chapter 3, Project Description

Page 3-1

3.2 PROJECT PURPOSE AND NEED

The Program would treat municipal wastewater to levels suitable for potable reuse in order to create a new, reliable, local source of water while at the same time reducing the City's reliance on imported water. The City currently relies on imported water for 85% of its water supply, including the California State Water Project and the Colorado Rivers (conveyed via the California Aqueduct and the Colorado River Aqueduct, respectively). The region's reliance on imported water causes San Diego's water supply to be vulnerable to impacts from shortages, disruptions, and susceptible to price increases. In addition, recurring drought conditions further impact water supply availability. The Program would also divert wastewater from the Point Loma Wastewater Treatment Plant (PLWTP), thereby reducing the total ~~dissolved~~ suspended solids (TSS) discharged by the PLWTP to the same or lower levels as would be achieved by implementing full secondary treatment.

The importance of the reduction of TSS at the PLWTP and its relationship to the Clean Water Act 301(h) waiver and the related concept of secondary equivalency for PLWTP as a key driver for the Pure Water Program should be explained in additional detail, with this important link reflected in the consideration of alternatives and evaluation of cumulative impacts (see also specific comments below regarding those sections).

Page 3-2, Project Objectives

1. *Provide a cumulative total of at least 83 million gallons per day (MGD) of local, high-quality purified water to serve the San Diego Region.*
2. *Reduce dependence on imported water.*
3. *Reduce energy consumption associated with importing water.*
4. *Increase use of recycled water.*
5. *Reduce flows to the PLWTP and reduce TSS discharged at the Point Loma ocean outfall to the same or lower levels as would be achieved by implementing secondary treatment at the full plant capacity.*
6. *Implement the Program in scheduled phases that meet the target online dates agreed to in the 2014 Cooperative Agreement and the 2015 Application for Renewal of the NPDES permit.*

Page | 3 of 7

G-9

G-10

G-11

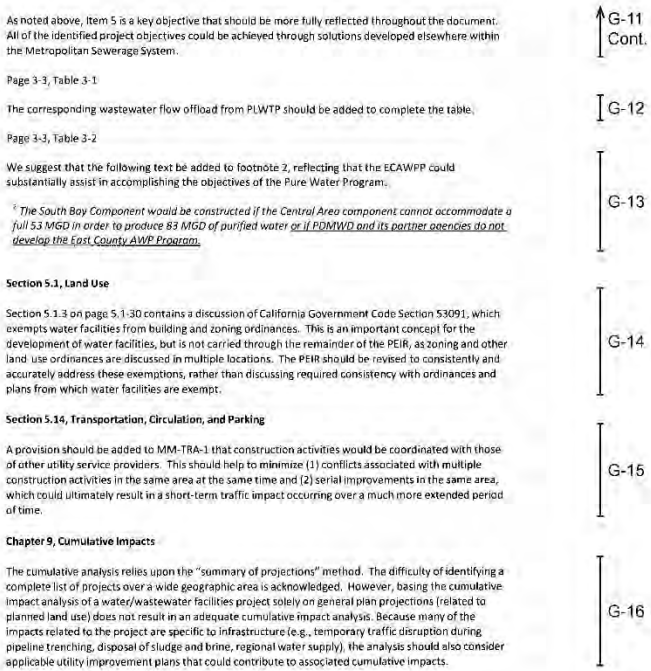
G-4 Comment noted.

G-5 Page 2-8 and 2-9 of the Final PEIR (FPEIR) have been revised to include additional discussion of the proposed ECAWPP. Please refer to Response G-6. In addition, Chapter 9.0, Cumulative Impacts, has been updated to include a discussion of the ECAWPP and potential cumulative effects. Revisions made to the FPEIR are for clarification purposes only and do not result in any substantial changes in the analysis or changes to the significance conclusions presented in the document.

G-6 Page 2-8 and 2-9 of the FPEIR has been revised as requested in the comment.

Revisions made to the FPEIR are for clarification purposes only and do not result in any substantial changes in the analysis or changes to the significance conclusions presented in the document.

G-7 The 2014 Cooperative Agreement does not specifically state that the City commits to "diverting 100 MGD of sewer flows from PLWTP," but rather states the Program would reduce the mass of total suspended solids discharged by the PLWTP to the same or lower levels as would be achieved by implementing secondary treatment at the full



As noted above, Item 5 is a key objective that should be more fully reflected throughout the document. All of the identified project objectives could be achieved through solutions developed elsewhere within the Metropolitan Sewerage System.

Page 3-3, Table 3-1

The corresponding wastewater flow offload from PLWTP should be added to complete the table.

Page 3-3, Table 3-2

We suggest that the following text be added to footnote 2, reflecting that the ECAWPP could substantially assist in accomplishing the objectives of the Pure Water Program.

[2] *The South Bay Component would be constructed if the Central Area component cannot accommodate a full 53 MGD in order to produce 83 MGD of purified water or if PDMWD and its partner agencies do not develop the East County AWP Program.*

Section 5.1, Land Use

Section 5.1.3 on page 5.1-30 contains a discussion of California Government Code Section 53091, which exempts water facilities from building and zoning ordinances. This is an important concept for the development of water facilities, but is not carried through the remainder of the PEIR, as zoning and other land use ordinances are discussed in multiple locations. The PEIR should be revised to consistently and accurately address these exemptions, rather than discussing required consistency with ordinances and plans from which water facilities are exempt.

Section 5.14, Transportation, Circulation, and Parking

A provision should be added to MM-TRA-1 that construction activities would be coordinated with those of other utility service providers. This should help to minimize (1) conflicts associated with multiple construction activities in the same area at the same time and (2) serial improvements in the same area, which could ultimately result in a short-term traffic impact occurring over a much more extended period of time.

Chapter 9, Cumulative Impacts

The cumulative analysis relies upon the "summary of projections" method. The difficulty of identifying a complete list of projects over a wide geographic area is acknowledged. However, basing the cumulative impact analysis of a water/wastewater facilities project solely on general plan projections (related to planned land use) does not result in an adequate cumulative impact analysis. Because many of the impacts related to the project are specific to infrastructure (e.g., temporary traffic disruption during pipeline trenching, disposal of sludge and brine, regional water supply), the analysis should also consider applicable utility improvement plans that could contribute to associated cumulative impacts.

Page | 4 of 7

G-11 Cont.
G-12
G-13
G-14
G-15
G-16

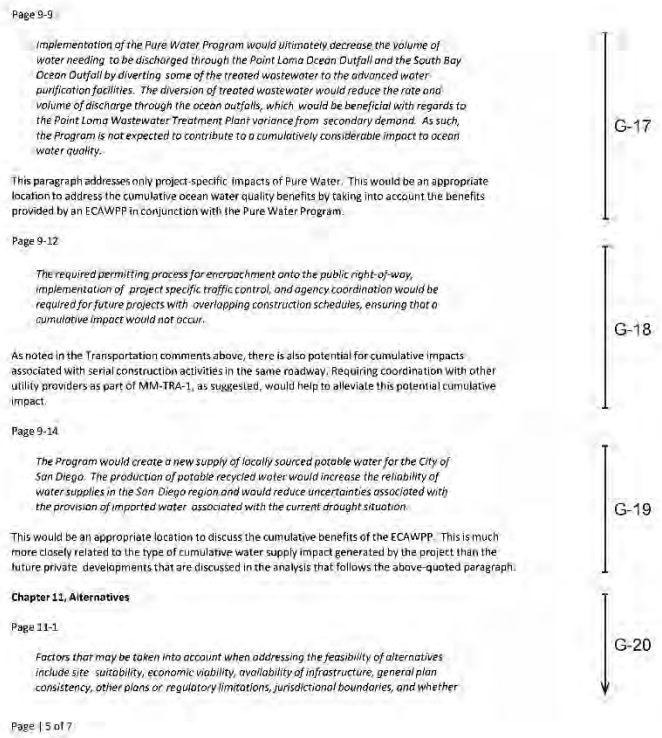
permitted capacity. Therefore, the City does not concur with the suggested additions by the District.

G-8 Page 2-17 of the FPEIR has been revised as requested.

G-9 Figure 2-2 was originally included as Figure 4-7 in the Recycled Water Study, which has been finalized and was accepted by the City Council on July 17, 2012 (City of San Diego 2012). The figure is only intended to show facilities specifically owned and operated by the City of San Diego. The City concurs that operations at the Ray Stoyer WRF influence wastewater flows in the Metro System, but believes that representation of the East Mission Gorge Pump Station and Mission Gorge Trunk Sewer on Figure 2-2 are sufficient.

G-10 Page 3-1 of the FPEIR has been revised as requested in the comment.

G-11 The City's 301(h) modified NPDES permit and related concept of secondary equivalency are described in detail on pages 2-16 and 2-17 of the DEIR. The Program's diversion of wastewater flows from the PLWTP and corresponding reduction of total suspended solids discharged at the plant are also clearly stated in Section 3.2, Project Purpose and Need. No additional revisions are necessary.



Page 9-9

Implementation of the Pure Water Program would ultimately decrease the volume of water needing to be discharged through the Point Loma Ocean Outfall and the South Bay Ocean Outfall by diverting some of the treated wastewater to the advanced water purification facilities. The diversion of treated wastewater would reduce the rate and volume of discharge through the ocean outfalls, which would be beneficial with regards to the Point Loma Wastewater Treatment Plant variance from secondary demand. As such, the Program is not expected to contribute to a cumulatively considerable impact to ocean water quality.

This paragraph addresses only project-specific impacts of Pure Water. This would be an appropriate location to address the cumulative ocean water quality benefits by taking into account the benefits provided by an ECAWPP in conjunction with the Pure Water Program.

G-17

Page 9-12

The required permitting process for encroachment onto the public right-of-way, implementation of project specific traffic control, and agency coordination would be required for future projects with overlapping construction schedules, ensuring that a cumulative impact would not occur.

As noted in the Transportation comments above, there is also potential for cumulative impacts associated with serial construction activities in the same roadway. Requiring coordination with other utility providers as part of MM-TRA-1, as suggested, would help to alleviate this potential cumulative impact.

G-18

Page 9-14

The Program would create a new supply of locally sourced potable water for the City of San Diego. The production of potable recycled water would increase the reliability of water supplies in the San Diego region and would reduce uncertainties associated with the provision of imported water associated with the current drought situation.

This would be an appropriate location to discuss the cumulative benefits of the ECAWPP. This is much more closely related to the type of cumulative water supply impact generated by the project than the future private developments that are discussed in the analysis that follows the above-quoted paragraph.

G-19

Chapter 11, Alternatives

Page 11-1

Factors that may be taken into account when addressing the feasibility of alternatives include site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether

Page | 5 of 7

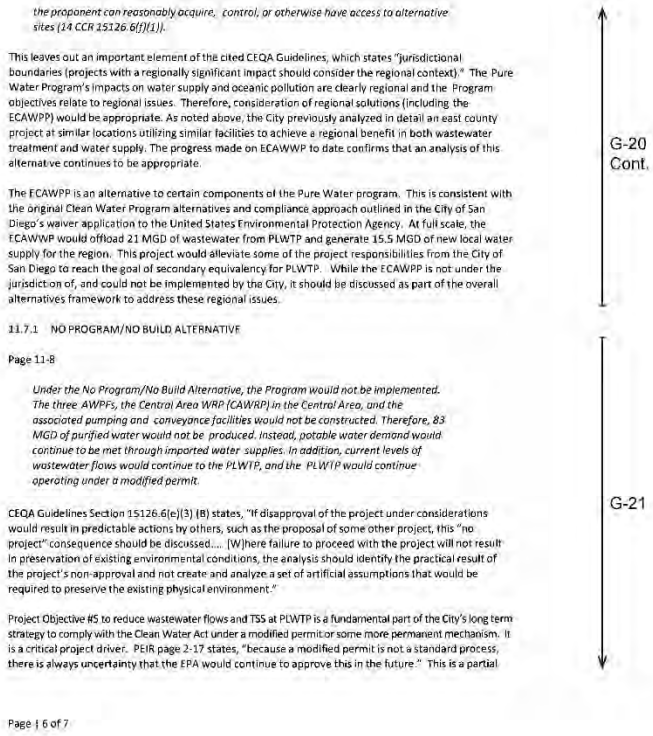
G-20

A reasonable range of alternatives has been provided in the DPEIR in compliance with the CEQA Guidelines Section 15126.6(a). The City of San Diego has previously analyzed a variety of water supply alternatives, including, but not limited to, conservation, desalination and reclaimed water use. As discussed in Section 11.2, Water Supply Alternatives Planning, these alternatives were analyzed in depth by the City and can be reviewed in the Water Reuse Study (City of San Diego 2006) and Recycled Water Study (City of San Diego 2012).

G-12 Table 3-1 of the DPEIR corresponds to Exhibit B of the 2014 Cooperative Agreement. Specific details regarding the corresponding wastewater flow offloaded from PLWTP with each phase of the Pure Water Program are not known at this time and were not included in the 2014 Cooperative Agreement.

G-13 See Response G-3. While the City acknowledges that the ECAWPP would complement the goals and functions of the Pure Water Program, it would be speculative to predict the effects that it, and potential other projects, would have on implementation of Pure Water Program components.

G-14 The regulatory discussion of California Government Code Section 53091 is provided for context only.



the proponent can reasonably acquire, control, or otherwise have access to alternative sites (14 CCR 15126.6(f)(1)).

This leaves out an important element of the cited CEQA Guidelines, which states "jurisdictional boundaries (projects with a regionally significant impact should consider the regional context)." The Pure Water Program's impacts on water supply and oceanic pollution are clearly regional and the Program objectives relate to regional issues. Therefore, consideration of regional solutions (including the ECAWPP) would be appropriate. As noted above, the City previously analyzed in detail an east county project at similar locations utilizing similar facilities to achieve a regional benefit in both wastewater treatment and water supply. The progress made on ECAWWP to date confirms that an analysis of this alternative continues to be appropriate.

The ECAWPP is an alternative to certain components of the Pure Water program. This is consistent with the original Clean Water Program alternatives and compliance approach outlined in the City of San Diego's waiver application to the United States Environmental Protection Agency. At full scale, the ECAWWP would offload 21 MGD of wastewater from PLWTP and generate 15.5 MGD of new local water supply for the region. This project would alleviate some of the project responsibilities from the City of San Diego to reach the goal of secondary equivalency for PLWTP. While the ECAWPP is not under the jurisdiction of, and could not be implemented by the City, it should be discussed as part of the overall alternatives framework to address these regional issues.

11.7.1 NO PROGRAM/NO BUILD ALTERNATIVE

Page 11-8

Under the No Program/No Build Alternative, the Program would not be implemented. The three AWPFs, the Central Area WRP (CAWRP) in the Central Area, and the associated pumping and conveyance facilities would not be constructed. Therefore, 83 MGD of purified water would not be produced. Instead, potable water demand would continue to be met through imported water supplies. In addition, current levels of wastewater flows would continue to the PLWTP, and the PLWTP would continue operating under a modified permit.

CEQA Guidelines Section 15126.6(e)(3) (B) states, "If disapproval of the project under considerations would result in predictable actions by others, such as the proposal of some other project, this "no project" consequence should be discussed.... [W]here failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment."

Project Objective #5 to reduce wastewater flows and TSS at PLWTP is a fundamental part of the City's long term strategy to comply with the Clean Water Act under a modified permit or some more permanent mechanism. It is a critical project driver. PEIR page 2-17 states, "because a modified permit is not a standard process, there is always uncertainty that the EPA would continue to approve this in the future." This is a partial

Page | 6 of 7

G-20 Cont.

G-21

Section 5.1, Land Use, of the DPEIR includes a discussion of the proposed Program's consistency with ordinances and plans for informational purposes only. Page 5.1-30 of the FPEIR has been revised to remove the last sentence in the section under the heading "California Government Code Section 53091" which stated that the building and zoning ordinances of local cities and the County of San Diego are not discussed further in the Land Use Section.

G-15 Mitigation measure MM-TRA-1, as drafted in the DPEIR, provides adequate provisions to avoid potential conflicts related to construction traffic, including preparation of a traffic control plan and notification of adjacent properties, businesses, emergency providers and facility administrators. Notification to utility service providers is required prior to construction as part of the City's standard plan check process.

G-16 While the City believes that the approach to the cumulative impact analysis is appropriate and in compliance with CEQA (see Chapter 9.0, Cumulative Impacts), the FPEIR has been revised to reflect a hybrid approach by also including relevant, and reasonably foreseeable projects. As such, the ECAWPP has been included as a cumulative project

acknowledgement that the No Project Alternative may not be continuation of the status quo. We suggest that the definition of the No Project Alternative be expanded to include the potential response by the City if Project Objective #5 were not achieved.

Additionally, the potential offloading to occur from other actions, such as the ECAWPP, should be acknowledged.

Page 11-19

Similar to the proposed Program, coordination with other agencies would be required to avoid potential impacts with infrastructure, such as water and sewer pipelines, electrical wires, cables, etc., especially where these utilities would be located within the same right-of-way as pipeline alignments associated with the Program.

Although this issue is not strictly one that is covered under Appendix G of the CEQA Guidelines, this is an excellent point; one that is not addressed in Section 5.9, Public Utilities. We request that the City commit to coordination with applicable agencies prior to construction and/or excavation to avoid any potential adverse impacts to infrastructure.

Thank you for your consideration of these comments. It is our hope that regional collaboration and efficient deployment of projects will help provide a comprehensive solution to achieve secondary equivalency. We look forward to continuing to work with the City in these efforts, and appreciate the opportunity to comment on the Draft PEIR.

PADRE DAM MUNICIPAL WATER DISTRICT

Albert C. Lau, P.E.
Director of Engineering and Planning

ACL:cc
cc: Allen Carlisle
Mark Niemiec, PE
Arne Sandvik, PE
Seval Sen, PE

Page | 7 of 7

G-21 Cont.

G-22

G-23

G-24

and an analysis of potential cumulative effects with the Pure Water Program has been added to Chapter 9.0, Cumulative Impacts. As for other potential "applicable utility improvement plans", the comment lacks specificity that would afford a more complete response, and therefore, no additional response or edits to the DPEIR is required.

G-17 Please refer to Response G-16. As noted, the cumulative analysis of the FPEIR has been updated to include potential cumulative effects of the ECAWPP, including potential benefits to ocean water quality.

G-18 Please refer to Responses G-15 and G-16. As noted, the cumulative analysis of the FPEIR has been updated to include potential cumulative effects of the ECAWPP, including potential cumulative impacts related to construction activity conflicts and traffic impacts.

G-19 Please refer to Response G-16. As noted, the cumulative analysis of the FPEIR has been updated to include potential cumulative effects of the ECAWPP, including potential benefits to water supply.

G-20 A reasonable range of alternatives has been described and analyzed in the DPEIR in compliance with the CEQA Guidelines Section 15126.6(a). As noted in the discussion of alternatives development and screening,

THIS PAGE INTENTIONALLY LEFT BLANK		presented in the DPEIR, the City of San Diego has previously analyzed a variety of water supply alternatives, including, but not limited to, conservation, desalination and reclaimed water use. As discussed in Section 11.2, Water Supply Alternatives Planning, these alternatives were analyzed in depth by the City and can be reviewed in the Water Reuse Study (City of San Diego 2006) and Recycled Water Study (City of San Diego 2012). As acknowledged by the District, the ECAWPP is not under the jurisdiction of, and could not be implemented by the City. As such, the City cannot rely on the ECAWPP as a replacement for certain components of the Pure Water Program as a feasible alternative since it could not control the design, timing of implementation, or final quantities of purified water to be produced, and therefore, could not guarantee satisfaction of the Program objectives as outlined in the PEIR.
	G-21	As discussed in the DPEIR Section 11.6, Alternatives Eliminated from Detailed Consideration, updating the Point Loma Wastewater Treatment Plant to full secondary treatment was considered previously by the City (Recycled Water Study 2012). The 2014 Cooperative Agreement outlines the disadvantages of

THIS PAGE INTENTIONALLY LEFT BLANK		updating the PLWTP to full secondary treatment and identifies the Pure Water Program as the preferred method of achieving reduced total suspended solids at the PLWTP. Therefore, this alternative was eliminated from consideration and not carried forward for full analysis in the DPEIR, based on the potential for increased environmental impacts and its inability to meet the majority of the Program objectives. As such, the No Project Alternative does not require revisions to include the potential for updating the PLWTP to full secondary treatment.
	G-22	See response G-16. Chapter 9.0, Cumulative Impacts, of the FPEIR has been updated to include the ECAWPP as a cumulative project. Potential water quality benefits that would occur as a result of offloading if the ECAWPP is implemented have been added to this chapter.
	G-23	Section 5.9.4 of the DPEIR discusses the potential for short-term conflicts with underground utility lines within roadway right-of-way during construction; the discussion concludes that proper planning during construction and coordination with the applicable service providers would reduce the likelihood of impacts to these facilities. As a standard practice, the City coordinates with utility providers and other

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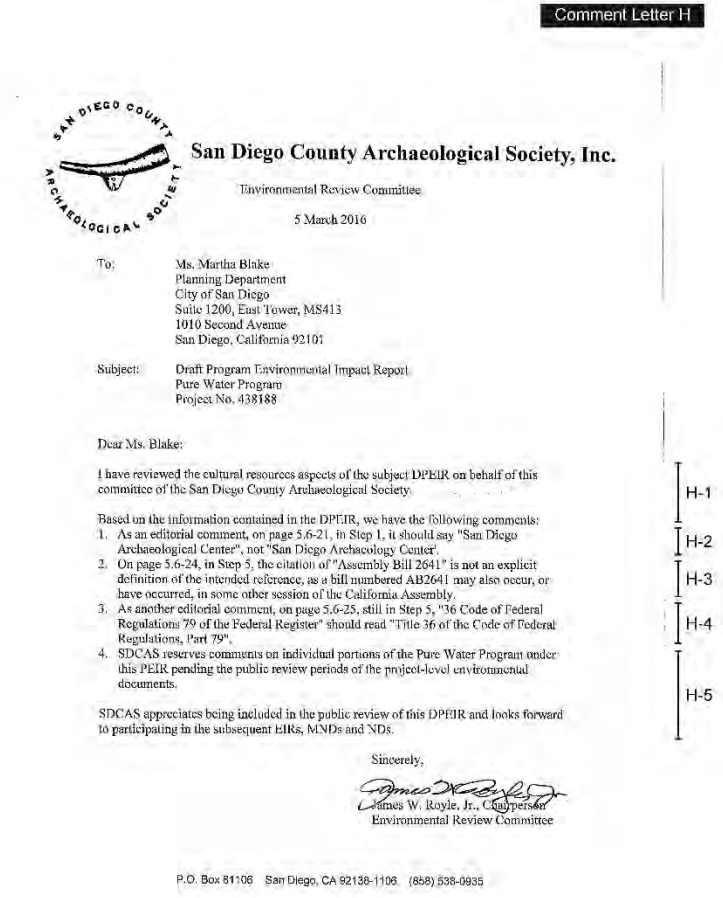
agencies when working in the public right-of-way. This will be done during both design and future project-level CEQA analysis, as well as prior to the start of construction-related activities.

G-24 Comment noted.

Comment Letter H



San Diego County Archaeological Society, Inc.

Environmental Review Committee

5 March 2016

To: Ms. Martha Blake
Planning Department
City of San Diego
Suite 1200, East Tower, MS413
1010 Second Avenue
San Diego, California 92101

Subject: Draft Program Environmental Impact Report
Pure Water Program
Project No. 438188

Dear Ms. Blake:

I have reviewed the cultural resources aspects of the subject DPEIR on behalf of this committee of the San Diego County Archaeological Society. H-1

Based on the information contained in the DPEIR, we have the following comments:

1. As an editorial comment, on page 5.6-21, in Step 1, it should say "San Diego Archaeological Center", not "San Diego Archaeology Center". H-2
2. On page 5.6-24, in Step 5, the citation of "Assembly Bill 2641" is not an explicit definition of the intended reference, as a bill numbered AB2641 may also occur, or have occurred, in some other session of the California Assembly. H-3
3. As another editorial comment, on page 5.6-25, still in Step 5, "36 Code of Federal Regulations 79 of the Federal Register" should read "Title 36 of the Code of Federal Regulations, Part 79". H-4
4. SDCAS reserves comments on individual portions of the Pure Water Program under this PEIR pending the public review periods of the project-level environmental documents. H-5

SDCAS appreciates being included in the public review of this DPEIR and looks forward to participating in the subsequent EIRs, MNDs and NDs.

Sincerely,

James W. Royle, Jr., Chairperson
Environmental Review Committee

P.O. Box 81106 San Diego, CA 92138-1106 (858) 538-0935

Response to Comment Letter H

San Diego County Archaeological Society, Inc.
James W. Royle, Jr.
March 5, 2106

H-1 Comment noted; the City appreciates SDCAS review of the project.

H-2 Page 5.6-21 of the DPEIR, "San Diego Archaeology Center" has been revised to read "San Diego Archaeological Center". Revisions made to the Final PEIR are for clarification purposes only and do not result in any changes to the significance conclusions presented in the document.

H-3 The text on page 5.6-25 has been revised to include a reference to the specific Assemblyman Coto who sponsored the bill.

Revisions made to the Final PEIR are for clarification purposes only and do not result in any changes to the significance conclusions presented in the document.

H-4 Page 5.6-25, "36 Code of Federal Regulations 79 of the Federal Register" has been revised to read "Title 36 of the Code of Federal Regulations, Part 79". Revisions made to the Final PEIR are for clarification

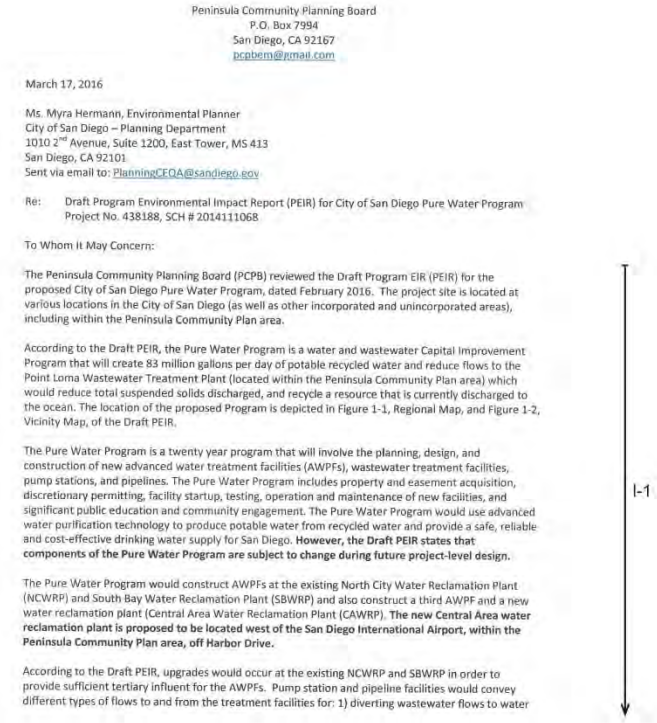
cc: SDCAS President
File

P.O. Box 81106 • San Diego, CA 92138-1106 • (858) 538-0935

purposes only and do not result in any changes to the significance conclusions presented in the document.

H-5 Comment noted.

Comment Letter I



Peninsula Community Planning Board
P.O. Box 7994
San Diego, CA 92167
pcpbem@gmail.com

March 17, 2016

Ms. Myra Hermann, Environmental Planner
City of San Diego – Planning Department
1010 2nd Avenue, Suite 1200, East Tower, MS 413
San Diego, CA 92101
Sent via email to: PlanningCEQA@sandiego.gov

Re: Draft Program Environmental Impact Report (PEIR) for City of San Diego Pure Water Program
Project No. 438188, SCH # 2014111068

To Whom it May Concern:

The Peninsula Community Planning Board (PCPB) reviewed the Draft Program EIR (PEIR) for the proposed City of San Diego Pure Water Program, dated February 2016. The project site is located at various locations in the City of San Diego (as well as other incorporated and unincorporated areas), including within the Peninsula Community Plan area.

According to the Draft PEIR, the Pure Water Program is a water and wastewater Capital Improvement Program that will create 83 million gallons per day of potable recycled water and reduce flows to the Point Loma Wastewater Treatment Plant (located within the Peninsula Community Plan area) which would reduce total suspended solids discharged, and recycle a resource that is currently discharged to the ocean. The location of the proposed Program is depicted in Figure 1-1, Regional Map, and Figure 1-2, Vicinity Map, of the Draft PEIR.

The Pure Water Program is a twenty year program that will involve the planning, design, and construction of new advanced water treatment facilities (AWPFs), wastewater treatment facilities, pump stations, and pipelines. The Pure Water Program includes property and easement acquisition, discretionary permitting, facility startup, testing, operation and maintenance of new facilities, and significant public education and community engagement. The Pure Water Program would use advanced water purification technology to produce potable water from recycled water and provide a safe, reliable and cost-effective drinking water supply for San Diego. **However, the Draft PEIR states that components of the Pure Water Program are subject to change during future project-level design.**

The Pure Water Program would construct AWPFs at the existing North City Water Reclamation Plant (NCWRP) and South Bay Water Reclamation Plant (SBWRP) and also construct a third AWPF and a new water reclamation plant (Central Area Water Reclamation Plant (CAWRP). **The new Central Area water reclamation plant is proposed to be located west of the San Diego International Airport, within the Peninsula Community Plan area, off Harbor Drive.**

According to the Draft PEIR, upgrades would occur at the existing NCWRP and SBWRP in order to provide sufficient tertiary influent for the AWPFs. Pump station and pipeline facilities would convey different types of flows to and from the treatment facilities for: 1) diverting wastewater flows to water

I-1

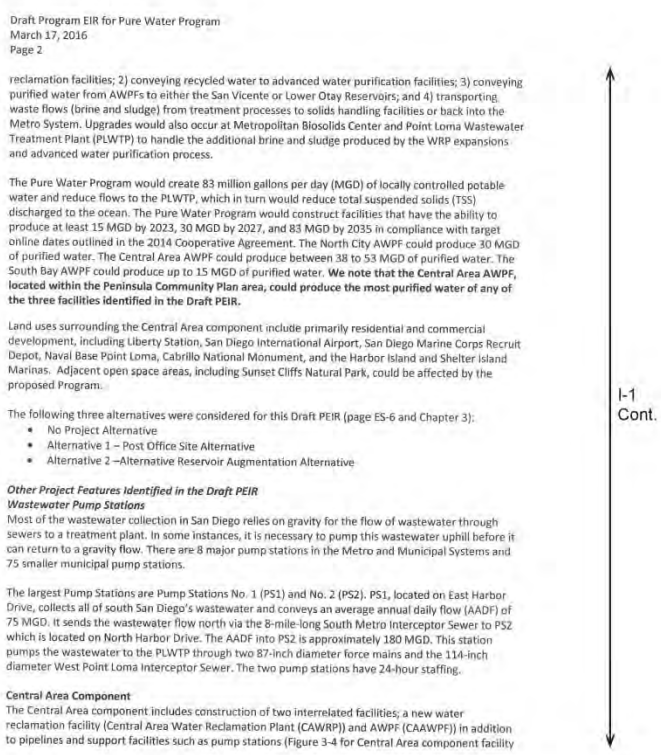
Response to Comment Letter I

Peninsula Community Planning Board
Julia M. Quinn
March 17, 2016

I-1 Comment noted; the commenter accurately summarizes the project description contained in the DPEIR.

I-2 As stated in the DPEIR, Chapter 1.0, Section 15168 of the CEQA Guidelines allow a lead agency to prepare a Program EIR to consider broad policy alternatives and program-wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts.

The PEIR is intended to evaluate the potential components of the Program at a general programmatic level. It is not intended or structured to evaluate project-level impacts associated with future implementation of any of the treatment facilities or pipelines, although the PEIR may provide information and analyses that could be used in conjunction with future project-level environmental reviews of such improvements. Any subsequent activities proposed for the Program, such as approvals and implementation of individual components of the Program, will be further



Draft Program EIR for Pure Water Program
March 17, 2016
Page 2

reclamation facilities; 2) conveying recycled water to advanced water purification facilities; 3) conveying purified water from AWPFs to either the San Vicente or Lower Otay Reservoirs; and 4) transporting waste flows (brine and sludge) from treatment processes to solids handling facilities or back into the Metro System. Upgrades would also occur at Metropolitan Biosolids Center and Point Loma Wastewater Treatment Plant (PLWTP) to handle the additional brine and sludge produced by the WRP expansions and advanced water purification process.

The Pure Water Program would create 83 million gallons per day (MGD) of locally controlled potable water and reduce flows to the PLWTP, which in turn would reduce total suspended solids (TSS) discharged to the ocean. The Pure Water Program would construct facilities that have the ability to produce at least 15 MGD by 2023, 30 MGD by 2027, and 83 MGD by 2035 in compliance with target online dates outlined in the 2014 Cooperative Agreement. The North City AWPF could produce 30 MGD of purified water. The Central Area AWPF could produce between 38 to 53 MGD of purified water. The South Bay AWPF could produce up to 15 MGD of purified water. **We note that the Central Area AWPF, located within the Peninsula Community Plan area, could produce the most purified water of any of the three facilities identified in the Draft PEIR.**

Land uses surrounding the Central Area component include primarily residential and commercial development, including Liberty Station, San Diego International Airport, San Diego Marine Corps Recruit Depot, Naval Base Point Loma, Cabrillo National Monument, and the Harbor Island and Shelter Island Marinas. Adjacent open space areas, including Sunset Cliffs Natural Park, could be affected by the proposed Program.

The following three alternatives were considered for this Draft PEIR (page ES-6 and Chapter 3):

- No Project Alternative
- Alternative 1 – Post Office Site Alternative
- Alternative 2 –Alternative Reservoir Augmentation Alternative

Other Project Features Identified in the Draft PEIR
Wastewater Pump Stations

Most of the wastewater collection in San Diego relies on gravity for the flow of wastewater through sewers to a treatment plant. In some instances, it is necessary to pump this wastewater uphill before it can return to a gravity flow. There are 8 major pump stations in the Metro and Municipal Systems and 75 smaller municipal pump stations.

The largest Pump Stations are Pump Stations No. 1 (PS1) and No. 2 (PS2). PS1, located on East Harbor Drive, collects all of south San Diego's wastewater and conveys an average annual daily flow (AADF) of 75 MGD. It sends the wastewater flow north via the 8-mile-long South Metro Interceptor Sewer to PS2 which is located on North Harbor Drive. The AADF into PS2 is approximately 180 MGD. This station pumps the wastewater to the PLWTP through two 87-inch diameter force mains and the 114-inch diameter West Point Loma Interceptor Sewer. The two pump stations have 24-hour staffing.

Central Area Component

The Central Area component includes construction of two interrelated facilities; a new water reclamation facility (Central Area Water Reclamation Plant (CAWRP)) and AWPF (CAAWPF)) in addition to pipelines and support facilities such as pump stations (Figure 3-4 for Central Area component facility

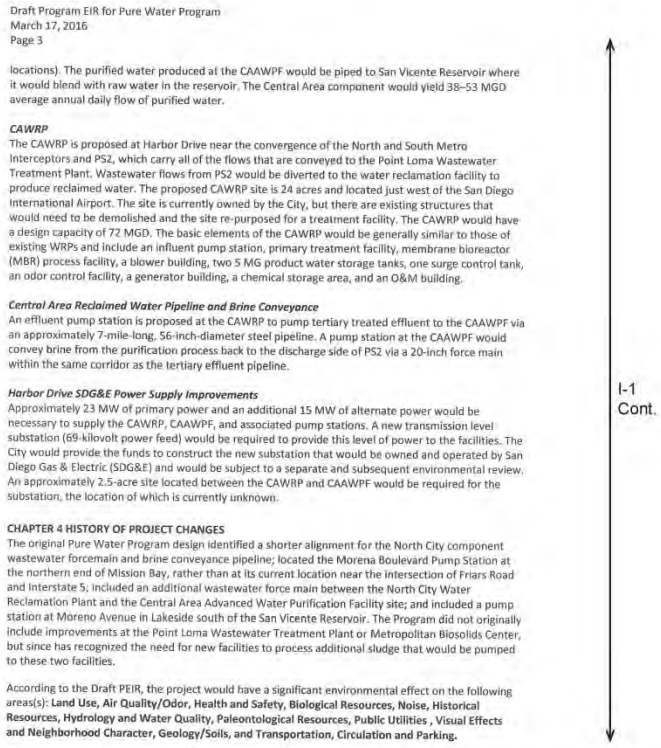
I-1 Cont.

evaluated separately under individual project-level CEQA/NEPA review processes.

I-3 As described in Chapter 1.0 of the DPEIR, a 30-day public scoping period was held from November 24, 2014 through December 23, 2014 in compliance with Section 15082 of the CEQA Guidelines. In addition, public scoping meetings were held on December 9, 2014, at the City of San Diego South Bay Recreation Center and on December 11, 2014, at the Public Utilities Department Metropolitan Operations Complex, to gather additional public input. During project-level environmental review, additional scoping meetings will be held in locations specific to the locations of the Program components under review.

I-4 The City disagrees that deferral of analysis has occurred in the DPEIR; please refer to Response I-2. The project description, impact analysis, and mitigation contained in the DPEIR are based on a worst-case analysis of the Program in accordance with CEQA.

I-5 The City has reviewed the Peninsula Community Plan and NTC Precise Plan and LCP Land Use Plan and believes that the statements in Section 5.1 of the DPEIR are correct regarding the consistency of the CAWRP with the underlying land use designations of these plans. On Figure 5, Land Use, of the Peninsula



Draft Program EIR for Pure Water Program
March 17, 2016
Page 3

locations). The purified water produced at the CAAWPF would be piped to San Vicente Reservoir where it would blend with raw water in the reservoir. The Central Area component would yield 38–53 MGD average annual daily flow of purified water.

CAWRP
The CAWRP is proposed at Harbor Drive near the convergence of the North and South Metro Interceptors and PS2, which carry all of the flows that are conveyed to the Point Loma Wastewater Treatment Plant. Wastewater flows from PS2 would be diverted to the water reclamation facility to produce reclaimed water. The proposed CAWRP site is 24 acres and located just west of the San Diego International Airport. The site is currently owned by the City, but there are existing structures that would need to be demolished and the site re-purposed for a treatment facility. The CAWRP would have a design capacity of 72 MGD. The basic elements of the CAWRP would be generally similar to those of existing WRPs and include an influent pump station, primary treatment facility, membrane bioreactor (MBR) process facility, a blower building, two 5 MG product water storage tanks, one surge control tank, an odor control facility, a generator building, a chemical storage area, and an O&M building.

Central Area Reclaimed Water Pipeline and Brine Conveyance
An effluent pump station is proposed at the CAWRP to pump tertiary treated effluent to the CAAWPF via an approximately 7-mile-long, 56-inch-diameter steel pipeline. A pump station at the CAAWPF would convey brine from the purification process back to the discharge side of PS2 via a 20-inch force main within the same corridor as the tertiary effluent pipeline.

Harbor Drive SDG&E Power Supply Improvements
Approximately 23 MW of primary power and an additional 15 MW of alternate power would be necessary to supply the CAWRP, CAAWPF, and associated pump stations. A new transmission level substation (69-kilovolt power feed) would be required to provide this level of power to the facilities. The City would provide the funds to construct the new substation that would be owned and operated by San Diego Gas & Electric (SDG&E) and would be subject to a separate and subsequent environmental review. An approximately 2.5-acre site located between the CAWRP and CAAWPF would be required for the substation, the location of which is currently unknown.

CHAPTER 4 HISTORY OF PROJECT CHANGES
The original Pure Water Program design identified a shorter alignment for the North City component wastewater forcemain and brine conveyance pipeline; located the Morena Boulevard Pump Station at the northern end of Mission Bay, rather than at its current location near the intersection of Friars Road and Interstate 5; included an additional wastewater force main between the North City Water Reclamation Plant and the Central Area Advanced Water Purification Facility site; and included a pump station at Moreno Avenue in Lakeside south of the San Vicente Reservoir. The Program did not originally include improvements at the Point Loma Wastewater Treatment Plant or Metropolitan Biosolids Center, but since has recognized the need for new facilities to process additional sludge that would be pumped to these two facilities.

According to the Draft PEIR, the project would have a significant environmental effect on the following areas(s): **Land Use, Air Quality/Odor, Health and Safety, Biological Resources, Noise, Historical Resources, Hydrology and Water Quality, Paleontological Resources, Public Utilities , Visual Effects and Neighborhood Character, Geology/Soils, and Transportation, Circulation and Parking.**

I-1 Cont.

Community Plan, the CAWRP site is designated for Public Utility use. Although the "Public Use" land use is not defined in the Peninsula Community Plan, the underlying City of San Diego General Plan Institutional and Public and Semi-Public Facilities land use designation for the site is intended for major facilities (including water sanitation plants) built and maintained to offer public and semi-public services to the community. As such, construction and operation of a water reclamation plant on the identified CAWRP site is considered to be consistent with the underlying land use designation applied to the site by the Peninsula Community Plan and the City of San Diego General Plan.

Additionally, as stated in Section 5.1.3 of the DPEIR, "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" per Section 53091 (e) of the California Government Code.

I-6 Please refer to Response I-2.

I-7 Comment noted.

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Page 4

Draft EIR Comments

The Peninsula Community Planning Board was established and is recognized by the City of San Diego as the sole community planning body for the Peninsula community planning area. PCPB is comprised of 15 members, each of whom is elected at-large by the residents of the Peninsula community. At our meeting on March 17, 2016, PCPB approved forwarding the following comments on the contents of the Draft PEIR. I-1 Cont.

1. **General Comment** I-2

   A. The Pure Water Program is a twenty year program that will involve the planning, design, and construction of new advanced water treatment facilities (AWPFs), wastewater treatment facilities, pump stations, and pipelines. The Pure Water Program includes property and easement acquisition, discretionary permitting, facility startup, testing, operation and maintenance of new facilities, and significant public education and community engagement. The Pure Water Program would use advanced water purification technology to produce potable water from recycled water and provide a safe, reliable and cost-effective drinking water supply for San Diego. **However, the Draft PEIR states that components of the Pure Water Program are subject to change during future project-level design.**

The PCPB is concerned that the project description has not been adequately defined and an analysis of project impacts and required mitigation have not been adequately addressed in the Draft PEIR. CEQA requires an analysis of impacts attributed to the proposed project and identification of feasible mitigation measures to allow a meaningful public consideration of the potential effects of a project. The PCPB feels that as presented, the Draft PEIR does not allow a thorough evaluation of project impacts.

   B. PCPB is concerned that due to the potential impacts identified to the Peninsula Community Planning area the City of San Diego did not specifically reach out to the community and hold scoping meeting(s) in the Peninsula Community to address the project and gather input from the citizens that would be directly affected by the project. I-3

   C. The Draft PEIR states that impacts will be evaluated further during future project level analysis to ensure impacts would be less than significant. Therefore, the Draft PEIR is deferring analysis of the potential impacts of the project and identification of mitigation to reduce impacts to a less than significant level The PCPB is concerned that the project description has not been defined and an analysis of project impacts and required mitigation has been adequately addressed in the Draft PEIR. CEQA requires an analysis of impacts attributed to the proposed project and identification of feasible mitigation measures. I-4

2. **Significant Impacts of Land Use (Chapter 5.1 of the Draft PEIR)**

   The Draft EIR states (page 5.1-55) that while development of a water reclamation plant at the proposed site would be consistent with the Peninsula community plan and General Plan public utility and public facility land use designations, development of a water reclamation plant would conflict with the commercial community with a pedestrian orientation (i.e., CC-5-5) zoning I-5

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applicable to the site. In addition, development of the CAWRP on the proposed site was not envisioned in the NTC Precise Plan and LCP Land Use Plan (certified by the CCC in September 2001), which shows the proposed RPSTI occupying the proposed CAWRP site. The NTC Precise Plan contemplates buildout of the RPSTI over a 26-acre area, including 201,000 square feet of rehabilitated buildings and 150,000 square feet of new construction.

The PCPB does not concur with the statement about consistency with the Peninsula Community Plan. We note that the NTC Precise Plan, including land use designations and zoning changes, were incorporated into the Community Plan by City Council Action on October 3, 2000, and the analysis of land use would not result in a significant impact. Therefore, the analysis of land use in the Draft PEIR has not adequately analyzed the impacts of the proposed project on land use. CEQA requires an analysis of impacts attributed to the proposed project and identification of feasible mitigation measures.

I-5 Cont.

3. **Harbor Drive SDG&E Power Supply Improvements (Draft PEIR page 5.1-63)**

The Draft EIR states that to accommodate the energy needs of the proposed Central Area components, an approximate 2.5-acre substation would be constructed in the future, but at this time, the location of the substation site is not known. The new substation would be constructed between the CAWRP and CAAWPF. The area between these two facilities encompasses an urban landscape that includes neighborhood commercial and regional shopping centers, office complexes, restaurants, and industrial businesses, but also supports a golf course and multi-family apartment-style development and the San Diego River corridor. Because the location of these two facilities is not yet known, the relevant land use and zoning designations are not yet known. Furthermore, depending on the location of the future facilities and their proximity to sensitive land uses and receptors, construction and operations could result in significant land use impacts. Therefore, for purposes of this Program analysis, construction and operation of the new substation could result in potentially significant impacts related to conflicts with the City of San Diego General Plan, community plan(s), and San Diego River Park Master Plan.

I-6

Again, the PCPB is concerned that impacts associated with this feature of the project has not been adequately evaluated in Draft PEIR. Therefore, the Draft PEIR has not adequately analyzed the impacts of the proposed project. CEQA requires an analysis of impacts attributed to the proposed project and identification of feasible mitigation measures.

Thank you for the opportunity to provide comments on the Draft PEIR for the Pure Water Program project. The PCPB can be reached at pcpbem@gmail.com regarding these comments.

I-7

Sincerely,

Julia M. Quinn

Julia M. Quinn, Chair
Peninsula Community Planning Board

CC: Councilmember Lorie Zapf, District II

Approved by an Action of the Peninsula Community Planning Board on March 17, 2016

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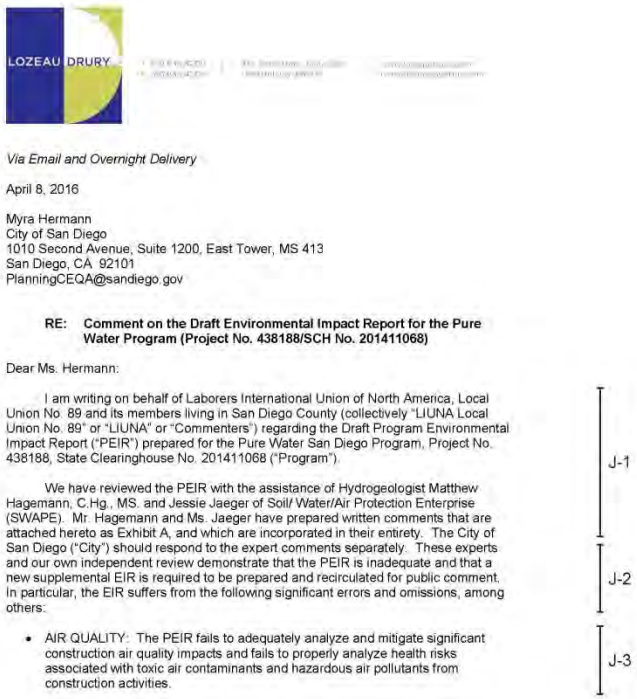
Comment Letter J



LOZEAU DRURY

Via Email and Overnight Delivery

April 8, 2016

Myra Hermann
City of San Diego
1010 Second Avenue, Suite 1200, East Tower, MS 413
San Diego, CA 92101
PlanningCEQA@sandiego.gov

RE: Comment on the Draft Environmental Impact Report for the Pure Water Program (Project No. 438188/SCH No. 201411068)

Dear Ms. Hermann:

I am writing on behalf of Laborers International Union of North America, Local Union No. 89 and its members living in San Diego County (collectively "LIUNA Local Union No. 89" or "LIUNA" or "Commenters") regarding the Draft Program Environmental Impact Report ("PEIR") prepared for the Pure Water San Diego Program, Project No. 438188, State Clearinghouse No. 201411068 ("Program"). J-1

We have reviewed the PEIR with the assistance of Hydrogeologist Matthew Hagemann, C.Hg., MS. and Jessie Jaeger of Soil/ Water/Air Protection Enterprise (SWAPE). Mr. Hagemann and Ms. Jaeger have prepared written comments that are attached hereto as Exhibit A, and which are incorporated in their entirety. The City of San Diego ("City") should respond to the expert comments separately. These experts and our own independent review demonstrate that the PEIR is inadequate and that a new supplemental EIR is required to be prepared and recirculated for public comment. In particular, the EIR suffers from the following significant errors and omissions, among others: J-2

- AIR QUALITY: The PEIR fails to adequately analyze and mitigate significant construction air quality impacts and fails to properly analyze health risks associated with toxic air contaminants and hazardous air pollutants from construction activities. J-3

Response to Comment Letter J

Lozeau Drury LLP, on behalf of LIUNA Local Union No. 89 Richard T. Drury, Lozeau Drury April 8, 2016

J-1 Comment noted.

J-2 Comment noted. As described in more detail in the following response to this letter, none of the conditions presented in the CEQA Guidelines Section 15088.5 triggering recirculation have been met, and hence recirculation of the DPEIR is not required.

J-3 These general comments about potential air quality impacts and health risks are introduced here with more specific details offered later in the comment letter. Refer to Response J-12.

J-4 These general comments about potential hazards and hazardous waste impacts are introduced here with more specific details offered later in the comment letter. Refer to Responses J-13 through J-23.

J-5 Please see Responses J-12 and J-21; the DPEIR does not require revisions to include a health risk assessment or environmental site assessments.

- HAZARDS AND HAZARDOUS WASTE: The PEIR fails to adequately identify potential contaminants that may be present in water following treatment at the proposed advanced water purification facilities or to analyze potential health impacts of such contaminants in drinking water. The PEIR also fails to identify potential contaminants in the brine and sludge produced from the water purification process, or to analyze potential impacts of such contaminants to surface and ground water. Finally, the PEIR fails to identify hazardous waste sites in areas of infrastructure associated with the Program, such as pipelines and booster stations.

J-4

Commenters urge the City to revise the EIR to adequately describe, analyze, and mitigate the Program and its impacts, including preparation of health risk assessments and environmental site assessments for construction of Program components.[1] The revised EIR should be recirculated to allow public review and comment.

J-5

J-6

I. PROGRAM DESCRIPTION

The Pure Water Program would use advanced water purification technology to produce potable water from recycled water to provide a drinking water supply for the City. The Program consists of the design and construction of new advanced water purification facilities ("AWPFs"), a new water reclamation plant, upgrades to existing water reclamation and wastewater treatment facilities and design and construction of new pump stations and pipelines. The PEIR analyzes the following Program components as they are currently contemplated but notes that such components are subject to change during future project-level design.

The Program would construct AWPFs at the existing North City Water Reclamation Plant ("NCWRP") and South Bay Water Reclamation Plant ("SBWRP") and a third AWPF and a new water reclamation plant (Central Area Water Reclamation Plant ("CAWRP")) would also be constructed. Upgrades would occur at the existing NCWRP and SBWRP to provide sufficient tertiary influent for the AWPFs. Pump station and pipeline facilities would convey different types of flows to and from the treatment facilities for (1) diverting wastewater flows to water reclamation facilities; (2) conveying recycled water to the AWPFs; (3) conveying purified water from AWPFs to either the San Vicente or Lower Otay Reservoirs; and (4) transporting waste flows (brine and sludge) from treatment processes to solids handling facilities or back into the Metro System. Upgrades would also occur at Metropolitan Biosolids Center and Point Loma Wastewater Treatment Plant ("PLWTP") to handle the additional brine and sludge produced by the WRP expansions and advanced water purification process.

J-7

[1] We reserve the right to supplement these comments at later hearings and proceedings for this Project. (See, *Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal. App. 4th 1109.)

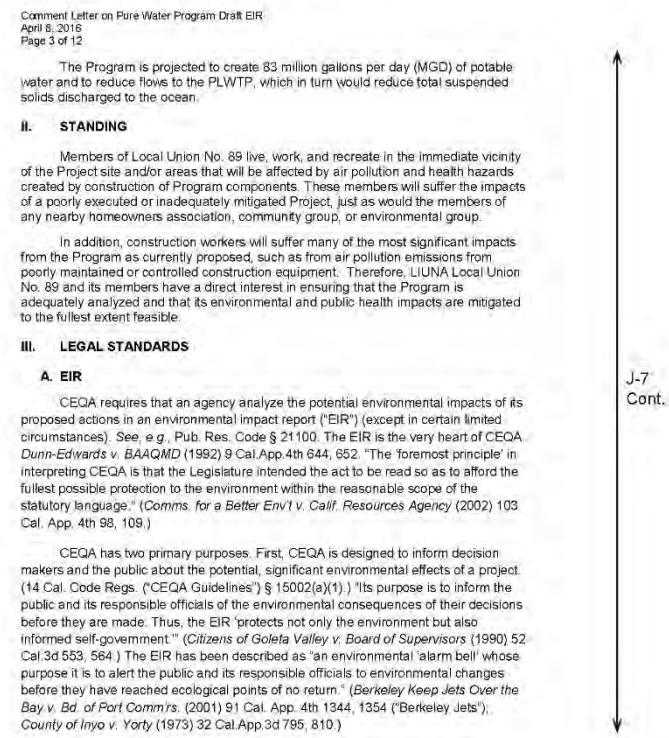
J-6 The City does not believe that any of the conditions presented in Section 15088.5 of the CEQA Guidelines which trigger recirculation have been met; therefore, recirculation of the Draft PEIR is not required.

J-7 Comment noted. The comment provides general information regarding the project description, standing, and legal standards and does not specifically raise an issue pertinent to the content or adequacy of the DPEIR.

Refer to Responses J-13 through J-23.

A reasonable range of alternatives has been provided in the Draft PEIR in compliance with the CEQA Guidelines Section 15126.6(a). The City of San Diego has previously analyzed a variety of water supply alternatives, including, but not limited to, conservation, desalination and reclaimed water use. As discussed in Section 11.2, Water Supply Alternatives Planning, these alternatives were analyzed in depth by the City and can be reviewed in the Water Reuse Study (City of San Diego 2006) and Recycled Water Study (City of San Diego 2012).

J-8 The City disagrees that the DPEIR fails to analyze significant impacts and mitigation; rather, the DPEIR fully analyzes and discloses all significant impacts



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The Program is projected to create 83 million gallons per day (MGD) of potable water and to reduce flows to the PLWTP, which in turn would reduce total suspended solids discharged to the ocean.

II. STANDING

Members of Local Union No. 89 live, work, and recreate in the immediate vicinity of the Project site and/or areas that will be affected by air pollution and health hazards created by construction of Program components. These members will suffer the impacts of a poorly executed or inadequately mitigated Project, just as would the members of any nearby homeowners association, community group, or environmental group.

In addition, construction workers will suffer many of the most significant impacts from the Program as currently proposed, such as from air pollution emissions from poorly maintained or controlled construction equipment. Therefore, LIUNA Local Union No. 89 and its members have a direct interest in ensuring that the Program is adequately analyzed and that its environmental and public health impacts are mitigated to the fullest extent feasible.

III. LEGAL STANDARDS

A. EIR

CEQA requires that an agency analyze the potential environmental impacts of its proposed actions in an environmental impact report ("EIR") (except in certain limited circumstances). *See, e.g.*, Pub. Res. Code § 21100. The EIR is the very heart of CEQA. *Dunn-Edwards v. BAAQMD* (1992) 9 Cal.App.4th 644, 652. "The 'foremost principle' in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language." (*Comms. for a Better Env't v. Calif. Resources Agency* (2002) 103 Cal. App. 4th 98, 109.)

CEQA has two primary purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project. (14 Cal. Code Regs. ("CEQA Guidelines") § 15002(a)(1).) "Its purpose is to inform the public and its responsible officials of the environmental consequences of their decisions before they are made. Thus, the EIR 'protects not only the environment but also informed self-government.'" (*Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564.) The EIR has been described as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return." (*Berkeley Keep Jets Over the Bay v. Bd. of Port Comm'rs.* (2001) 91 Cal. App. 4th 1344, 1354 ("Berkeley Jets"); *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.)

J-7 Cont.

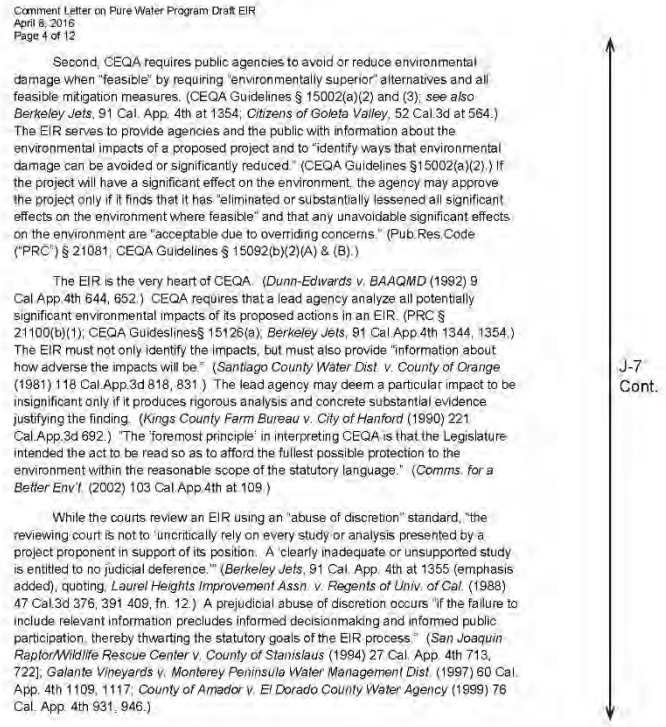
and mitigation in compliance with the CEQA Guidelines. None of the conditions presented in Section 15088.5 of the CEQA Guidelines triggering recirculation have been met; therefore, recirculation of the DPEIR is not required.

J-9 Comment noted.

J-10 None of the conditions presented in Section 15088.5 of the CEQA Guidelines triggering recirculation have been met; therefore, recirculation of the DPEIR is not required.

J-11 Comment noted. The comment provides general information regarding CEQA requirements and does not specifically raise an issue pertinent to the content of the PEIR.

J-12 A health risk assessment (HRA) with regards to the construction of Program facilities is not warranted for multiple reasons. First, construction of Program facilities would not include stationary sources that would require a permit. Secondly, the California Air Resources Board (ARB) regulates diesel particulate matter, which is the greatest potential for toxic air contaminants (TAC). Additionally, although the Office of Environmental Health Hazard Assessment (OEHHA) guidance calls for a HRA to be conducted for construction projects two months or greater, it does



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Second, CEQA requires public agencies to avoid or reduce environmental damage when "feasible" by requiring "environmentally superior" alternatives and all feasible mitigation measures. (CEQA Guidelines § 15002(a)(2) and (3); *see also Berkeley Jets*, 91 Cal. App. 4th at 1354; *Citizens of Goleta Valley*, 52 Cal.3d at 564.) The EIR serves to provide agencies and the public with information about the environmental impacts of a proposed project and to "identify ways that environmental damage can be avoided or significantly reduced." (CEQA Guidelines §15002(a)(2).) If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has "eliminated or substantially lessened all significant effects on the environment where feasible" and that any unavoidable significant effects on the environment are "acceptable due to overriding concerns." (Pub.Res.Code ("PRC") § 21081, CEQA Guidelines § 15092(b)(2)(A) & (B).)

The EIR is the very heart of CEQA. (*Dunn-Edwards v. BAAQMD* (1992) 9 Cal.App.4th 644, 652.) CEQA requires that a lead agency analyze all potentially significant environmental impacts of its proposed actions in an EIR. (PRC § 21100(b)(1); CEQA Guidelines§ 15126(a); *Berkeley Jets*, 91 Cal.App.4th 1344, 1354.) The EIR must not only identify the impacts, but must also provide "information about how adverse the impacts will be." (*Santiago County Water Dist. v. County of Orange* (1981) 118 Cal.App.3d 818, 831.) The lead agency may deem a particular impact to be insignificant only if it produces rigorous analysis and concrete substantial evidence justifying the finding. (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692.) "The 'foremost principle' in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language." (*Comms. for a Better Env't.* (2002) 103 Cal.App.4th at 109.)

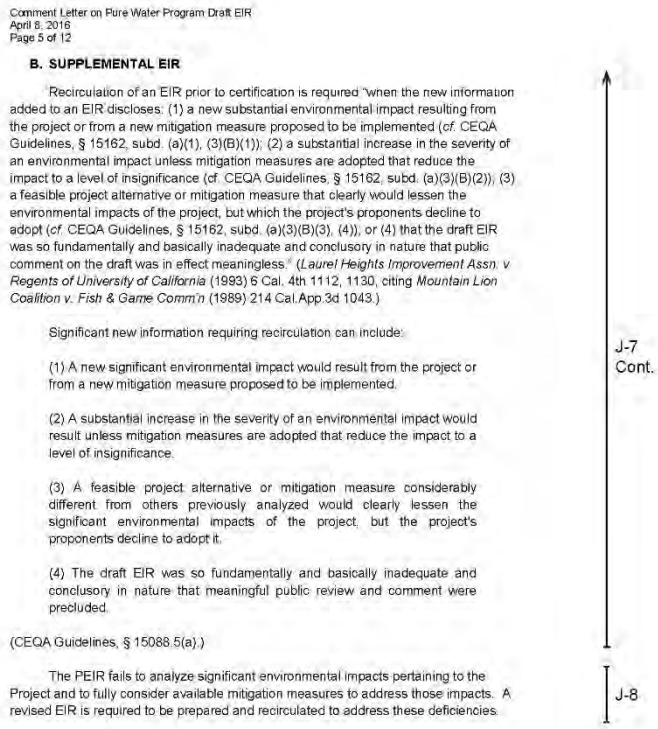
While the courts review an EIR using an "abuse of discretion" standard, "the reviewing court is not to 'uncritically rely on every study or analysis presented by a project proponent in support of its position. A 'clearly inadequate or unsupported study is entitled to no judicial deference.'" (*Berkeley Jets*, 91 Cal. App. 4th at 1355 (emphasis added), quoting. *Laurel Heights Improvement Assn. v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 391 409, fn. 12.) A prejudicial abuse of discretion occurs "if the failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process." (*San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal. App. 4th 713, 722]; *Galante Vineyards v. Monterey Peninsula Water Management Dist.* (1997) 60 Cal. App. 4th 1109, 1117; *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal. App. 4th 931, 946.)

J-7
Cont.

not require this. Ultimately, it is not the intent of the OEHHA health risk guidance to require a HRA for nearly every discretionary action.

However, a HRA was performed at the Central AWPF to support the findings presented in the DPEIR. The HRA was performed at the Central AWPF location because it is the only proposed facility site with sensitive receptors within 1,000 feet of the proposed facility construction area. As such, this facility was used as the worst case scenario, with the understanding that if construction health risk was below applicable thresholds for this facility, then health risk would similarly be below applicable threshold for the other facilities. The specifics of the HRA modeling analysis methods are provided in the technical health risk assessment memorandum for this comment response (Attachment A). The specific modeling data, which are attachments to the technical memorandum, will be made available upon request via email to the Planning Department at PlanningCEQA@sandiego.gov.

The HRA confirmed the child MEIR (exposure starting in 3rd trimester) and the associated chronic hazard index for the child MEIR would not exceed the County significance thresholds. Since emissions of DPM generated by construction at the Central AWPF facility



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B. SUPPLEMENTAL EIR

Recirculation of an EIR prior to certification is required "when the new information added to an EIR discloses: (1) a new substantial environmental impact resulting from the project or from a new mitigation measure proposed to be implemented (*cf.* CEQA Guidelines, § 15162, subd. (a)(1), (3)(B)(1)); (2) a substantial increase in the severity of an environmental impact unless mitigation measures are adopted that reduce the impact to a level of insignificance (*cf.* CEQA Guidelines, § 15162, subd. (a)(3)(B)(2)); (3) a feasible project alternative or mitigation measure that clearly would lessen the environmental impacts of the project, but which the project's proponents decline to adopt (*cf.* CEQA Guidelines, § 15162, subd. (a)(3)(B)(3), (4)); or (4) that the draft EIR was so fundamentally and basically inadequate and conclusory in nature that public comment on the draft was in effect meaningless." (*Laurel Heights Improvement Assn. v. Regents of University of California* (1993) 6 Cal. 4th 1112, 1130, citing *Mountain Lion Coalition v. Fish & Game Comm'n* (1989) 214 Cal.App.3d 1043.)

Significant new information requiring recirculation can include:

(1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.

(2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.

(3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project's proponents decline to adopt it.

(4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

(CEQA Guidelines, § 15088.5(a).)

The PEIR fails to analyze significant environmental impacts pertaining to the Project and to fully consider available mitigation measures to address those impacts. A revised EIR is required to be prepared and recirculated to address these deficiencies.

J-7 Cont.

J-8

would result in cancer and noncarcinogenic risk below the applicable thresholds, the impact would be less than significant. In addition, as noted previously, since the Central AWPF site was used as the worse-case exposure scenario, the health risk impacts associated with construction of facilities at the other sites (North City AWPF, Central Area WRP, and the South Bay AWFP) would also be less than significant.

J-13 The DPEIR summarizes the extensive testing and monitoring activities that occurred at the Water Purification Demonstration Project facility. As stated in the DPEIR, Chapter 2.0, "testing at the AWPF was conducted from June 2011 until August 2012 and included measurements for 342 constituents and parameters (231 regulated constituents and 111 non-regulated constituents)". Testing at the demonstration facility "included almost 30,000 tests (including 9,000 tests during initial testing completed in 2012) of the purified water at various points in the treatment process and for 342 different constituents. The water quality of the purified water was compared to regulatory limits, verifying that purified water met all applicable water quality standards." Table 2-1 in the DPEIR summarizes the monitoring results from the Demonstration Project.

The PEIR states that it is intended to allow the City to consider broad policy alternatives and Program-wide mitigation measures at an early time and to streamline subsequent environmental review of the Program components. It further states that it is not intended to evaluate project-level impacts associated with future implementation of any of the treatment facilities or pipelines, and that any subsequent activities proposed for the Program, such as approvals and implementation of individual Program components, will be further evaluated separately under individual project-level CEQA/NEPA review processes. (PEIR, p. ES-10). J-9

Notwithstanding its commitment to perform additional CEQA review for project-level components of the Program, the City should prepare and circulate a supplemental EIR to address the deficiencies set forth in this letter. J-10

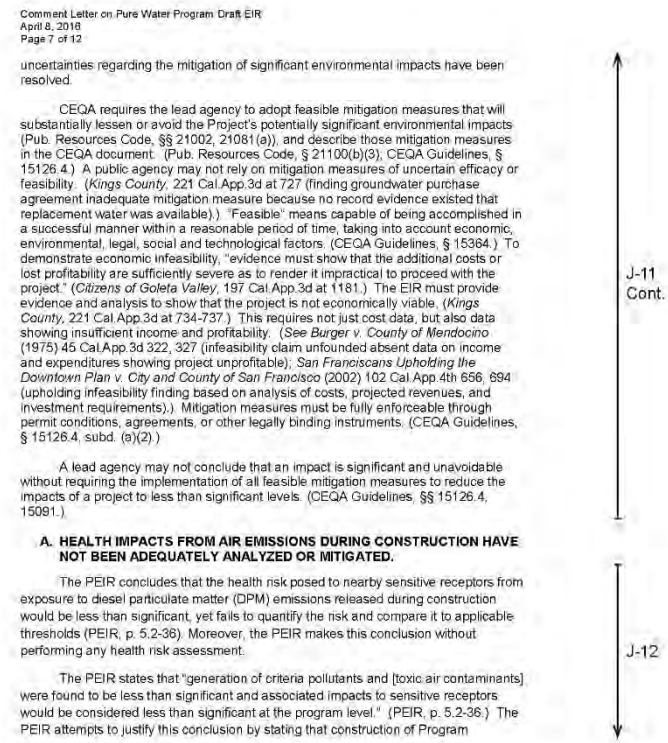
IV. THE PEIR FAILS TO ANALYZE AND MITIGATE ALL POTENTIALLY SIGNIFICANT IMPACTS.

An EIR must disclose all potentially significant adverse environmental impacts of a project. (Pub. Resources Code, § 21100(b)(1); CEQA Guidelines, § 15126(a); *Berkeley Jets*, 91 Cal. App. 4th 1344, 1354.) CEQA requires that an EIR must not only identify the impacts, but must also provide "information about how adverse the impacts will be." (*Santiago County Water Dist.*, 118 Cal.App.3d at 831). The lead agency may deem a particular impact to be insignificant only if it produces rigorous analysis and concrete substantial evidence justifying the finding. (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692.)

CEQA requires public agencies to avoid or reduce environmental damage when "feasible" by requiring mitigation measures. (CEQA Guidelines, § 15002(a)(2) and (3); *See also, Berkeley Jets*, 91 Cal. App. 4th at 1354; *Citizens of Goleta Valley*, 52 Cal.3d at 564.) The EIR serves to provide agencies and the public with information about the environmental impacts of a proposed project and to "identify ways that environmental damage can be avoided or significantly reduced." (CEQA Guidelines, §15002(a)(2).) If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has "eliminated or substantially lessened all significant effects on the environment where feasible" and that any unavoidable significant effects on the environment are "acceptable due to overriding concerns." (Pub. Resources Code, § 21081; CEQA Guidelines, § 15092(b)(2)(A) & (B).) J-11

In general, mitigation measures must be designed to minimize, reduce, or avoid an identified environmental impact or to rectify or compensate for that impact. (CEQA Guidelines, § 15370.) Where several mitigation measures are available to mitigate an impact, each should be discussed and the basis for selecting a particular measure should be identified. (*Id.*, at § 15126.4(a)(1)(B).) A lead agency may not make the required CEQA findings unless the administrative record clearly shows that all

Quarterly Testing Report No. 4, provides a comprehensive list of all potential drinking water contaminants and the monitoring results of the level of contaminants present in purified water after advanced treatment (https://www.sandiego.gov/sites/default/files/legacy/water/purewater/pdf/projectreports/awpfappendixb.pdf). In general two categories of parameters were monitored over the testing period: (1) contaminants selected based on regulatory considerations for a potential full scale facility and (2) non-regulated contaminants. Potential drinking water contaminants monitored include, but are not limited to: formaldehyde, ammonia, nitrates, phosphorus, total dissolved solids, fecal coliform, total organic carbon, E. coli, bacteriophage, chlorides, sulfates, sodium, manganese, boron, fluoride, asbestos, benzene, cyanide, lead, mercury, radionuclides, and other chemicals of emerging concern (CECs). The water quality monitoring met or exceeded all requirements for regulated water quality contaminants. Of the 111 non-regulated constituents sampled for at the Demonstration Project, only six were found to be quantifiably detected at low levels in the purified water at any time, including three constituents from the 2012 EPA Unregulated Contaminant Monitoring Rule (UCMR3) and three CECs.



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uncertainties regarding the mitigation of significant environmental impacts have been resolved.

CEQA requires the lead agency to adopt feasible mitigation measures that will substantially lessen or avoid the Project's potentially significant environmental impacts (Pub. Resources Code, §§ 21002, 21081(a)), and describe those mitigation measures in the CEQA document. (Pub. Resources Code, § 21100(b)(3); CEQA Guidelines, § 15126.4.) A public agency may not rely on mitigation measures of uncertain efficacy or feasibility. (*Kings County*, 221 Cal.App.3d at 727 (finding groundwater purchase agreement inadequate mitigation measure because no record evidence existed that replacement water was available).) "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors. (CEQA Guidelines, § 15364.) To demonstrate economic infeasibility, "evidence must show that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the project." (*Citizens of Goleta Valley*, 197 Cal.App.3d at 1181.) The EIR must provide evidence and analysis to show that the project is not economically viable. (*Kings County*, 221 Cal.App.3d at 734-737.) This requires not just cost data, but also data showing insufficient income and profitability. (*See Burger v. County of Mendocino* (1975) 45 Cal.App.3d 322, 327 (infeasibility claim unfounded absent data on income and expenditures showing project unprofitable); *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656, 694 (upholding infeasibility finding based on analysis of costs, projected revenues, and investment requirements).) Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments. (CEQA Guidelines, § 15126.4, subd. (a)(2).)

A lead agency may not conclude that an impact is significant and unavoidable without requiring the implementation of all feasible mitigation measures to reduce the impacts of a project to less than significant levels. (CEQA Guidelines, §§ 15126.4, 15091.).

A. HEALTH IMPACTS FROM AIR EMISSIONS DURING CONSTRUCTION HAVE NOT BEEN ADEQUATELY ANALYZED OR MITIGATED.

The PEIR concludes that the health risk posed to nearby sensitive receptors from exposure to diesel particulate matter (DPM) emissions released during construction would be less than significant, yet fails to quantify the risk and compare it to applicable thresholds (PEIR, p. 5.2-36). Moreover, the PEIR makes this conclusion without performing any health risk assessment.

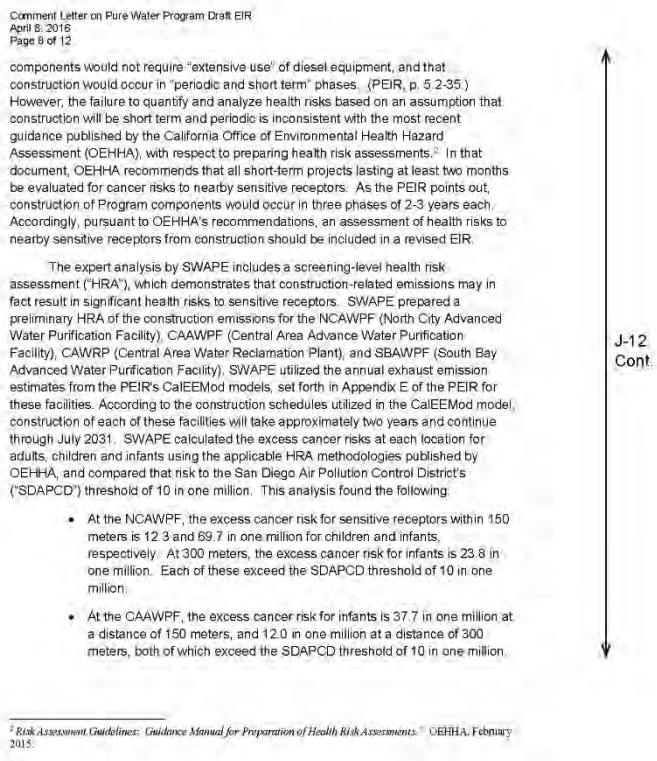
The PEIR states that "generation of criteria pollutants and [toxic air contaminants] were found to be less than significant and associated impacts to sensitive receptors would be considered less than significant at the program level." (PEIR, p. 5.2-36.) The PEIR attempts to justify this conclusion by stating that construction of Program

J-11 Cont.

J-12

Three UCMR3 list constituents, bromochloromethane, hexavalent chromium, and strontium, were quantifiable detected in the purified water. The first two of these constituents can be considered disinfection byproducts and may have been formed at low levels within the treatment processes. The third constituent is a naturally occurring metal used as a dietary supplement and in manufacturing. Only three CECs were detected at quantifiable concentrations in the purified water. These compounds were iohexal (contrasting agent used in x-ray), acesulfame-k (widely used artificial sweetener), and triclosan (antibacterial agent). In all cases where constituents were detected, concentrations were significantly below the Drinking Water Equivalent level (bromochloromethane, iohexal, and triclosan), below the CDPH detection limit (hexavalent chromium), below the Food and Drug Administration Acceptable Daily Intake (acesulfame-k), or lower than the EPA's Contaminant Candidate List 3 (CCL3) Health Reference Level (strontium).

As stated in the DPEIR, Chapter 1.0, the PEIR is intended to evaluate the potential components of the Program at a general programmatic level. It is not intended or structured to evaluate project-level impacts associated with future implementation of any of the



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components would not require "extensive use" of diesel equipment, and that construction would occur in "periodic and short term" phases. (PEIR, p. 5.2-35.) However, the failure to quantify and analyze health risks based on an assumption that construction will be short term and periodic is inconsistent with the most recent guidance published by the California Office of Environmental Health Hazard Assessment (OEHHA), with respect to preparing health risk assessments.[2] In that document, OEHHA recommends that all short-term projects lasting at least two months be evaluated for cancer risks to nearby sensitive receptors. As the PEIR points out, construction of Program components would occur in three phases of 2-3 years each. Accordingly, pursuant to OEHHA's recommendations, an assessment of health risks to nearby sensitive receptors from construction should be included in a revised EIR.

The expert analysis by SWAPE includes a screening-level health risk assessment ("HRA"), which demonstrates that construction-related emissions may in fact result in significant health risks to sensitive receptors. SWAPE prepared a preliminary HRA of the construction emissions for the NCAWPF (North City Advanced Water Purification Facility), CAAWPF (Central Area Advance Water Purification Facility), CAWRP (Central Area Water Reclamation Plant), and SBAWPF (South Bay Advanced Water Purification Facility). SWAPE utilized the annual exhaust emission estimates from the PEIR's CalEEMod models, set forth in Appendix E of the PEIR for these facilities. According to the construction schedules utilized in the CalEEMod model, construction of each of these facilities will take approximately two years and continue through July 2031. SWAPE calculated the excess cancer risks at each location for adults, children and infants using the applicable HRA methodologies published by OEHHA, and compared that risk to the San Diego Air Pollution Control District's ("SDAPCD") threshold of 10 in one million. This analysis found the following:

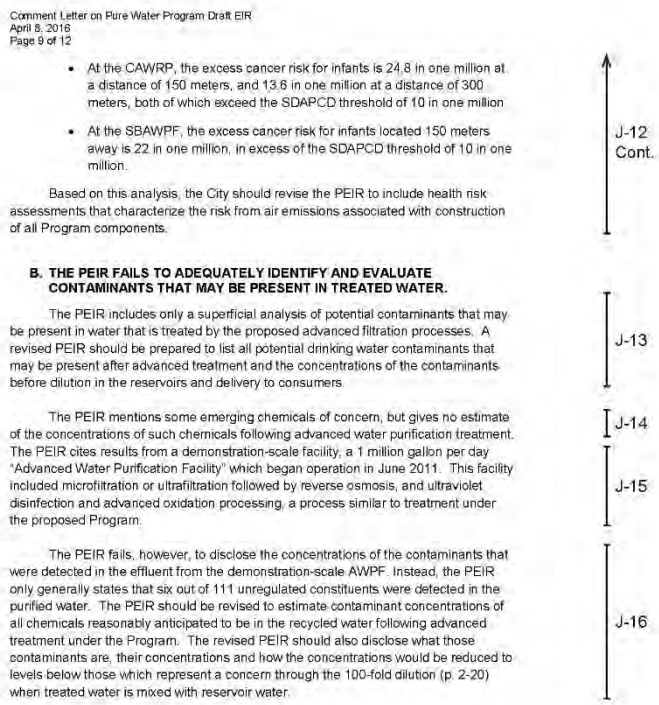
- At the NCAWPF, the excess cancer risk for sensitive receptors within 150 meters is 12.3 and 69.7 in one million for children and infants, respectively. At 300 meters, the excess cancer risk for infants is 23.8 in one million. Each of these exceed the SDAPCD threshold of 10 in one million.
- At the CAAWPF, the excess cancer risk for infants is 37.7 in one million at a distance of 150 meters, and 12.0 in one million at a distance of 300 meters, both of which exceed the SDAPCD threshold of 10 in one million.

J-12 Cont.

[2] *Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments.*" OEHHA, February 2015.

treatment facilities or pipelines, although the PEIR may provide information and analyses that could be used in conjunction with future project-level environmental reviews of such improvements. Any subsequent activities proposed for the Program, such as approvals and implementation of individual components of the Program, will be further evaluated separately under individual project-level CEQA/National Environmental Policy Act review processes. As such, the City believes that the level of detail provided in the DPEIR was adequate to provide for sufficient analysis at the programmatic level. The information included in this response is provided at the request of the commenter, but no revisions to the PEIR are necessary.

J-14 As discussed in Chapter 2 of the DPEIR, Environmental Setting, 111 unregulated constituents were monitored during the Demonstration Project. Only 6 out of 111 unregulated constituents were detected in the purified water in at least one sampling event and all six were 10 million times to 18 times lower than the associated Drinking Water Equivalent Level or the EPA-identified Health Reference Level. While the advanced treatment process employed at the Demonstration Facility resulted in levels of unregulated constituents well below levels that could present a potential health hazard, purified water would



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- At the CAWRP, the excess cancer risk for infants is 24.8 in one million at a distance of 150 meters, and 13.6 in one million at a distance of 300 meters, both of which exceed the SDAPCD threshold of 10 in one million
- At the SBAWPF, the excess cancer risk for infants located 150 meters away is 22 in one million, in excess of the SDAPCD threshold of 10 in one million.

Based on this analysis, the City should revise the PEIR to include health risk assessments that characterize the risk from air emissions associated with construction of all Program components.

B. THE PEIR FAILS TO ADEQUATELY IDENTIFY AND EVALUATE CONTAMINANTS THAT MAY BE PRESENT IN TREATED WATER.

The PEIR includes only a superficial analysis of potential contaminants that may be present in water that is treated by the proposed advanced filtration processes. A revised PEIR should be prepared to list all potential drinking water contaminants that may be present after advanced treatment and the concentrations of the contaminants before dilution in the reservoirs and delivery to consumers.

The PEIR mentions some emerging chemicals of concern, but gives no estimate of the concentrations of such chemicals following advanced water purification treatment. The PEIR cites results from a demonstration-scale facility, a 1 million gallon per day "Advanced Water Purification Facility" which began operation in June 2011. This facility included microfiltration or ultrafiltration followed by reverse osmosis, and ultraviolet disinfection and advanced oxidation processing, a process similar to treatment under the proposed Program.

The PEIR fails, however, to disclose the concentrations of the contaminants that were detected in the effluent from the demonstration-scale AWPF. Instead, the PEIR only generally states that six out of 111 unregulated constituents were detected in the purified water. The PEIR should be revised to estimate contaminant concentrations of all chemicals reasonably anticipated to be in the recycled water following advanced treatment under the Program. The revised PEIR should also disclose what those contaminants are, their concentrations and how the concentrations would be reduced to levels below those which represent a concern through the 100-fold dilution (p. 2-20) when treated water is mixed with reservoir water.

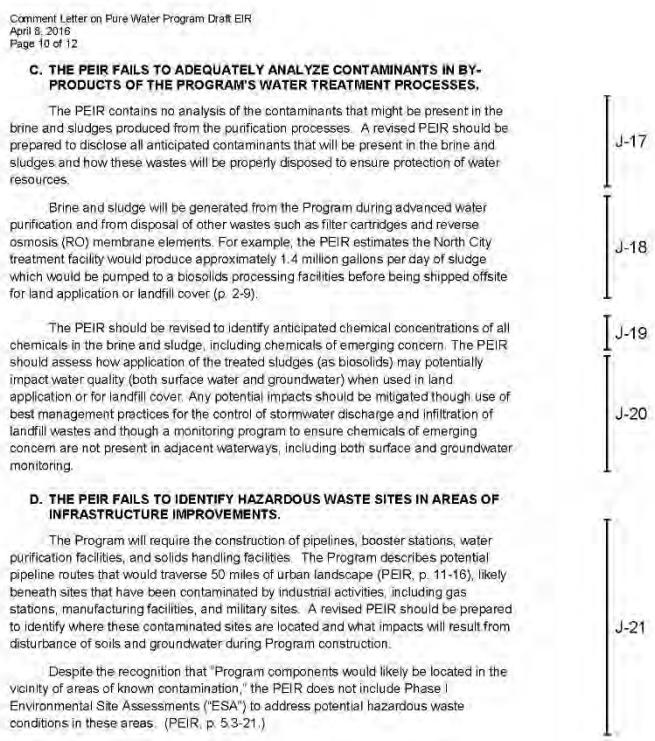
J-12 Cont.
J-13
J-14
J-15
J-16

additionally be diluted to at least 10:1 in a reservoir over any 24 hour period. Additional testing of the reservoir is planned to verify dilution under all possible scenarios. Please also refer to Response J-13.

J-15 Comment noted. The commenter accurately summarizes the information provided in Chapter 2 of the DPEIR regarding the Water Purification Demonstration Project facility.

J-16 Please refer to Response J-13 and J-14. As a result of testing and monitoring conducted at the Demonstration facility, the City has confirmed that all regulated and unregulated constituents would be below water quality standards for regulated constituents or below the Drinking Water Equivalent Level or the EPA-identified Health Reference Level for unregulated constituents following treatment at the AWPF. Dilution by mixing with water in the reservoir would further provide assurances against contamination; however, would not be necessary to achieve acceptable water quality standards.

J-17 As described in Chapter 3, Project Description, of the DPEIR, approximately 6.3 MGD AADF of brine would result from the RO process at the North City AWPF and would be conveyed via a 20-inch gravity flow line from the NCAWPF back to the proposed



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C. THE PEIR FAILS TO ADEQUATELY ANALYZE CONTAMINANTS IN BY-PRODUCTS OF THE PROGRAM'S WATER TREATMENT PROCESSES.

The PEIR contains no analysis of the contaminants that might be present in the brine and sludges produced from the purification processes. A revised PEIR should be prepared to disclose all anticipated contaminants that will be present in the brine and sludges and how these wastes will be properly disposed to ensure protection of water resources.

J-17

Brine and sludge will be generated from the Program during advanced water purification and from disposal of other wastes such as filter cartridges and reverse osmosis (RO) membrane elements. For example, the PEIR estimates the North City treatment facility would produce approximately 1.4 million gallons per day of sludge which would be pumped to a biosolids processing facilities before being shipped offsite for land application or landfill cover (p. 2-9).

J-18

The PEIR should be revised to identify anticipated chemical concentrations of all chemicals in the brine and sludge, including chemicals of emerging concern. The PEIR should assess how application of the treated sludges (as biosolids) may potentially impact water quality (both surface water and groundwater) when used in land application or for landfill cover. Any potential impacts should be mitigated though use of best management practices for the control of stormwater discharge and infiltration of landfill wastes and though a monitoring program to ensure chemicals of emerging concern are not present in adjacent waterways, including both surface and groundwater monitoring.

J-19

J-20

D. THE PEIR FAILS TO IDENTIFY HAZARDOUS WASTE SITES IN AREAS OF INFRASTRUCTURE IMPROVEMENTS.

The Program will require the construction of pipelines, booster stations, water purification facilities, and solids handling facilities. The Program describes potential pipeline routes that would traverse 50 miles of urban landscape (PEIR, p. 11-16), likely beneath sites that have been contaminated by industrial activities, including gas stations, manufacturing facilities, and military sites. A revised PEIR should be prepared to identify where these contaminated sites are located and what impacts will result from disturbance of soils and groundwater during Program construction.

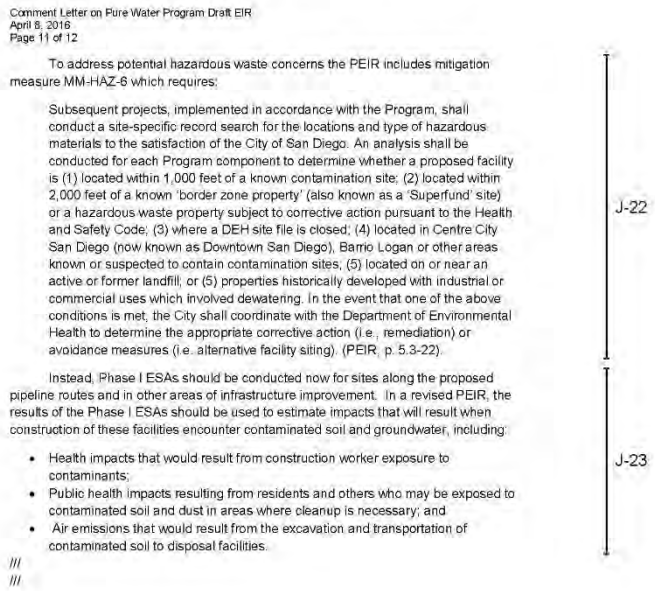
J-21

Despite the recognition that "Program components would likely be located in the vicinity of areas of known contamination," the PEIR does not include Phase I Environmental Site Assessments ("ESA") to address potential hazardous waste conditions in these areas. (PEIR, p. 5.3-21.)

Morena Boulevard Pump Station where it would discharge back to the sewer system. The Central Area AWPF and South Bay AWFP would similarly result in brine that would be discharged back to the sewer system. The brine would be treated at the PLWTP and discharged through the Point Loma Ocean Outfall, which is conducted in accordance with an individual NPDES permit (RWQCB Order No. R9-2009-0001).

Section 5.7.7 of the DPEIR addresses treated water discharges. As described in the DPEIR, implementation of the Program would result in reduction of the volume of water discharged at the ocean outfalls, resulting in a beneficial impact with regards to the Program's impact on ocean water quality. Contaminants present in the brine discharged by the AWPFs would be no different than contaminants that are present in the wastewater previously treated by the NCWRP, SBWRP or PLWTP.

As described in Chapter 3, Project Description, of the DPEIR, expansion of the NCWRP and SBWRP and construction of the new CAWRP would all result in the production of sludge that would require upgrades to the existing Metro Biosolids Center and construction of a new sludge processing facility at South Bay. Although upgrades would be required to process additional



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To address potential hazardous waste concerns the PEIR includes mitigation measure MM-HAZ-6 which requires:

> Subsequent projects, implemented in accordance with the Program, shall conduct a site-specific record search for the locations and type of hazardous materials to the satisfaction of the City of San Diego. An analysis shall be conducted for each Program component to determine whether a proposed facility is (1) located within 1,000 feet of a known contamination site; (2) located within 2,000 feet of a known 'border zone property' (also known as a 'Superfund' site) or a hazardous waste property subject to corrective action pursuant to the Health and Safety Code; (3) where a DEH site file is closed; (4) located in Centre City San Diego (now known as Downtown San Diego), Barrio Logan or other areas known or suspected to contain contamination sites; (5) located on or near an active or former landfill; or (5) properties historically developed with industrial or commercial uses which involved dewatering. In the event that one of the above conditions is met, the City shall coordinate with the Department of Environmental Health to determine the appropriate corrective action (i.e., remediation) or avoidance measures (i.e. alternative facility siting). (PEIR, p. 5.3-22).

J-22

Instead, Phase I ESAs should be conducted now for sites along the proposed pipeline routes and in other areas of infrastructure improvement. In a revised PEIR, the results of the Phase I ESAs should be used to estimate impacts that will result when construction of these facilities encounter contaminated soil and groundwater, including:

- Health impacts that would result from construction worker exposure to contaminants;
- Public health impacts resulting from residents and others who may be exposed to contaminated soil and dust in areas where cleanup is necessary; and
- Air emissions that would result from the excavation and transportation of contaminated soil to disposal facilities.

J-23

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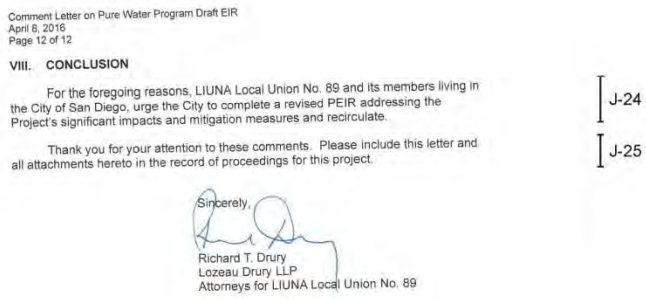
sludge, the contaminants present in the sludge would be no different than sludge previously generated by the wastewater treatment process.

J-18 Refer to response J-17. The DPEIR also analyzes wastes produced by the proposed AWPFs in Section 5.9, Public Utilities, of the DPEIR under the subheading "Solid Waste".

J-19 Please refer to Response J-17. Implementation of the additional treatment steps at the AWPFs would not result in changes to the composition of the brine and sludge resulting from the various treatment processes. The proposed Program would reduce the volume of discharges at the ocean outfalls, thereby resulting in a beneficial impact to ocean water quality. No revisions to the DPEIR are required.

J-20 As stated in the DPEIR, Chapter 1.0, the PEIR is intended to evaluate the potential components of the Program at a general programmatic level. It is not intended or structured to evaluate project-level impacts associated with future implementation of any of the treatment facilities or pipelines. Please refer to Response J-17.

J-21 As stated in the PEIR, Chapter 1.0, the PEIR is intended to evaluate the potential components of the



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VIII. CONCLUSION

For the foregoing reasons, LIUNA Local Union No. 89 and its members living in the City of San Diego, urge the City to complete a revised PEIR addressing the Project's significant impacts and mitigation measures and recirculate. J-24

Thank you for your attention to these comments. Please include this letter and all attachments hereto in the record of proceedings for this project. J-25

Sincerely,

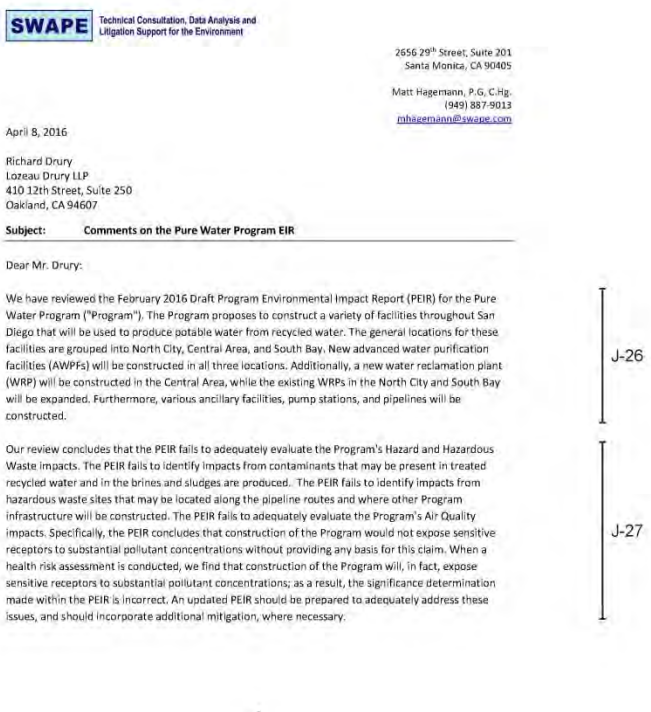
Richard T. Drury
Lozeau Drury LLP
Attorneys for LIUNA Local Union No. 89

Program at a general programmatic level. It is not intended or structured to evaluate project-level impacts associated with future implementation of any of the treatment facilities or pipelines, although the PEIR may provide information and analyses that could be used in conjunction with future project-level environmental reviews of such improvements. Any subsequent activities proposed for the Program, such as approvals and implementation of individual components of the Program, will be further evaluated separately under individual project-level CEQA/NEPA review processes.

Implementation of Mitigation Framework measure MM-HAZ-6 would require site-specific record searches and the preparation of Phase I ESAs for each Program component during project-level environmental review. As specific locations are not known for all Program facilities and pipeline routes at this time, and because MM-HAZ-6 would ensure potential impacts are reduced to less than significant, the City believes that preparation of Phase I ESAs for each Program component are not required for the PEIR.

J-22 Comment noted.

J-23 Please refer to response J-21.



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April 8, 2016

Richard Drury
Lozeau Drury LLP
410 12th Street, Suite 250
Oakland, CA 94607

Subject: Comments on the Pure Water Program EIR

Dear Mr. Drury:

We have reviewed the February 2016 Draft Program Environmental Impact Report (PEIR) for the Pure Water Program ("Program"). The Program proposes to construct a variety of facilities throughout San Diego that will be used to produce potable water from recycled water. The general locations for these facilities are grouped into North City, Central Area, and South Bay. New advanced water purification facilities (AWPFs) will be constructed in all three locations. Additionally, a new water reclamation plant (WRP) will be constructed in the Central Area, while the existing WRPs in the North City and South Bay will be expanded. Furthermore, various ancillary facilities, pump stations, and pipelines will be constructed.

J-26

Our review concludes that the PEIR fails to adequately evaluate the Program's Hazard and Hazardous Waste impacts. The PEIR fails to identify impacts from contaminants that may be present in treated recycled water and in the brines and sludges are produced. The PEIR fails to identify impacts from hazardous waste sites that may be located along the pipeline routes and where other Program infrastructure will be constructed. The PEIR fails to adequately evaluate the Program's Air Quality impacts. Specifically, the PEIR concludes that construction of the Program would not expose sensitive receptors to substantial pollutant concentrations without providing any basis for this claim. When a health risk assessment is conducted, we find that construction of the Program will, in fact, expose sensitive receptors to substantial pollutant concentrations; as a result, the significance determination made within the PEIR is incorrect. An updated PEIR should be prepared to adequately address these issues, and should incorporate additional mitigation, where necessary.

J-27

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J-24 The City does not agree that the DPEIR needs to be revised in response to the comments presented herein. None of the conditions presented in Section 15088.5 of the CEQA Guidelines are triggered by these revisions; therefore, recirculation of the DPEIR is not required.

J-25 Comment noted.

J-26 Comment noted.

J-27 Please refer to Response J-5.

J-28 Please refer to Responses J-13 through J-16.

J-29 Please refer to Responses J-17 through J-20.

J-30 Please refer to Response J-21.

J-31 Please refer to Response J-12.

Hazards and Hazardous Waste

Contaminants in Treated Water are not Adequately Evaluated

The PEIR includes only a superficial analysis of potential contaminants that may be present in water that is treated by the advanced filtration processes that are proposed. A revised PEIR should be prepared to list all potential drinking water contaminants that may be present after advanced treatment and the concentrations of the contaminants before dilution in the reservoirs and upon delivery to consumers.

The PEIR only mentions some chemicals of emerging concern including those that are regulated or undergoing regulation, including perchlorate, methyl tertiary butyl ether (MTBE), giardia, and cryptosporidium, 1,2,3-trichloropropane (1,2,3-TCP), and N-Nitrosodimethylamine (NDMA). The PEIR also mentions unregulated chemicals of emerging concern, including pharmaceuticals, endocrine-disrupting compounds such as hormones, and other environmentally persistent chemicals that may be present in recycled water. Currently, the U.S. EPA is considering the regulation of 12 pharmaceutical chemicals.[1] These chemicals have health impacts at very low concentrations, often at the part per trillion level.[2]

No estimates of the concentrations of these chemicals following treatment is given in the PEIR. The PEIR cites results from a demonstration project, a 1 million gallon per day "Advanced Water Purification Facility" which began operation in June 2011, which includes microfiltration or ultrafiltration followed by reverse osmosis, and ultraviolet disinfection and advanced oxidation processing, a process similar to treatment under the Program.

Testing of the effluent from the demonstration program was conducted for 231 regulated constituents and 111 non-regulated constituents and found:

> Regarding CECs and unregulated constituents that as of yet do not have primary drinking water MCLs, only 6 out of 111 unregulated constituents were detected in the purified water during in at least one sampling event. All six were 10 million times to 18 times lower than the associated Drinking Water Equivalent Level or the EPA-identified Health Reference Level. Although these standards are guidelines and not regulatory limits, they both represent an acceptable concentration in drinking water assuming an average person consumes 2 liters of water per day for 70 years. As discussed below, the water produced by the full-scale facility would be diluted to at least 1:100 through the process of reservoir augmentation (PEIR, p. 2-20).

The PEIR fails, however, to disclose the concentrations of the contaminants that were detected in the effluent from the Advanced Water Purification Facility. Instead, the PEIR only generally states that six compounds were detected, as cited above. The PEIR should be revised to estimate contaminant concentrations of all chemicals that could reasonablybe anticipated in the recycled water following advanced treatment under the Program. The revised PEIR should also disclose what those contaminants are, their concentrations and how the concentrations would be reduced to levels below those which

J-28

[1] http://www.environmentalhealthnews.org/ehs/news/2013/november/emerging-contaminants-report
[2] http://www.awra.org/impact/issues/0705Impact.pdf, p. 15

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represent a concern through the 100-fold dilution (p. 2-20) when treated water is mixed with reservoir water.

J-28 Cont.

Contaminants in Brine and Sludges are not adequately Evaluated

No analysis of the contaminants that might be present in the brine and sludges produced from the purification processes is presented in the PEIR. A revised PEIR should be prepared to disclose all anticipated contaminants that will be present in the brine and sludges and how these wastes will be properly disposed to ensure protection of water resources.

Brine and sludge will be generated from the Program during advanced water purification and from disposal of other wastes such as filter cartridges and reverse osmosis (RO) membrane elements. The PEIR estimates the North City treatment facility would produce approximately 1.4 million gallons per day of sludge which would be pumped to a biosolids processing facilities before being shipped offsite for land application or landfill cover (p. 2-9).

The PEIR cites regulatory standards for metals under US EPA's Standards for the Use and Disposal of Sewage Sludge that may be present in biosolids but does not list all anticipated contaminants that may be present in the sludges, including chemicals of emerging concern. The potential for chemicals of emerging concern (including pharmaceuticals, surfactants and flame retardant chemicals) to enter surface water and groundwater is well understood and is the subject of a recent definitive article in the journal Nature.[3] Particular concerns have been recently expressed by researchers about the ability of these chemicals to reach underlying groundwater or nearby surface water through infiltration and runoff.

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The PEIR should be revised to list anticipated chemical concentrations of all chemicals in the sludges, including chemicals of emerging concern. The PEIR should assess how application of the treated sludges (as biosolids) may potentially impact water quality (both surface water and groundwater) when used in land application or for landfill cover. Any potential impacts should be mitigated though use of best management practices for the control of stormwater discharge and infiltration of landfill wastes and though a monitoring program to ensure chemicals of emerging concern are not present in adjacent waterways, including both surface and groundwater monitoring.

Hazardous Waste Sites in Areas of Infrastructure Improvements are not Identified

The Program will require the construction of pipelines, booster stations, water purification facilities, and solids handling facilities. The Program describes potential pipeline routes that would traverse 50 miles of urban landscape (p. 11-16), undoubtedly beneath sites that have been contaminated by industrial activities, including gas stations, manufacturing facilities, and military sites. A revised PEIR needs to be prepared to identify where these contaminated sites are located and what impacts will result from disturbance of soils and groundwater during Program construction.

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The PEIR does not include Phase I Environmental Site Assessments to address potential hazardous waste conditions in areas of Program infrastructure improvements, stating only:

[3] http://www.nature.com/articles/srep03731

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> As indicated above, no Environmental Site Assessments were conducted for this PEIR, due to the large number and scale of Program components. Hazardous material sites are located throughout the Program area, as indicated by a database search of the DTSC EnviroStor database (DTSC 2015). Hazardous materials sites include automotive uses such as gas and service stations, dry cleaners, disposal sites, power generation sites, and industrial or manufacturing uses, among other uses. Due to their extensive nature, Program components would likely be located in the vicinity of areas of known contamination included on a hazardous material sites list compiled pursuant to Government Code Section 6596.25. (p. 5.3-21).

To address potential hazardous waste concerns the PEIR includes mitigation measure MM-HAZ-6 which requires:

> Subsequent projects, implemented in accordance with the Program, shall conduct a site-specific record search for the locations and type of hazardous materials to the satisfaction of the City of San Diego. An analysis shall be conducted for each Program component to determine whether a proposed facility is (1) located within 1,000 feet of a known contamination site; (2) located within 2,000 feet of a known 'border zone property' (also known as a 'Superfund' site) or a hazardous waste property subject to corrective action pursuant to the Health and Safety Code; (3) where a DEH site file is closed; (4) located in Centre City San Diego (now known as Downtown San Diego), Barrio Logan or other areas known or suspected to contain contamination sites; (5) located on or near an active or former landfill; or (5) properties historically developed with industrial or commercial uses which involved dewatering. In the event that one of the above conditions is met, the City shall coordinate with the Department of Environmental Health to determine the appropriate corrective action (i.e., remediation) or avoidance measures (i.e. alternative facility siting). (p. 5.3-22).

Instead, the Phase I ESAs should be conducted now for sites along the proposed pipeline routes and in other areas of infrastructure improvement. In a revised PEIR, the results of the Phase I ESAs should be used to estimate impacts that will result when construction of these facilities encounter contaminated soil and groundwater, including:

- Health impacts that would result from construction worker exposure to contaminants;
- Public health impacts resulting from residents and others who may be exposed to contaminated soil and dust in areas where cleanup is necessary; and
- Air emissions that would result from the excavation and transportation of contaminated soil to disposal facilities.

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Air Quality

Diesel Particulate Matter Health Risk Emissions Inadequately Evaluated

The PEIR concludes that the health risk posed to nearby sensitive receptors from exposure to diesel particulate matter (DPM) emissions released during construction would be less than significant, yet fails to quantify the risk and compare it to applicable thresholds (p. 5.2-36). The PEIR attempts to justify the omission of an actual health risk assessment (HRA), by stating:

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"Construction of the Program components would not require the extensive use of heavy-duty construction equipment…and would not involve extensive use of diesel trucks…Construction of Program components would occur in three phases of 2-3 years each and would be periodic and short term within each phase. Following completion of construction activities, project-related TAC emissions would cease. Additionally operational diesel-powered generators would only operate during testing and maintenance periods, and during emergency power outages. Therefore, the Program would not result in a long-term (i.e., 70-year), permanent source of TAC emissions. No residual TAC emissions and corresponding cancer risk are anticipated after construction, nor are any long-term sources of TAC emissions anticipated during operation of the Program" (p. 5.2-35).

Furthermore, the PEIR states that "program-generation of criteria pollutants and TACs were found to be less than significant, and associated impacts to sensitive receptors would be considered less than significant at the program level" (p. 5.2-36). This justification, however, is incorrect. The PEIR assumes that because construction would occur over a period of time shorter than 70 years, and because each component will occur in phases, health risk from construction activities would be less than significant. However, construction of the entire Program is anticipated to occur over a 13-year period (PEIR, p. 5.2-18). It is unreasonable to characterize 13 years of construction as a short duration of time, as implied by the PEIR.

Omission of a quantified health risk due to the assumption that construction would occur periodically and over a short period of time within each phase is inconsistent with the most recent guidance published by Office of Environmental Health Hazard Assessment (OEHHA), the organization responsible for providing recommendations and guidance on how to conduct health risk assessments in California. In February of 2015, OEHHA released its most recent *Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments*, which was formally adopted in March of 2015.[4] This guidance document describes the types of projects that warrant the preparation of a health risk assessment. Construction of the Program will produce emissions of DPM, a human carcinogen, through the exhaust stacks of construction equipment over a total construction period of approximately 13 year (PEIR, p. 5.2-18), with each component requiring at least a year of construction. The OEHHA document recommends that all short-term projects lasting at least two months be evaluated for cancer risks to nearby sensitive receptors.[5] This recommendation reflects the most recent health risk policy, and as such, an assessment of health risks to nearby sensitive receptors from construction should be included in a revised CEQA evaluation for the Project.

In addition, each of the Program's components would require the use of construction equipment and therefore would release DPM emissions. Therefore, stating that the components would not require "extensive use of heavy-duty construction equipment" and "extensive use of diesel trucks" (PEIR, p. 5.2-35) does not justify omission of a HRA. Even if construction equipment is not used "extensively", DPM

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[4] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* http://oehha.ca.gov/air/hot_spots/hotspots2015.html
[5] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf, p. 8-18

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emissions will be emitted and will result in potential health risk that should be quantified. Finally, even though DPM emissions will cease after completion of construction activities, emissions released over the 13-year construction period still pose a risk to sensitive receptors and will increase the cancer risk. In an effort to demonstrate this, we prepared a screening-level health risk assessment. The results of our assessment, as described below, demonstrate that construction-related DPM emissions may result in a significant health risk impact.

Modeling Parameters

As of 2011, the United States Environmental Protection Agency (EPA) recommends AERSCREEN as the leading air dispersion model, due to improvements in simulating local meteorological conditions based on simple input parameters.[6] The model replaced SCREEN3, which is included in OEHHA[7] and CAPCOA[8] guidance as the appropriate air dispersion model for Level 2 health risk screening assessments ("HRSAs"). A Level 2 HRSA utilizes a limited amount of site-specific information to generate maximum reasonable downwind concentrations of air contaminants to which nearby sensitive receptors may be exposed. If an unacceptable air quality hazard is determined to be possible using AERSCREEN, a more refined modeling approach is required prior to approval of the Project.

We prepared a preliminary HRSA of the construction emissions for the NCAWPF (North City Advanced Water Purification Facility), CAAWPF (Central Area Advance Water Purification Facility), CAWRP (Central Area Water Reclamation Plant), and SBAWPF (South Bay Advanced Water Purification Facility). We utilized the annual exhaust emission estimates from the PEIR's CalEEMod models, which can be found within Appendix E of the PEIR for these facilities. According to the construction schedules utilized in the CalEEMod model, construction of each of these facilities will take approximately two years and continue through July 2031 (see table below).

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Component	Name	Start Date	End Date	Number of Days
North City	NCAWPF	5/15/2019	5/15/2021	731
Central Area	CDAWPF	4/1/2026	3/31/2028	730
Central Area	CDWRP	7/1/2025	12/31/2027	913
South Bay	SBAWPF	8/15/2029	7/31/2031	715

The AERSCREEN model relies on a continuous average emission rate to simulate maximum downwind concentrations from point, area, and volume emission sources. To account for the variability in

[6] "AERSCREEN Released as the EPA Recommended Screening Model," USEPA, April 11, 2011, *available at:* http://www.epa.gov/ttn/scram/guidance/clarification/20110411_AERSCREEN_Release_Memo.pdf
[7] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf
[8] "Health Risk Assessments for Proposed Land Use Projects," CAPCOA, July 2009, *available at:* http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf

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construction equipment usage for each phase of construction, we calculated an average DPM emission rate by the following equation.

$$Emission\ Rate\ \left(\frac{grams}{second}\right) = \frac{lbs\ of\ DPM}{days\ of\ Construction} \times \frac{453.6\ grams}{lb} \times \frac{1\ day}{24\ hours} \times \frac{1\ hour}{3{,}600\ seconds}$$

Because the duration, start year, and year of completion vary between construction of each facility, we calculated an emission rate specific for each facility (see table below).

Component	Name	DPM Emissions (tons/year)[1]	Number of Days	Emission Rate (g/s)[2]
North City	NCAWPF	0.2104	731	0.00302
Central Area	CAAWPF	0.0988	730	0.00142
Central Area	CAWRP	0.1246	913	0.00143
South Bay	SBAWPF	0.0672	715	0.00099

[1] Values representative of Exhaust PM10 Emissions taken from the CalEEMod output files located in Appendix E of the PEIR. Source: Appendix E, pp. 184, 98, 121, 246

[2] Emission rate was calculated by dividing the annual emissions by the construction duration for each phase. 2,000 pounds/ton; 453.6 grams/pound; 24 hours/day; 3,600 seconds/hour

Construction activity for the NCAWPF was simulated as a 13-acre rectangular area source in AERSCREEN, with dimensions of 230 meters by 230 meters. The CAAWPF was modeled as an 11-acre rectangular area source with dimensions of 250 meters by 175 meters and the CAWRP was modeled as a 24-acre rectangular area source with dimensions of 350 meters by 275 meters. Finally, the SBAWPF was modeled as a 6.7-acre rectangular area source with dimensions of 175 meters by 155 meters. A release height of three meters was selected to represent the height of exhaust stacks on construction equipment, and an initial vertical dimension of one and a half meters was used to simulate instantaneous plume dispersion upon release. An urban meteorological setting was selected with model-default inputs for wind speed and direction distribution.

Modeling Outputs

The AERSCREEN model generated maximum reasonable estimates of single hour downwind DPM concentrations from the Project site. EPA guidance suggests that in screening procedures, the annualized average concentration of an air pollutant may be estimated by multiplying the single-hour concentration by 10%.[3] Because this is a Program level EIR, many details of each individual component of the Program are not fully known and are subject to change. As such, the specific distances of sensitive receptors are not known. However, the PEIR states that the land uses surrounding the North City components, Central Area components, and South bay components include residential and commercial development (p. 2-3). Furthermore, because many components of the Program will not be constructed for years, there is the potential for additional Projects to be developed near the various Program sites that may result in additional sensitive receptors. As a result, we evaluated the health risk posed to receptors at 150 meters (approximately 500 feet) and 300 meters (approximately 1000 feet) away from

[3] http://www.epa.gov/ttn/scram/guidance/guide/EPA-454R-92-019_OCR.pdf

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each facility using the maximum single-hour concentration output values produced in AERSCREEN for these distances (see tables below).

Receptor 150 Meters Away

Component	Facility Name	Maximum Single Hour DPM Concentration ($\mu g/m^3$)	Annualized Average DPM Concentration ($\mu g/m^3$)
North City	NCAWPF	2.121	0.212
Central Area	CAAWPF	1.147	0.115
Central Area	CAWRP	0.604	0.060
South Bay	SBAWPF	0.682	0.068

Receptor 300 Meters Away

Component	Facility Name	Maximum Single Hour DPM Concentration ($\mu g/m^3$)	Annualized Average DPM Concentration ($\mu g/m^3$)
North City	NCAWPF	0.725	0.072
Central Area	CAAWPF	0.364	0.036
Central Area	CAWRP	0.331	0.033
South Bay	SBAWPF	0.260	0.026

Exposure Assumptions

We calculated the excess cancer risk for each sensitive receptor location, for adults, children, and/or infant receptors using applicable HRA methodologies prescribed by OEHHA. OEHHA recommends the use of Age Sensitivity Factors ("ASFs") to account for the heightened susceptibility of young children to the carcinogenic toxicity of air pollution.[10] According to the revised guidance, quantified cancer risk should be multiplied by a factor of ten during the first two years of life (infant), and by a factor of three for the subsequent fourteen years of life (child aged two until sixteen). Furthermore, in accordance with guidance set forth by the SCAQMD and OEHHA, we used 95th percentile breathing rates for infants and 80th percentile breathing rates for children and adults.[11] We used a cancer potency factor of 1.1 (mg/kg-day)$^{-1}$ and an averaging time of 25,550 days.

Health Risk at NCAWPF

The results of our calculations for sensitive receptors located 150 meters away from the NCAWPF are shown below.

Parameter	Description	Units	Adult	Child	Infant
C_{air}	Concentration	$\mu g/m^3$	0.2121	0.2121	0.2121

[10] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf

[11] "Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics 'Hot Spots' Information and Assessment Act," SCAQMD, June 5, 2015, *available at:* http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab2588-risk-assessment-guidelines.pdf?sfvrsn=6, p. 19

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DBR	Daily breathing rate	L/kg-day	230	640	1090
EF	Exposure Frequency	days/year	350	350	350
ED	Exposure Duration	years	2	2	2
AT	Averaging Time	days	25550	25550	25550
	Inhaled Dose	(mg/kg-day)	1.3E-06	3.7E-06	6.3E-06
CPF	Cancer Potency Factor	1/(mg/kg-day)	1.1	1.1	1.1
ASF	Age Sensitivity Factor	-	1	3	10
	Cancer Risk		**1.47E-06**	**1.23E-05**	**6.97E-05**

The excess cancer risk to adults, children, and infants during Project construction for sensitive receptors 150 meters away are 1.47, 12.3, and 69.7 in one million, respectively. The child and infantile exposure for the sensitive receptors exceeds the San Diego Air Pollution Control District's (SDAPCD) threshold of 10 in one million. The results of our calculations for sensitive receptors located 300 meters away from the NCAWPF are shown below.

Parameter	Description	Units	Adult	Child	Infant
C_{air}	Concentration	µg/m³	0.07246	0.07246	0.07246
DBR	Daily breathing rate	L/kg-day	230	640	1090
EF	Exposure Frequency	days/year	350	350	350
ED	Exposure Duration	years	2	2	2
AT	Averaging Time	days	25550	25550	25550
	Inhaled Dose	(mg/kg-day)	4.6E-07	1.3E-06	2.2E-06
CPF	Cancer Potency Factor	1/(mg/kg-day)	1.1	1.1	1.1
ASF	Age Sensitivity Factor	-	1	3	10
	Cancer Risk		**5.02E-07**	**4.19E-06**	**2.38E-05**

The excess cancer risk to adults, children, and infants during Project construction for sensitive receptors 300 meters away are 0.502, 4.16, and 23.8 in one million, respectively. The infantile exposure for the sensitive receptors exceeds the SDAPCD threshold of 10 in one million. Because the child and infantile risk at 150 meters, and the infantile risk at 300 meters exceed the SDAPCD threshold of 10 in one million, the Program component could have a potentially significant health risk impact to sensitive receptors.

Health Risk at CAAWPF

The results of our calculations for sensitive receptors located 150 meters away from the CAAWPF are shown below.

Parameter	Description	Units	Adult	Child	Infant
C_{air}	Concentration	µg/m³	0.1147	0.1147	0.1147
DBR	Daily breathing rate	L/kg-day	230	640	1090
EF	Exposure Frequency	days/year	350	350	350

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ED	Exposure Duration	years	2	2	2
AT	Averaging Time	days	25550	25550	25550
	Inhaled Dose	(mg/kg-day)	7.2E-07	2.0E-06	3.4E-06
CPF	Cancer Potency Factor	1/(mg/kg-day)	1.1	1.1	1.1
ASF	Age Sensitivity Factor	-	1	3	10
	Cancer Risk		**7.95E-07**	**6.64E-06**	**3.77E-05**

The excess cancer risk to adults, children, and infants during Project construction for sensitive receptors 150 meters away are 0.795, 6.64, and 37.7 in one million, respectively. The infantile exposure for the sensitive receptors exceeds the SDAPCD threshold of 10 in one million. The results of our calculations for sensitive receptors located 300 meters away from the CAAWPF are shown below.

Parameter	Description	Units	Adult	Child	Infant
C_{air}	Concentration	µg/m³	0.03644	0.03644	0.03644
DBR	Daily breathing rate	L/kg-day	230	640	1090
EF	Exposure Frequency	days/year	350	350	350
ED	Exposure Duration	years	2	2	2
AT	Averaging Time	days	25550	25550	25550
	Inhaled Dose	(mg/kg-day)	2.3E-07	6.4E-07	1.1E-06
CPF	Cancer Potency Factor	1/(mg/kg-day)	1.1	1.1	1.1
ASF	Age Sensitivity Factor	-	1	3	10
	Cancer Risk		**2.53E-07**	**2.11E-06**	**1.20E-05**

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The excess cancer risk to adults, children, and infants during Project construction for sensitive receptors 300 meters away are 0.253, 2.11, and 12.0 in one million, respectively. The infantile exposure for the sensitive receptors exceeds the SDAPCD threshold of 10 in one million. Because the infantile risk at 150 and 300 meters exceed the threshold of 10 in one million, the Program component could have a potentially significant health risk impact to sensitive receptors.

Health Risk at CAWRP

The results of our calculations for sensitive receptors located 150 meters away from the CAWRP are shown below.

Parameter	Description	Units	Adult	Child	Infant
C_{air}	Concentration	µg/m³	0.0604	0.0604	0.0604
DBR	Daily breathing rate	L/kg-day	230	640	1090
EF	Exposure Frequency	days/year	350	350	350
ED	Exposure Duration	years	2.5	2.5	2.5
AT	Averaging Time	days	25550	25550	25550
	Inhaled Dose	(mg/kg-day)	4.8E-07	1.3E-06	2.3E-06
CPF	Cancer Potency Factor	1/(mg/kg-day)	1.1	1.1	1.1

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ASF	Age Sensitivity Factor	-	1	3	10
	Cancer Risk		**5.23E-07**	**4.37E-06**	**2.48E-05**

The excess cancer risk to adults, children, and infants during Project construction for sensitive receptors 150 meters away are 0.523, 4.37, and 24.8 in one million, respectively. The infantile exposure for the sensitive receptors exceeds the SDAPCD threshold of 10 in one million. The results of our calculations for sensitive receptors located 300 meters away from the CAWRP are shown below.

Parameter	Description	Units	Adult	Child	Infant
C_{air}	Concentration	µg/m³	0.03312	0.03312	0.03312
DBR	Daily breathing rate	L/kg-day	230	640	1090
EF	Exposure Frequency	days/year	350	350	350
ED	Exposure Duration	years	2.5	2.5	2.5
AT	Averaging Time	days	25550	25550	25550
	Inhaled Dose	(mg/kg-day)	2.6E-07	7.3E-07	1.2E-06
CPF	Cancer Potency Factor	1/(mg/kg-day)	1.1	1.1	1.1
ASF	Age Sensitivity Factor	-	1	3	10
	Cancer Risk		**2.87E-07**	**2.40E-06**	**1.36E-05**

The excess cancer risk to adults, children, and infants during Project construction for sensitive receptors 300 meters away are 0.287, 2.40, and 13.6 in one million, respectively. The infantile exposure for the sensitive receptors exceeds the SDAPCD threshold of 10 in one million. Because the infantile risk at 150 and 300 meters exceed the threshold of 10 in one million, the Program component could have a potentially significant health risk impact to sensitive receptors.

Health Risk at SBAWPF

The results of our calculations for sensitive receptors located 150 meters away from the SBAWPF are shown below.

Parameter	Description	Units	Adult	Child	Infant
C_{air}	Concentration	µg/m³	0.0682	0.0682	0.0682
DBR	Daily breathing rate	L/kg-day	230	640	1090
EF	Exposure Frequency	days/year	350	350	350
ED	Exposure Duration	years	1.96	1.96	1.96
AT	Averaging Time	days	25550	25550	25550
	Inhaled Dose	(mg/kg-day)	4.2E-07	1.2E-06	2.0E-06
CPF	Cancer Potency Factor	1/(mg/kg-day)	1.1	1.1	1.1
ASF	Age Sensitivity Factor	-	1	3	10
	Cancer Risk		**4.63E-07**	**3.87E-06**	**2.20E-05**

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The excess cancer risk to adults, children, and infants during Project construction for sensitive receptors 150 meters away are 0.463, 3.87, and 22.0 in one million, respectively. The infantile exposure for the sensitive receptors exceeds the SDAPCD threshold of 10 in one million. The results of our calculations for sensitive receptors located 300 meters away from the SBAWPF are shown below.

Parameter	Description	Units	Adult	Child	Infant
C_{air}	Concentration	$\mu g/m^3$	0.02599	0.02599	0.02599
DBR	Daily breathing rate	L/kg-day	230	640	1090
EF	Exposure Frequency	days/year	350	350	350
ED	Exposure Duration	years	1.96	1.96	1.96
AT	Averaging Time	days	25550	25550	25550
	Inhaled Dose	(mg/kg-day)	1.6E-07	4.5E-07	7.6E-07
CPF	Cancer Potency Factor	1/(mg/kg-day)	1.1	1.1	1.1
ASF	Age Sensitivity Factor	-	1	3	10
	Cancer Risk		**1.77E-07**	**1.47E-06**	**8.37E-06**

The excess cancer risk to adults, children, and infants during Project construction for sensitive receptors 300 meters away are 0.177, 1.47, and 8.37 in one million, respectively. Although the health risk at 300 meters does not exceed the threshold of 10 in one million, because the infantile risk at 150 meters exceed the threshold, the Program component could have a potentially significant health risk impact to sensitive receptors.

As demonstrated in the calculations above, the health risk posed to sensitive receptors within 300 meters exceeds the 10 in one million threshold for every facility except the SBAWPF, which poses a health risk at 150 meters away. It should be noted that our health risk assessment uses the annual average concentrations for the construction of the following facilities – NCAWPF, CAAWPF, CAWRP, and the SBAWPF – exclusively. However, many other Program components (such as pump stations and WRP expansions) may be constructed at the same time, within the same area, which may increase the actual concentration of DPM emitted in any given location. As a result, the health risk posed to nearby sensitive receptors from exposure to construction emissions mat be higher than what is estimated here. Regardless, our analysis demonstrates that construction of the Program components would result in a significant health risk impact, which is contrary to the significance determination made within the PEIR. As a result, a refined health risk assessment must be prepared to examine air quality impacts generated by Project construction using site-specific meteorology and specific equipment usage schedules, and appropriate mitigation measures must be adopted to mitigate these risks to less than significant levels.

Sincerely,

Matt Hagemann, P.G., C.Hg.

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Jessie Jaeger

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Education:
M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.
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Professional Certifications:
California Professional Geologist
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Professional Experience:
Matt has 25 years of experience in environmental policy, assessment and remediation. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) while also working with permit holders to improve hydrogeologic characterization and water quality monitoring.

Matt has worked closely with U.S. EPA legal counsel and the technical staff of several states in the application and enforcement of RCRA, Safe Drinking Water Act and Clean Water Act regulations. Matt has trained the technical staff in the States of California, Hawaii, Nevada, Arizona and the Territory of Guam in the conduct of investigations, groundwater fundamentals, and sampling techniques.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 - present);
- Geology Instructor, Golden West College, 2010 - 2104;
- Senior Environmental Analyst, Komex H2O Science, Inc. (2000 – 2003);

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- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

Senior Regulatory and Litigation Support Analyst:

With SWAPE, Matt's responsibilities have included:

- Lead analyst and testifying expert in the review of over 100 environmental impact reports since 2003 under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, Valley Fever, greenhouse gas emissions, and geologic hazards. Make recommendations for additional mitigation measures to lead agencies at the local and county level to include additional characterization of health risks and implementation of protective measures to reduce worker exposure to hazards from toxins and Valley Fever.
- Stormwater analysis, sampling and best management practice evaluation at industrial facilities.
- Manager of a project to provide technical assistance to a community adjacent to a former Naval shipyard under a grant from the U.S. EPA.
- Technical assistance and litigation support for vapor intrusion concerns.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.
- Expert witness on two cases involving MTBE litigation.
- Expert witness and litigation support on the impact of air toxins and hazards at a school.
- Expert witness in litigation at a former plywood plant.

With Komex H2O Science Inc., Matt's duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.

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- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.

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- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

Executive Director:

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the discharge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

Hydrogeology:

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted public hearings, and responded to public comments from residents who were very concerned about the impact of designation.

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- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation-wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

Policy:

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9. Activities included the following:

- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, Oxygenates in Water: Critical Information and Research Needs.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific principles into the policy-making process.
- Established national protocol for the peer review of scientific documents.

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Geology:

With the U.S. Forest Service, Matt led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities were as follows:

- Mapped geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.
- Coordinated his research with community members who were concerned with natural resource protection.
- Characterized the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, Matt led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervised year-long effort for soil and groundwater sampling.
- Conducted aquifer tests.
- Investigated active faults beneath sites proposed for hazardous waste disposal.

Teaching:

From 1990 to 1998, Matt taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.

Matt taught physical geology (lecture and lab and introductory geology at Golden West College in Huntington Beach, California from 2010 to 2014.

Invited Testimony, Reports, Papers and Presentations:

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the Public Environmental Law Conference, Eugene, Oregon.

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S. EPA Region 9, San Francisco, California.

Hagemann, M.F., 2005. Use of Electronic Databases in Environmental Regulation, Policy Making and Public Participation. Brownfields 2005, Denver, Coloradao.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

Hagemann, M.F., 2004. Invited testimony to a California Senate committee hearing on air toxins at schools in Southern California, Los Angeles.

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Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal repesentatives, Parker, AZ.

Hagemann, M.F., 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

Hagemann, M.F., 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

Hagemann, M.F., 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

Hagemann, M.F., 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

Hagemann, M.F., 2002. An Estimate of the Cost to Address MTBE Contamination in Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

Hagemann, M.F., 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

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Hagemann, M.F., 2001. Estimated Cleanup Cost for MTBE in Groundwater Used as Drinking Water. Unpublished report.

Hagemann, M.F., 2001. Estimated Costs to Address MTBE Releases from Leaking Underground Storage Tanks. Unpublished report.

Hagemann, M.F., and VanMouwerik, M., 1999. Potential Water Quality Concerns Related to Snowmobile Usage. Water Resources Division, National Park Service, Technical Report.

VanMouwerik, M. and **Hagemann, M.F.** 1999, Water Quality Concerns Related to Personal Watercraft Usage. Water Resources Division, National Park Service, Technical Report.

Hagemann, M.F., 1999, Is Dilution the Solution to Pollution in National Parks? The George Wright Society Biannual Meeting, Asheville, North Carolina.

Hagemann, M.F., 1997, The Potential for MTBE to Contaminate Groundwater. U.S. EPA Superfund Groundwater Technical Forum Annual Meeting, Las Vegas, Nevada.

Hagemann, M.F., and Gill, M., 1996, Impediments to Intrinsic Remediation, Moffett Field Naval Air Station, Conference on Intrinsic Remediation of Chlorinated Hydrocarbons, Salt Lake City.

Hagemann, M.F., Fukunaga, G.L., 1996, The Vulnerability of Groundwater to Anthropogenic Contaminants on the Island of Maui, Hawaii. Hawaii Water Works Association Annual Meeting, Maui, October 1996.

Hagemann, M. F., Fukanaga, G. L., 1996, Ranking Groundwater Vulnerability in Central Oahu, Hawaii. Proceedings, Geographic Information Systems in Environmental Resources Management, Air and Waste Management Association Publication VIP-61.

Hagemann, M.F., 1994. Groundwater Characterization and Cleanup at Closing Military Bases in California. Proceedings, California Groundwater Resources Association Meeting.

Hagemann, M.F. and Sabol, M.A., 1993. Role of the U.S. EPA in the High Plains States Groundwater Recharge Demonstration Program. Proceedings, Sixth Biennial Symposium on the Artificial Recharge of Groundwater.

Hagemann, M.F., 1993. U.S. EPA Policy on the Technical Impracticability of the Cleanup of DNAPL-contaminated Groundwater. California Groundwater Resources Association Meeting.

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Hagemann, M.F., 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce of Prevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

Other Experience:
Selected as subject matter expert for the California Professional Geologist licensing examination, 2009-2011.

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JESSIE MARIE JAEGER

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

SOIL WATER AIR PROTECTION ENTERPRISE
2656 29th Street, Suite 201
Santa Monica, California 90405
Mobile: (530) 867-6202
Office: (310) 452-5555
Fax: (310) 452-5550
Email: jessie@swape.com

EDUCATION

UNIVERSITY OF CALIFORNIA, LOS ANGELES **B.S. CONSERVATION BIOLOGY & ENVIRONMENTAL SCIENCES** *JUNE 2014*

PROJECT EXPERIENCE

SOIL WATER AIR PROTECTION ENTERPRISE ***SANTA MONICA, CA***

AIR QUALITY SPECIALIST

SENIOR ANALYST: CEQA ANALYSIS & MODELING

- Calculated roadway, stationary source, and cumulative impacts for risk and hazard analyses at proposed land use projects.
- Quantified criteria air pollutant and greenhouse gas emissions released during construction and operational activities of proposed land use projects using CalEEMod and EMFAC2011 emission factors.
- Utilized AERSCREEN, a screening dispersion model, to determine the ambient air concentrations at sensitive receptor locations.
- Organized presentations containing figures and tables comparing results of particulate matter analyses to CEQA thresholds.
- Prepared reports that discuss results of the health risk analyses conducted for several land use redevelopment projects.

SENIOR ANALYST: GREENHOUSE GAS MODELING AND DETERMINATION OF SIGNIFICANCE

- Quantified greenhouse gas (GHG) emissions of a "business as usual" scenario for proposed land use projects using CalEEMod.
- Determined compliance of proposed projects with AB 32 GHG reduction targets, with measures described in CARB's Scoping Plan for each land use sector, and with GHG significance thresholds recommended by various Air Quality Management Districts in California.
- Produced tables and figures that compare the results of the GHG analyses to applicable CEQA thresholds and reduction targets.

PROJECT MANAGER: OFF-GASSING OF FORMALDEHYDE FROM FLOORING PRODUCTS

- Determined the appropriate standard test methods to effectively measure formaldehyde emissions from flooring products.
- Compiled and analyzed laboratory testing data. Produced tables, charts, and graphs to exhibit emission levels.
- Compared finalized testing data to Proposition 65 No Significant Risk Level (NSRL) and to CARB's Phase 2 Standard.
- Prepared a final analytical report and organized supporting data for use as Expert testimony in environmental litigation.
- Participated in meetings with clients to discuss project strategy and identify solutions to achieve short and long term goals.

PROJECT ANALYST: EXPOSURE ASSESSMENT OF CONTAMINANTS EMITTED BY INCINERATOR

- Reviewed and organized sampling data, and determined the maximum levels of arsenic, dioxin, and lead in soil samples.
- Determined cumulative and hourly particulate deposition of incinerator and modeled particle dispersion locations using GIS and AERMOD.
- Conducted risk assessment using guidance set forth by the Office of Environmental Health Hazard Assessment (OEHHA).
- Utilized LeadSpreadB to evaluate exposure, and the potential adverse health effects from exposure, to lead in the environment.
- Compared final results of assessment to the Environmental Protection Agency's (EPA) Regional Screening Levels (RSLs).

ACCOMPLISHMENTS

- **Recipient,** Bruins Advantage Scholarship, University of California, Los Angeles ***SEPT 2010 – JUNE 2014***
- **Academic Honoree,** Dean's List, University of California, Los Angeles ***SEPT 2013 – JUNE 2014***
- **Academic Wellness Director,** UCLA Undergraduate Students Associated Council ***SEPT 2013 – JUNE 2014***
- **Student Groups Support Committee Member,** UCLA Undergraduate Students Associated Council ***SEPT 2012 – JUNE 2013***

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Comment Letter K

PALA TRIBAL HISTORIC
PRESERVATION OFFICE

PMB 50, 35008 Pala Temecula Road
Pala, CA 92059
760-891-3510 Office | 760-742-3189 Fax

PALA THPO

March 21, 2016

Martha Blake
City of San Diego Planning Dept.
1010 2nd Ave, Suite 1200
San Diego, CA 92101

Re: Pure Water Program- Project no. 438188

Dear Mrs. Blake:

The Pala Band of Mission Indians Tribal Historic Preservation Office has received your notification of the project referenced above. This letter constitutes our response on behalf of Robert Smith, Tribal Chairman.

We have consulted our maps and determined that the project as described is not within the boundaries of the recognized Pala Indian Reservation. The project is also beyond the boundaries of the territory that the tribe considers its Traditional Use Area (TUA). Therefore, we have no objection to the continuation of project activities as currently planned and we defer to the wishes of Tribes in closer proximity to the project area.

K-1

We appreciate involvement with your initiative and look forward to working with you on future efforts. If you have questions or need additional information, please do not hesitate to contact me by telephone at 760-891-3515 or by e-mail at sgaughen@palatribe.com.

Sincerely,

Shasta C. Gaughen, PhD
Tribal Historic Preservation Officer
Pala Band of Mission Indians

ATTENTION: THE PALA TRIBAL HISTORIC PRESERVATION OFFICE IS RESPONSIBLE FOR ALL REQUESTS FOR CONSULTATION. PLEASE ADDRESS CORRESPONDENCE TO SHASTA C. GAUGHEN AT THE ABOVE ADDRESS. IT IS NOT NECESSARY TO ALSO SEND NOTICES TO PALA TRIBAL CHAIRMAN ROBERT SMITH.

Consultation letter 1

Response to Comment Letter K

Pala Tribal Historic Preservation Office
Shasta C. Gaughen
March 21, 2016

K-1 The Pala Band of Mission Indians received a copy of the Draft EIR along with all federally recognized and culturally affiliated tribal groups in San Diego County. At the close of public review, only two comment letters were received from San Diego County Native American tribal groups indicating that the project is not within the their aboriginal territory or boundaries of the territory the tribe considers its Traditional Use Area (TUA). No other comment letters were received from any San Diego County Native American tribal group or individual as a result of this process.

In accordance with the City of San Diego's General Plan Historic Preservation Element and the City's Historical Resources Guidelines, Native American monitors are required on all projects within City jurisdiction when significant archaeological resources have been identified, and during each phase of a project that involves either survey or ground disturbing activities on projects. In addition, the City is committed to an on-going relationship with the local Native American community through informal meetings and/or regulatory compliance

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Comment Letter L

RINCON BAND OF LUISEÑO INDIANS
Environmental Department
1 W. Tribal Road - Valley Center, California 92082
(760) 297-2330 Fax:(760) 297-2339

February 25, 2016

Myra Herrmann
City of San Diego
Planning Department
1010 2nd Avenue, Suite 1200
East Tower, MS 413
San Diego, CA 92101

Re: Pure Water Program Project No. 438188

Dear Ms. Herrmann:

This letter is written on behalf of the Rincon Band of Luiseño Indians. Thank you for inviting us to submit comments on the Pure Water Program Project No. 438188. Rincon is submitting these comments concerning your projects potential impact on Luiseño cultural resources.

The Rincon Band has concerns for the impacts to historic and cultural resources and the finding of items of significant cultural value that could be disturbed or destroyed and are considered culturally significant to the Luiseño people. This is to inform you, your identified location is not within the Luiseño Aboriginal Territory. We recommend that you locate a tribe within the project area to receive direction on how to handle any inadvertent findings according to their customs and traditions. L-1

If you would like information on tribes within your project area, please contact the Native American Heritage Commission and they will assist with a referral.

Thank you for the opportunity to protect and preserve our cultural assets.

Sincerely,

Vincent Whipple
Manager
Rincon Cultural Resources Department

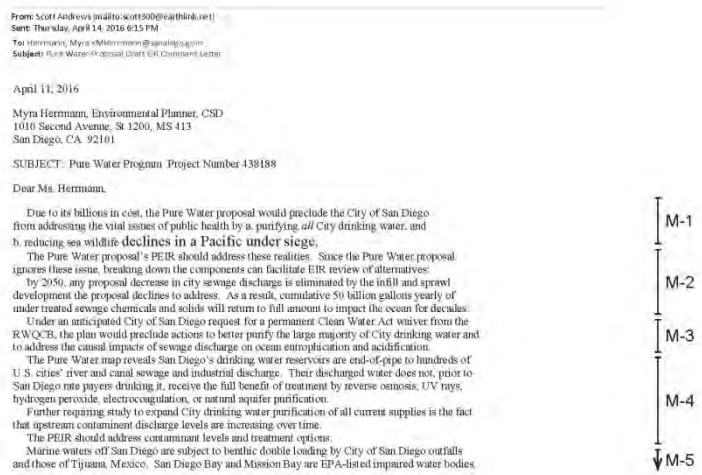
Bo Mazzetti, Tribal Chairman | Stephanie Spencer, Vice Chairwoman | Steve Stallings, Council Member | Laurie E. Gonzalez, Council Member | Alfonso Kolb, Council Member

Response to Comment Letter L

Rincon Band of Luiseño Indians
Vincent Whipple
February 25, 2016

L-1 Comment noted. See Response to Comment K-1.

Comment Letter M



From: Scott Andrews [mailto:Scott300@earthlink.net]
Sent: Thursday, April 14, 2016 6:15 PM
To: Herrmann, Myra <MHerrmann@sandiego.gov>
Subject: Pure Water Proposal Draft EIR Comment Letter

April 11, 2016

Myra Herrmann, Environmental Planner, CSD
1010 Second Avenue, St 1200, MS 413
San Diego, CA 92101

SUBJECT: Pure Water Program Project Number 438188

Dear Ms. Herrmann,

Due to its billions in cost, the Pure Water proposal would preclude the City of San Diego from addressing the vital issues of public health by a. purifying *all* City drinking water, and b. reducing sea wildlife declines in a Pacific under siege.

The Pure Water proposal's PEIR should address these realities. Since the Pure Water proposal ignores these issue, breaking down the components can facilitate EIR review of alternatives:

by 2050, any proposal decrease in city sewage discharge is eliminated by the infill and sprawl development the proposal declines to address. As a result, cumulative 50 billion gallons yearly of under treated sewage chemicals and solids will return to full amount to impact the ocean for decades.

Under an anticipated City of San Diego request for a permanent Clean Water Act waiver from the RWQCB, the plan would preclude actions to better purify the large majority of City drinking water and to address the causal impacts of sewage discharge on ocean eutrophication and acidification.

The Pure Water map reveals San Diego's drinking water reservoirs are end-of-pipe to hundreds of U.S. cities' river and canal sewage and industrial discharge. Their discharged water does not, prior to San Diego rate payers drinking it, receive the full benefit of treatment by reverse osmosis, UV rays, hydrogen peroxide, electrocoagulation, or natural aquifer purification.

Further requiring study to expand City drinking water purification of all current supplies is the fact that upstream contaminent discharge levels are increasing over time.

The PEIR should address contaminant levels and treatment options.

Marine waters off San Diego are subject to benthic double loading by City of San Diego outfalls and those of Tijuana, Mexico. San Diego Bay and Mission Bay are EPA-listed impaired water bodies.

M-1
M-2
M-3
M-4
M-5

Response to Comment Letter M

Scott Andrews
April 11, 2016

M-1 Comment noted. Comment does not address the adequacy or accuracy of the Draft PEIR.

Potential impacts to public health are discussed in Sections 5.3.4 (water contamination) and 5.7.7 (water quality discharge) of the DPEIR. As discussed in the DPEIR, impacts to public health as it relates to water quality discharge would be less than significant with the incorporation of mitigation. Potential impacts to marine wildlife species are discussed in Section 5.4.10 (sensitive species) of the DPEIR. As discussed in the DPEIR, with implementation of mitigation, impacts to sensitive wildlife species would be less than significant.

M-2 Comment noted. The City of San Diego, in their 2015 Clean Water Act (CWA) Section 301(h) National Pollutant Elimination Discharge System (NPDES) permit application, commits to reducing influent flows and solids loads to PLWTP such that the ultimate discharge of total suspended solids is reduced to levels that would have occurred had the PLWTP been converted to secondary treatment standards. In order to continue operating the PLWTP under this standard

subject to tidal surges that bring in ocean pollution.

These environmental realities demand review, and the $3.5B City plan would further decimate Pacific sea life with the cumulative damage of billions of gallons of under treated industrial and household sewage discharge. Please address this urgent April 6, 2016 call by marine scientists:

"Leading [Scripps panel] Ocean Scientists Recommend Immediate, coordinated Action Plan to Combat changes to West Coast Seawater Chemistry"

So, the City of San Diego PEIR contemplates a proposal that specifically perpetuates a major California city's unhealthy drinking water and sewage-contaminated recreational coastal zone.

When the City applied for its last EPA NPDES discharge waiver, proponents of "Pure Water" argued desalination was prohibitively expensive, and that it was flawed due to larvae intake and briney outflow issues.

All of these considerations have now been handled, with private financing for desal plants, and by Coastal Commission edicts governing plant handling of sea water that protects sea life.

It is protection of sea life that federal and state marine administration legislation demands. Therefore it is incumbent on the PEIR to address alternatives that protect same.

The now-operating Carlsbad plant already supplies to the region 50 MGD drinking water of the proposal's 83 MGD. With the approximately 400 MGD total desalination plants' supply under active consideration for the Southern California/northern Baja region, any supply from the proposal would be redundant to these efforts.

As cities' desalination plants come on line, less water will be pulled from the aqueduct because cities will use desalination's purer drinking water product. This leaves more water in the canal for San Diego from the north.

I include a Pure Water Fact Sheet.

Scott Andrews
619 221-5947

M-5 Cont.

M-6

of "secondary treatment equivalency," discharge from the PLWTP will need to remain at or below levels equivalent to secondary treatment.

M-3 Please refer to Response M-1. Comment does not address the adequacy or accuracy of the Draft PEIR.

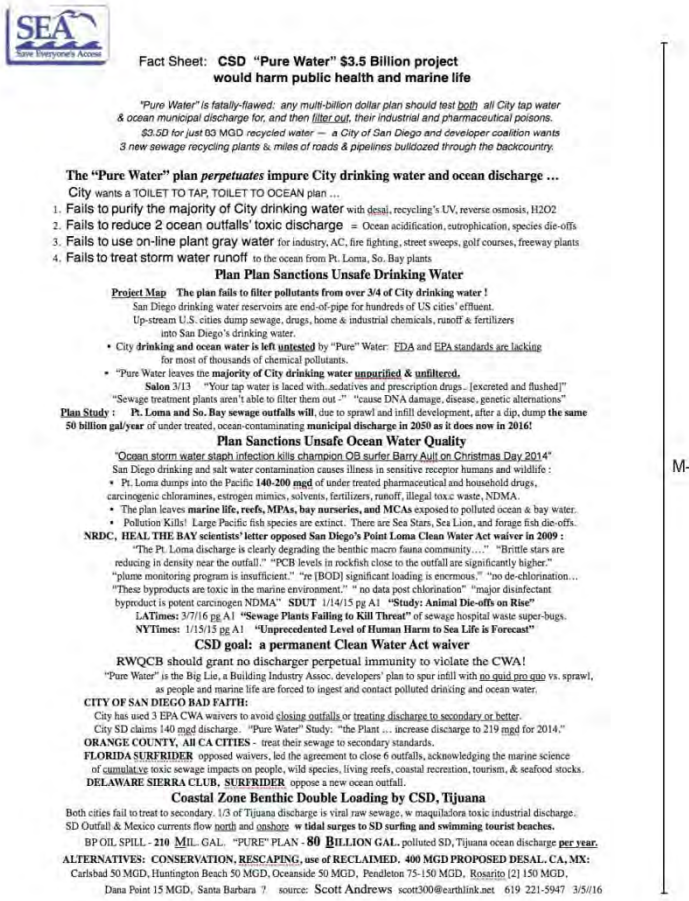
M-4 Comment noted. Please refer to Response M-1. Potential health and safety concerns regarding water contamination are discussed in Section 5.3.4 of the DPEIR.

M-5 Potential impacts to water quality discharge are discussed in Section 5.7.7 (water quality discharge) of the DPEIR. As discussed in the DPEIR, the Pure Water Program would result in reduced levels of total suspended solids discharged from the Point Loma Ocean Outfall.

M-5 Please refer to Response M-1. Comment does not address the adequacy or accuracy of the Draft PEIR.

M-6 Attachment received.

M-7 Comment noted.



Fact Sheet: **CSD "Pure Water" $3.5 Billion project would harm public health and marine life**

"Pure Water" is fatally-flawed: any multi-billion dollar plan should test both all City tap water & ocean municipal discharge for, and then filter out, their industrial and pharmaceutical poisons.
$3.5D for just 83 MGD recycled water – a City of San Diego and developer coalition wants 3 new sewage recycling plants & miles of roads & pipelines bulldozed through the backcountry.

The "Pure Water" plan *perpetuates* impure City drinking water and ocean discharge …

City wants a TOILET TO TAP, TOILET TO OCEAN plan …

1. Fails to purify the majority of City drinking water with desal, recycling's UV, reverse osmosis, H2O2
2. Fails to reduce 2 ocean outfalls' toxic discharge = Ocean acidification, eutrophication, species die-offs
3. Fails to use on-line plant gray water for industry, AC, fire fighting, street sweeps, golf courses, freeway plants
4. Fails to treat storm water runoff to the ocean from Pt. Loma, So. Bay plants

Plan Plan Sanctions Unsafe Drinking Water

Project Map **The plan fails to filter pollutants from over 3/4 of City drinking water !**
San Diego drinking water reservoirs are end-of-pipe for hundreds of US cities' effluent.
Up-stream U.S. cities dump sewage, drugs, home & industrial chemicals, runoff & fertilizers into San Diego's drinking water.

- City **drinking and ocean water is left untested** by "Pure" Water: FDA and EPA standards are lacking for most of thousands of chemical pollutants.
- "Pure Water leaves the **majority of City drinking water unpurified & unfilterd.**

Salon 3/13 "Your tap water is laced with..sedatives and prescription drugs.. [excreted and flushed]"
"Sewage treatment plants aren't able to filter them out -" "cause DNA damage, disease, genetic alternations"

Plan Study : Pt. Loma and So. Bay sewage outfalls will, due to sprawl and infill development, after a dip, dump **the same 50 billion gal/year** of under treated, ocean-contaminating **municipal discharge in 2050 as it does now in 2016!**

Plan Sanctions Unsafe Ocean Water Quality

"Ocean storm water staph infection kills champion OB surfer Barry Ault on Christmas Day 2014"
San Diego drinking and salt water contamination causes illness in sensitive receptor humans and wildlife :

- Pt. Loma dumps into the Pacific **140-200 mgd** of under treated pharmaceutical and household drugs, carcinogenic chloramines, estrogen mimics, solvents, fertilizers, runoff, illegal toxic waste, NDMA.
- The plan leaves **marine life, reefs, MPAs, bay nurseries, and MCAs** exposed to polluted ocean & bay water.
- Pollution Kills! Large Pacific fish species are extinct. There are Sea Stars, Sea Lion, and forage fish die-offs.

NRDC, HEAL THE BAY scientists' letter opposed San Diego's Point Loma Clean Water Act waiver in 2009 :
"The Pt. Loma discharge is clearly degrading the benthic macro fauna community…." "Brittle stars are reducing in density near the outfall." "PCB levels in rockfish close to the outfall are significantly higher." "plume monitoring program is insufficient." "re [BOD] significant loading is enormous." "no de-chlorination… "These byproducts are toxic in the marine environment." " no data post chlorination" "major disinfectant byproduct is potent carcinogen NDMA" **SDUT** 1/14/15 pg A1 **"Study: Animal Die-offs on Rise"**
LATimes: 3/7/16 pg A1 **"Sewage Plants Failing to Kill Threat"** of sewage hospital waste super-bugs.
NYTimes: 1/15/15 pg A1 **"Unprecedented Level of Human Harm to Sea Life is Forecast"**

CSD goal: a permanent Clean Water Act waiver

RWQCB should grant no discharger perpetual immunity to violate the CWA!
"Pure Water" is the Big Lie, a Building Industry Assoc. developers' plan to spur infill with no quid pro quo vs. sprawl, as people and marine life are forced to ingest and contact polluted drinking and ocean water.

CITY OF SAN DIEGO BAD FAITH:
City has used 3 EPA CWA waivers to avoid closing outfalls or treating discharge to secondary or better.
City SD claims 140 mgd discharge. "Pure Water" Study: "the Plant … increase discharge to 219 mgd for 2014."
ORANGE COUNTY, All CA CITIES - treat their sewage to secondary standards.
FLORIDA SURFRIDER opposed waivers, led the agreement to close 6 outfalls, acknowledging the marine science of cumulative toxic sewage impacts on people, wild species, living reefs, coastal recreation, tourism, & seafood stocks.
DELAWARE SIERRA CLUB, SURFRIDER oppose a new ocean outfall.

Coastal Zone Benthic Double Loading by CSD, Tijuana

Both cities fail to treat to secondary. 1/3 of Tijuana discharge is viral raw sewage, w maquiladora toxic industrial discharge.
SD Outfall & Mexico currents flow north and onshore **w tidal surges to SD surfing and swimming tourist beaches.**
BP OIL SPILL - **210** MIL. GAL. "PURE" PLAN - **80 BILLION GAL.** polluted SD, Tijuana ocean discharge **per year.**
ALTERNATIVES: CONSERVATION, RESCAPING, use of RECLAIMED. 400 MGD PROPOSED DESAL. CA, MX:
Carlsbad 50 MGD, Huntington Beach 50 MGD, Oceanside 50 MGD, Pendleton 75-150 MGD, Rosarito [2] 150 MGD, Dana Point 15 MGD, Santa Barbara ? source: Scott Andrews scott300@earthlink.net 619 221-5947 3/5//16

M-7

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Comment Letter N

JOHN W. STUMP
Attorney at Law
2413 Shamrock Street
City Heights, California 92105
mrjohnstump@cox.net 619-281-4663

April 11, 2016 **Five Pages**

Myra Herrmann, Environmental Planner, City of San Diego - Planning Department.
1010 2nd Avenue, Suite 1200, East Tower, MS 413,
San Diego, CA 92101 or email your comments to PlanningCEQA@sandiego.gov

SUBLECT: Project Name (PURE WATER PROGRAM) and Project Number (438188)

Dear City of San Diego, c/o: Myra Herrmann, Environmental Planner, and City of San Diego - Planning Department

Thank you for circulating the above referenced document and providing it to the City Heights Library, as an electronic English document. I have concerns that the methods of circulating and noticing of this document given that it scope, if implemented, has direct consequences on every man, woman, and child that resides in our greater metropolitan area, visits or area, receives products manufactured, processes, or raised in our region and, but not limited to, persons who receive medical or dental treatments in our region. This project is likely to involve local, California, and Federal funding, regulations, and interstate commerce because the scale of this project is so large and costly, the sewage mixed water would likely be used by persons traveling into the region or taken out of the region by cruise ships, aircraft, and with processed products. I demand, for these reasons, that this process be conducted under both Federal NEPA and CEQA standards. The EIR process protects not only the environment but also informed self-government." (*Laurel Heights Improvement Assn. v. Regents of the University of California* (1988) 47 Cal.3d 376, 392 (*Laurel Heights*).)

N-1

N-2

This project affects people and products in the most personal and direct way whenever they drink or come in contact water mixed with filtered sewage. I demand that this project be noticed to the regions' populations that are reasonably likely to drink water, consume products, and or receive medical treatments with water containing processed sewage. I believe that such notice must meet both California and Federal notice standards and be available in the significant languages present in the larger water use region. The new water, with processed sewage, is going to be used by sensitive receptors in group housing, nursing homes, hospitals, dormitories, jails and prisons, and military housing, to name a few special populations. At minimum, such notice should be prominently posted in public spaces and timely included in bills for water and sewage services. Horn v. County of Ventura, L.A. No. 30959 , Supreme Court of California, 24 Cal. 3d 605; 596 P.2d 1134; 156 Cal. Rptr. 718; 1979 Cal. LEXIS 278, July 9, 1979; Lexington Hills Ass'n v. Cal., Nos. H000420, H000962, H001172 , Court of Appeal of California, Sixth Appellate District, 200 Cal. App. 3d 415; 246 Cal. Rptr. 97; 1988 Cal. App. LEXIS 332, April 15, 1988 and Board of Supervisors v. Superior Court, No. E013090. , COURT OF APPEAL OF CALIFORNIA, FOURTH APPELLATE DISTRICT, DIVISION TWO, 23 Cal. App. 4th 830; 28 Cal. Rptr. 2d 560; 1994 Cal. App. LEXIS 245; 94 Cal. Daily Op. Service 2046; 94 Daily Journal DAR 3719, March 22, 1994. Drinking water processed sewage presents a much more intimate water public

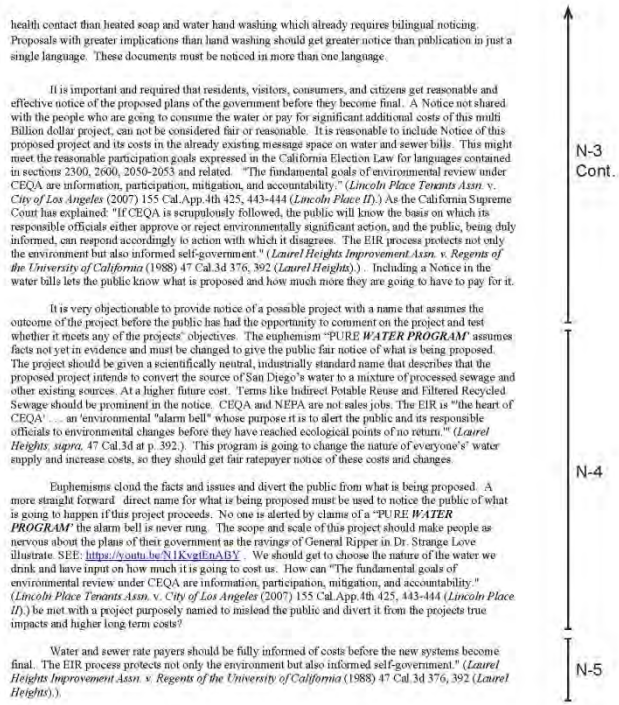
N-3

Response to Comment Letter N

John W. Stump
April 11, 2016

N-1 In compliance with Section 15082 of the CEQA Guidelines, the City's Planning Department circulated the NOP and Scoping Letter to interested agencies, groups, and individuals. The 30-day public scoping period ended December 23, 2014. In addition, public scoping meetings were held on December 9, 2014, at the City of San Diego South Bay Recreation Center and on December 11, 2014, at the Public Utilities Department Metropolitan Operations Complex, to gather additional public input. Comments received during the NOP public scoping period and meetings were considered during the preparation of this PEIR and are included in Appendix A of the PEIR.

The City of San Diego has conducted numerous public outreach efforts related to the Pure Water Program beyond the required noticing for the PEIR, including, but not limited to, tours of the Pure Water Facility (since 2011), staffing booths at community events throughout San Diego (both past and future), distribution of project information within the annual Drinking Water Quality Report that is mailed to addresses within San Diego, and outreach through social media. Further information



health contact than heated soap and water hand washing which already requires bilingual noticing. Proposals with greater implications than hand washing should get greater notice than publication in just a single language. These documents must be noticed in more than one language.

It is important and required that residents, visitors, consumers, and citizens get reasonable and effective notice of the proposed plans of the government before they become final. A Notice not shared with the people who are going to consume the water or pay for significant additional costs of this multi Billion dollar project, can not be considered fair or reasonable. It is reasonable to include Notice of this proposed project and its costs in the already existing message space on water and sewer bills. This might meet the reasonable participation goals expressed in the California Election Law for languages contained in sections 2300, 2600, 2050-2053 and related. "The fundamental goals of environmental review under CEQA are information, participation, mitigation, and accountability." (*Lincoln Place Tenants Assn.* v. *City of Los Angeles* (2007) 155 Cal.App.4th 425, 443-444 (*Lincoln Place II*).) As the California Supreme Court has explained: "If CEQA is scrupulously followed, the public will know the basis on which its responsible officials either approve or reject environmentally significant action, and the public, being duly informed, can respond accordingly to action with which it disagrees. The EIR process protects not only the environment but also informed self-government." (*Laurel Heights Improvement Assn. v. Regents of the University of California* (1988) 47 Cal.3d 376, 392 (*Laurel Heights*).) . Including a Notice in the water bills lets the public know what is proposed and how much more they are going to have to pay for it.

It is very objectionable to provide notice of a possible project with a name that assumes the outcome of the project before the public has had the opportunity to comment on the project and test whether it meets any of the projects' objectives. The euphemism "PURE ***WATER PROGRAM***" assumes facts not yet in evidence and must be changed to give the public fair notice of what is being proposed. The project should be given a scientifically neutral, industrially standard name that describes that the proposed project intends to convert the source of San Diego's water to a mixture of processed sewage and other existing sources. At a higher future cost. Terms like Indirect Potable Reuse and Filtered Recycled Sewage should be prominent in the notice. CEQA and NEPA are not sales jobs. The EIR is "'the heart of CEQA' . . . an 'environmental "alarm bell" whose purpose rt is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return.'" (*Laurel Heights, supra,* 47 Cal.3d at p. 392.). This program is going to change the nature of everyone's' water supply and increase costs, so they should get fair ratepayer notice of these costs and changes.

Euphemisms cloud the facts and issues and divert the public from what is being proposed. A more straight forward direct name for what is being proposed must be used to notice the public of what is going to happen if this project proceeds. No one is alerted by claims of a "PU*RE WATER PROGRAM*" the alarm bell is never rung. The scope and scale of this project should make people as nervous about the plans of their government as the ravings of General Ripper in Dr. Strange Love illustrate. SEE: http://youtu.be/N1KvgtEnABY . We should get to choose the nature of the water we drink and have input on how much it is going to cost us. How can "The fundamental goals of environmental review under CEQA are information, participation, mitigation, and accountability." (*Lincoln Place Tenants Assn.* v. *City of Los Angeles* (2007) 155 Cal.App.4th 425, 443-444 (*Lincoln Place II*).) be met with a project purposely named to mislead the public and divert it from the projects true impacts and higher long term costs?

Water and sewer rate payers should be fully informed of costs before the new systems become final. The EIR process protects not only the environment but also informed self-government." (*Laurel Heights Improvement Assn. v. Regents of the University of California* (1988) 47 Cal.3d 376, 392 (*Laurel Heights*).).

N-3 Cont.

N-4

N-5

regarding the public outreach conducted for the Pure Water Program can be found at the following website: https://www.sandiego.gov/water/purewater/purewatersd/involvement.

N-2 The project does not trigger National Environmental Policy Act (NEPA) review at this time, as there is no federal funding involved, nor are federal lands or actions. All subsequent activities proposed for the Program, such as approvals and implementation of individual components of the Program, will be further evaluated separately under individual project-level CEQA and NEPA review processes.

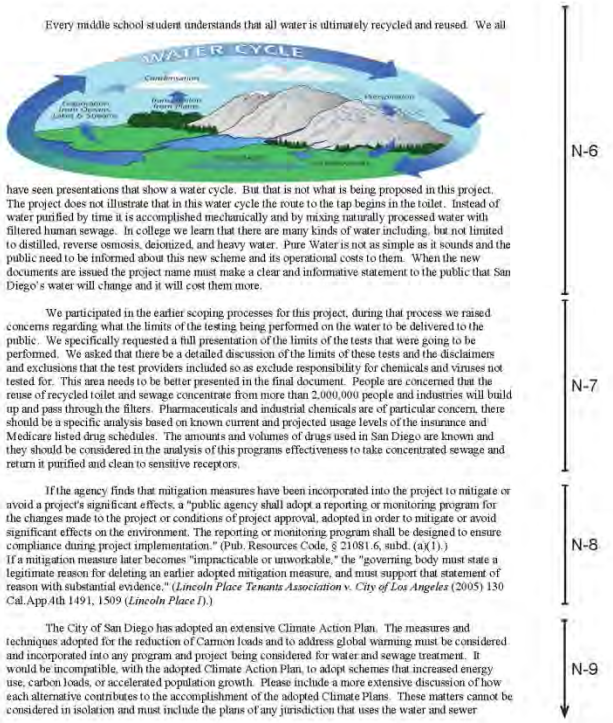
N-3 Please refer to Response to Comment N-1.

N-4 Comment noted. The PEIR adequately discloses the project description, environmental impacts, and mitigation measures as required by CEQA.

N-5 Comment noted. Please refer to Response to Comment N-1.

N-6 Comment noted. Comments do not address the adequacy or accuracy of the DPEIR.

N-7 The DPEIR summarizes the extensive testing and monitoring activities that occurred at the Water



Every middle school student understands that all water is ultimately recycled and reused. We all have seen presentations that show a water cycle. But that is not what is being proposed in this project. The project does not illustrate that in this water cycle the route to the tap begins in the toilet. Instead of water purified by time it is accomplished mechanically and by mixing naturally processed water with filtered human sewage. In college we learn that there are many kinds of water including, but not limited to distilled, reverse osmosis, deionized, and heavy water. Pure Water is not as simple as it sounds and the public need to be informed about this new scheme and its operational costs to them. When the new documents are issued the project name must make a clear and informative statement to the public that San Diego's water will change and it will cost them more.

N-6

We participated in the earlier scoping processes for this project, during that process we raised concerns regarding what the limits of the testing being performed on the water to be delivered to the public. We specifically requested a full presentation of the limits of the tests that were going to be performed. We asked that there be a detailed discussion of the limits of these tests and the disclaimers and exclusions that the test providers included so as exclude responsibility for chemicals and viruses not tested for. This area needs to be better presented in the final document. People are concerned that the reuse of recycled toilet and sewage concentrate from more than 2,000,000 people and industries will build up and pass through the filters. Pharmaceuticals and industrial chemicals are of particular concern, there should be a specific analysis based on known current and projected usage levels of the insurance and Medicare listed drug schedules. The amounts and volumes of drugs used in San Diego are known and they should be considered in the analysis of this programs effectiveness to take concentrated sewage and return it purified and clean to sensitive receptors.

N-7

If the agency finds that mitigation measures have been incorporated into the project to mitigate or avoid a project's significant effects, a "public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation." (Pub. Resources Code, § 21081.6, subd. (a)(1).)
If a mitigation measure later becomes "impracticable or unworkable," the "governing body must state a legitimate reason for deleting an earlier adopted mitigation measure, and must support that statement of reason with substantial evidence." (*Lincoln Place Tenants Association* v. *City of Los Angeles* (2005) 130 Cal.App.4th 1491, 1509 (*Lincoln Place I*).)

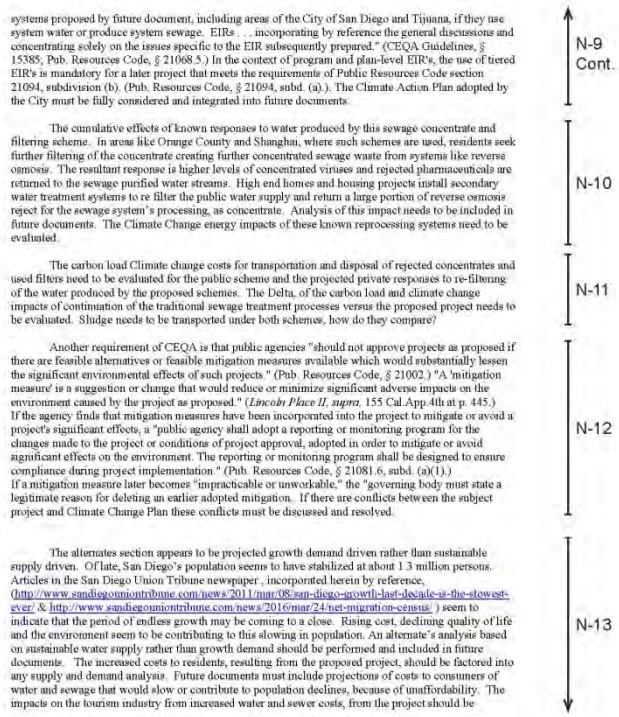
N-8

The City of San Diego has adopted an extensive Climate Action Plan. The measures and techniques adopted for the reduction of Carmon loads and to address global warming must be considered and incorporated into any program and project being considered for water and sewage treatment. It would be incompatible, with the adopted Climate Action Plan, to adopt schemes that increased energy use, carbon loads, or accelerated population growth. Please include a more extensive discussion of how each alternative contributes to the accomplishment of the adopted Climate Plans. These matters cannot be considered in isolation and must include the plans of any jurisdiction that uses the water and sewer

N-9

Purification Demonstration Project facility. As stated in the DPEIR, Chapter 2.0, "testing at the AWPF was conducted from June 2011 until August 2012 and included measurements for 342 constituents and parameters (231 regulated constituents and 111 non-regulated constituents)". Testing at the demonstration facility "included almost 30,000 tests (including 9,000 tests during initial testing completed in 2012) of the purified water at various points in the treatment process and for 342 different constituents. The water quality of the purified water was compared to regulatory limits, verifying that purified water met all applicable water quality standards." Table 2-1 in the DPEIR summarizes the monitoring results from the Demonstration Project.

Advanced Water Purification Facility Study Report Attachment B, Quarterly Testing Report No. 4, provides a comprehensive list of all potential drinking water contaminants and the monitoring results of the level of contaminants present in purified water after advanced treatment (https://www.sandiego.gov/sites/default/files/legacy/water/purewater/pdf/projectreports/awpfappendixb.pdf).. In general, two categories of parameters were monitored over the testing period: (1) contaminants selected based on regulatory considerations for a potential full scale facility and (2)



systems proposed by future document, including areas of the City of San Diego and Tijuana, if they use system water or produce system sewage. EIRs . . . incorporating by reference the general discussions and concentrating solely on the issues specific to the EIR subsequently prepared." (CEQA Guidelines, § 15385, Pub. Resources Code, § 21068.5.) In the context of program and plan-level EIR's, the use of tiered EIR's is mandatory for a later project that meets the requirements of Public Resources Code section 21094, subdivision (b). (Pub. Resources Code, § 21094, subd. (a).). The Climate Action Plan adopted by the City must be fully considered and integrated into future documents.

The cumulative effects of known responses to water produced by this sewage concentrate and filtering scheme. In areas like Orange County and Shanghai, where such schemes are used, residents seek further filtering of the concentrate creating further concentrated sewage waste from systems like reverse osmosis. The resultant response is higher levels of concentrated viruses and rejected pharmaceuticals are returned to the sewage purified water streams. High end homes and housing projects install secondary water treatment systems to re filter the public water supply and return a large portion of reverse osmosis reject for the sewage system's processing, as concentrate. Analysis of this impact needs to be included in future documents. The Climate Change energy impacts of these known reprocessing systems need to be evaluated.

The carbon load Climate change costs for transportation and disposal of rejected concentrates and used filters need to be evaluated for the public scheme and the projected private responses to re-filtering of the water produced by the proposed schemes. The Delta, of the carbon load and climate change impacts of continuation of the traditional sewage treatment processes versus the proposed project needs to be evaluated. Sludge needs to be transported under both schemes, how do they compare?

Another requirement of CEQA is that public agencies "should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects." (Pub. Resources Code, § 21002.) "A 'mitigation measure' is a suggestion or change that would reduce or minimize significant adverse impacts on the environment caused by the project as proposed." (*Lincoln Place II, supra,* 155 Cal.App.4th at p. 445.) If the agency finds that mitigation measures have been incorporated into the project to mitigate or avoid a project's significant effects, a "public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation." (Pub. Resources Code, § 21081.6, subd. (a)(1).) If a mitigation measure later becomes "impracticable or unworkable," the "governing body must state a legitimate reason for deleting an earlier adopted mitigation. If there are conflicts between the subject project and Climate Change Plan these conflicts must be discussed and resolved.

The alternates section appears to be projected growth demand driven rather than sustainable supply driven. Of late, San Diego's population seems to have stabilized at about 1.3 million persons. Articles in the San Diego Union Tribune newspaper , incorporated herein by reference, (http://www.sandiegouniontribune.com/news/2011/mar/08/san-diego-growth-last-decade-is-the-slowest-ever/ & http://www.sandiegouniontribune.com/news/2016/mar/24/net-migration-census/) seem to indicate that the period of endless growth may be coming to a close. Rising cost, declining quality of life and the environment seem to be contributing to this slowing in population. An alternate's analysis based on sustainable water supply rather than growth demand should be performed and included in future documents. The increased costs to residents, resulting from the proposed project, should be factored into any supply and demand analysis. Future documents must include projections of costs to consumers of water and sewage that would slow or contribute to population declines, because of unaffordability. The impacts on the tourism industry from increased water and sewer costs, from the project should be

N-9 Cont.

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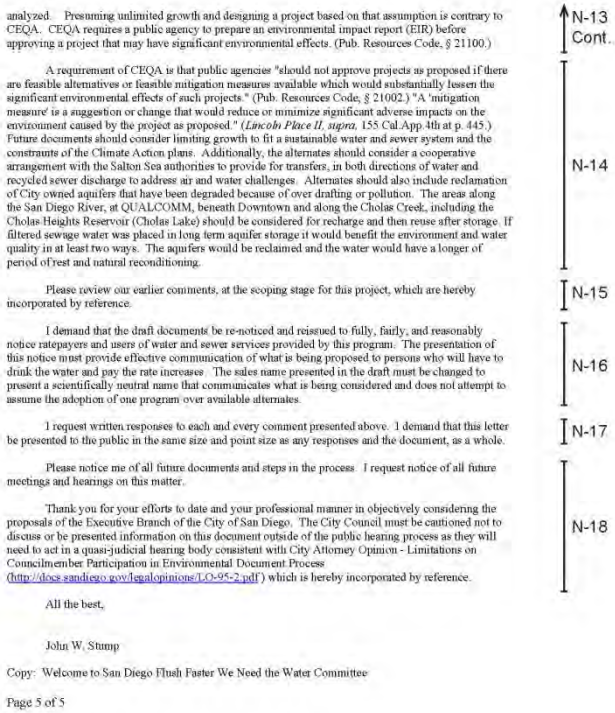
non-regulated contaminants. Potential drinking water contaminants monitored include, but are not limited to: formaldehyde, ammonia, nitrates, phosphorus, total dissolved solids, fecal coliform, total organic carbon, E. coli, bacteriophage, chlorides, sulfates, sodium, manganese, boron, fluoride, asbestos, benzene, cyanide, lead, mercury, radionuclides, and other chemicals of emerging concern (CECs). The water quality monitoring met or exceeded all requirements for regulated water quality contaminants. Of the 111 non-regulated constituents sampled for at the Demonstration Project, only six were found to be quantifiably detected at low levels in the purified water at any time, including three constituents from the 2012 EPA Unregulated Contaminant Monitoring Rule (UCMR3) and three CECs.

Three UCMR3 list constituents, bromochloromethane, hexavalent chromium, and strontium, were quantifiable detected in the purified water. The first two of these constituents can be considered disinfection byproducts and may have been formed at low levels within the treatment processes. The third constituent is a naturally occurring metal used as a dietary supplement and in manufacturing. Only three CECs were detected at quantifiable concentrations in the purified water. These compounds were iohexal (contrasting agent used in x-



analyzed. Presuming unlimited growth and designing a project based on that assumption is contrary to CEQA. CEQA requires a public agency to prepare an environmental impact report (EIR) before approving a project that may have significant environmental effects. (Pub. Resources Code, § 21100.)

A requirement of CEQA is that public agencies "should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects." (Pub. Resources Code, § 21002.) "A 'mitigation measure' is a suggestion or change that would reduce or minimize significant adverse impacts on the environment caused by the project as proposed." (*Lincoln Place II, supra,* 155 Cal.App.4th at p. 445.) Future documents should consider limiting growth to fit a sustainable water and sewer system and the constraints of the Climate Action plans. Additionally, the alternates should consider a cooperative arrangement with the Salton Sea authorities to provide for transfers, in both directions of water and recycled sewer discharge to address air and water challenges. Alternates should also include reclamation of City owned aquifers that have been degraded because of over drafting or pollution. The areas along the San Diego River, at QUALCOMM, beneath Downtown and along the Cholas Creek, including the Cholas Heights Reservoir (Cholas Lake) should be considered for recharge and then reuse after storage. If filtered sewage water was placed in long term aquifer storage it would benefit the environment and water quality in at least two ways. The aquifers would be reclaimed and the water would have a longer of period of rest and natural reconditioning.

Please review our earlier comments, at the scoping stage for this project, which are hereby incorporated by reference.

I demand that the draft documents be re-noticed and reissued to fully, fairly, and reasonably notice ratepayers and users of water and sewer services provided by this program. The presentation of this notice must provide effective communication of what is being proposed to persons who will have to drink the water and pay the rate increases. The sales name presented in the draft must be changed to present a scientifically neutral name that communicates what is being considered and does not attempt to assume the adoption of one program over available alternates.

I request written responses to each and every comment presented above. I demand that this letter be presented to the public in the same size and point size as any responses and the document, as a whole.

Please notice me of all future documents and steps in the process. I request notice of all future meetings and hearings on this matter.

Thank you for your efforts to date and your professional manner in objectively considering the proposals of the Executive Branch of the City of San Diego. The City Council must be cautioned not to discuss or be presented information on this document outside of the public hearing process as they will need to act in a quasi-judicial hearing body consistent with City Attorney Opinion - Limitations on Councilmember Participation in Environmental Document Process (http://docs.sandiego.gov/legalopinions/LO-95-2.pdf) which is hereby incorporated by reference.

All the best,

John W. Stump

Copy: Welcome to San Diego Flush Faster We Need the Water Committee

Page 5 of 5

N-13 Cont.

N-14

N-15

N-16

N-17

N-18

ray), acesulfame-k (widely used artificial sweetener), and triclosan (antibacterial agent). In all cases where constituents were detected, concentrations were significantly below the Drinking Water Equivalent level (bromochloromethane, iohexal, and triclosan), below the CDPH detection limit (hexavalent chromium), below the Food and Drug Administration Acceptable Daily Intake (acesulfame-k), or lower than the EPA's Contaminant Candidate List 3 (CCL3) Health Reference Level (strontium).

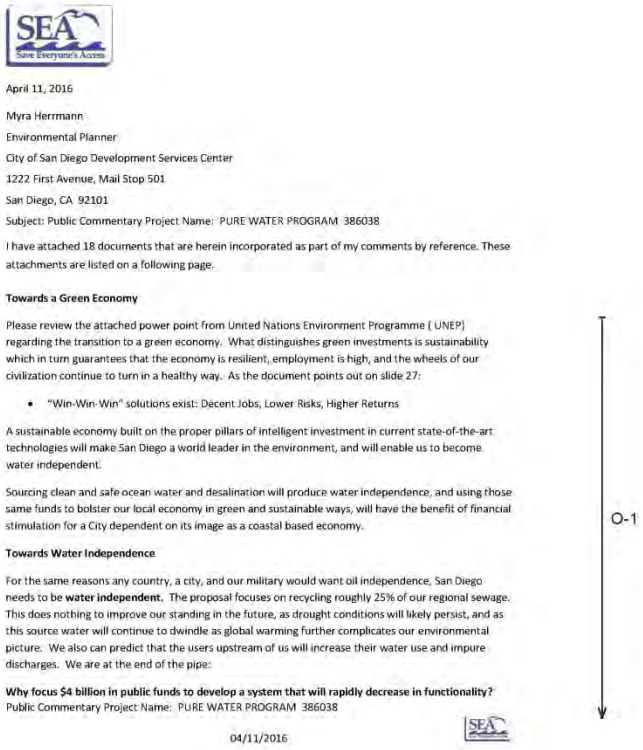
As stated in the DPEIR, Chapter 1.0, the PEIR is intended to evaluate the potential components of the Program at a general programmatic level. It is not intended or structured to evaluate project-level impacts associated with future implementation of any of the treatment facilities or pipelines, although the PEIR may provide information and analyses that could be used in conjunction with future project-level environmental reviews of such improvements. Any subsequent activities proposed for the Program, such as approvals and implementation of individual components of the Program, will be further evaluated separately under individual project-level CEQA/NEPA review processes. As such, the City believes that the level of detail provided in the DPEIR was adequate to provide for sufficient analysis at the programmatic

THIS PAGE INTENTIONALLY LEFT BLANK	level. The information included in this response is provided at the request of the commenter, but no revisions to the PEIR are necessary. **N-8** Comment noted. Chapter 12 of the DPEIR contains a mitigation, monitoring, and reporting program (MMRP) that was developed in compliance with Section 21081.6 of the CEQA Guidelines. **N-9** As stated in Section 5.15.8 (conformance with GHG policies) of the DPEIR, the Pure Water Program would be in conformance with the City's Climate Action Plan and would result in less than significant impacts. According to the CEQA Guidelines, an EIR "shall describe a range of reasonable alternatives to the project, or to the location of the 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" (14 CCR 15126.6(a)). As stated in Section 11.7 of the DPEIR, the consideration and discussion of alternatives focuses on reducing significance impacts resulting from the proposed project. Therefore, the alternatives discussion presented in the PEIR only addresses topics determined to be potentially significant and does not address GHG

THIS PAGE INTENTIONALLY LEFT BLANK		emissions and conformance with the City's Climate Action Plan because the Pure Water Program would not result in potentially significant impacts related to these topics. Any subsequent activities proposed for the Program, such as approvals and implementation of individual components of the Program, will be further evaluated separately under individual project-level CEQA/NEPA review processes and will include a discussion regarding compliance with the City's Climate Action Plan.
	N-10	Comment noted. Please refer to Response N-7.
	N-11	Table 5.15-9, Electricity Consumption for Typical Urban Water Systems versus Pure Water of the DPEIR shows the energy requirements necessary for typical urban water consumption (current scenario) as compared to the energy requirements for the Pure Water Program. As shown in Table 5.15-9, wastewater treatment is included in the comparison.
	N-12	Comment noted. Refer to Response to Comment N-8.
	N-13	According to the CEQA Guidelines, an EIR "shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen

THIS PAGE INTENTIONALLY LEFT BLANK	any of the significant effects of the project, and evaluate the comparative merits of the alternatives" (14 CCR 15126.6(a)). In accordance with Section 15126.6(a) of the CEQA Guidelines, the alternatives have been developed based on the project objectives and their potential to avoid or substantially lessen any of the significant effects of the project. **N-14** Comment noted; refer to Response N-13. **N-15** Comment noted. The commenter's scoping comments are included in Appendix A of the DPEIR. Comments received during scoping have been addressed within the analysis of the DPEIR. Additional clarifications are also included in responses B-2, J-13, M-4, N-2, N-6, N-9, O-1, O-2 and P-3. **N-16** Comment noted; please refer to Response to Comment N-1. None of the criteria listed in Section 15088.5 of the CEQA Guidelines for recirculation of the DPEIR have been met, and recirculation is not required. **N-17** Comment noted. **N-18** Comment noted.

Comment Letter O



April 11, 2016

Myra Herrmann
Environmental Planner
City of San Diego Development Services Center
1222 First Avenue, Mail Stop 501
San Diego, CA 92101
Subject: Public Commentary Project Name: PURE WATER PROGRAM 386038

I have attached 18 documents that are herein incorporated as part of my comments by reference. These attachments are listed on a following page.

Towards a Green Economy

Please review the attached power point from United Nations Environment Programme (UNEP) regarding the transition to a green economy. What distinguishes green investments is sustainability which in turn guarantees that the economy is resilient, employment is high, and the wheels of our civilization continue to turn in a healthy way. As the document points out on slide 27:

- "Win-Win-Win" solutions exist: Decent Jobs, Lower Risks, Higher Returns

A sustainable economy built on the proper pillars of intelligent investment in current state-of-the-art technologies will make San Diego a world leader in the environment, and will enable us to become water independent.

Sourcing clean and safe ocean water and desalination will produce water independence, and using those same funds to bolster our local economy in green and sustainable ways, will have the benefit of financial stimulation for a City dependent on its image as a coastal based economy.

Towards Water Independence

For the same reasons any country, a city, and our military would want oil independence, San Diego needs to be **water independent.** The proposal focuses on recycling roughly 25% of our regional sewage. This does nothing to improve our standing in the future, as drought conditions will likely persist, and as this source water will continue to dwindle as global warming further complicates our environmental picture. We also can predict that the users upstream of us will increase their water use and impure discharges. We are at the end of the pipe:

Why focus $4 billion in public funds to develop a system that will rapidly decrease in functionality?
Public Commentary Project Name: PURE WATER PROGRAM 386038

04/11/2016

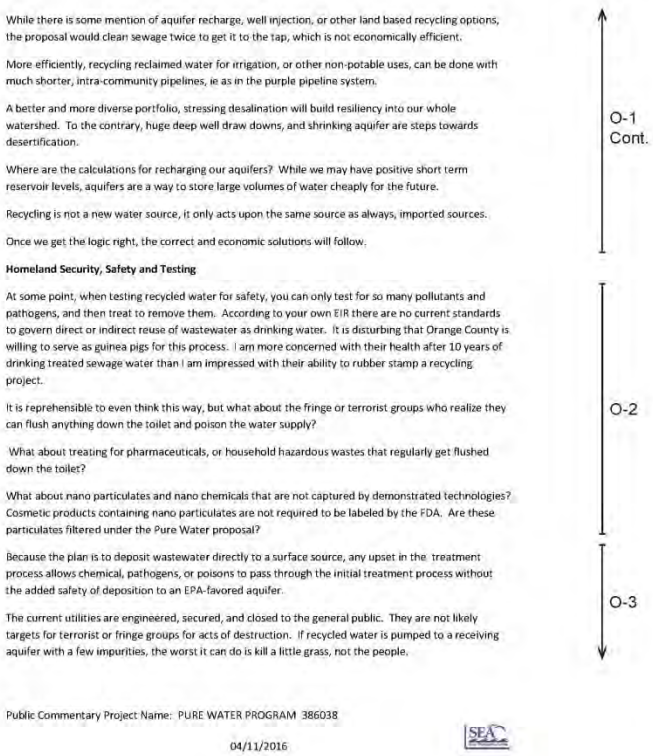
O-1

Response to Comment Letter O

Save Everyone's Access
Shelli Craig
April 11 ,2016

O-1 Comment noted. The City of San Diego has analyzed a wide range of water supply alternatives, including the use of reclaimed water for irrigation, which are discussed in Section 11.2, Water Supply Alternatives Planning, of the DPEIR. Other water supply alternatives, including, but not limited to, conservation, desalination and groundwater have also been analyzed previously by the City and are summarized in this section.

O-2 Chapter 2, Environmental Setting, of the DPEIR provides an overview of the extensive testing and monitoring that occurred at the Demonstration Project facility. Results from the Demonstration Project show that of all regulated constituents would meet applicable water quality standards and all non-regulated constituents would be either undetectable or would be lower than the associated Drinking Water Equivalent Level or the EPA-identified Health Reference Level. In addition, purified water would either be diluted to at least 100:1 in a reservoir, or diluted to at least 10:1 in a reservoir with an additional, independent treatment



While there is some mention of aquifer recharge, well injection, or other land based recycling options, the proposal would clean sewage twice to get it to the tap, which is not economically efficient.

More efficiently, recycling reclaimed water for irrigation, or other non-potable uses, can be done with much shorter, intra-community pipelines, ie as in the purple pipeline system.

A better and more diverse portfolio, stressing desalination will build resiliency into our whole watershed. To the contrary, huge deep well draw downs, and shrinking aquifer are steps towards desertification.

Where are the calculations for recharging our aquifers? While we may have positive short term reservoir levels, aquifers are a way to store large volumes of water cheaply for the future.

Recycling is not a new water source, it only acts upon the same source as always, imported sources.

Once we get the logic right, the correct and economic solutions will follow.

Homeland Security, Safety and Testing

At some point, when testing recycled water for safety, you can only test for so many pollutants and pathogens, and then treat to remove them. According to your own EIR there are no current standards to govern direct or indirect reuse of wastewater as drinking water. It is disturbing that Orange County is willing to serve as guinea pigs for this process. I am more concerned with their health after 10 years of drinking treated sewage water than I am impressed with their ability to rubber stamp a recycling project.

It is reprehensible to even think this way, but what about the fringe or terrorist groups who realize they can flush anything down the toilet and poison the water supply?

What about treating for pharmaceuticals, or household hazardous wastes that regularly get flushed down the toilet?

What about nano particulates and nano chemicals that are not captured by demonstrated technologies? Cosmetic products containing nano particulates are not required to be labeled by the FDA. Are these particulates filtered under the Pure Water proposal?

Because the plan is to deposit wastewater directly to a surface source, any upset in the treatment process allows chemical, pathogens, or poisons to pass through the initial treatment process without the added safety of deposition to an EPA-favored aquifer.

The current utilities are engineered, secured, and closed to the general public. They are not likely targets for terrorist or fringe groups for acts of destruction. If recycled water is pumped to a receiving aquifer with a few impurities, the worst it can do is kill a little grass, not the people.

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O-1 Cont.

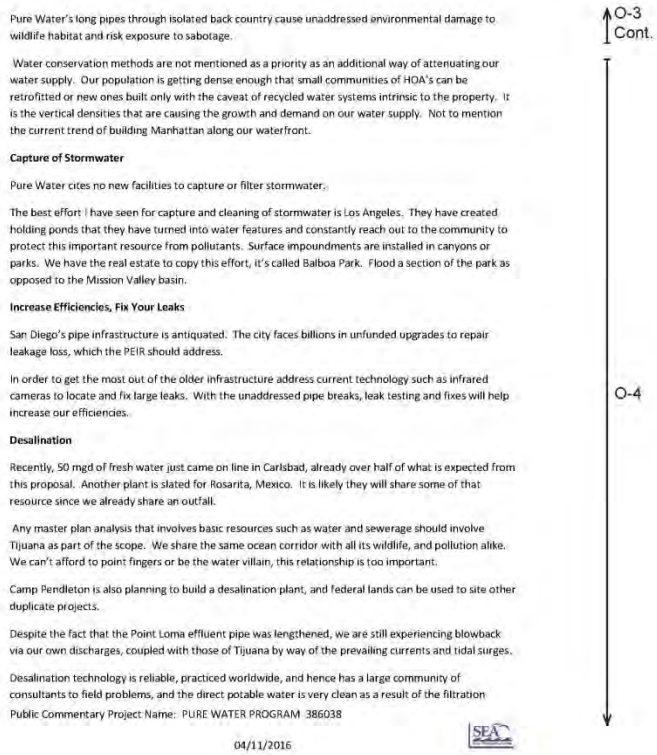
O-2

O-3

barrier at the AWPF beyond what was employed in the Demonstration Facility, thus providing an additional barrier. As discussed in Section 5.3 of the DPEIR, Health and Safety, a number of reliability features would be incorporated into the process to ensure the quality of the product water.

Up to 80% of the region's water is imported from the Colorado River and Northern California surface water sources. The Colorado River is currently the receiving water for tertiary-treated wastewater discharges from municipalities within the River's watershed. As such, the region's current source of imported water is of similar or less quality than the tertiary treated water being produced at the existing NCWRP and SBWRP and at the proposed CAWRP that would be the source water for the AWPFs. Therefore, while the dilution rate and mixing times are less with the proposed Program, the actual quality of the source water is not substantially different.

O-3 Comment noted. Please refer to Section 5.3.4 of the DPEIR. A number of reliability features have been incorporated into the process to ensure that purified water meets potable drinking water standards and does not pose a risk of contamination. These features include use of a fully automated control system,



Pure Water's long pipes through isolated back country cause unaddressed environmental damage to wildlife habitat and risk exposure to sabotage.

Water conservation methods are not mentioned as a priority as an additional way of attenuating our water supply. Our population is getting dense enough that small communities of HOA's can be retrofitted or new ones built only with the caveat of recycled water systems intrinsic to the property. It is the vertical densities that are causing the growth and demand on our water supply. Not to mention the current trend of building Manhattan along our waterfront.

Capture of Stormwater

Pure Water cites no new facilities to capture or filter stormwater.

The best effort I have seen for capture and cleaning of stormwater is Los Angeles. They have created holding ponds that they have turned into water features and constantly reach out to the community to protect this important resource from pollutants. Surface impoundments are installed in canyons or parks. We have the real estate to copy this effort, it's called Balboa Park. Flood a section of the park as opposed to the Mission Valley basin.

Increase Efficiencies, Fix Your Leaks

San Diego's pipe infrastructure is antiquated. The city faces billions in unfunded upgrades to repair leakage loss, which the PEIR should address.

In order to get the most out of the older infrastructure address current technology such as infrared cameras to locate and fix large leaks. With the unaddressed pipe breaks, leak testing and fixes will help increase our efficiencies.

Desalination

Recently, 50 mgd of fresh water just came on line in Carlsbad, already over half of what is expected from this proposal. Another plant is slated for Rosarita, Mexico. It is likely they will share some of that resource since we already share an outfall.

Any master plan analysis that involves basic resources such as water and sewerage should involve Tijuana as part of the scope. We share the same ocean corridor with all its wildlife, and pollution alike. We can't afford to point fingers or be the water villain, this relationship is too important.

Camp Pendleton is also planning to build a desalination plant, and federal lands can be used to site other duplicate projects.

Despite the fact that the Point Loma effluent pipe was lengthened, we are still experiencing blowback via our own discharges, coupled with those of Tijuana by way of the prevailing currents and tidal surges.

Desalination technology is reliable, practiced worldwide, and hence has a large community of consultants to field problems, and the direct potable water is very clean as a result of the filtration

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O-3 Cont.

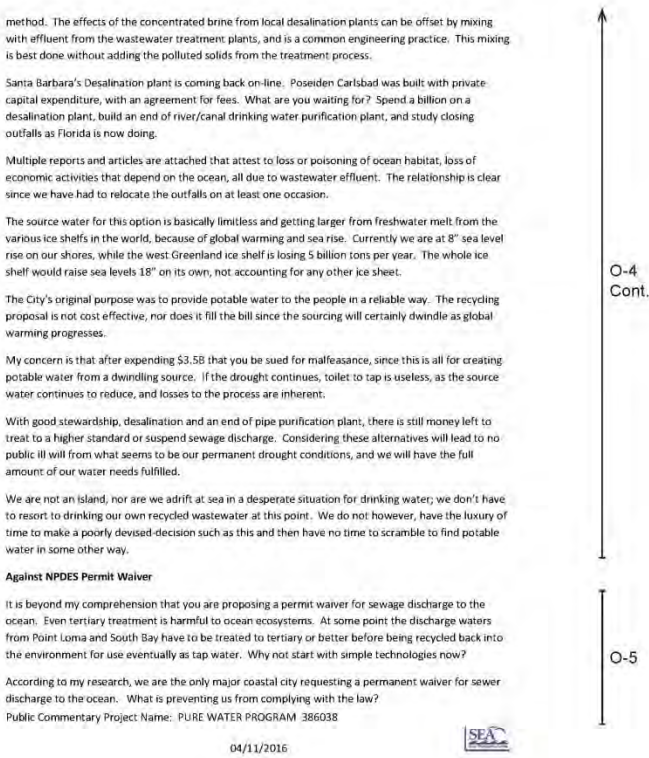
O-4

equipment redundancy, and integrity monitoring. In addition, the Program would be required to have a mechanism, known as a failsafe disposal, to either store or divert water not meeting federal and state water quality requirements.

Additionally, as discussed in Section 5.3.7 of the DPEIR, treatment facilities would allow site access to authorized personnel only via a secured entry point with a 24-hour guard and pump stations would be fenced and/or enclosed in a locked building. All pipelines would be located below ground, where feasible, and the potential risk of sabotage to these conveyance facilities would be no greater than the risk for existing water conveyance pipelines.

Impacts to wildlife habitat are thoroughly addressed in Section 5.4.4 of the DPEIR.

O-4 Comment noted. Please refer to Response O-1. The City has considered a wide variety of water supply alternatives during long-range planning efforts. The options discussed in this comment are not considered part of the Program as defined by the CEQA Guidelines Section 15378 and analyzed in the DPEIR. Refer to Chapter 3 of the DPEIR for the full project description.



method. The effects of the concentrated brine from local desalination plants can be offset by mixing with effluent from the wastewater treatment plants, and is a common engineering practice. This mixing is best done without adding the polluted solids from the treatment process.

Santa Barbara's Desalination plant is coming back on-line. Poseiden Carlsbad was built with private capital expenditure, with an agreement for fees. What are you waiting for? Spend a billion on a desalination plant, build an end of river/canal drinking water purification plant, and study closing outfalls as Florida is now doing.

Multiple reports and articles are attached that attest to loss or poisoning of ocean habitat, loss of economic activities that depend on the ocean, all due to wastewater effluent. The relationship is clear since we have had to relocate the outfalls on at least one occasion.

The source water for this option is basically limitless and getting larger from freshwater melt from the various ice shelfs in the world, because of global warming and sea rise. Currently we are at 8" sea level rise on our shores, while the west Greenland ice shelf is losing 5 billion tons per year. The whole ice shelf would raise sea levels 18" on its own, not accounting for any other ice sheet.

The City's original purpose was to provide potable water to the people in a reliable way. The recycling proposal is not cost effective, nor does it fill the bill since the sourcing will certainly dwindle as global warming progresses.

My concern is that after expending $3.5B that you be sued for malfeasance, since this is all for creating potable water from a dwindling source. If the drought continues, toilet to tap is useless, as the source water continues to reduce, and losses to the process are inherent.

With good stewardship, desalination and an end of pipe purification plant, there is still money left to treat to a higher standard or suspend sewage discharge. Considering these alternatives will lead to no public ill will from what seems to be our permanent drought conditions, and we will have the full amount of our water needs fulfilled.

We are not an island, nor are we adrift at sea in a desperate situation for drinking water; we don't have to resort to drinking our own recycled wastewater at this point. We do not however, have the luxury of time to make a poorly devised-decision such as this and then have no time to scramble to find potable water in some other way.

Against NPDES Permit Waiver

It is beyond my comprehension that you are proposing a permit waiver for sewage discharge to the ocean. Even tertiary treatment is harmful to ocean ecosystems. At some point the discharge waters from Point Loma and South Bay have to be treated to tertiary or better before being recycled back into the environment for use eventually as tap water. Why not start with simple technologies now?

According to my research, we are the only major coastal city requesting a permanent waiver for sewer discharge to the ocean. What is preventing us from complying with the law?
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O-4 Cont.

O-5

O-5 The regulatory process related to the issuance of a modified NPDES permit and allowance of secondary equivalence in place of upgrading the Point Loma Wastewater Treatment Plant (PLWTP) to secondary treatment is discussed in Section 2.5.2 of the DPEIR. Additionally, as discussed in Section 11.6 of the DPEIR, updating the PLWTP to full secondary treatment was considered, but rejected in the alternatives analysis based on review of the Water Reuse Study (City of San Diego 2006) and Recycled Water Study (City of San Diego 2012).

O-6 This comment does not address the adequacy or accuracy of the DPEIR.

O-7 Please refer to Response O-5.

O-8 Please refer to Response O-2.

O-9 Potential impacts related to greenhouse gas emissions are discussed in Section 5.15 of the DPEIR. As discussed in the DPEIR, impacts related to greenhouse gas emissions would be less than significant; therefore, no mitigation, including carbon offsets, is required.

As stated in the PEIR, Chapter 1.0, the PEIR is intended to evaluate the potential components of the Program at a general programmatic level. Individual

At this point in the proposal, approaching $4 billion, the elimination of the outfall to the ocean is entirely possible. Treatment and removal of solids, and either high heat, or electrocoagulation, along with the current cogeneration, will eliminate the need to throw away valuable compost material that could be stored at the landfill and used by the public for landscaping.

The MagneGas option in part or in full will bake the solids, sanitize the liquids for discharge to an aquifer, and produce a clean gas that can be burned to feed the grid. Again net zero carbon, balancing out the trips to the landfill in trucks instead of the pipeline that the slurry of solids piped to the landfill currently. I recently learned that MagneGas now has a model municipal wastewater treatment plant functioning in Italy.

I am not convinced that expansions and hence higher levels of treatment, tertiary even, of the Point Loma treatment plant cannot be accomplished because of space or economic constraints. There are other technologies that can be easily put in place to accomplish this task, without additional treatment chemicals, or large capital improvements.

PEIR study must address the neutralization of other pathogens, such as viral, antibiotic resistant bacterias, not to mention the endocrine disruptors, and nano particulate matter. Mere chemical treatment does not guarantee sanitization of these vectors. Alternate and efficient technologies can-such as Powell Electrocoagulation, a report summary attached. Notice the letter from the College of Marine Science, stating that this method removes common viruses and bacteria to undetectable levels.

Green House Gases (GHGs)

While the plan does do some cursory mathematics for GHG impact of the projects based on current requirements, there is no mention of offsets if a certain threshold is reached if these calculations are found to be in error once the project commences. The pump stations could also be run with solar power as the source power, and there is no consideration of this source in the draft EIR.

Since the calculations indicated the project would actually come in far under the threshold, no other carbon emission offsets were considered. Since we are on the edge of a vast marine environment, kelp supplementation is low hanging fruit as an offset for carbon emissions.

Growing and maintaining a kelp bed for carbon sequestration on behalf of ourselves and the planet cannot be done as effectively if we are still poisoning that environment with untreated or poorly treated sewage.

Also, using oil converting algae for wastewater treatment was not addressed. What is left behind by the process is an oil laden algae that can be easily extracted to capture the oil, and then the husks can be safely composted. Burning of the oil is then net zero carbon emission. This oil can also be sold to our military who is already using this green technology in Navy sea and air operations.

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components of the Program will be further evaluated separately under individual project-level CEQA/NEPA review processes.

O-10 Comment does not address the adequacy or adequacy of the Draft PEIR.

O-11 Comment noted.

O-12 Attachments have been received.

At a minimum, having some sort of active program to offset our City's carbon footprint, because of the congested freeways, is in order.

O-10 Cont.

Assuming legal challenges, the Pure Water proposal will not come to fruition until 2035, at the earliest. Further, the City of San Diego's proposal has environmental and economic deficiencies which demand serious review and consideration of the more viable alternatives set forth herein.

O-11

Shelli E. Craig
Civil Engineer
SEA Secretary

Public Commentary Project Name: PURE WATER PROGRAM 386038

04/11/2016

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LIST OF DOCUMENTS PROVIDED

- Leading Ocean Scientists Recommend Immediate, **Coordinated Action Plan to Combat Changes to West Coast Seawater Chemistry**. Scripps Scientific Panel, April 6, 2016.
- **NRDC Heal the Bay letter to EPA Opposing NPDES Permit N301(h) waiver for Pt. Loma WWTP.** Jan 28, 2009.
- **CCC Federal Consistency Certification**, City of San Diego, Secondary Treatment Waiver,Oct 7, 2009.
- **Heal the Bay/NRDC Comment Letter**, Oct 2 2009
- **West Coast Ocean Acidification and Hypoxia Science Panel**, April 2016.
- **Ocean Outfall Study**, Final Report, Department of Environmental Engineering Sciences for Florida Dept. of Environmental Protection, April 2006.
- **"The Effects of Sewage on Aquatic Ecosystems"**, Campbell, Kirstin. Web article science.opposing views.com
- **Electrocoagulation Report**, Removal of Metals, Micro Algae and Phosphates,
- **10th Annual International Cleaning Technology Exposition**, Conference March 3-5, 2003.
- **Removal of 6 Estrogenic Endocrine -Disrupting Compounds (EDCs) from Municipal Wastewater using Aluminum Electrocoagulation**
- Letter USF, **Bench Test Removals of Pathogens and Viruses using Electrocoagulation**, August 2010.
- **"More Drinking Water for San Diego"** by David Schubert. San Diego Union Tribune, September 12, 2008.
- **"Tijuana River Sewage Raises Ocean Pollution Levels"** by Aleksandra Konstantinovic, Dec 2014. City News Service.
- **California Ocean Wastewater Discharge, Report and Inventory**, Prepared by Heal the Ocean, March 2010.
- **"California Fish Populations are Declining"**, Scripps Institute of Oceanography. October 29, 2015.
- 1988/89 Grand Jury Reports, Water for the City of San Diego.
- **Cooperative Agreement with CSD for Non-opposition to** CWA N301(h) Waiver, Jan 29, 2009. Marco Gonzalez, Coast Law Group, LLP for Surfrider, San Diego Chapter, and San Diego Coastkeeper.
- **Power point presentation, Green Economy Initiative**, UNEP, ESDN Conference Prague 18 June 2009 Christophe Bouvier.

O-12

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Additional Electronic Documents
FAQS on Sewage Sludge/Biosolids Annual Reporting - 2014

http://www.waterencyclopedia.com/Po-Re/Pollution-of-the-Ocean-by-Sewage-Nutrients-and-Chemicals.html

https://www3.epa.gov/npdes/pubs/owm.pdf

https://www.epa.gov/npdes/municipal-wastewater

http://wdiucet.org/2015/12/08/state-secures-funds-for-sewage-plant-upgrades/

https://www.epa.gov/ex https://www.epa.gov/biosolids

http://oec.ac.uk/sciences-technology/seas-under-threat/marine-pollution/sewage

http://www.seaweb.org/resources/briefings/toxic.php

http://wwf.panda.org/about_our_earth/blue_planet/problems/pollution/

http://blog.nature.org/conservancy/2011/09/16/what-a-waste-why-human-sewage-is-having-worst-impact-on-coral-reefs-globally/

http://www.motherjones.com/politics/2006/03/marine-pollution-how-ocean-became-toxic-waste-dump

Pew: http://www.fws.gov/southeast/grants/pdf/oceans_summary.pdf

http://issuu.org/21-1/sdfins-3/

GREAT One: http://www.iatp.org/files/Marine_Pollution_in_the_United_States.htm

http://library.cqpress.com/cqresearcher/document.php?id=cqresrre2007100000

http://library.cqpress.com/cqresearcher/document.php?id=cqresrre2005110400

http://oceana.org/our-campaigns/stop_ocean_pollution/campaign

http://www.savehereford.org/commentary-and-editorials/2015/06/03/the-dilemma-of-toxic-nutrient-on-a-toxic-planet-698

ewg Environmental Working Group
http://www.ewg.org/research/water-treatment-contaminants

Water Board
http://www.swrcb.ca.gov/water_issues/programs/owts/docs/disinfection.pdf

O-12
Cont.

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Comment Letter P

From: Raymond Paulson [mailto:raymond.paulson@gmail.com]
Sent: Monday, April 11, 2016 4:22 PM
To: DSD EAS <DSDEAS@sandiego.gov>
Cc: Raymond Paulson <raymond.paulson@gmail.com>; Mayor Kevin Faulconer <KevinFaulconer@sandiego.gov>; Councilmember Todd Gloria <ToddGloria@sandiego.gov>; Hill, Stephen <SHill@sandiego.gov>
Subject: Re: Project: PURE WATER PROGRAM CITY OF SAN DIEGO - Attn: Myra Herrmann

On Sun, Apr 10, 2016 at 9:01 AM, Raymond Paulson <raymond.paulson@gmail.com> wrote:

Mryra,

please use the email below with item #4 and #5 added updated from the prior email and send CONFIRMATION that you received this email and the email below for use for public comments PURE WATER PROGRAM. P-1

Respectfully, Ray Paulson

On Sun, Apr 10, 2016 at 8:46 AM, Raymond Paulson <raymond.paulson@gmail.com> wrote:

Myra Herrmann, Environmental Planner, City of San Diego Development Services Center, 1222 First Avenue, MS 501, San Diego, CA 92101

PROJECT NAME I No.: PURE WATER PROGRAM i 386038 COMMUNITY AREAS: Citywide COUNCIL DISTRICT: All Council Districts PROJECT DESCRIPTION: The Pure Water San Diego Program (Pure Water Program) is the City of San Diego

Myra,

Please see the following points on EIR for what has been named with "PURE WATER PROGRAM" issues to provide tax payer information for costs and public health and safety: P-2

1. No control point for sewage to tap at toilets

A. Risk is sabotage (e.g. homeland security ISIS and other terrorist groups, other fringe groups)

- damage to expensive drinking water piping and or water treatment equipment
- drinking water
- Nature at aquifer and ecosystem (NEGATIVE ENVIRONMENTAL IMPACT (EIR))

B. Risk also is haphazard behavior

- university students in chemical lab dump nano-size chemicals into sink or toilet entering sewage system that pass through any known filter available from any market (nothing exists) and nano impace to nature and people no known defense mechanism because life evolved around larger nature made particles!!!

- etc.

2. Medical Doctors and Life Scientists Cannot Guarantee Sewage Pathogen Waste Profile for Treatment P-3

- Pathogens evolve and change in diameter

- Pathogens evolve resistances to current treatment (e.g. residence time, ultraviolet light resistance, chemical resistance used for treatment)

Response to Comment Letter P

Raymond Paulson
April 11, 2016

P-1 Comment noted. The City acknowledges receipt of both e-mails from Mr. Paulson.

P-2 Please refer to Section 5.3.4 of the DPEIR. A number of reliability features have been incorporated into the process to ensure that purified water meets potable drinking water standards and does not pose a risk of contamination. These features include use of a fully automated control system, equipment redundancy, and integrity monitoring. In addition, the Program would be required to have a mechanism, known as a failsafe disposal, to either store or divert water not meeting federal and state water quality requirements.

Additionally, as discussed in Section 5.3.7 of the DPEIR, treatment facilities would allow site access to authorized personnel only via a secured entry point with a 24-hour guard and pump stations would be fenced and/or enclosed in a locked building. All pipelines would be located below ground, where feasible, and the potential risk of sabotage to these conveyance facilities would be no greater than the risk for existing water conveyance pipelines.

3. P.E. Registered Engineers cannot design for above issues with integrity for public health and safety AND the negative impact to the environment potential cannot be accounted for - i.e. no control point at toilets and sinks etc.

P-3 Cont.

4. Risk of depletion using Sewage to Tap water - inherent losses for water treatment and evaporation needs verification - upwards of 25% to 50% or more based on the water treatment process selected - and if the drought continues, and with the ocean being a carbon sink with 20 to 30 year lag on release. professionals in the field atmospheric modeling, state that the droughts can last decades longer even if all the nations converted to renewable energy this year! With depleting aquifers and inherent loss in sewage to tap (process reject water and evaporation etc.) , sewage to tap is not a valid solution because the water supply will run dry or run out potentially! The only reliable source of water to get through the global warming period the nations are facing is converting ocean water to tap water. Also, using that supply source, and also using new technology to convert sewage water high energy output reduces green house gases and costs!

P-4

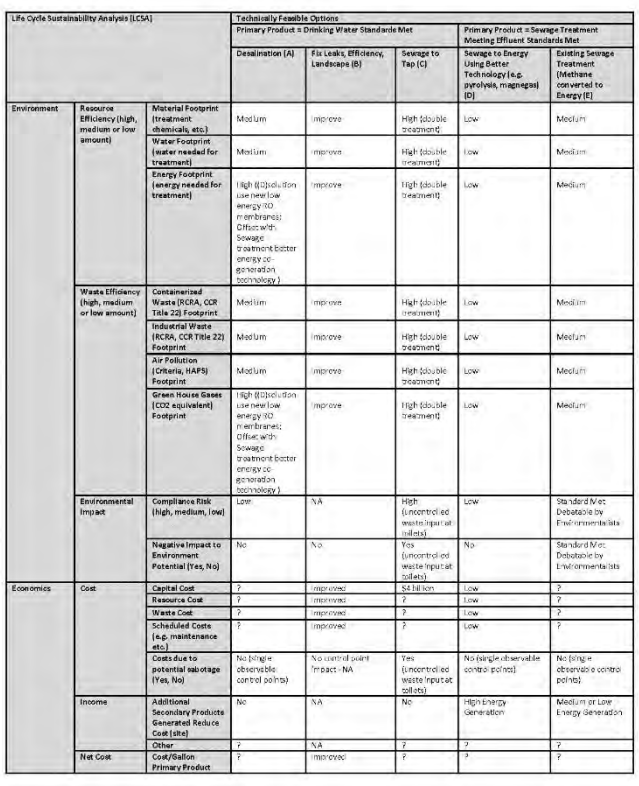
5. Typical is that a program, like sewage to tap in Orange County, gives false confidence for other municipalities to duplicate and a false sense of security. What the tax payer needs is the real options for drinking water treatment and sewage treatment with real supporting information to make the best decision with technically feasible options with costs and potential risks to health and safety of people and the ecosystems - see the following example - please provide such a table with supporting actual or calculated values with a P.E. engineer and medical doctor with the right credentials to CERTIFY the information above (items #1, #2 #3 #4 above) and the table below:

P-5

Respectfully, Ray Paulson, P.E., B.S. Mechanical Engineer, M.S. Environmental Engineer, Adjunct Professor

P-3 Potential impacts to public health are discussed in Sections 5.3.4 (water contamination) and 5.7.7 (water quality discharge) of the DPEIR. As discussed in the DPEIR, impacts to public health as it relates to water quality discharge would be less than significant with the incorporation of mitigation. Chapter 2, Environmental Setting, of the DPEIR provides an overview of the extensive testing and monitoring that occurred at the Demonstration Project facility. Results from the Demonstration Project show that of all regulated constituents would meet applicable water quality standards and all non-regulated constituents would be either undetectable or would be lower than the associated Drinking Water Equivalent Level or the EPA-identified Health Reference Level.

P-4 The City acknowledges that 100% of the recycled water which enters the advanced water purification treatment process is not converted to purified water; however, when compared to existing conditions where wastewater is discharged to the ocean and all water is lost from the system, the estimated 15% of water lost in the purification process is relatively minimal (Recycled Water Study 2012 p 4-17). Additionally, the advanced water purification process uses similar treatment methods as does desalination (i.e., reverse osmosis), and both processes result in a brine discharge. Potential



Life Cycle Sustainability Analysis [LCSA]			Technically Feasible Options				
			Primary Product = Drinking Water Standards Met			Primary Product = Sewage Treatment Meeting Effluent Standards Met	
			Desalination (A)	Fix Leaks, Efficiency, Landscape (B)	Sewage to Tap (C)	Sewage to Energy Using Better Technology (e.g. pyrolysis, magnegas) (D)	Existing Sewage Treatment (Methane converted to Energy (E)
Environment	Resource Efficiency (high, medium or low amount)	Material Footprint (treatment chemicals, etc.)	Medium	Improve	High (double treatment)	Low	Medium
		Water Footprint (water needed for treatment)	Medium	Improve	High (double treatment)	Low	Medium
		Energy Footprint (energy needed for treatment)	High ((D)olution use new low energy RO membranes); Offset with Sewage treatment better energy co-generation technology)	Improve	High (double treatment)	Low	Medium
	Waste Efficiency (high, medium or low amount)	Containerized Waste (RCRA, CCR Title 22) Footprint	Medium	Improve	High (double treatment)	Low	Medium
		Industrial Waste (RCRA, CCR Title 22) Footprint	Medium	Improve	High (double treatment)	Low	Medium
		Air Pollution (Criteria, HAPS) Footprint	Medium	Improve	High (double treatment)	Low	Medium
		Green House Gases (CO2 equivalent) Footprint	High ((D)olution use new low energy RO membranes); Offset with Sewage treatment better energy co-generation technology)	Improve	High (double treatment)	Low	Medium
	Environmental Impact	Compliance Risk (high, medium, low)	Low	NA	High (Uncontrolled waste input at pellets)	Low	Standard Met Debatable by Environmentalists
		Negative Impact to Environment Potential (Yes, No)	No	No	Yes (Uncontrolled waste input at pellets)	No	Standard Met Debatable by Environmentalists
Economics	Cost	Capital Cost	?	Improved	$4 billion	Low	?
		Resource Cost	?	Improved	?	Low	?
		Waste Cost	?	Improved	?	Low	?
		Scheduled Costs (e.g. maintenance etc.)	?	Improved	?	Low	?
		Costs due to potential sabotage (Yes, No)	No (single observable control points)	No control point Impact - NA	Yes (Uncontrolled waste input at pellets)	No (single observable control points)	No (single observable control points)
	Income	Additional Secondary Products Generated Reduce Cost (site)	No	NA	No	High Energy Generation	Medium or Low Energy Generation
		Other	?	NA	?	?	?
	Net Cost	Cost/Gallon Primary Product	?	Improved	?	?	?

P-5 Cont.

impacts related to water supply are discussed in Section 5.16 of the DPEIR. As discussed in the DPEIR, the Pure Water Program would result in a beneficial impact to the regions water supply.

P-5 Comment noted. A reasonable range of alternatives has been provided in the Draft PEIR in compliance with the CEQA Guidelines Section 15126.6(a). The City of San Diego has previously analyzed a variety of water supply alternatives, including, but not limited to, conservation, desalination and reclaimed water use. As discussed in Section 11.2, Water Supply Alternatives Planning, these alternatives were analyzed in depth by the City and can be reviewed in the Water Reuse Study (City of San Diego 2006) and Recycled Water Study (City of San Diego 2012).

P-6 Comment noted. Comment does not address the adequacy or accuracy of the DPEIR.

P-7 Please refer to Response to Comment P-4. The DPEIR focuses on the proposed Program as delineated in Section 3.4. Implementation of additional treatment at the PLWTP is beyond the scope of the proposed Program as defined in the DPEIR.

Quality and Quantity of Product for Quality of Life [Community Advantages and Disadvantages]	Quality	Risk of Contamination and Not Meeting Drinking Water Standard or Effluent Standard (Yes, No)	No	No	Yes	Improved	Existing
	Quantity	Risk of Depletion (Yes, No)	No	No	Yes	NA	NA
	Other	Other					
Sustainability Triple Bottom Line Selection Priority Order Using Criteria Above			1 (A), (B) and (D).	(1) (A), (B) and (D)	No control points for waste water input—to risky	1 (A), (B) and (D)	2 (C), (A) and (B)

P-5 Cont.

Also, the below are practical ways to lower costs - send this to the proper personnel for review.

1. Also, point loma is NOT MEETING the more stringent Clean Water Act standards and this is questionable and they have battled this against groups like sierra club for many years and other groups- why continue to spend money on litigation when there exists NEW TECHNOLOGY to meet the highest clean water act standard and SAVE ADDITIONAL COSTS and lower the energy footprint, and green house gas footprint even more?

P-6

2. For example, the following technologies should be studied for implementation at the Point Loma sewage treatment plan as follows:

A. http://www.pyrolysis.biz/sewage_sludge_pyrolysis.html - output is 80% reduction of solids, more energy output and water that meets the stringent standards with little additional treatment savings cost and providing income while benefitting the environment - less energy and green house gases and clean water act strigent standards met.

B. https://sustainabledevelopment.un.org/content/sustdev/csd/csd15/PF/info/B_Linton.pdf Much lower cost technology - heats effluent to 10,000 degrees F and generates gas to make energy - same as above - lower cost, more energy output, meet clean water act stringent standards, lower green house gas footprint, etc...the gas usable and mixable with natural gas....and safer...is magnetically formed H2 gas in football shape LIGHTER THAN AIR so less dangerous than natural gas.....

C. http://powellwaterrecovery.com/ecadvantage-difference.shtml 10% of the energy requirement to meet more stringent clean water act standards.....

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3. All the above technologies could be studied AS PRE TREATMENT - to then dump water out into existing NPDES sewage treatment for PERMIT REQUIREMENTS to not have to re open the permit to save on legal costs.....and test the water as required by NPDES permit.....if it meets the Clean Water Act most stringent standard - the city can send the water out into the OCEAN

Also JOINT USA - MEXICO plant on the border - to lower sewage coming north - and be a good neighbor....using above technologies etc....and other nations help them etc...

Respectfully, Ray Paulson

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ATTACHMENT A

Pure Water Health Risk Memorandum

DUDEK

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TECHNICAL MEMORANDUM

To: City of San Diego
From: Matthew Morales, Air Quality Analyst
Subject: Health Risk Analysis for the Pure Water Program
Date: June 3, 2016
Cc: Shawn Shamlou, Dudek
Megan Lawson, Dudek

1.0 INTRODUCTION

This memorandum provides detailed information regarding the construction health risk assessment (HRA) for the Pure Water Program (Program) facilities. During the public review comment period for the DPEIR, a public comment was received claiming that a construction HRA is required as part of the DEIR air quality analysis of the Program. The following analysis is presented to demonstrate that health risk associated with construction of Program facilities would be less than significant. This analysis does not change the conclusions regarding the level of significance of the prior analysis of air quality included in the Draft EIR. This memorandum analyzes the possible health risks of exposure to diesel particulate matter (DPM), and concludes that the health risk impacts of exposure at the proposed Program facility site identified in the comment letter would be less than significant.

2.0 CONSTRUCTION HEALTH RISK ASSESSMENT

The construction of Program facilities does not warrant a HRA analysis for a number of reasons. First, construction of Program facilities would not include stationary sources that would require a permit. The Office of Environmental Health Hazard Assessment (OEHHA) *Air Toxics Hot Spots Program Risk Assessment Guidelines – Guidance Manual for Preparation of Health Risk Assessments* states "The Air Toxics Hot Spots and Information and Assessment Act is designed to provide information to state and local agencies and to the general public on the extent of airborne emissions from **stationary sources** and the potential public health impacts of those emissions" as well as "the intent in developing this Guidance Manual is to provide HRA procedures for use in the Air Toxics Hot Spots Program or for the permitting of existing, new, or modified **stationary sources**" (OEHHA 2015 pp 1-1, 1-2).

Additionally, the California Air Resources Board (ARB) regulates diesel particulate matter, which is the greatest potential for toxic air contaminant (TAC) emissions during construction from heavy equipment operations and heavy-duty trucks. The following measures are required by state law to reduce diesel particulate emissions:

- Fleet owners of mobile construction equipment are subject to the CARB Regulation for In-use Off-road Diesel Vehicles (Title 13 California Code of Regulations, Chapter 9, Section 2449), the purpose of which is to reduce diesel particulate matter (DPM) and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles.
- All commercial diesel vehicles are subject to Title 13, Section 2485 of the California Code of Regulations, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading shall be limited to five minutes; electric auxiliary power units should be used whenever possible.

During the public comment period, concern was raised that the OEHHA guidance calls for a HRA to be conducted for the construction projects with construction durations two months or greater. Although the OEHHA health risk guidance manual suggests that construction activity in excess of two months could be subject to a health risk assessment, it does not indicate that all construction projects in excess of two months requires a HRA. The intent of the 2-month or greater temporal suggestion is directed at construction scenarios that would employ large stationary sources (or other significant sources of emissions) that would generate substantial TAC emissions in a short period of time. If every construction project with a schedule in excess of two months were required to conduct a health risk assessment, then an assessment would be required for nearly every discretionary action taken. This is not the intent of the OEHHA health risk guidance.

Furthermore, the modeling performed by SWAPE omitted several key project-specific parameters that led to a substantial overestimation of construction-related impacts. SWAPE employed AERSCREEN, which is a screening-level model that does not take into account site-specific meteorology, terrain, and other geographic-specific parameters that affect health risk. Instead, use of the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) dispersion model is recommended because it accounts for these site specific parameters. Additionally, SWAPE applied an area source for the estimation of construction equipment and mobile source emission generation; however, volume sources more appropriately represent emissions from on-site construction equipment. Moreover, SWAPE did not identify specific sensitive receptors in the vicinity of each facility in question. Although future receptors could occur at a later date, it is not known at this time where future receptors might be located, and it is not within the scope of the project under CEQA to speculate as to where future receptors may be located.

Although a health risk assessment is not warranted for the various facilities that would be constructed as part of the Program for the reasons stated above, a project-specific health risk assessment was performed in response to SWAPE's letter using appropriate, project-specific parameters that were omitted in SWAPE's analysis.

3.0 ANALYSIS METHODOLOGY

In order to determine potential health risk associated with construction of Program facilities, sensitive receptors were identified in proximity to each of the proposed Program facility sites (i.e., North City AWPF, Central Area AWPF, Central Area WRP, and the South Bay AWFP). The Central Area AWPF is the only proposed facility site with sensitive receptors within 1,000 feet of the proposed facility construction area. As such, this facility was used as the worse-case exposure scenario, with the understanding that if construction health risk was below applicable thresholds for this facility, then health risk would similarly be below applicable thresholds for the other facilities. Notably, a 1,000-foot radial distance is considered the distance in which pollutant concentrations are greatest, and serves as a general "notification" distance from receptors. For example, research conducted by the California Air Resources Board (ARB) indicated an 80% drop-off in pollutant concentrations at approximately 1,000 feet from major sources (ARB 2005). Therefore, a 1,000-foot distance is often used in analyzing impacts to receptors from distribution centers, freeways, rail yards, stationary sources, and other pollutant sources.

Construction of the Central Area AWPF would result in diesel particulate matter (DPM) emissions from heavy-duty construction equipment and trucks operating within the facility construction area. DPM is characterized as a toxic air contaminant (TAC) by the ARB. The OEHHA has identified carcinogenic and chronic noncarcinogenic effects from long-term (chronic) exposure, but it has not identified similar health effects due to short-term (acute) exposure to DPM. The nearest existing off-site sensitive receptors from the Central Area AWPF site consist of multi-family residences located northwest (approximately 850 feet or further) of the construction area.

Cancer Risk

Cancer risk is defined as the increase in lifetime probability (chance) of an individual developing cancer due to exposure to a carcinogenic compound, typically expressed as the increased probability in 1 million. The cancer risk from inhalation of a TAC is estimated by calculating the inhalation dose in units of milligrams/kilogram body weight per day based on an ambient concentration in units of micrograms per cubic meter ($\mu g/m^3$), breathing rate, age-specific sensitivity factors, and exposure period, and multiplying the dose by the inhalation cancer potency factor, expressed as units of inverse dose [i.e., $(\text{milligrams/kilogram body weight per day})^{-1}$]. Typically, population-wide cancer risks are based on a lifetime (70 years) of continuous

exposure and an individual resident cancer risk is based on a 30-year exposure duration; however, for the purposes of this analysis, a 2-year exposure scenario corresponding to the construction period for Central Area AWPF was assumed.

Cancer risks are typically calculated for all carcinogenic TACs and summed to calculate the overall increase in cancer risk to an individual. The calculation procedure assumes that cancer risk is proportional to concentrations at any level of exposure and that risks from various TACs are additive. This is considered a conservative assumption at low doses and is consistent with the updated OEHHA-recommended approach (OEHHA 2015).

Noncancer Risk

Noncancer health impact of an inhaled TAC is measured by the hazard quotient, which is the ratio of the ambient concentration of a TAC in units of $\mu g/m^3$ divided by the reference exposure level (REL), also in units of $\mu g/m^3$. The inhalation REL is the concentration at or below which no adverse health effects are anticipated. The REL is typically based on health effects to a particular target organ system, such as the respiratory system, liver, or central nervous system. Hazard quotients are then summed for each target organ system to obtain a hazard index.

DPM Concentration Analysis

To estimate the ambient DPM concentrations resulting from construction activities at nearby sensitive receptors, a dispersion modeling analysis was performed using the AERMOD dispersion model, Version 15181, in conjunction with the Hotspots Analysis and Reporting Program Version 2 (HARP 2). ARB developed HARP 2 as a tool to implement the risk assessments and incorporates all the requirements provided by OEHHA as outlined in the *Air Toxics Hot Spot Program Risk Assessment Guidelines – Guidance Manual for Preparation of Health Risk Assessments* (OEHHA 2015).

The DPM emissions from diesel-powered construction equipment and on-site diesel-powered trucks that would be used during construction are based on the California Emissions Estimator Model (CalEEMod) output for the Central Area AWPF construction, as provided in Appendix E of the DPEIR. Annual emissions of construction-related exhaust PM_{10}, as a surrogate for DPM, were calculated and then converted to grams per second for use in the AERMOD model.

It was assumed construction equipment would be operating 8 hours per day, Monday through Friday. An unmitigated emission rate of 5.87 x 10^{-3} grams per second was calculated as follows:

0.0988 total tons exhaust PM_{10} = 197.6 total pounds (lbs) DPM during construction

197.6 lbs × 453.6 g/lb ÷ (8 hrs/day × 530 working days) ÷ 3600 seconds/hour = 5.87 x 10^{-3} g/second

To develop a conservative assumption regarding emissions from heavy-duty equipment and trucks and DPM exposure, the total emission rate described above was divided by 50 (20-meter by 20-meter) volume sources, clustered on the construction area nearest the sensitive receptors. This assumption is conservative since it essentially concentrates total construction emissions generated at the site onto about 1/3 of the total site area that is proximate to sensitive receptors for the full duration of construction. A release height of 5 meters was provided to represent the midrange of the expected plume rise from frequently used construction equipment during daytime atmospheric conditions. These parameters reflect those utilized in the South Coast Air Quality Management District's Localized Significance Thresholds (LST) Methodology (SCAQMD 2008). In addition, the San Diego Air Pollution Control District (SDAPCD) recommends the use of the rural dispersion coefficient as the modeling default, based on the close proximity to the coastline (SDAPCD 2015).

The five latest years of AERMOD-ready meteorological data from 2009 through 2014 for the Montgomery Field Airport Monitoring Station were provided by ARB for use in AERMOD. ARB processed the data using EPA's AERMET (version 14134) meteorological data processor.

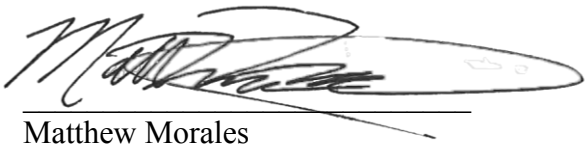
The cancer risk calculations were performed using the HARP 2 Air Dispersion Modeling and Risk Tool (ADMRT) by importing the predicted annual DPM concentrations from AERMOD for the sensitive receptors, including the Maximally Exposed Individual Resident (MEIR). Cancer risk parameters, such as age sensitivity factors (ASFs), daily breathing rates (DBRs), and cancer potency factors were based on the values and data recommended by OEHHA (2015) as implemented in HARP 2. The potential exposure pathway for DPM includes inhalation only. The potential exposure through other pathways (e.g., ingestion) requires substance and site-specific data, and the specific parameters for DPM are not known for these pathways.

For the purposes of this construction health risk assessment, given the less-than-lifetime exposure period, and the higher breathing rates and sensitivity of children to TACs, the cancer risk calculation assumes that the exposure would affect children early in their lives. For the derived cancer risk calculation under the worst-case scenario, the 2-year exposure duration was assumed to start during the 3rd trimester of pregnancy. Additionally, as a conservative assumption, a "fraction at home" (FAH) factor was not applied for age bins less than 16, whereas OEHHA recommends a 0.85 FAH for 3rd trimester through 2 years old for evaluating residential cancer risk.

In addition to the potential cancer risk, DPM has chronic (i.e., long-term) noncarcinogenic health impacts. The chronic hazard index was evaluated using the OEHHA inhalation RELs. The chronic noncarcinogenic inhalation hazard index for construction activities was also calculated using the HARP 2 ADMRT.

4.0 CONCLUSIONS

The results of the AERMOD and HARP 2 modeling are provided in Attachment A. The modeled maximum annual concentration at the MEIR would be 0.00188 µg/m^3. The associated cancer risk for the child MEIR (exposure starting in 3rd trimester) would be approximately 0.6 in 1 million, which would not exceed the County significance threshold of 10 in 1 million for cancer impacts. The associated chronic hazard index for the child MEIR would be approximately 0.0004, which would not exceed the County significance threshold of 1.0 for noncarcinogenic health impacts. Since emissions of DPM generated by construction at the Central AWPF facility would result in cancer and noncarcinogenic risk below the applicable thresholds, the impact would be less than significant. In addition, as noted in the "Analysis Methodology" section above, since the Central AWPF site was used as the worse-case exposure scenario, the health risk impacts associated with construction of facilities at the other sites (North City AWPF, Central Area WRP, and the South Bay AWFP) would also be less than significant.



Matthew Morales
Air Quality Specialist

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EXECUTIVE SUMMARY

ES-1 INTRODUCTION

This Program Environmental Impact Report (PEIR) has been prepared by the City of San Diego (City) as lead agency pursuant to the California Environmental Quality Act (CEQA) California Public Resources Code 21000 et seq., and the CEQA Guidelines (California Code of Regulations (CCR), Section 15000 et seq.). This PEIR evaluates the potential short-term and long-term, direct and indirect, cumulative, and combined environmental impacts of the Pure Water Program (Program).

The Program includes a variety of facilities located throughout the central and southern coastal areas of San Diego County (see Figure 1-1). The Program location can be generally described in three major geographic components: North City, Central Area, and South Bay. Figure 1-2 shows the conceptual locations of proposed facilities and pipelines for the Pure Water Program. New advanced water purification facilities (AWPFs) and the majority of pump stations would be located within the corporate boundaries of the City of San Diego (City). Pipelines would traverse through a number of local jurisdictions, including the Cities of San Diego, La Mesa, El Cajon, Santee, Chula Vista, National City and the community of Lakeside in unincorporated San Diego County, in addition to federal lands within Marine Corps Air Station (MCAS) Miramar, Naval Base Point Loma, and the U.S. Marine Corps Recruit Depot.

ES-2 PROJECT DESCRIPTION AND BACKGROUND

The Pure Water Program would use advanced water purification technology to produce potable water from recycled water and provide a safe, reliable and cost-effective drinking water supply for San Diego. The Pure Water Program consists of the design and construction of new advanced water purification facilities and a new water reclamation plant; upgrades to existing water reclamation and wastewater treatment facilities; and design and construction of new pump stations and pipelines. The following Program components are currently contemplated as comprising the entirety of the Pure Water Program; however, Program components are subject to change during future project-level design.

The Pure Water Program would construct AWPFs at the existing North City Water Reclamation Plant (NCWRP) and South Bay Water Reclamation Plant (SBWRP) and a third AWPF and new water reclamation plant (Central Area Water Reclamation Plant (CAWRP)) would be constructed. Upgrades would occur at the existing NCWRP and SBWRP in order to provide sufficient tertiary influent for the AWPFs. Pump station and pipeline facilities would convey different types of flows to and from the treatment facilities for: 1) diverting wastewater flows to water reclamation facilities; 2) conveying recycled water to advanced water purification

facilities; 3) conveying purified water from AWPFs to either the San Vicente and/or Lower Otay Reservoirs; and 4) transporting waste flows (brine and sludge) from treatment processes to solids handling facilities or back into the Metro System. A Program alternative would convey purified water to the Miramar Reservoir and Murray Reservoir. Upgrades would also occur at Metropolitan Biosolids Center and Point Loma Wastewater Treatment Plant (PLWTP) to handle the additional brine and sludge produced by the WRP expansions and advanced water purification process. Section 3 of this PEIR includes a comprehensive description of the project, including accompanying graphics.

The Pure Water Program would create 83 million gallons per day (MGD) of locally controlled potable water and reduce flows to the PLWTP, which in turn would reduce total suspended solids (TSS) discharged to the ocean. The Pure Water Program would construct facilities that have the ability to produce at least 15 MGD by 2023, 30 MGD by 2027, and 83 MGD by 2035 in compliance with target online dates outlined in the 2014 Cooperative Agreement and PLWTP modified permit renewal application. The North City AWPF ~~could~~ may produce up to 30 MGD of purified water. The Central Area AWPF ~~could~~ may produce between 38 to 53 MGD of purified water. The South Bay AWPF may~~could~~ produce up to 15 MGD of purified water.

ES-3 IMPACTS DETERMINED TO BE SIGNIFICANT

Table ES-1 provides a summary of significant impacts of the Pure Water Program. Impacts associated with land use, air quality, health and safety, biological resources, noise, historical resources, hydrology and water quality, paleontological resources, public utilities, visual effects and neighborhood character, geology and soils, and transportation, circulation, and parking were identified as being potentially significant, but less than significant with mitigation.

Table ES-1
Summary of Significant Environmental Impacts

Issue Area	Impact	Mitigation Measures	Level of Significance After Mitigation
Land Use			
Would the Pure Water Program be inconsistent or conflict with the environmental goals, objectives, and recommendations of a general plan, community plan, or other applicable land use plans?	Project components could conflict with or be inconsistent with the environmental goals, objectives or guidelines of an applicable community plan or general plan.	Mitigation measures **MM-LU-1and MM-LU-2** as described in Section 5.1, Land Use.	Below a Level of Significance
Would the Pure Water Program result in a conflict with the provisions of the MSCP or other adopted environmental plans for the area?	Program components could result in indirect and direct impacts to protected areas, resulting in conflicts with environmental plans.	Mitigation measures **MM-LU-3** through **MM-LU-9~~10~~** as described in Section 5.1, Land Use.	Below a Level of Significance
Would the Pure Water Program result in land uses which are not compatible with an adopted Airport Land Use Compatibility Plan (ALUCP)?	Program components would need to be reviewed by the ALUC and FAA to make a final determination of consistency during subsequent project review.	Mitigation measures **MM-LU-10~~1~~** and **MM-LU-11~~2~~** as described in Section 5.1, Land Use.	Below a Level of Significance
Air Quality and Odor			
Would the Pure Water Program result in a violation of any air quality standard or contribute substantially to an existing or projected air quality violation?	City component could result in exceedance of the NOx threshold.	Mitigation measures **MM-AQ-1 and MM-AQ-2** as described in Section 5.2, Air Quality and Odor.	Below a Level of Significance
Would the Pure Water Program create objectionable odors affecting a substantial number of people?	Operation of the CAWRP and pump stations could result in potential nuisance odors due to the proximity to existing and future sensitive receptors.	Mitigation measure **MM-AQ-3** as described in Section 5.2, Air Quality and Odor.	Below a Level of Significance
Health and Safety			
Would the Pure Water Program expose people or property to health hazards, including fire?	Program could increase wildfire hazards by introducing new ignition sources.	Mitigation measures **MM-HAZ-1 and MM-HAZ-2** as described in Section 5.3, Health and Safety.	Below a Level of Significance

Table ES-1
Summary of Significant Environmental Impacts

Issue Area	Impact	Mitigation Measures	Level of Significance After Mitigation
Would the Pure Water Program create future risk of an explosion or the release of a hazardous substance (including, but not limited to gas, oil, pesticides, chemicals, or radiation)? Would the proposed Program expose people or the environment to a significant hazard through the routine transport, use, or disposal of hazardous materials?	Long-term operation of the Program could result in hazardous materials release through use, storage, and transport.	Mitigation measures **MM-HAZ-3, MM-HAZ-4, and MM-HAZ-5** as described in Section 5.3, Health and Safety.	Below a Level of Significance
Would any component of the Pure Water Program interface or intersect with a site that is included on a hazardous material sites list compiled pursuant to Government Code Section 6596.25 and, as a result, pose a potential hazard to the public or environment?	Program components could be located on unknown hazardous materials sites.	Mitigation measure **MM-HAZ-6** as described in Section 5.3, Health and Safety.	Below a Level of Significance
Would the Pure Water Program result in a safety hazard for people working in a designated airport influence area?	Program components may result in a safety hazard for people working in a designated airport influence area.	Mitigation measures **MM-LU-10~~1~~** and **MM-LU-11~~2~~**, as described in Section 5.1, Land Use.	Below a Level of Significance
Biological Resources			
Would the proposed Pure Water Program result in impacts to a sensitive habitat or sensitive natural community as identified in local, regional, state or federal plans, policies, or regulations?	Program components could result in potential direct or indirect impacts to sensitive habitat or sensitive natural communities.	Mitigation measure **MM-BIO-1** as described in Section 5.4, Biological Resources.	Below a Level of Significance
Would the proposed Pure Water Program result in an impact on City, State, or federally regulated wetlands through direct removal, filling, hydrological interruption or other means?	Program components could result in potential direct or indirect impacts to wetlands.	Mitigation measure **MM-BIO-2** as described in Section 5.4, Biological Resources.	Below a Level of Significance
Would implementation of the proposed Pure Water Program result in a reduction in the number of any unique, rare, endangered, sensitive, or fully protected species of plants or animals?	Program components could result in potential direct or indirect impacts to sensitive species.	Mitigation measure **MM-BIO-1** as described in Section 5.4, Biological Resources.	Below a Level of Significance

Table ES-1
Summary of Significant Environmental Impacts

Issue Area	Impact	Mitigation Measures	Level of Significance After Mitigation
Would the proposed Pure Water Program result in interference with the movement of any native resident or migratory wildlife through linkages or wildlife corridors?	Program components could result in potential impacts to wildlife movement.	Mitigation measure **MM-BIO-3** as described in Section 5.4, Biological Resources.	Below a Level of Significance
Would the Pure Water Program conflict with provisions of adopted local habitat conservation plans or policies protecting biological resources?	Program components could result in potential direct or indirect impacts to applicable plans.	Mitigation measures **MM-BIO-1** and **MM-LU-3**, as described in Section 5.1, Land Use and Section 5.4, Biological Resources.	Below a Level of Significance
Would the Pure Water Program introduce land uses within or adjacent to the MHPA that would result in adverse edge effects?	Program components could result in potential direct or indirect impacts to the MHPA.	Mitigation measures **MM-LU-3** through **MM-LU-1~~9~~0**, as described in Section 5.1, Land Use and **MM-BIO-1** as described in Section 5.4, Biological Resources.	Below a Level of Significance
Would the Pure Water Program introduce invasive species into natural open space areas?	Program components could introduce invasive species to natural open space areas	Mitigation measure **MM-LU-3** as described in Section 5.1, Land Use.	Below a Level of Significance
Noise			
Would construction noise associated with implementation for any component of the Pure Water Program exceed the City's adopted noise ordinance or noise levels as established in the General Plan?	Program components could result in potential impacts related to construction noise. Program components could result in potential impacts related to operational noise and vibration.	Mitigation measures **MM-NOI-1 and MM-NOI-2** as described in Section 5.5, Noise.	Below a Level of Significance
Historical Resources			
Would the Pure Water Program result in the alteration or destruction of a prehistoric or historic archaeological site, or any adverse physical or aesthetic effects to a prehistoric or historic building, structure, object, or site?	Program components could result in potential impacts to unknown subsurface cultural resources and historic built environment resources.	Mitigation measures **MM-LU-2** as described in Section 5.1, Land Use and **MM-HIST-1 and MM-HIST-2** as described in Section 5.6, Historical Resources.	Below a Level of Significance
Would the Pure Water Program result in any impact to existing religious or sacred uses or result in the disturbance of any human remains within the potential impact area?	Program components could result in potential impacts to human remains.	Mitigation measure **MM-HIST-1**, as described in Section 5.6, Historical Resources.	Below a Level of Significance

Table ES-1
Summary of Significant Environmental Impacts

Issue Area	Impact	Mitigation Measures	Level of Significance After Mitigation
Hydrology and Water Quality			
Would the Pure Water Program increase impervious surfaces and associated increased runoff? Would the Pure Water Program result in a substantial alteration to on- and off-site drainage patterns due to changes runoff flow rates or volumes?	Program components could increase impervious surfaces and result in potential impacts to runoff, drainage patterns, and flow rates.	Mitigation measures **MM-HYD-1** through **MM-HYD-3** as described in Section 5.7, Hydrology and Water Quality.	Below a Level of Significance
Would the Pure Water Program create discharges into surface or groundwater, or result in any alteration of surface or ground water quality, including, but not limited to, temperature, dissolved oxygen or turbidity? Would there be increases in pollutant discharges including downstream sedimentation?	The Program could result in potential impacts related to non-stormwater and emergency discharges.	Mitigation measures **MM-HYD-4** and **MM-HYD-5** as described in Section 5.7, Hydrology and Water Quality.	Below a Level of Significance
Would the Pure Water Program, when considered in combination with past, current, and future projects in the affected watersheds, result in cumulatively significant impacts on hydrology and water quality?	The Program could result in potential cumulative impacts to water quality	Mitigation measures **MM-HYD-1** through **MM-HYD-5** as described in Section 5.7, Hydrology and Water Quality.	Below a Level of Significance
Paleontological Resources			
Would the Pure Water Program result in the loss of significant paleontological resources?	Program components could result in potential impacts to paleontological resources.	Mitigation measure **MM-PALEO-1** as described in Section 5.8, Paleontological Resources.	Below a Level of Significance
Public Utilities			
Would the Pure Water Program result in new systems or require substantial alterations to existing utilities including solid waste disposal, the construction of which would create a physical effect on the environment? These systems include communications systems, storm water drainage and solid waste disposal.	Construction and operation of Program components could result in potential impacts related to the generation of solid waste.	Mitigation measure **MM-PU-1** as described in Section 5.9, Public Utilities.	Below a Level of Significance

Table ES-1
Summary of Significant Environmental Impacts

Issue Area	Impact	Mitigation Measures	Level of Significance After Mitigation
Visual Effects and Neighborhood Character			
Would the Pure Water Program result in a substantial change to natural topography or other ground surface relief features through landform alteration?	Program components (specifically treatment facilities and pump stations) could result in the alteration of landforms.	Mitigation measure **MM-AES-1** as described in Section 5.10, Visual Effects and Neighborhood Character.	Below a Level of Significance
Would implementation of the Pure Water Program result in the blockage of public views from designated open space areas, roads, or to any significant visual landmarks or scenic vistas?	Program components (specifically treatment facilities and pump stations) could result in the blockage of public views or impacts to scenic vistas.	Mitigation measure **MM-AES-2** as described in Section 5.10, Visual Effects and Neighborhood Character.	Below a Level of Significance
Would the Pure Water Program result in substantial alteration to the existing character of the area? Would the Pure Water Program be compatible with surrounding development in terms of bulk; scale, materials, or style?	Program components (specifically treatment facilities and pump stations) could result in substantial alteration to the existing character or be incompatible with surrounding development.	Mitigation measure **MM-AES-3** as described in Section 5.10, Visual Effects and Neighborhood Character.	Below a Level of Significance
Geology and Soils			
Would the Pure Water Program expose people or property to geologic hazards such as earthquakes, landslides, mudslides, liquefaction, ground failure, or similar hazards?	Program components could potentially be subject to geologic hazards.	Mitigation measure **MM-GEO-1** as described in Section 5.12, Geology and Soils.	Below a Level of Significance
Would the Pure Water Program increase the potential for erosion of soils on- or off-site?	Program components could potentially result in increased erosion.	Mitigation measure **MM-GEO-2** as described in Section 5.12, Geology and Soils.	Below a Level of Significance
Would the Pure Water Program be located on a geological 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?	Program components could potentially be located on unstable soils or geologic formations.	Mitigation measure **MM-GEO-1** as described in Section 5.12, Geology and Soils.	Below a Level of Significance
Transportation, Circulation, and Parking			
Would the Pure Water Program create alterations to present circulation movements in the area including effects on existing public access points?	Construction of Program components could temporarily disrupt access.	Mitigation measure **MM-TRA-1** as described in Section 5.13, Transportation, Circulation, and Parking.	Below a Level of Significance

ES-4 EFFECTS NOT FOUND TO BE SIGNIFICANT

The remaining topics discussed in the PEIR were found to be less than significant without mitigation; these topics include energy; public services; greenhouse gas emissions; water supply; agricultural resources; and mineral resources.

ES-5 AREAS OF KNOWN CONTROVERSY

Public scoping meetings were held on December 9, 2014, at the City of San Diego South Bay Recreation Center and on December 11, 2014, at the Public Utilities Department Metropolitan Operations Complex, to gather additional public input. Comments received during the Notice of Preparation (NOP) public scoping period and meetings were considered during the preparation of this PEIR. Comment letters received during the NOP public scoping period expressed concern about biological resources, airport compatibility, water supply, water quality, land use compatibility, and odor. These concerns have been identified as areas of known controversy and are also analyzed in Chapter 5 of this PEIR. The NOP, scoping letter, and other NOP public comments are included as Appendix A of this PEIR.

ES-6 PROJECT ALTERNATIVES

An analysis of alternatives has been provided in this document to provide decision makers with a reasonable range of possible alternatives to be considered. The discussion in this PEIR focuses on several alternatives to the Program that were brought forward for detailed evaluation. The alternatives to the Pure Water Program include the No Program/No Build Alternative, Post Office Site Alternative, and the Alternate Reservoir Augmentation Alternative.

A matrix displaying the major characteristics and significant environmental effects of each alternative as compared to the Program is provided in Table ES-2. The table also indicates whether the alternative would be feasible in terms of meeting the objectives of the Program as defined in Chapter 3.

Table ES-2
Summary of Alternatives' Impacts

Environmental Issue	Pure Water Program	No Project Alternative	Post Office Site Alternative	Alternate Reservoir Augmentation Alternative
Land Use	Less than significant with incorporation of mitigation measures	Impacts avoided	Similar impacts	Similar impacts
Air Quality and Odor	Less than significant with incorporation of mitigation measures	Impacts avoided	Similar impacts	Slightly reduced

Table ES-2
Summary of Alternatives' Impacts

Environmental Issue	Pure Water Program	No Project Alternative	Post Office Site Alternative	Alternate Reservoir Augmentation Alternative
Health and Safety	Less than significant with incorporation of mitigation measures	Impacts avoided	Similar impacts	Similar impacts
Biological Resources	Less than significant with incorporation of mitigation measures	Impacts avoided	Similar impacts	Slightly reduced
Noise	Less than significant with incorporation of mitigation measures	Impacts avoided	Similar impacts	Slightly reduced
Historical Resources	Less than significant with incorporation of mitigation measures	Impacts avoided	Similar impacts	Slightly reduced
Hydrology and Water Quality	Less than significant with incorporation of mitigation measures	Impacts avoided	Similar impacts	Slightly reduced
Paleontological Resources	Less than significant with incorporation of mitigation measures	Impacts avoided	Similar impacts	Slightly reduced
Public Utilities	Less than significant with incorporation of mitigation measures	Impacts avoided	Similar impacts	Similar impacts
Visual Effects and Neighborhood Character	Less than significant with incorporation of mitigation measures	Impacts avoided	Similar impacts	Slightly reduced
Energy	Less than significant	Impacts avoided; Beneficial Impacts are not realized	Similar impacts	~~Slightly greater~~reduced
Geology and Soils	Less than significant with incorporation of mitigation measures	Impacts avoided	Slightly greater	Similar impacts
Transportation, Circulation, and Parking	Less than significant with incorporation of mitigation measures	Impacts avoided	Similar impacts	Slightly reduced
Public Services	Less than significant	Impacts avoided	Similar impacts	Similar impacts
Greenhouse Gas Emissions	Less than significant	Impacts avoided; Beneficial Impacts are not realized	Similar impacts	Slightly ~~greater~~reduced
Water Supply	Beneficial Impact	Beneficial Impacts are not realized	Similar impacts	Similar impacts
Meets Most of the Basic Project Objectives?	**Yes**	**No**	**Yes**	**Yes**

ES-7 SUBSEQUENT ENVIRONMENTAL REVIEW

The PEIR is intended to allow the City to consider broad policy alternatives and Program-wide mitigation measures at an early time and to streamline subsequent environmental review of the Program components. The PEIR is not intended to evaluate project-level impacts associated with future implementation of any of the treatment facilities or pipelines; any subsequent activities proposed for the Program, such as approvals and implementation of individual Program components, will be further evaluated separately under individual project-level CEQA/National Environmental Policy Act (NEPA) review processes.

CHAPTER 1 INTRODUCTION

This Program Environmental Impact Report (PEIR) evaluates the potential short-term and long-term, direct and indirect, cumulative, and combined environmental impacts of the Pure Water Program (Program) initiated by the City of San Diego Public Utilities Department. The Program involves the production of 83 million gallons per day (MGD) of potable recycled water through the design and construction of new advanced water purification, pumping, and conveyance facilities, as well as upgrades to existing facilities. The location of the Program is depicted in Figure 1-1, Regional Map and Figure 1-2, Vicinity Map.

The City of San Diego is the lead agency in preparing this PEIR in accordance with the California Environmental Quality Act (CEQA) (California Public Resources Code, Section 21000 et seq.) and CEQA Guidelines (14 CCR 15000 et seq.). This PEIR is intended for use by both decision makers and the public. It provides relevant information concerning the potential environmental effects associated with the construction and operation of the Program.

1.1 CEQA REQUIREMENTS

1.1.1 CEQA COMPLIANCE

CEQA requires the preparation of an environmental impact report (EIR) for any project that a lead agency determines may have a significant impact on the environment. According to Section 21002.1(a) of the CEQA statutes, "The purpose of an environmental impact report is to identify the significant effects on the environment of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided." CEQA also establishes mechanisms whereby the public and decision makers can be informed about the nature of the project being proposed, and the extent and types of impacts that the project and its alternatives would have on the environment if they were to be implemented. This PEIR has been prepared to comply with all criteria, standards, and procedures of the CEQA Guidelines (14 CCR 15000 et seq.).

The Program is analyzed under a PEIR in compliance with Section 15168 of the CEQA Guidelines, Program EIR. According to Section 15168(a) of the CEQA statutes, A program EIR "may be prepared for a series of actions that can be characterized as one large project and are related either: (1) Geographically; (2) A logical parts in the chain of contemplated actions; (3) In connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or (4) As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways."

This PEIR has also been prepared pursuant to the City's CEQA Significance Determination Thresholds (City of San Diego 2011). This document represents the independent judgment of the City as lead agency.

1.1.2 NOTICE OF PREPARATION AND SCOPING MEETING

The scope of analysis for the PEIR was determined by the City in a scoping letter dated November 24, 2014, as well as a result of public responses to the Scoping Letter Notice of Preparation (NOP). In compliance with Section 15082 of the CEQA Guidelines, the City's Planning Department circulated the NOP and Scoping Letter to interested agencies, groups, and individuals. The 30-day public scoping period ended December 23, 2014. In addition, public scoping meetings were held on December 9, 2014, at the City of San Diego South Bay Recreation Center and on December 11, 2014, at the Public Utilities Department Metropolitan Operations Complex, to gather additional public input. Comments received during the NOP public scoping period and meetings were considered during the preparation of this PEIR. The NOP and Scoping Letter comments are included as Appendix A of this PEIR. Based on the scope of analysis for this PEIR, the following issues were determined to be potentially significant and are therefore addressed in Chapter 5, Environmental Analysis, of this document: land use, visual effects and neighborhood character, air quality/odor, greenhouse gas emissions, biological resources, historical resources, health and safety, hydrology and water quality, geology/soils, noise, paleontological resources, transportation/circulation, energy, public services, public utilities, and water supply.

Additional CEQA-mandated environmental topics, such as agricultural and forestry resources and mineral resources were not found to be significant based on the scoping results. These issues are addressed in Chapter 10, Effects Not Found to be Significant, of the PEIR. Specific environmental topics were included in Chapter 10 because they did not meet the screening thresholds established in the City's Significance Determination Thresholds (City of San Diego 2011); therefore, impacts associated with these environmental topics were considered to be less than significant.

1.2 PURPOSE AND USES OF THIS PEIR

Pursuant to the CEQA Guidelines (Section 15168), a Program EIR allows the lead agency to consider broad policy alternatives and program-wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts, and allow reduction in paperwork. Another purpose of a PEIR is to streamline future environmental review of projects found to fall within the scope of the PEIR. The PEIR for this Program will address and evaluate the potential components of the Program at a general programmatic level. However, the PEIR is not intended or structured to evaluate project-level impacts associated with future

implementation of any of the treatment facilities or pipelines, although the PEIR may provide information and analyses that could be used in conjunction with future project-level environmental reviews of such improvements. Any subsequent activities proposed for the Program, such as approvals and implementation of individual components of the Program, will be further evaluated separately under individual project-level CEQA/National Environmental Policy Act review processes.

1.3 PEIR FORMAT

An executive summary of this PEIR is provided at the beginning of this document. The summary includes the conclusions of the environmental analysis and a comparative summary of the Program with the alternatives analyzed in this EIR. Chapter 1, Introduction, introduces the Program in light of the required environmental review procedures. Chapter 2, Environmental Setting, Project Background and Regulatory Setting, describes the Program's location, physical environmental setting, and the City's current wastewater and water system, provides an overview of the regulatory setting for potable reuse, and provides a summary of related studies. Chapter 3, Project Description, provides a description of the Program history and background, the components of the Program, the Program's purpose and objectives, and required discretionary approvals. Chapter 4, History of Project Changes, contains a discussion of how the Program has changed since issuance of the NOP. Chapter 5 consists of the environmental analysis, which examines the potentially significant environmental issues for the Program. Chapter 6 discusses significant environmental effects which cannot be avoided if the Program is implemented, and Chapter 7 addresses significant irreversible environmental changes. Chapter 8, Growth Inducement, describes the potential direct and indirect growth-inducing impacts of the Program. Chapter 9, Cumulative Impacts, addresses cumulative impacts, and Chapter 10 addresses effects not found to be significant. Chapter 11, Alternatives, addresses a reasonable range of alternatives to the Program. Chapter 12, Mitigation, Monitoring, and Reporting Program, provides mitigation for significant impacts incurred by the Program, and Chapter 13, References Cited, contains a list of sources cited throughout the PEIR organized by section. The remaining PEIR sections and appendices are provided as set forth in the table of contents.

1.4 DISCRETIONARY ACTIONS

The Program would require a variety of discretionary actions, approvals, and permits by the City and various agencies. It is anticipated that this PEIR and future project-level EIRs will be used by these agencies in their decision-making process. Table 1-1 summarizes the future discretionary actions, approvals, and permits anticipated to be required as part of the future implementation of the various components of the Program, and identifies agencies that would be responsible for granting the approvals and permits.

Table 1-1
Future Discretionary Actions, Approvals and Permits

Discretionary Action/Approval/Permit	Agency
Property and Easement Acquisition	City of San Diego
Construction and Encroachment Permit(s)	City of San Diego
Site Development Permit	City of San Diego
Coastal Development Permit	City of San Diego
Construction and Encroachment Permit(s)	City of La Mesa
Construction and Encroachment Permit(s)	City of El Cajon
Construction and Encroachment Permit(s)	City of Santee
Construction and Encroachment Permit(s)	National City
Construction and Encroachment Permit(s)	City of Chula Vista
Construction and Encroachment Permit(s)	County of San Diego
Right-of-Way Encroachment Permit	California Department of Transportation
Joint Right of Entry Permit	Metropolitan Transit System/North County Transit District
Right of Entry Permit	Metropolitan Transit System
Coastal Development Permit	California Coastal Commission
Section 401 Permit – Water Quality Certification	Regional Water Quality Control Board
Section 404 Permit – Clean Water Act	U.S. Army Corps of Engineers
Section 10 Permit – Rivers and Harbors Act	U.S. Army Corps of Engineers
Section 2081 Incidental Take Permit	California Department of Fish and Wildlife
Section 1602 Streambed Alteration Agreement	California Department of Fish and Wildlife
Section 7 Consultation or Section 10(a) Incidental Take Permit	U.S. Fish and Wildlife Service
Air Quality Permit to Construct/Permit to Operate	San Diego Air Pollution Control District
Construction General Permit, including the stormwater pollution prevention plan	State Water Resources Control Board/ Regional Water Quality Control Board
Domestic Water Supply Permit Amendment	State Water Resource Control Board, Division of Drinking Water
Obstruction Evaluation/Airport Airspace Analysis (OE/AAA), Form 7460-1	Federal Aviation Administration

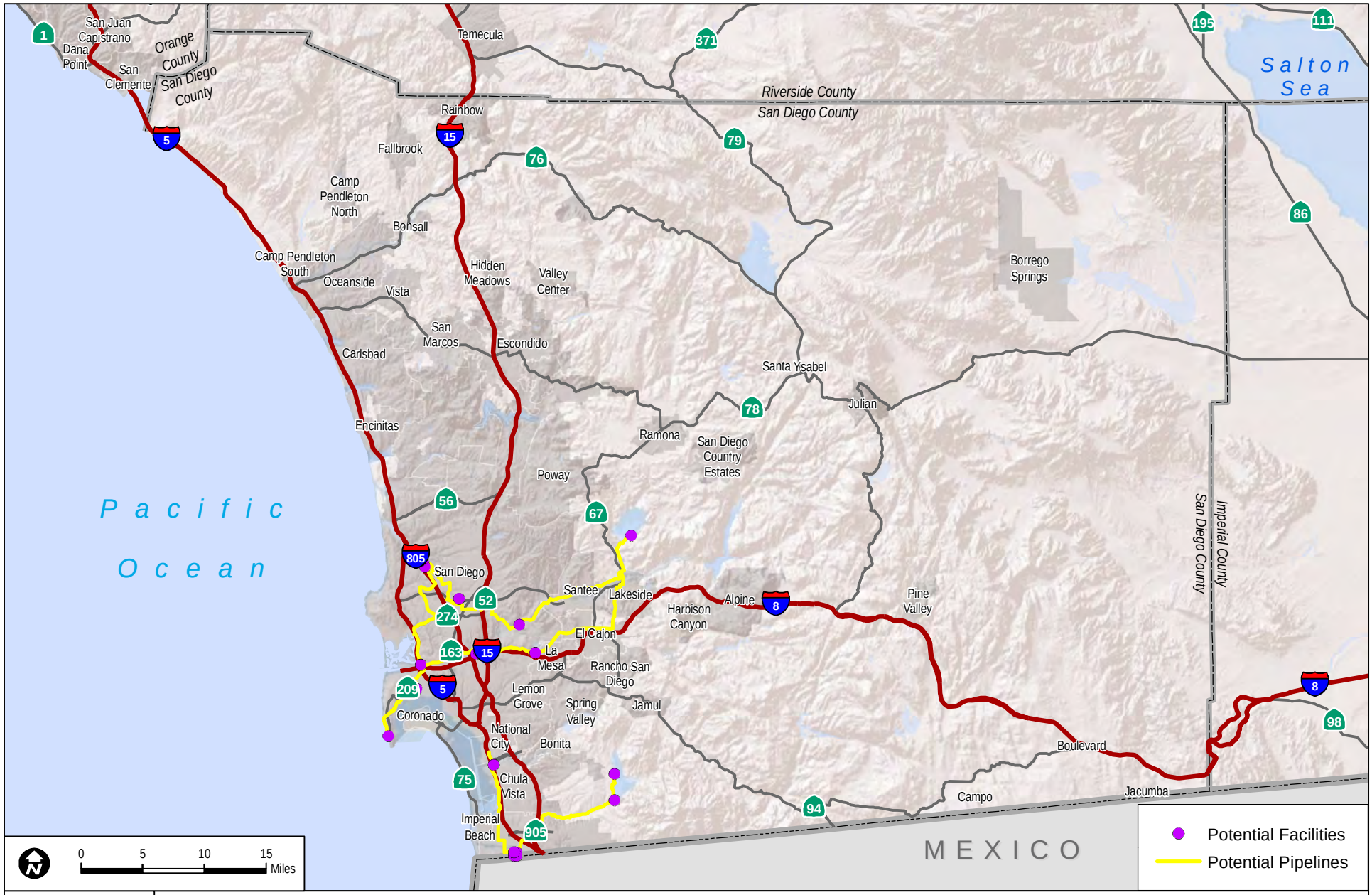

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FIGURE 1-1

Regional Map

Pure Water Program EIR

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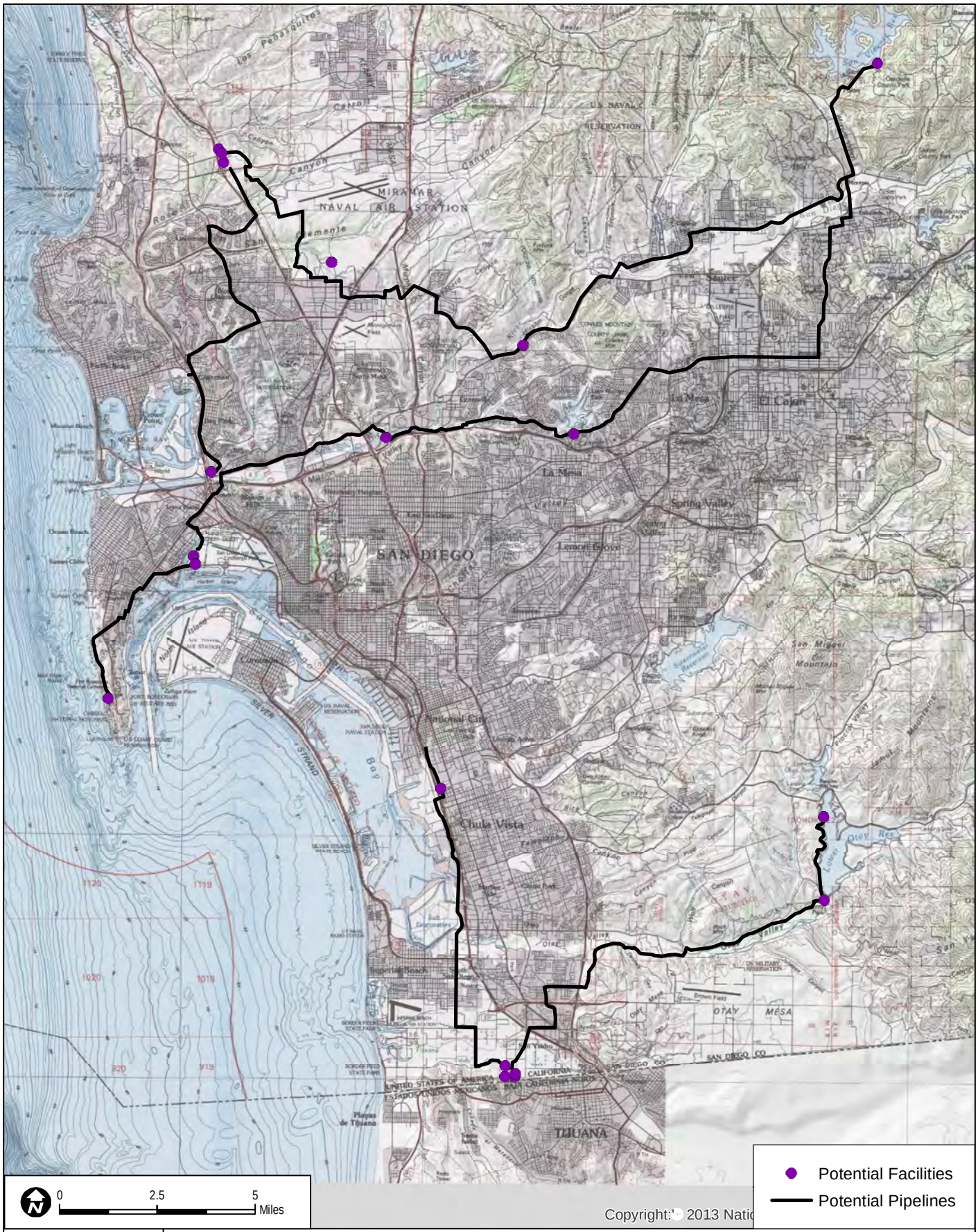

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SOURCE: USGS 7.5-Minute Series - Del Mar, El Cajon, Imperial Beach, Jamul Mountains, La Jolla, La Mesa, National City, Otay Mesa, Point Loma, and San Vicente Reservoir Quadrangles.

FIGURE 1-2
Vicinity Map

Pure Water Program EIR

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CHAPTER 2 ENVIRONMENTAL SETTING, PROJECT BACKGROUND, AND REGULATORY SETTING

This chapter provides a description of existing site conditions for the Pure Water Program (Program). The section also provides an overview of the local and regional environmental setting of the project, per Section 15125 of the California Environmental Quality Act (CEQA) Guidelines. More details regarding the setting specifically pertaining to each environmental issue are provided at the beginning of each impact area addressed in Chapter 5, Environmental Analysis.

Section 2.5 provides a discussion of the City's current wastewater and water system, an overview of the regulatory setting for potable reuse, and a summary of related studies that help to frame the context for the overall Program and Program objectives.

2.1 LOCATION

The Program includes a variety of facilities located throughout the central and southern coastal areas of San Diego County (see Figure 1-1). The Program location can be generally described in three major geographic components: North City, Central Area, and South Bay. Figure 1-2, Vicinity Map, shows the conceptual locations of proposed facilities and pipelines for the Program. New advanced water purification facilities (AWPFs) and the majority of pump stations would be located within the corporate boundaries of the City of San Diego (City). Pipelines would traverse a number of local jurisdictions, including the Cities of San Diego, La Mesa, El Cajon, Santee, Chula Vista, National City and the community of Lakeside in unincorporated San Diego County, in addition to federal lands within MCAS Miramar, Naval Base Point Loma, and the U.S. Marine Corps Recruit Depot. Portions of the Program area fall within the City's Multiple Species Conservation Program and Multi-Habitat Planning Area, as further described in Section 5.1, Land Use.

2.2 PHYSICAL CHARACTERISTICS

2.2.1 NORTH CITY

The North City component is generally located in developed areas. New facilities associated with the North City component would primarily be located at and adjacent to the existing North City Water Reclamation Plant (NCWRP) site located at Eastgate Mall and Interstate 805 (I-805). The NCWRP site is currently developed with wastewater treatment facilities, an operations building, and a cogeneration facility. The Demonstration Project is also located at the NCWRP and currently produces 1 million gallons per day (MGD) of purified water. The North City AWPF (NCAWPF) is proposed to be located on an undeveloped site north of Eastgate Mall at I-805. The new wastewater forcemain and brine pipeline would primarily follow existing roads from

NCAWPF through the University, Clairemont Mesa, and Linda Vista communities to the Morena Boulevard Pump Station, which is located northeast of the intersection of I-5 and I-8. The San Vicente Purified Water Pipeline would generally be located in roadway right-of-way; however, the alignment crosses undeveloped lands on MCAS Miramar, between Murphy Canyon Road and Clairemont Mesa Boulevard, the San Diego River east of the Admiral Baker Golf Course and again at West Hills Parkway, between disjunct portions of Mast Boulevard in the City of Santee, between Lakeside Avenue and Moreno Avenue in Lakeside, and between Moreno Avenue and the reservoir outfall discharge structure at San Vicente Reservoir. The reservoir outfall discharge structure at San Vicente Reservoir is located in undeveloped land on the south side of San Vicente Reservoir. Except for those areas and some minor deviations in other pipeline alignments, all proposed facilities in the North City component are situated on developed land and/or along existing paved streets.

2.2.2 CENTRAL AREA

The Central Area component is generally located in developed areas. The Central Area Water Reclamation Plant (CAWRP) is proposed on a 24-acre site just west of the San Diego International Airport. This site is currently developed with various institutional uses, including the City Public Utilities Department's Environmental Monitoring & Technical Services Laboratory. The Central Area AWPF (CAAWPF) would be located on undeveloped land just south of the San Diego River valley, and the Alvarado Water Treatment Plant Booster Station would also be on undeveloped land. Pipeline alignments would generally be within existing paved streets, except for where the wastewater force main alignment crosses lands on Naval Base Point Loma and scattered points along the purified water pipeline where the alignment crosses open space in the San Diego River, Navajo Canyon, and Mission Trails Regional Park near Lake Murray Dam. Except for those areas, and some minor deviations in other pipeline alignments, all proposed facilities in the Central Area component are situated on developed or disturbed land and/or along existing paved streets.

2.2.3 SOUTH BAY

The South Bay Area component is located in a mix of developed and undeveloped areas. The Otay River Valley, Tijuana River Valley, Otay Reservoir, and lands along the shore of San Diego Bay are undeveloped, while National City, Imperial Beach/Nestor, and San Ysidro/Otay areas are developed. Although mostly located in existing roads, the proposed South Bay wastewater force main and purified water pipeline alignments run through undeveloped areas in the Tijuana River and Otay River valleys.

2.3 SURROUNDING LAND USES

2.3.1 NORTH CITY

Land uses surrounding the North City component include primarily residential and commercial development. Transportation corridors in the North City vicinity include I-805, I-15, I-5, State Route 52 (SR-52), SR-163, SR-67, Mission Gorge Road, Genesee Avenue, Morena Boulevard, Clairemont Mesa Boulevard and Balboa Avenue. Other surrounding land uses include Montgomery and Gillespie Fields, Miramar Landfill, Miramar National Cemetery, and MCAS Miramar. Adjacent open space areas include Mission Trails Regional Park, Marian Bear Memorial Park, Tecolote Canyon Natural Park, Mission Bay Park, San Diego River Park, San Vicente Reservoir Cornerstone Lands, Oak Oasis Open Space Preserve, Louis A. Steltzer Park, San Diego River Ecological Reserve, and the San Diego River Flood Control Channel.

2.3.2 CENTRAL AREA

Land uses surrounding the Central Area component include primarily residential and commercial development. Transportation corridors in the Central Area vicinity include I-805, I-15, I-5, I-8, SR-163, SR-67, Friars Road, Lake Murray Boulevard, Navajo Road, and Fletcher Parkway. Other surrounding land uses include the San Diego International Airport, San Diego Marine Corps Recruit Depot, Naval Base Point Loma, Cabrillo National Monument, and Harbor Island and Shelter Island Marinas. Adjacent open space areas include Sunset Cliffs Natural Park, Presidio Park, San Diego River Park, Navajo Canyon, Mission Trails Regional Park, Hillside Park in El Cajon, and the San Diego River Flood Control Channel. Lake Murray is in the vicinity of the purified water pipeline and booster station.

2.3.3 SOUTH BAY

Land uses surrounding the South Bay component include a mix of residential, commercial, and industrial development. Transportation corridors in the South Bay vicinity include I-805, I-5, I-8, SR-905, and SR-125. Other surrounding land uses include salt evaporation ponds, Brown Field, Naval Outlying Landing Field Imperial Beach, the Olympic Training Center, correctional facilities, and the Otay landfill. Adjacent open space areas include the Otay Valley Regional Park, Tijuana River National Estuarine Research Reserve, Otay Reservoir Cornerstone Lands and the San Diego National Wildlife Refuge.

2.4 EMERGENCY SERVICES

2.4.1 FIRE PROTECTION AND EMERGENCY MEDICAL SERVICES

The City of San Diego General Plan Public Facilities, Services, and Safety Element includes goals, policies, and other information regarding fire protection services. City of San Diego Fire-Rescue Department (SDFD) provides traditional fire protection services as well as emergency medical services, water rescue, hazardous material response, confined space rescue, cliff rescue, high angle rescue, mass casualty incidents, and response to terrorism (City of San Diego 2008b). The SDFD employs 801 fire personnel, 338, lifeguard personnel, and 161 civilian personnel across 47 fire stations and 9 permanent lifeguard stations (City of San Diego 2015a). Fire stations serving the Program area would include SDFD Fire Station 35, Fire Station 29, Fire Station 22, and Fire Station 49.

2.4.2 POLICE PROTECTION

The City of San Diego General Plan Public Facilities, Services, and Safety Element includes goals, policies, and other information regarding police protection services. The City of San Diego Police Department (SDPD) focuses on providing police protection services with a goal for safe, peaceful, and orderly communities through a Neighborhood Policing philosophy that engages a responsibility between police officers and residents (City of San Diego 2008b). The SDPD divides its jurisdiction into multiple neighborhood divisions.

2.5 PROJECT HISTORY AND BACKGROUND

2.5.1 EXISTING FACILITIES, WATER DEMANDS, AND WASTEWATER FLOWS

Potable Water System Overview

The City's Public Utilities Department serves more than 1.3 million people populating more than 200 square miles of developed land. In addition to supplying approximately 279,000 metered service connections within its own incorporated boundaries, the City conveys and/or sells water to the City of Del Mar, Santa Fe Irrigation District, San Dieguito Water District, and the California American Water Company (Cal-Am), which, in turn, serves the Cities of Coronado and Imperial Beach and portions of south San Diego (City of San Diego 2015b). The City has agreements to sell surplus water to Otay Water District and exchange water to Ramona Municipal Water District. The City maintains several emergency connections to and from neighboring water agencies, including Santa Fe Irrigation District, Poway Municipal Water District, Otay Water District, Cal-Am, and Sweetwater Authority (City of San Diego 2011).

The City purchases imported water from the San Diego County Water Authority (SDCWA). The City's local water supplies consist of surface water obtained from local watersheds. The City has nine local surface water reservoirs with more than 408,000 acre-feet (AF) of capacity, which are connected directly or indirectly to three water treatment plants. The largest reservoir is San Vicente Reservoir with a capacity of 242,000 AF since completion of the Emergency Storage Project (discussed in more detail in Section 2.5.3). The Miramar Water Treatment Plant (WTP) has a rated capacity of 144 MGD and generally serves the City's geographical area north of the San Diego River (City of San Diego 2015c). The Alvarado WTP recently underwent upgrades and improvements and has a current rated capacity of 200 MGD. The Alvarado WTP generally serves the geographical area from National City to La Jolla Village Drive/Miramar Road. The Otay WTP has a current rated capacity of 34.2 MGD and serves south San Diego (City of San Diego 2011).

Recycled water—i.e., wastewater treated sufficiently for outdoor and industrial uses and distributed through a separate distribution system—is also a local water supply.

The City overlies and is in the vicinity of several groundwater basins. Currently, less than 1% of the City's water supply is produced from groundwater resources (City of San Diego 2011).

The City's Public Utilities Department maintains and operates 49 water pump stations, 136-plus pressure zones, and 31 treated water storage facilities with more than 200 million gallons (MG) of potable water storage capacity, including steel tanks, standpipes, concrete tanks and rectangular concrete reservoirs, with capacities varying from less than 1 MG to 35 MG (see Figure 2-1, City of San Diego Potable Water System). The water system consists of 3,213 miles of pipeline, including transmission lines up to 84 inches in diameter and distribution lines as small as 4 inches in diameter (City of San Diego 2011).

City of San Diego Current and Projected Water Demands

The City's actual water use declined between 2005 and 2010 from 199,178 acre-feet per year (AFY) to 162,291 AFY for many reasons including economic conditions, response to the mandatory water use restrictions associated with the Level 2 Drought Alert, increased retail water costs, and conversion of potable water system customers to the recycled water system. The Drought Alert was lifted after the substantially above average hydrologic events of the 2010/11 winter. Water use in the City had climbed back up to roughly 187,000 AFY by 2012, and over 195,000 AF during the historically warm and dry 2014. With the entire state now in its fourth year of drought, the State Water Resources Control Board adopted, on May 5, 2015, water use restrictions, including allocation reductions, from Calendar Year 2013 levels, for every individual water agency in the state. The City of San Diego has been assigned a reduction allocation of 16%, or mandating use to be lowered to approximately 157,000 AFY. It is assumed that some portion of these cutbacks will become permanent, even if and when allocations are

lifted when the drought is declared over by the governor, as many will replace high water use landscaping with drought-tolerant and California native landscaping, in addition to more and more water efficient technologies being adopted. Nonetheless, the City's expected population growth in the future will continue to increase water demands (City of San Diego 2015d).

The City receives, on average, 85%–90% of its water from its wholesale supplier, SDCWA, which is responsible for providing a safe and reliable supply of water to its 24 member agencies, including the City of San Diego. SDCWA serves 95% of the County's population over an area of 951,000 acres. Up to 80% of the region's water is imported from the Colorado River and Northern California. The Metropolitan Water District of Southern California (MWD) is SDCWA's largest supplier, providing more than half of the water used in 2010 (SDCWA 2015). The remaining water supply comes from SDCWA's long-term water conservation and transfer agreement with the Imperial Irrigation District, conserved water resulting from lining of portions of the All-American and Coachella Canals in Imperial Valley, and local supply sources including groundwater, local surface water, recycled water, and conservation (SDCWA 2015). Seawater desalination is also scheduled to come on line by the December 2015, producing from 48,000–56,000 AFY of drought-proof potable supply.

Wastewater and Water Reclamation System Overview

The City of San Diego operates the Metropolitan Sewerage System (Metro System) which provides regional wastewater treatment and disposal for the City and 12 Participating Agencies (the Cities of Chula Vista, Coronado, Del Mar, El Cajon, Imperial Beach, La Mesa, National City, and Poway; the Lemon Grove Sanitation District, the Otay Water District, the Padre Dam Municipal Water District, and the County of San Diego (on behalf of Winter Gardens Sewer Maintenance District, and the Alpine, Lakeside and Spring Valley Sanitation Districts)). The system was designed to provide sufficient capacity to accommodate a regional population in excess of 2.5 million, and covers a 450-square-mile area including most of the City, and stretching from Del Mar and Poway to the north, Alpine and Lakeside to the east, and south to San Ysidro. The Metro System consists of wastewater treatment plants, conveyance facilities (including major pipelines and pump stations), two ocean outfalls, water reclamation plants, and a regional biosolids processing facility. Figure 2-2 provides a schematic of the Metro System showing the major facilities. As described below, the Point Loma Wastewater Treatment Plant (PLWTP) is the main treatment plant in the Metro System, and uses a chemically enhanced primary treatment process that uses chemical coagulant and flocculent to remove suspended solids. Wastewater treated through the chemically enhanced primary treatment process is disposed via an ocean outfall. The City also operates two water reclamation plants: the NCWRP and the South Bay Water Reclamation Plant (SBWRP). These plants are capable of treating wastewater to a "tertiary" treatment level, which is suitable for non-potable reuse, as further described below (City of San Diego 2012).

Point Loma Wastewater Treatment Plant

The PLWTP is the main treatment facility in the Metro System with a rated capacity of 240 MGD based on annual average daily flows and a peak wet weather capacity of 432 MGD. The PLWTP is located on the south and western coastline of the Point Loma Peninsula. It discharges treated effluent into the Pacific Ocean 4.5 miles offshore at a depth of over 300 feet via the Point Loma Ocean Outfall. Biosolids are separated and pumped 17 miles to the Metropolitan Biosolids Center (MBC) located adjacent to the Miramar Landfill, further described below (City of San Diego 2012).

Between 2003 and 2009, wastewater flows recorded at the PLWTP ranged from 145 MGD to 185 MGD, with peak flows in 2005 resulting from a significant above-average rainfall season. High flows occur during rain due to infiltration of storm water into the sewer system. The flows then steadily decreased until 2009 as a result of increased recycled water production at the NCWRP and SBWRP, as well as from implementation of significant water conservation and water efficiency measures (City of San Diego 2012). The annual average daily flow (AADF) rate at the PLWTP in 2014 was 141 MGD (City of San Diego 2015c).

North City Water Reclamation Plant

The NCWRP is one of two water reclamation plants in the Metro System that uses both the secondary and tertiary treatment processes. Secondary treatment removes the dissolved organic matter through the use of microbes that consume the organic matter. The biological process is then followed by settling tanks to remove the biological suspended solids. The tertiary treatment process involves additional filtration and disinfection, which produces water that is suitable for reuse in non-potable applications, such as irrigation and industrial uses. The NCWRP's permitted capacity is 30 MGD (based on an AADF rate); however, it was master-planned for expansion to 45 MGD. Annual average non-potable recycled water output averaged 7 MGD in 2014 (City of San Diego 2015c). Wastewater in excess of the non-potable recycled water demands is treated to secondary level and diverted to the Metro System into the Rose Canyon Trunk Sewer and ultimately flows to the PLWTP for ocean disposal (City of San Diego 2012).

South Bay Water Reclamation Plant

The SBWRP was commissioned in 2002 and has a permitted capacity of 15 MGD AADF. The facility is located in the Tijuana River Valley near the international border and serves the surrounding area. The SBWRP also treats water using a tertiary treatment process to produce non-potable recycled water to be distributed to surrounding communities for irrigation and industrial uses; the majority of the South Bay demand comes from the Otay Water District through a wholesale agreement between the Otay Water District and the City. Annual average

non-potable recycled water output averaged 8 MGD in 2014 (City of San Diego 2015c). Wastewater in excess of the non-potable recycled water demands is treated to secondary level and discharged to the ocean via the 3.5-mile-long, 100 foot deep South Bay Ocean Outfall. Solids removed at the SBWRP are returned to the collection system for transport to the PLWTP for treatment and then ultimately to the MBC for processing (City of San Diego 2012).

Recycled Water Conveyance System

The City also operates a non-potable recycled water conveyance and delivery system consisting of two service areas—the Northern Service Area and the Southern Service Area—supplied with recycled water from the NCWRP and SBWRP, respectively. Three wholesale purchasers of recycled water for the City are located within the service area: City of Poway and Olivenhain Municipal Water District (Northern Service Area) and Otay Water District (Southern Service Area). The recycled water conveyance system and WRPs are shown on Figure 2-3.

Additional Water Reclamation Capacity

Two additional reclamation plants (each separately owned and operated by Participating Agencies)—the Padre Dam Water Recycling Facility and the Ralph W. Chapman Water Recycling Facility—also offload flows before reaching the Metro System (see Figure 2-2). The conveyance of non-potable recycled water from the reclamation plants to customers (via pumps, piping, and reservoirs) is coordinated by individual water purveyors and is not part of the Metro System (City of San Diego 2012).

The Padre Dam Municipal Water District (District) began operating an Advanced Water Purification Demonstration Project in April 2015 at the ~~Roy Stover~~Ray Stoyer Water Recycling Facility to evaluate treatment strategies needed to meet the requirements for potable reuse from recycled water. The Advanced Water Purification Demonstration Project is currently ~~producing~~ processing approximately 100,000 gallons of water per day for demonstration and testing purposes. In addition, the District has completed the East County Advanced Water Purification Program (ECAWPP) planning study in a collaborative partnership between the Helix Water District, County of San Diego, and City of El Cajon. As stated in the planning study, the primary objectives of the ECAWPP are (1) to utilize wastewater generated in East County to create a cost-effective new source of local, reliable and drought proof water supplies for potable and non-potable uses, and (2) to minimize future financial liabilities related to the Metro System. The planning study evaluated alternatives for increasing recycled water availability and use within San Diego East County and identified a preferred alternative that would produce up to 15.5 MGD of new potable water. It is envisioned that the ECAWPP would be executed in three phases. Phase 1 would include expansion of the Ray Stoyer WRF from 2 MGD to 6 MGD and construction of a 2.2. to 3.5-MGD capacity AWP facility. The approximately 3.5 MGD of AWP effluent would either recharge the Santee

Basin aquifer or augment water supply at Lake Jennings, owned and operated by the Helix Water District. Phase 2 would include expansion of the WRF to 15 MGD, producing a total of 10.4 MGD of purified water for surface water augmentation at Lake Jennings by 2023. Phase 3 would expand the WRF capacity to 21 MGD, producing a total of 15.5 MGD of purified water for surface water augmentation at Lake Jennings by 2035~~If the demonstration project is successful, the East County Advanced Water Purification Program could provide up to 2,000 to 3,000 acre-feet (560 to 840 MGD) per year of drinking water to Padre Dam customers. Additional studies are being conducted to consider the potential for expanding the project to include the service areas of Padre Dam Municipal Water District, Helix Water District, a portion of the County of San Diego, and the City of El Cajon~~ (Padre Dam Municipal Water District 2016).

Metropolitan Biosolids Center

The MBC is a biosolids treatment facility adjacent to the Miramar Landfill. MBC receives anaerobically digested sludge from the PLWTP and primary and waste activated sludge from the NCWRP. At MBC, NCWRP wastes are thickened, digested, and dewatered, while the digested sludge from PLWTP is only dewatered. Silos are provided to store dewatered biosolids before transferring to the truck loading facilities. Dewatered biosolids are hauled away for land application or landfill cover. The centrate is collected and pumped back to the sewers. The MBC is currently sized to treat 179 dry tons per day.

Wastewater Pump Stations

Most of the wastewater collection in San Diego relies on gravity for the flow of wastewater through sewers to a treatment plant. In some instances, it is necessary to pump this wastewater uphill before it can return to a gravity flow. There are 8 major pump stations in the Metro and Municipal Systems and 75 smaller municipal pump stations (City of San Diego 2015d).

The largest Pump Stations are Pump Stations No. 1 (PS1) and No. 2 (PS2). PS1, located on East Harbor Drive, collects all of south San Diego's wastewater and conveys an average annual daily flow (AADF) of 75 MGD. It sends the wastewater flow north via the 8-mile-long South Metro Interceptor Sewer to PS2 which is located on North Harbor Drive. The AADF into PS2 is approximately 180 MGD. This station pumps the wastewater to the PLWTP through two 87-inch diameter force mains and the 114-inch diameter West Point Loma Interceptor Sewer. The two pump stations have 24-hour staffing (City of San Diego 2015d).

2.5.2 REGULATORY SETTING

The statutory and regulatory framework surrounding recycled water and potable reuse as relevant to the Program is described below.

Agency Roles, Responsibilities, and Statutory Authority

U.S. Environmental Protection Agency

The principal federal agency involved in drinking water regulation is the U.S. Environmental Protection Agency (EPA). The EPA is responsible for implementing federal drinking water law, setting national drinking water requirements, and overseeing the California State Water Resources Control Board's (SWRCB) enforcement of the federal law.

The Safe Drinking Water Act (SDWA) is the main federal law that ensures the quality of Americans' drinking water. Under the SDWA, the EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards. The SDWA authorizes the EPA to set national health-based standards for drinking water to protect against both naturally occurring and man-made contaminants that may be found in drinking water. The EPA, states, and water agencies then work together to make sure that these standards are met. Originally, SDWA focused primarily on treatment as the means of providing safe drinking water at the tap. The 1996 amendments to the SDWA greatly enhanced the existing law by recognizing source water protection, operator training, funding for water system improvements, and public information as important components of safe drinking water. This approach ensures the quality of drinking water by protecting it from source to tap.

State Water Resources Control Board

The principal state regulatory agency involved in drinking water quality and potable reuse in California is the SWRCB. In 1991, the SWRCB and its nine Regional Water Quality Control Boards (RWQCBs) were brought together with five other state environmental protection agencies under the newly crafted California Environmental Protection Agency (CalEPA). CalEPA was formed by a Governor's Executive Order to create a cabinet level voice for the protection of human health and the environment and to ensure the coordinated deployment of state resources. At the time, and up until 2014, the California Department of Public Health (CDPH)—which is a department under the California Health and Human Services Agency and not part of CalEPA—was responsible for regulating and enforcing potable water quality standards. On July 1, 2014, the CDPH Drinking Water Program and the Environmental Laboratory Accreditation Program[1] moved from CDPH to the SWRCB. The roles and functions of the Drinking Water Program and the Environmental Laboratory Accreditation Program remain the same, but are now administered by the SWRCB under the Division of Drinking Water (DDW).

[1] The Environmental Laboratory Accreditation Program provides evaluation and accreditation of environmental testing laboratories to ensure the quality of analytical data used for regulatory purposes to meet the requirements of the state's drinking water, wastewater, shellfish, food, and hazardous waste programs.

The SWRCB receives the majority of its statutory authority related to public health and potable water from the California Safe Drinking Water Act, as defined in the California Health and Safety Code and Titles 17 and 22, California Code of Regulations (CCR). In addition, the SWRCB DDW has the primary enforcement authority (primacy) to enforce the federal SDWA, and is responsible for the regulatory oversight of about 8,000 public water systems[2] (PWSs) throughout the state including the City of San Diego's water system. As discussed in Section 5.7, Hydrology and Water Quality, the SWRCB also administers and enforces regulations pertaining to protection of water quality and beneficial uses of water (including both surface water and groundwater) under the Porter-Cologne Water Quality Control Act, aspects of the federal Clean Water Act, and other statutes. The purpose of transferring the CDPH Drinking Water Program to the SWRCB was to promote more integrated water quality management, from source to tap, and to take advantage of the natural synergies and common resources needed to ensure both (1) the protection of surface water quality in the environment and (2) the protection of human health through administration and enforcement of potable water standards.

Other State and Local Agencies

In addition to the SWRCB, there are several state agencies that have a role in regulating certain types of PWSs, including PWS formation, design, construction, and operation, including the rates that they can charge their customers. For example, the Department of Pesticide Regulation is responsible for ensuring that pesticides do not pollute groundwater. In addition to the SWRCB's role in ensuring that drinking water standards are protective of public health, the Office of Environmental Health Hazard Assessment is responsible for providing the SWRCB with health-based risk assessments for contaminants; these assessments are used to develop primary drinking water standards.

Local agencies also have a role in drinking water regulation both through direct oversight of certain PWSs and through activities that affect a PWS service area. In addition to other functions, Local Agency Formation Commissions oversee the expansion of service areas of public agencies that are PWS and can review to determine if an agency is providing municipal services in a satisfactory manner, including the delivery of safe drinking water.

Drinking Water Quality Standards

U.S. Environmental Protection Agency

Drinking water standards are set by the EPA to control the level of contaminants in the nation's drinking water. The SDWA requires the EPA to set these standards, which public water systems in the United States are required to meet. Enforceable standards set by the EPA come in the form

[2] Public water systems are systems that either have 15 or more service connections or serve at least 25 individuals daily at least 60 days out of the year.

of a maximum contaminant level[3] (MCL) and/or a treatment technique[4] (TT). Examples of rules requiring TTs are the Surface Water Treatment Rule (requires disinfection and filtration) and the Lead and Copper Rule (requires optimized corrosion control). The Lead and Copper Rule, for example, outlines additional treatment or other requirements a PWS must follow if water samples show exceedances of the action level trigger. After considering the level of a contaminant in drinking water below which there is no known or expected health risk (referred to as an "MCL Goal"), technological and economic feasibility, and public comments and other information, the EPA finalizes enforceable MCLs or TTs to provide the maximum feasible protection to public health. The EPA has set standards for 90 chemical, microbiological, radiological, and physical contaminants in drinking water.

The EPA also sets Secondary Drinking Water Regulations, which are nonenforceable guidelines for contaminants that may cause cosmetic effects (such as skin and tooth discoloration) or aesthetic effects (such as taste or odor). Water systems are not required by the EPA to adopt these secondary standards, but states may choose to adopt and enforce them.

The EPA and others are currently conducting research and collecting information to determine which currently unregulated contaminants pose the greatest public health risk and will therefore be regulated in the future. MCLs, TTs and other drinking water standards are not fixed and absolute; they evolve as analytical testing methods become more precise and as new scientific information regarding the public health effects of pollutants is revealed. The EPA continually coordinates with state agencies and the scientific community to ensure adopted drinking water quality standards reflect the current state of knowledge regarding the health effects and toxicology of chemical constituents.

State Water Resources Control Board

The California SDWA prescribes enforceable primary standards for five major categories of drinking water contaminants consisting of microorganisms, disinfectants and disinfection byproducts, inorganic chemicals, organic chemicals, and radionuclides. Primary drinking water standards established by the SWRCB under the California SDWA are equivalent or more stringent than those set by the EPA under the aforementioned federal SDWA. The DDW has adopted new or more stringent drinking water standards for 16 inorganic and 33 organic contaminants, 2 groups of disinfection byproducts, 2 individual disinfection byproducts, and 2 treatment technique requirements. Domestic Water Quality and Monitoring Regulations (22 CCR, Section 64400 et seq.) include MCLs for chemicals, monitoring requirements, compliance

[3] A maximum contaminant level is the maximum amount of a contaminant allowed in water delivered to a user of any public water system.

[4] A treatment technique is the required procedure or level of technological performance set when there is no reliable method to measure a contaminant at very low levels.

determination procedures, and requirements for public notification in case of failure. Monitoring requirements were also established in 2001 for nine unregulated organic and inorganic chemical contaminants, which allowed collection of information on their presence in drinking water supplies. In addition, secondary MCLs have been established for nonhealth concerns, based on aesthetic issues, such as taste, odor, or color in the water. The SWRCB and EPA have established secondary MCLs for 15 contaminants.

The Surface Water Treatment Rule (22 CCR, Section 64650 et seq.) is a set of regulations intended to control the pathogenic microorganisms found in surface sources by setting treatment requirements in lieu of MCLs. The regulations establish source sanitary survey, multi-barrier treatment, treatment design, operation, reliability, monitoring, reporting, and failure notification requirements. The regulation requires that the source be an approved surface water (i.e., a surface water or groundwater under the direct influence of surface water) that has received permit approval from SWRCB in accordance with sections 116525 through 116550 of the Health and Safety Code.

With regard to chemical contaminants that do not have established MCLs, the SWRCB establishes notification levels, which are health-based advisory levels. When chemicals are found at concentrations greater than their notification levels, certain reporting requirements apply. In addition, the SWRCB has established response levels at two to three times higher than each notification level, where the SWRCB recommends removal of a drinking water source from service to protect public health. Currently, the SWRCB has established notification levels and response levels for 30 constituents.

Evolution and Trends in Drinking Water Standards

Individual treatment technologies are designed to be effective in removing one or more types of contaminants including particulate, chemical, and biological contaminants. The application of a specific treatment technology depends on the type of contaminants present in the source water. Generally groundwater sources contain more chemical contaminants, whereas surface water sources contain more particulate matters, and most waters require disinfection treatment in order to render the water microbiologically safe for human consumption. Technologies used for reducing or removing biological contaminants are classified disinfection or reduction treatment processes or as particulate or turbidity removal or filtration treatment processes (SWRCB 2015).

PWSs have long employed treatment techniques that have been effective at removing bacterial, viral, and protozoan pathogens; industrial chemicals; pesticides; and water-treatment byproducts. Contaminants that have emerged in the last few decades, such as perchlorate, methyl tertiary butyl ether (MTBE), giardia, and cryptosporidium, have been regulated and effectively controlled through treatment; while others, such as 1,2,3-trichloropropane (1,2,3-TCP), and N-Nitrosodimethylamine (NDMA), are in the process of becoming regulated. Notification levels for both 1,2,3-TCP and

NDMA have been established, and the SWRCB is proposing an MCL for 1,2,3-TCP. Standards for some regulated chemicals, such as hexavalent chromium, arsenic, and disinfection byproducts, have been newly established or have become more stringent in the last decade.

Recent trends in recycled water use applications have focused on contaminants of emerging concern (CECs). Such contaminants include pharmaceuticals, endocrine-disrupting compounds such as hormones, and other environmentally persistent chemicals that enter the wastewater system through human use. These constituents are not currently regulated in the potable water supply or in wastewater. Studies indicate that conventional wastewater treatment partially removes CECs, but advanced treatment such as reverse osmosis (RO) followed by advanced oxidation are able to reduce such chemicals to nondetectable or very low levels. The SWRCB convened a Blue Ribbon Advisory Panel to study the issue; a draft report released by the panel provides guidelines for establishing a baseline monitoring program for potable reuse projects.

Public Water System Permitting

PWS permits are issued to each producer or purveyor of drinking water serving a specified minimum number of connections as required by the California Health and Safety Code. The permit covers each source of water used by the system. These permits and their accompanying engineering reports identify the source site, construction, and contaminant threats, and establish the treatment, operational, and monitoring requirements for each source. Almost all permits include special provisions established specifically for the individual water system, setting forth operating requirements that, if not met, could result in a formal enforcement action. Permits do not have expiration dates, but whenever a water system adds a new water source, adds or changes treatment, has a change in ownership, or makes changes that are not in compliance with DDW drinking water regulations, then an amendment to the water permit is required.

In the case of potable reuse, the use of recycled water as a source must be identified in the PWS permit. There are several regulations, draft regulations, and policies that SWRCB uses in its current operations that must be considered in the development of any project involving potable reuse.

A Consumer Confidence Report is required annually for each PWS (22 CCR 64481). Each report must contain information on the source of the water delivered, including:

- The type of water delivered by the water system (e.g., surface water, groundwater, and the commonly used name [if any] and location of the body of water).
- If a source water assessment has been completed, notification that the assessment is available, how to obtain it, the date it was completed or last updated, and a brief summary of the system's vulnerability to potential sources of contamination.

The report is intended to clearly communicate to the public the source of their water, threats to the source, and any water quality problems. The City of San Diego (City) Public Utilities Department publicizes its annual drinking water quality reports (consumer confidence report) online at http://www.sandiego.gov/water/quality/reports.shtml. The City has never been in violation of state and federal potable water quality standards.

Non-potable Recycled Water Regulations

Non-potable recycled water (also referred to as "reclaimed water" in the United States or "Title 22 water" in California) is a broad term that encompasses several beneficial uses of treated wastewater. Chapter 3 of CCR Title 22, Division 4, outlines criteria for non-potable water recycling. This document is commonly abbreviated as Title 22 in the industry, and contains regulations that govern the sources, production, intended use, and quality of recycled water. Limited applications are allowed at secondary treatment levels. Most agencies in California operate water reclamation plants meeting disinfected tertiary standards (which add filtration and disinfection process after secondary treatment). Disinfected tertiary treatment plants allow serving much broader uses.

The City's plants, along with Padre Dam Municipal Water District's and the Otay Water District's plants, include disinfected tertiary treatment, which allows them to serve the broadest application of non-potable recycled water uses. Allowed uses of tertiary treated recycled water include irrigation (including agricultural and landscaping), fire protection, toilet/urinal flushing, and construction uses (e.g., dust control, soil compaction, concrete mixing).

Potable Reuse Draft Regulations

California Senate Bill 918 (SB 918), signed into law on September 30, 2010, provided funding and deadlines to complete regulations for indirect potable reuse projects and to evaluate direct potable reuse. The law required the CDPH Drinking Water Program (now the SWRCB DDW) to adopt uniform water recycling criteria for potable water reuse for groundwater recharge by December 31, 2013. These draft regulations were completed and adopted on June 18, 2014, as 22 CCR Division 4, Chapter 3, Articles 5.1 and 5.2, "Indirect Potable Reuse: Groundwater Replenishment – Surface Application / Subsurface Application." The law also requires the department to develop and adopt uniform water recycling criteria for surface water augmentation by December 31, 2016, if an expert panel convened pursuant to the bill finds that the criteria would adequately protect public health. The bill also requires SWRCB to investigate the feasibility of developing uniform water recycling criteria for direct potable reuse and to provide a final report on that investigation to the legislature by December 31, 2016.

Potable reuse is currently regulated by the SWRCB and the RWQCBs through the issuance of National Pollutant Discharge Elimination System (NPDES) permits and Waste Discharge Requirements. These are described in greater detail in Chapter 5.7, Hydrology and Water Quality. Implementation of existing groundwater recharge projects were based on individual permits and general conformance to CDPH's August 2008 draft regulations specific to the treatment, monitoring, and recharge of recycled water for augmenting groundwater basins. General requirements for groundwater recharge projects include:

- Developing an industrial pre-treatment and pollutant source control program.
- Complying with effluent limits established in the RWQCB permit for the reuse project.
- Developing a SWRCB-approved plan that provides an alternative source of domestic water supply or a SWRCB-approved treatment mechanism in the event that the reuse project causes the drinking water source to become unusable.
- Conducting a public hearing for reuse projects, with specific requirements for public notification via various methods.
- Preparing a SWRCB-approved operations plan.
- Sampling the water in the target aquifer before starting the recharge project.

With respect to augmentation of water supply reservoirs using water that has undergone advanced purification, it is stated in the California Health and Safety Code (Section 116551) that SWRCB DDW shall not issue a permit to a public water system or amend a valid existing permit for the use of a reservoir as a source of supply that is directly augmented with recycled water unless SWRCB DDW performs an engineering evaluation of the proposed treatment technology and finds that the proposed technology will ensure that the recycled water meets all applicable primary and secondary drinking water standards and poses no significant threat to public health.

National Pollution Discharge Elimination System Permit

The PLWTP operates with a modified NPDES Permit that includes a variance from the federal Clean Water Act (CWA) secondary requirements for the discharge of total suspended solids and biochemical oxygen demand. The permit contains modified standards for only these two substances; all other constituents in the discharge must meet the same standards as in a secondary permit. This variance has ensured protection of ocean water quality from discharges at the PLWTP ocean outfall while avoiding unnecessary and expensive upgrades at the PLWTP to secondary treatment capacity. The City currently operates the SBWRP at a secondary treatment level, which can be discharged to the ocean through the South Bay ocean outfall with no permit modification.

Section 301(h) of the CWA allows the EPA to grant variances to ocean dischargers who demonstrate that the modified standards are not harmful to the ocean. Additionally, in the 1990s, the City worked with the local congressional delegation to pass special legislation modifying the CWA to provide the City with its own unique ability to apply for a modified permit for the PLWTP. This legislation, known as the Ocean Pollution Reduction Act, was signed into law on October 31, 1994, and as a result, the City received its first modified permit in 1995. The permit must be renewed every 5 years.

In 2010, the EPA granted the City of San Diego its third 301(h) modified NPDES Permit. The 301(h) modification allows the City to continue operating the PLWTP as a chemically enhanced (advanced) primary treatment facility instead of upgrading the PLWTP to secondary treatment.

During the 2010 NPDES permit renewal process, Coastkeeper and Surfrider entered into a Cooperative Agreement with the City to conduct the Recycled Water Study (City of San Diego 2012), described above, to find ways to maximize water reuse and minimize the flow to PLWTP. In accordance with the agreement, both organizations provided support to the EPA's decision to grant the modified permit. In 2014, the City negotiated a second Cooperative Agreement with Coastkeeper, Surfrider, Coastal Environmental Rights Foundation, and the San Diego Audubon Society (collectively referred to as the environmental stakeholders) for purposes of supporting potable reuse of wastewater and secondary equivalency. ~~In the 2014 Cooperative Agreement, the City committed to implementation of the Program and production of 83 MGD of potable reuse by 2035.~~

The City has the legal authority under the Ocean Pollution Reduction Act to continue applying for a modified permit each renewal term. Results from the City's extensive PLWTP and ocean monitoring program have shown that discharges from the PLWTP continue to meet all requirements of the modified permit; however, because a modified permit is not a standard process, there is always uncertainty that the EPA would continue to approve this in the future. As such, the City has submitted a modified permit application for the 2015 permit renewal that commits to the goal of implementing a potable reuse program (Pure Water Program) and obtaining legislative or administrative actions such that the Point Loma ocean outfall discharge is recognized as equivalent to secondary treatment for purposes of compliance with the CWA (secondary equivalency). Implementation of the Program would off-load the PLWTP by removing flows and constituents upstream. This diversion would reduce the amount of water, total ~~dissolved~~ suspended solids, and biochemical oxygen demand discharged to the ocean. On September 17, 2015, the City received a letter in support of the Program from the EPA recognizing that upgrades at the PLWTP to achieve secondary treatment may not be needed to protect ocean water quality as a result of Program improvements to effluent quality.

2.5.3 PREVIOUS STUDIES AND PROJECTS

The Program is the first in the state to propose reservoir augmentation with advanced purified recycled water. Other water purveyors have been implementing potable reuse projects through groundwater replenishment, primarily in Southern California, in an effort to reduce reliance on imported supplies and exert more local control on management of water resources. For example, the Orange County Water Agency has been replenishing their underground aquifers using advanced water purification technologies for nearly a decade.

The Program proposes reservoir augmentation, as the San Diego region lacks large groundwater basins suitable for large-scale groundwater replenishment projects. Like groundwater replenishment, reservoir augmentation employs the concept of an environmental buffer, whereby treated wastewater that has undergone wastewater treatment followed by advanced purification processes is discharged at a location that is removed from raw water intake facilities—both spatially and temporally—to allow for ample dilution and time to respond to any issues detected upstream in treatment barriers. The City has been studying this concept for years and has commissioned economic, regulatory, technical and social studies necessary to demonstrate the concept is protective of public health and is feasible. These studies are available on the City's website at http://www.sandiego.gov/water/purewater/index.shtml. They are also summarized in the discussion below.

Issues common to both groundwater replenishment and reservoir augmentation include ensuring adequate treatment for CECs and other unregulated contaminants. Issues unique to reservoir augmentation include the potential effects on water quality of the subject reservoirs, such as avoiding adverse impacts on reservoir chemistry and temperature (e.g., nutrient levels and eutrophication). The limnology study conducted as part of the City's Water Purification Demonstration Project and limnology study has investigated these issues in great detail, the results of both of which are summarized below.

City of San Diego Water Reuse Study

The City of San Diego Water Reuse Study (2006) evaluated opportunities available to the City to increase beneficial use of recycled water, including both non-potable reuse and potable reuse, which is the augmentation of a potable drinking water supply (surface or ground water) with recycled water followed by an "environmental buffer" that precedes the typical treatment of drinking water prior to entering a potable water distribution system. Two groups were formed to provide input and oversee the process: an Assembly on Water Reuse comprising a cross-section of San Diego stakeholders and an Independent Advisory Panel of experts in relevant fields. The Metropolitan Joint Powers Authority and the SDCWA also participate in the stakeholder meetings. The study included an evaluation of six strategies integrating non-potable reuse and

potable reuse opportunities for the North, Central, and South potable water service areas. A potable reuse project using the City's San Vicente Reservoir through a concept known as "reservoir augmentation" was identified as the preferred reuse strategy.

The reservoir augmentation concept would involve wastewater from homes and businesses undergoing multiple levels of treatment, including advanced water treatment, which renders the water "purified" and similar in quality to distilled water. The purified water is then proposed to be sent to the San Vicente Reservoir where it would blend with local runoff and imported supplies. The water would receive one last round of treatment at a drinking WTP before being distributed as drinking water. This concept forms the basis of the North City component of the Program (City of San Diego 2013a).

Water Purification Demonstration Project

In December 2007, the City Council voted to accept the Water Reuse Study and to proceed with the Water Purification Demonstration Project (Demonstration Project). The objective of the Demonstration Project was to determine the feasibility of turning recycled water produced at the NCWRP into drinkable water through the use of advanced water purification technology.

In the last decade, there have been significant advances in treatment technology (e.g., improvements in membrane performance, the use of advanced oxidation processes for the reduction of organic compounds, and the increasing use of ultraviolet radiation for disinfection) and analytical monitoring methodology (e.g., development of test methods for trace organic constituents—particularly endocrine disrupting compounds, pharmaceuticals, and ingredients in personal care products—and the ability to measure them at nanogram per liter or lower levels) (SWRCB 2015). Municipal wastewater contains a myriad of microbial pathogens (bacteria, parasites, and viruses) and chemical contaminants (e.g., heavy metals, pharmaceutically active compounds, endocrine disrupting compounds, and ingredients in personal care products) that must be reduced to extremely low or immeasurable levels in recycled water used for potable reuse. According to the Draft Safe Drinking Water Plan for California (SWRCB 2015), and as demonstrated by the City, advanced wastewater treatment processes are now available which are suitable to reliably accomplish this task.

The main components of the Demonstration Project included:

- Operated, tested and monitored a demonstration-scale advanced water purification facility (AWPF) that produced one million gallons of purified water per day;
- Convened an Independent Advisory Panel to provide expert peer review and feedback;
- Conducted a study of San Vicente Reservoir;

- Proposed a regulatory framework for a full-scale reservoir augmentation project;
- Performed an energy and cost analysis;
- Performed a pipeline alignment study;
- Conducted an education and outreach program.

The Demonstration Project included the design, installation, and operation of a 1 MGD demonstration-scale AWPF at the NCWRP, which began operation in June 2011. The AWPF treatment process begins with microfiltration (MF) or ultrafiltration (UF), followed by RO, and ends with ultraviolet disinfection and advanced oxidation processing (UV/AOP). Testing at the AWPF was conducted from June 2011 until August 2012 and included measurements for 342 constituents and parameters (231 regulated constituents and 111 non-regulated constituents).

Key monitoring activities from the demonstration-scale AWPF included:

- Daily testing to identify potential breaches in the membrane filtration units
- Continuous measurement of total organic carbon (TOC) and conductivity to demonstrate that the RO system was performing as expected
- Continuous UV reactor power level monitoring to confirm UV lamp operations
- Daily monitoring of hydrogen peroxide dose and continuous flow confirmation to demonstrate that the target hydrogen peroxide dose was achieved

This daily and continuous testing was conducted throughout the 12-month testing period. This extensive monitoring showed that the demonstration-scale AWPF equipment met the intended treatment performance on a continuous basis and was reliable throughout the operational period (City of San Diego 2013b).

As shown in Table 2-1, comprehensive water quality testing at the demonstration-scale AWPF included almost 30,000 tests (including 9,000 tests during initial testing completed in 2012) of the purified water at various points in the treatment process and for 342 different constituents. The water quality of the purified water was compared to regulatory limits, verifying that purified water met all applicable water quality standards. Furthermore, the water quality testing shows that the purified water produced at the demonstration-scale AWPF is pure, approaching distilled water quality. For example, the total dissolved solids (a measure of salt content) in the purified water is about 15 milligrams per liter (mg/L), compared to total dissolved solids in San Diego's source and drinking water of about 500 mg/L. As a second example, the TOC (a measure of carbon that is bound in organic molecules) in the purified water is about 0.1 mg/L compared to TOC of 3.0 mg/L in San Diego's source water and 2.5 mg/L in San Diego's drinking water (City of San Diego 2013b).

Regarding CECs and unregulated constituents that as of yet do not have primary drinking water MCLs, only 6 out of 111 unregulated constituents were detected in the purified water during in at least one sampling event. All six were 10 million times to 18 times lower than the associated Drinking Water Equivalent Level or the EPA-identified Health Reference Level. Although these standards are guidelines and not regulatory limits, they both represent an acceptable concentration in drinking water assuming an average person consumes 2 liters of water per day for 70 years. As discussed below, the water produced by the full-scale facility would be diluted to at least 100:1~~:100 through the process of~~in the reservoir, or will be diluted at least 10:1 in the reservoir with an additional, independent treatment barrier at the AWPF~~ augmentation~~.

Table 2-1
AWPF Demonstration Project Monitoring Results

Regulations or Guidelines	Number of Constituents and Parameters	Purified Water Results	Comment
California Department of Public Health Goals			
Primary Drinking Water MCLs	90	Meets All Regulations	Primary drinking water MCLs are enforceable, human health-based water quality limits.
Secondary Drinking Water MCLs	18	Meets All Regulations	Secondary drinking water MCLs are unenforceable water quality goals related to aesthetic water characteristics such as taste and odor. Purified water met all federal and state secondary MCLs with the exception of pH and corrosivity. The potential full-scale AWPF would include post treatment to meet these requirements.
Microbial	4	Not Detected	Total coliform, fecal coliform, and viruses (somatic and male specific bacteriophage)
Notification Levels	30	Meets All Regulations	Notification levels are drinking water quality advisory limits.
Groundwater Replenishment Criteria	142	Meets All Regulations	Groundwater Replenishment Criteria are water quality limits specifically developed for indirect potable reuse via groundwater replenishment.
Anticipated San Diego Water Board Goals for Reservoir Augmentation			
Reservoir Limits	143	Meets All Regulations	Reservoir limits are EPA Numeric Criteria for Priority Pollutants and San Diego Basin Numeric Objectives.
Total	**231**	Because some contaminants and parameters are in multiple regulations/guidelines, the total of unique parameters is less than the sum.	

Source: City of San Diego 2013b, page 34.

The Water Purification Demonstration Project has shown that the advanced water purification process would produce water in compliance with existing drinking water quality standards and guidelines, and that product water discharges to the San Vicente Reservoir (1) would provide an additional environmental buffer prior to raw water intake into the City's potable

water system, and (2) are not expected to have an adverse effect on reservoir chemistry, temperature, and circulation. Table 2-2 provides a summary of the findings for each of the Program's key components.

Table 2-2
Summary of Demonstration Project Findings

Project Component	Key Findings
Convene an Independent Advisory Panel	The Independent Advisory Panel found that purified water would meet or exceed all drinking water requirements and provide multiple barriers for public health protection; reservoir modeling verified that the reservoir will provide at least a 100-fold dilution of purified water, SWRCB and the San Diego RWQCB have indicated support for the project, and City staff has implemented an effective public outreach program. The Independent Advisory Panel found the demonstration-scale AWPF produced water of a higher quality than any source available to the City of San Diego and unanimously concluded that a reservoir augmentation project at San Vicente Reservoir would be a landmark project in the acceptance and furtherance of indirect potable reuse and would improve the reliability of the City of San Diego's water supply portfolio.
Design, install, and operate a demonstration-scale advanced water purification facility at the North City Water Reclamation Plan	Water quality of the purified water was compared to regulatory limits, verifying that purified water met all applicable water quality standards. This comprehensive water quality testing showed that the purified water produced at the demonstration-scale AWPF is pure, approaching distilled water purity. Continuous and daily monitoring of each water purification process can assure the integrity of each treatment step and that only high quality water is produced.
Perform a study of San Vicente Reservoir to establish residence time and water quality parameters and conditions of purified water in the reservoir.	The addition of purified water into San Vicente Reservoir would not affect natural hydrologic characteristics of the reservoir, seasonal stratification, or mixing. Blending and retention of purified water in the reservoir would constitute a substantial environmental barrier, sufficient to meet regulatory requirements. For all anticipated reservoir operating scenarios and purified water release locations, the reservoir would dilute the purified water by at least a factor of 100 to 1, or by a factor of 10 to 1 with an additional, independent treatment barrier at the AWPF. The addition of purified water would not substantially affect water quality in San Vicente Reservoir. The dam raise will improve overall water quality and the addition of purified water will not change these improvements.
Perform an energy and economic analysis.	The estimated capital and annual operational and maintenance costs for a full-scale reservoir augmentation project at San Vicente Reservoir are $369 million and $15.5 million per year, respectively. This capital and annual costs for a full-scale project yielded an estimated unit cost of $2,000/AF. This unit cost is comparable to the $2,100/AF unit cost estimated in the LRWRP for a full-scale (15 mgd average production) reservoir augmentation project at San Vicente Reservoir. Accounting for wastewater system avoided costs, the estimated net unit cost of a reservoir augmentation project at San Vicente Reservoir is $1,000/AF, which is comparable to the current imported water cost.

Table 2-2
Summary of Demonstration Project Findings

Project Component	Key Findings
	A full-scale reservoir augmentation project at San Vicente Reservoir was estimated to require 2,500 kWh/AF of energy and would produce approximately 1.0 metric tons of greenhouse gases/AF. A full-scale project would consume energy and produce greenhouse gas emissions that are equivalent to imported water and less than ocean desalination.
Define the state's regulatory requirements for a full-scale reservoir augmentation project at San Vicente Reservoir.	The CDPH issued a concept approval of the City's San Vicente Reservoir Augmentation Project. The San Diego RWQCB, with concurrence from the EPA issued concept approval as well.
Perform a pipeline alignment study.	The estimated capital and annual operational and maintenance costs for the conveyance system are $225 million and $3.4 million, respectively. Updated analysis of the pipeline alignment confirmed that a southerly alignment appears to be the most feasible.
Conduct a public outreach and education program.	Recent research showed that when provided with information about the water purification process, respondents favor use of purified water to supplement local water supply via reservoir augmentation at San Vicente Reservoir. Feedback from individuals that toured the Advanced Water Purification Facility showed that providing an opportunity to tour the facility increases understanding about water purification.

Source: City of San Diego 2013b, pg. 121-124.

On October 12, 2011, the San Diego RWQCB adopted Resolution No. R9-2011-0069, which documented the San Diego RWQCB's support for a reservoir augmentation project at San Vicente Reservoir, as well as its intent to consider permitting through the NPDES and Waste Discharge Requirements process. Regulatory acceptance of the City's Demonstration Project was validated through a Concept Approval letter from ~~SWCRB~~ SWRCB and a Resolution of Support and Letter of Concurrence from the San Diego RWQCB in February 2013.

A report on the Demonstration Project was completed in March 2013. During the April 23, 2013, unanimous acceptance of the Demonstration Project (R-308121), the City Council directed staff to define in greater detail the City's potable reuse options and to determine a preferred implementation plan and schedule that considers potable reuse options for maximizing the local water supply and reducing flows to the PLWTP. This potable reuse program forms the basis of the Pure Water San Diego Program. On April 29, 2014, the City Council adopted a resolution (R-308906) supporting the implementation of Pure Water San Diego. On November 18, 2014, the City Council unanimously supported the application to renew the NPDES permit for PLWTP; the application included key elements of the City's Pure Water Program to implement potable reuse.

San Vicente Reservoir Limnology Study

As part of the Demonstration Project, the City also conducted a study of San Vicente Reservoir to investigate the limnology and water quality of the San Vicente Reservoir and assess the residence time and flow patterns of the proposed purified water discharge point. Existing regulations for groundwater replenishment and anticipated regulations for surface water augmentation will require that an environmental buffer, either a groundwater basin or a surface water reservoir, serve as a receptacle for purified water prior to blending into the drinking water system. Under the Program, San Vicente Reservoir and Lower Otay Reservoir would provide that environmental buffer if the City were to move forward with either element of the Program. It should be noted that the Water Purification Demonstration Project showed the purification process produces water of suitable quality for potable use "as is," and that the concept of an environmental buffer in this case constitutes additional assurance of adequate water quality rather than a measure necessary to meet drinking water standards.

To evaluate the potential retention and dilution provided by San Vicente Reservoir, a three-dimensional hydrodynamic computer model of San Vicente Reservoir was set up in order to:

- Determine the effectiveness of San Vicente Reservoir as an environmental buffer capable of providing the blending and retention requirement of the regulatory agencies.
- Evaluate any hydrodynamic changes, or changes to movement of water within the reservoir, resulting from introduction of purified water.
- Determine whether addition of purified water to San Vicente Reservoir would affect water quality within the reservoir.

The three-dimensional modeling of San Vicente Reservoir used a pair of coupled computer models: the Estuary Lake and Coastal Ocean Model and the Computational Aquatic Ecosystem Dynamics Model. These models were originally developed at the University of Western Australia. An expert team applied the models for use on the Limnology and Reservoir Detention Study of San Vicente Reservoir (Flow Science Inc. 2012a–d). The expert team conducted similar modeling efforts for Lake Mead in Nevada and for Los Vaqueros Reservoir, Lake Perris, Lake Hodges, and Olivenhain Reservoir in California, plus three previous modeling projects for San Vicente Reservoir. The modeling was performed under multiple scenarios, including an extended drought, and with significant input from both the independent advisory council and the regulatory agencies (i.e., CDPH and SWRCB).

Reservoir stratification—the formation of "layers" of water within a reservoir—is a natural phenomenon that occurs in essentially all reservoirs in North America, including San Vicente Reservoir. Consistent and predictable stratification has been observed in more than 20 years of

monitoring data collected from San Vicente Reservoir. During the period of stratification (approximately 10 months per year), warm water that is naturally heated by the sun is contained within the top-most layer of the reservoir (epilimnion), because warmer water is less dense than cooler water. The more dense, cooler water is contained within the lower layer of the reservoir (hypolimnion). When stratification occurs, the water and any dissolved or suspended constituents contained within the epilimnion do not readily mix with the water and constituents contained within the hypolimnion.

During winter months, the epilimnion cools in response to cooler air temperatures. This causes water temperature in the reservoir to equalize and the epilimnion and hypolimnion mix, causing the reservoir to lose its stratification (destratify).

The fully destratified (mixed) condition lasts for a few weeks to a month and typically occurs in January, February, or March. The natural stratification and mixing of the reservoir is an important phenomenon, because it determines the extent and timing of mixing and retention provided by the reservoir.

A reservoir augmentation project at San Vicente Reservoir would involve releasing purified water into the upper layer of San Vicente Reservoir. Because the purified water would be warm compared to the reservoir water and would flow into the reservoir at the surface, it would tend to remain in the upper layer of the reservoir. San Vicente Reservoir's outlet structure, located near the San Vicente Dam, has multiple ports to provide operators with flexibility when withdrawing water from the reservoir and sending it to a municipal drinking water treatment plant for treatment. Operators typically withdraw water for drinking water treatment and distribution from the deeper ports, where water quality is more consistent. Under stratified conditions, in which the upper and lower layers of the reservoir do not mix, purified water would be prevented from flowing directly to the outlet structure, providing a substantial retention time and preventing short-circuiting. During the relatively short period in which reservoir stratification would be lost, the reservoir would experience full and complete blending, so that any purified water that were to flow to the outlet would first undergo extensive blending with reservoir water.

The full study and results are available on the City's Pure Water Program website. Key findings of the San Vicente Reservoir modeling effort are as follows:

- The addition of purified water into San Vicente Reservoir would not affect natural hydrologic characteristics of the reservoir, seasonal stratification, or mixing. This finding demonstrates that the addition of purified water would not affect the natural blending and retention in the reservoir.

- Blending and retention of purified water in San Vicente Reservoir would constitute a substantial environmental barrier, sufficient to meet regulatory requirements.
- For all anticipated reservoir operating scenarios and purified water release locations, the reservoir would dilute the purified water by at least a factor of 100 to 1, or by a factor of 10 to 1 with an additional, independent treatment barrier at the AWPF.
- The addition of purified water would not affect any aspect of water quality in San Vicente Reservoir. The dam raise and reservoir expansion, which was independent of the Demonstration Project, has improved overall water quality in the reservoir by reducing nutrients including nitrogen compounds that can stimulate algae growth and cause water quality issues, and the addition of purified water would not change these improvements. Addition of purified water would improve some aspects of reservoir water quality, such as reducing salt concentration.

As part of the reservoir study, a water quality monitoring program was proposed by Flow Science Inc. (2012d), which includes periodic sampling and measurement of physical, chemical, and biological parameters for inflows, outflows, and at in-reservoir locations. It also includes on-site measurements of meteorological data. The purpose of the monitoring study would be to continually update and maintain the limnology and water quality model of the reservoir and use it as a tool to assess reservoir water quality during reservoir augmentation operations. The monitoring plan also recommends a complete compilation of historical trends, data, and statistics to be able to establish a baseline against which to compare monitoring results and derive meaningful findings. The monitoring program would also include a yearly report summarizing the monitoring results and determining if there is any indication that reservoir augmentation has caused any shifts in water quality.

The Program also contemplates augmentation of the Lower Otay Reservoir using a similar process. A limnology study similar in scope is currently underway for the Lower Otay Reservoir; at this time it is anticipated that the conclusions would be similar to those discussed earlier for the San Vicente Reservoir. Eventual permitting and construction of a reservoir augmentation project at Lower Otay Reservoir would involve a similar suite of studies, monitoring, and regulatory requirements as described for the San Vicente Reservoir.

Recycled Water Study

In August 2009, the City, along with key stakeholders, initiated the Recycled Water Study (City of San Diego 2012) as part of a Cooperative Agreement between the City and two environmental groups: San Diego Coastkeeper (Coastkeeper) and the San Diego Chapter of the Surfrider Foundation (Surfrider). The study developed integrated water reuse alternatives which support both non-potable and potable reuse to augment the region's water supply and reduce reliance on

imported water. The Recycled Water Study identified potential locations for future AWPFs and water and wastewater facilities. Two of these locations, North City and South Bay, are existing water reclamation plants. The AWPFs are proposed to be constructed on vacant land adjacent to these existing reclamation plants and are proposed to purify the recycled water they produce to near distilled-water quality. The third AWPF would occur through a combination of a water reclamation plant proposed to be located west of the airport near Harbor Drive (due to its proximity to PS2 and the confluence of the vast majority of the wastewater generated within the Metro System) and an AWPF proposed to be located at a site in Mission Valley, which would process recycled water from the reclamation plant. The Recycled Water Study identified two City-owned and operated reservoirs (Otay Reservoir and the San Vicente Reservoir) as potential locations for reservoir augmentation (City of San Diego 2012).

The City Council accepted the Recycled Water Study on July 17, 2012 (R-307584). Follow-up studies and technical memoranda have been completed to refine the information presented in the very high level evaluation of the alternatives presented in the Recycled Water Study.

San Vicente Reservoir Dam Raise and Emergency Storage Project

San Vicente Reservoir is located near Lakeside and is owned and operated by the City of San Diego. San Vicente Reservoir is predominately used for municipal water supply purposes and also supports limited recreational activities. As part of the Emergency Storage Project, SDCWA has constructed new conveyance facilities that allow San Vicente Reservoir to serve WTPs operated by water agencies throughout the region. Through the Emergency Storage Project, the San Vicente Dam was raised by 117 feet and increased the reservoir's capacity from 90,000 AF to 247,000 AF.

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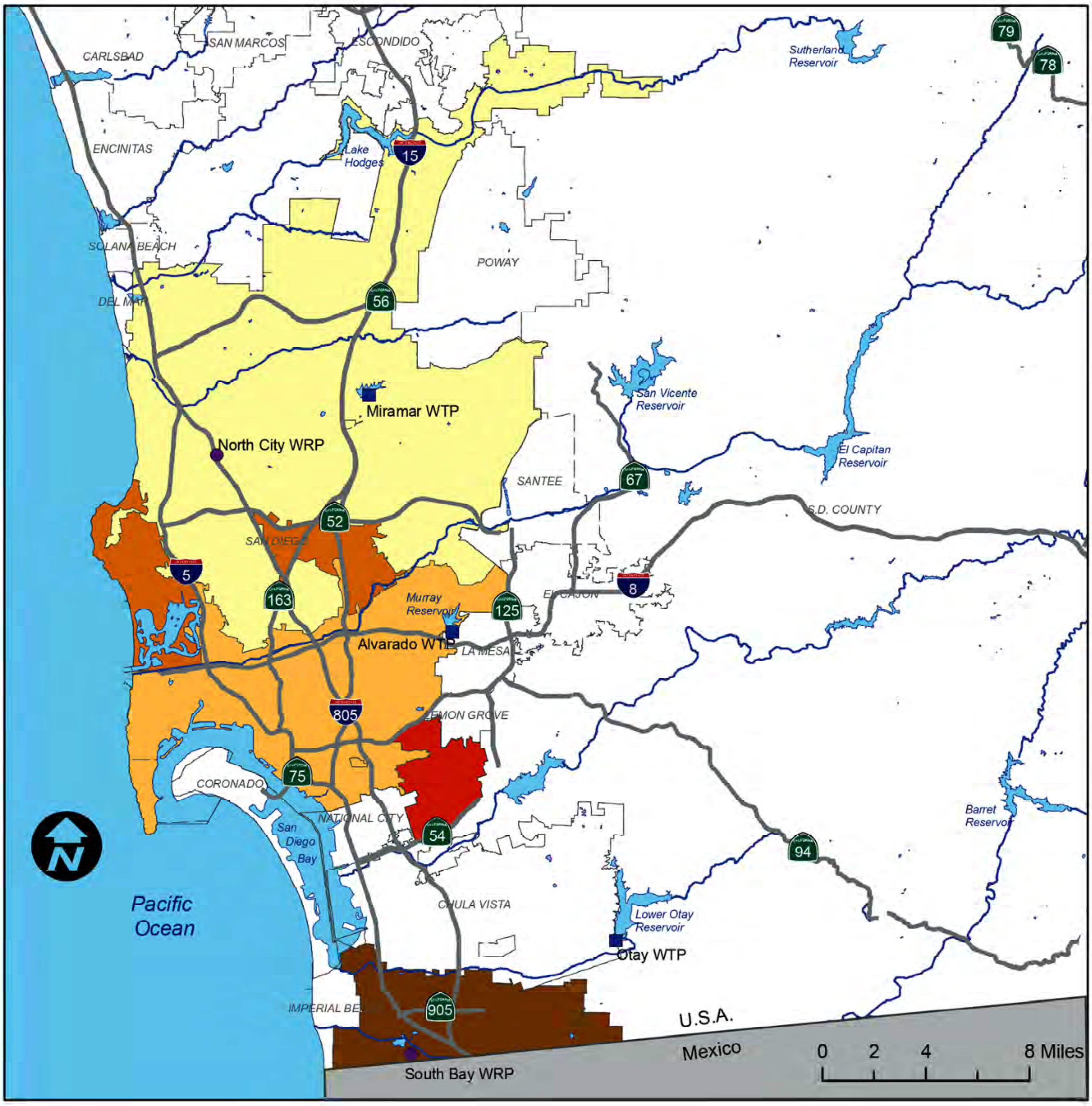

Legend

- Water Reclamation Plants (WRP)
- Water Treatment Plants (WTP)
- Major Freeways
- Rivers
- Municipal Boundaries
- Miramar Service Area
- Alvarado/Miramar Service Area
- Alvarado Service Area
- Alvarado/Otay Service Area
- Otay Service Area
- Lakes/Reservoirs

Morena Lake, not shown in the figure, is located to the East and upstream of Barret Reservoir

DUDEK

SOURCE: San Diego Recycled Water Study, 2012.

FIGURE 2-1

City of San Diego Potable Water System

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SOURCE: San Diego Recycled Water Study, 2012.

FIGURE 2-2

City of San Diego Metropolitan Sewerage System

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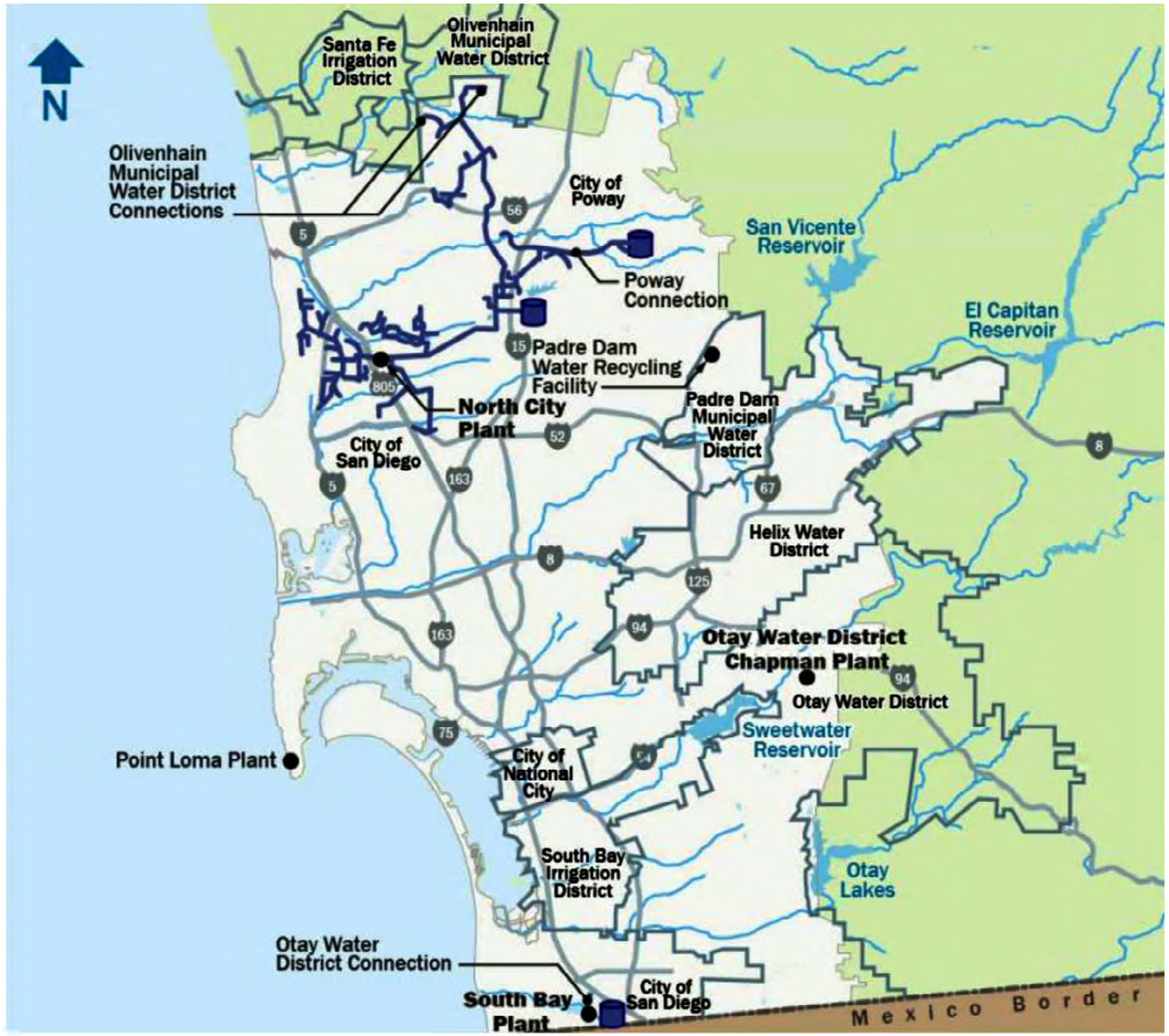

SOURCE: San Diego Recycled Water Study, 2012.

FIGURE 2-3

City of San Diego Recycled Water Conveyance System

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CHAPTER 3 PROJECT DESCRIPTION

This section provides a description of the Pure Water Program (Program), the environmental effects of which are evaluated in Chapters 5 through 9 of this Program Environmental Impact Report (PEIR). The project location, history, purpose and need, and objectives are described immediately below, followed by a description of project characteristics and a summary of the discretionary actions that would be required. Section 15124 of the California Environmental Quality Act (CEQA) Guidelines set forth specific technical requirements for the project description, and includes items such as the precise location of the project; a statement of the project's objectives; and a general description of the project's technical, economic, and environmental characteristics.

3.1 PROJECT LOCATION

The Program includes a variety of facilities located throughout the central and southern coastal areas of San Diego County. The Program location can be generally described in three major geographic components: North City, South Bay, and the Central Area. Figure 3-1 shows the conceptual locations of proposed facilities and pipelines for the Program. New advanced water purification facilities and the majority of pump stations would be located within the corporate boundaries of the City of San Diego (City). Pipelines would traverse a number of local jurisdictions, including the Cities of San Diego, La Mesa, El Cajon, Santee, Chula Vista, National City and the community of Lakeside in unincorporated San Diego County, in addition to federal lands within MCAS Miramar, Naval Base Point Loma and the U.S. Marine Corp Recruit Depot.

3.2 PROJECT PURPOSE AND NEED

The Program would treat municipal wastewater to levels suitable for potable reuse in order to create a new, reliable, local source of water while at the same time reducing the City's reliance on imported water. The City currently relies on imported water for 85% of its water supply, including the California State Water Project and the Colorado Rivers (conveyed via the California Aqueduct and the Colorado River Aqueduct, respectively). The region's reliance on imported water causes San Diego's water supply to be vulnerable to impacts from shortages, disruptions, and susceptible to price increases. In addition, recurring drought conditions further impact water supply availability. The Program would also divert wastewater from the Point Loma Wastewater Treatment Plant (PLWTP), thereby reducing the total ~~dissolved~~ suspended solids (TSS) discharged by the PLWTP to the same or lower levels as would be achieved by implementing full secondary treatment.

3.3 PROJECT OBJECTIVES

Section 2.5, Project History and Background, provides a discussion of the regulatory context and previous studies related to the Program that frame the following objectives, which were developed by the City for the Program:

1. Provide a cumulative total of at least 83 million gallons per day (MGD) of local, high-quality purified water to serve the San Diego Region.
2. Reduce dependence on imported water.
3. Reduce energy consumption associated with importing water.
4. Increase use of recycled water.
5. Reduce flows to the PLWTP and reduce TSS discharged at the Point Loma ocean outfall to the same or lower levels as would be achieved by implementing secondary treatment at the full plant capacity.
6. Implement the Program in scheduled phases that meet the target online dates agreed to in the 2014 Cooperative Agreement[1] and the 2015 Application for Renewal of National Pollution Discharge Elimination System permit[1].

3.4 PROJECT CHARACTERISTICS

The Program would use advanced water purification technology to produce potable water from recycled water and provide a safe, reliable and cost-effective drinking water supply for San Diego. The Program consists of the design and construction of new advanced water purification facilities and a new water reclamation plant; upgrades to existing water reclamation and wastewater treatment facilities; and design and construction of new pump stations and pipelines. The following Program components are currently contemplated as comprising the entirety of the Program; however, Program components are subject to change during future project-level design.

The Program would construct advanced water purification facilities (AWPFs) at the existing North City Water Reclamation Plant and South Bay Water Reclamation Plant (SBWRP), and a third AWPF and new WRP would be constructed. Upgrades would occur at the existing NCWRP

~~1 Agreement between the City and Coastkeeper, Surfrider, Coastal Environmental Rights Foundation, and the San Diego Audubon Society in which the City committed to implementation of the Program and production of 83 MGD of potable reuse by 2035.~~

1 Modified permit application that commits to the goal of implementing a potable reuse program and obtaining legislative or administrative actions such that the Point Loma ocean outfall discharge is recognized as equivalent to secondary treatment for purposes of compliance with the CWA (secondary equivalency).

and SBWRP in order to provide sufficient tertiary influent for the AWPFs. Pump station and pipeline facilities would convey different types of flows to and from the treatment facilities for: 1) diverting wastewater flows to water reclamation facilities; 2) conveying recycled water to advanced water purification facilities; 3) conveying purified water from AWPFs to the San Vicente and Lower Otay Reservoirs; and 4) transporting waste flows (brine and sludge) from treatment processes to solids handling facilities or back into the Metro System. Upgrades would also occur at the Metropolitan Biosolids Center (MBC) and PLWTP to handle the additional brine and sludge produced by the WRP expansions and advanced water purification process (see Figure 3-1 for a conceptual map of facilities proposed by the Program).

The Program would create 83 MGD of locally controlled potable water (approximately one-third of projected 2035 demand) and reduce flows to the PLWTP, which in turn would reduce TSS discharged to the ocean. As shown in Table 3-1, the Program would construct facilities that have the ability to produce at least 15 MGD by 2023, 30 MGD by 2027, and 83 MGD by 2035 in compliance with target online dates outlined in the 2014 Cooperative Agreement. The goals and targets of the Program would be met through a combination and variety of projects. The North City AWPF (NCAWPF) could produce 30 MGD of purified water. The Central Area AWPF (CAAWPF; part of the Central Area component) could produce between 38 to 53 MGD of purified water. The South Bay AWPF (SBAWPF) could produce up to 15 MGD of purified water and would only be constructed if the Central Area component cannot accommodate a full 53 MGD (see Table 3-2).

Table 3-1
Pure Water Program Production Target Dates

Total Production Capacity (MGD)	Target Online Date
15	2023
30	2027
83	2035

Source: City of San Diego et al. 2014

Table 3-2
Pure Water Program Phasing Summary

Component	Target Production Capacity (MGD)	Total Production Capacity (MGD)
North City	31.4[1]	31
Central Area	38–53	68–83
South Bay[2]	15	83
Total		**At least 83 MGD**

1 The North City Component would target a production capacity of 31.4 MGD in order to continue providing service to existing recycled water customers. Only 30 MGD of potable recycled water would be delivered to the San Vicente Reservoir.

2 The South Bay Component would be constructed if the Central Area component cannot accommodate a full 53 MGD in order to produce 83 MGD of purified water.

3.4.1 PROJECT COMPONENTS

The Program facilities can be categorized as treatment, pumping, and conveyance. Three AWPFs are proposed: the NCAWPF and SBAWPF would be collocated with the existing NCWRP and SBWRP, respectively. A third AWPF—the CAAWPF—would be constructed in Mission Valley to treat tertiary effluent from a proposed WRP located at Harbor Drive near the San Diego International Airport. From these AWPFs, purified water would be piped to either the San Vicente Reservoir or the Otay Reservoir where it would blend with local runoff and imported supplies to add to the multiple barrier treatment approach through the use of an environmental buffer (time and distance prior to entering a drinking water treatment facility). The water would then receive an additional round of treatment at a potable water treatment plant before being distributed as potable water (see Figure 3-2, Advanced Water Purification Treatment Process).

North City Component

The North City component includes expansion of the existing NCWRP, construction of a new full-scale AWPF adjacent to the NCWRP, pipelines, and support facilities such as pump stations (see Figure 3-3). The purified water produced at the NCAWPF would be piped to San Vicente Reservoir where it would blend with raw water in the reservoir. The North City component would yield an annual average of 31.4 MGD of purified water and 11.8 MGD of recycled water for non-potable use.

NCWRP Expansion

The NCWRP would be expanded from a capacity of 30 MGD to 51 MGD (annual average daily flow (AADF)) and 90 MGD on a peak daily flow, which in turn would yield an annual average of 31.4 MGD of purified water from the AWPF and 11.8 MGD of recycled water for non-potable use. To increase capacity at the NCWRP, a number of new process units and tankage would be required. Unit process requiring expansion include: influent screening, primary sedimentation, flow equalization, aeration basins, secondary clarification, and tertiary filtration.

Additional wastewater flows to the expanded NCWRP would be delivered from the Morena Boulevard Pump Station and wastewater force main. Additional sludge generated by the expanded NCWRP may require upgrades at MBC, discussed in more detail below.

NCAWPF and Influent Conveyance

The new AWPF would be located on the vacant City-owned lot across Eastgate Mall Road to the north of the NCWRP. A new influent pump station would be located at the NCWRP site and would be sized to pump tertiary effluent via a pipeline installed in a pipe gallery/access tunnel

under Eastgate Mall Road connecting the NCWRP to the NCAWPF. The pump station would be located adjacent to the tertiary filters to divert tertiary effluent from upstream of the chlorination facilities and pump it to the membrane filtration facility at the NCAWPF.

An existing chlorine contact tank on the NCWRP site would be repurposed as an equalization basin to help equalize the diurnal flow fluctuations and to homogenize the influent water characteristics before treatment at the NCAWPF. Two new tanks would also be constructed on the NCWRP site to provide a total of 2.7 MG of equalization volume.

The NCAWPF would produce 31.4 MGD AADF of purified water, 30 MGD of which would be pumped to the San Vicente Reservoir for reservoir augmentation, and 1.4 MGD of which would serve existing recycled water customers for non-potable uses.

Production of purified water at the NCAWPF would involve microfiltration (MF) or ultrafiltration (UF), reverse osmosis (RO), and ultraviolet disinfection and advanced oxidation (UV/AOP) (see Figure 3-2). In addition to process areas for each stage of treatment at the NCAWPF, the facility would include chemical feed systems, post-treatment chemical storage, and a two-story operations, maintenance, and administration (O&M) building. The NCAWPF would also include a full scale laboratory for water quality testing.

San Vicente Purified Water Pipeline and Pump Stations

New pump stations and a pipeline would be needed to convey the purified water produced at the NCAWPF to the San Vicente Reservoir. The purified water would be pumped approximately 28 miles, requiring an effluent pump station at the NCAWPF as well as a booster station (i.e., Mission Trails Booster Station) at about half the distance to the reservoir. The San Vicente Purified Water Pipeline, anticipated to be approximately 48 inches in diameter (except for one segment which would likely be 60 inches), would head in a southerly direction from the proposed NCAWPF before heading east to the San Vicente Reservoir. The pipeline is proposed to travel through Kearny Mesa and Tierrasanta (City of San Diego), the City of Santee, the community of Lakeside, and unincorporated areas of the County of San Diego. The majority of the pipeline would be new pipe, except for one segment which is proposed to repurpose an existing 21,000-foot-long segment of 36-inch recycled water pipeline. In addition, approximately 1 mile of pipeline near the San Vicente Reservoir would be placed in hard rock, and therefore, would need to be tunneled using one or more tunnel boring machines. The tunneled portion of pipeline (i.e., the San Vicente Tunnel) would end at the reservoir discharge structure, which includes a concrete structure and an open riprap channel approximately 850 feet in length.

Morena Boulevard Pump Station, Wastewater Force Main, and Brine Conveyance

In order to utilize the proposed expanded capacity of the NCWRP, approximately 20 MGD AADF of additional wastewater flows that would normally be conveyed to the PLWTP would need to be diverted to the NCWRP. The Morena Boulevard Pump Station is proposed to be located near the intersection of Friars Road and I-5 to collect wastewater flows from a combination of the North Mission Valley Interceptor, Morena Boulevard Interceptor, Morena Boulevard Trunk Sewer, and the East Mission Bay Trunk Sewer and pump the diverted flows approximately 13 miles to the NCWRP through a new 48-inch wastewater force main.

Approximately 6.3 MGD AADF of brine from the RO process at the AWPF would be conveyed via a 20-inch gravity flow line from the NCAWPF back to the proposed Morena Boulevard Pump Station in the same corridor as the wastewater force main. The brine line would discharge downstream of the diversion structures back to the sewer system.

North City Cogeneration Facilities Expansion

Two cogeneration facilities are currently located at the NCWRP: a 3.8-megawatt (MW) facility privately owned by Fortistar and a 1.59 MW facility owned by the City. Both facilities use landfill gas from the Miramar Landfill as their fuel source. The Fortistar facility provides up to 3.5 MW to power the existing NCWRP and 0.2 MW for their internal needs, and sells additional power to the City for export to other City facilities. The 1.5 to 2.0 MW of power being exported to other City facilities could cover some of the additional power supply needs of the expanded NCWRP. The City may purchase the Fortistar facility, and it could be expanded by installing additional cogeneration to meet the NCAWPF power needs. The new cogeneration facility is proposed to be located at the NCAWPF, NCWRP, or at MBC.

Central Area Component

The Central Area component includes construction of two interrelated facilities; a new water reclamation facility (Central Area Water Reclamation Plant (CAWRP)) and AWPF (CAAWPF)) in addition to pipelines and support facilities such as pump stations (see Figure 3-4 for Central Area component facility locations). The purified water produced at the CAAWPF would be piped to San Vicente Reservoir where it would blend with raw water in the reservoir. The Central Area component would yield 38–53 MGD AADF of purified water.

CAWRP

The CAWRP is proposed at Harbor Drive near the convergence of the North and South Metro Interceptors and PS2, which carry all of the flows that are conveyed to the PLWTP. Wastewater

flows from PS2 would be diverted to the water reclamation facility to produce reclaimed water. The proposed CAWRP site is 24 acres and located just west of the San Diego International Airport. The site is currently owned by the City, but there are existing structures that would need to be demolished and the site re-purposed for a treatment facility.

The CAWRP would have a design capacity of 72 MGD. The basic elements of the CAWRP would be generally similar to those of existing WRPs and include an influent pump station, primary treatment facility, membrane bioreactor (MBR) process facility, a blower building, two 5 MG product water storage tanks, one surge control tank, an odor control facility, a generator building, a chemical storage area, and an O&M building.

Central Area Reclaimed Water Pipeline and Brine Conveyance

An effluent pump station is proposed at the CAWRP to pump tertiary treated effluent to the CAAWPF via an approximately 7-mile-long, 56-inch-diameter steel pipeline. A pump station at the CAAWPF would convey brine from the purification process back to the discharge side of PS2 via a 20-inch force main within the same corridor as the tertiary effluent pipeline.

Sludge Conveyance

A sludge pump station at CAWRP would pump sludge generated during the tertiary treatment process directly to a receiving tank located at PLWTP via a 6.3-mile-long, 16-inch-diameter force main.

CAAWPF

The CAAWPF is proposed for an 11-acre site in Mission Valley south of Qualcomm Stadium and the San Diego River. The CAAWPF would receive MBR-treated water from the CAWRP and would produce between 38 and 53 MGD of purified water that would be pumped to the San Vicente Reservoir. Production of purified water at the CAAWPF would involve MF or UF, RO, and UV/AOP. In addition to process areas for each stage of treatment at the CAAWPF, the facility would include feed storage tanks and feed pumps, chemical storage and feed systems, post-treatment chemical storage, product water storage tanks, a surge control tank, and an O&M building of approximately 26,000 square feet.

CAAWPF Purified Water Pipeline and Pump Stations

A pump station at the CAAWPF would pump purified water from the CAAWPF through the Alvarado WTP Booster Station located near the Alvarado WTP to the connection point with the San Vicente Purified Water Pipeline. The proposed 54-inch steel force main alignment would be approximately 17.5 miles in length.

PLWTP Improvements

Approximately 4.2 MGD of sludge produced at the new CAWRP would be pumped to the PLWTP for thickening and digestion before conveyance to MBC for dewatering. A dedicated facility would be constructed at the PLWTP for the sludge produced by the CAWRP and would include raw sludge storage, sludge degritting, centrifuge thickening, and centrate pumping. Facilities to be constructed at the PLWTP include two raw sludge storage tanks, a thickener facility, and a thickened sludge pump station.

MBC Improvements

The expansion of the NCWRP and construction of a new CAWRP would increase the sludge loading at MBC. The NCWRP raw sludge will be pumped directly to MBC, while the CAWRP sludge will first be thickened and digested at the PLWTP before conveyance to MBC for dewatering and disposal. During expansion of the NCWRP, improvements at MBC may include the addition of one sludge degritter and one thickening centrifuge within an existing building. During construction of the new CAWRP, new facilities to be constructed at MBC may include expansion of an existing building or construction of a new building with truck drive-under bays for offloading of dewatered sludge, a truck loadout station, four cake sludge pumps, three dewatered storage silos, a new odor control building, and addition of a new odor control system with associated chemical storage tanks and chemical feed pumps.

Harbor Drive SDG&E Power Supply Improvements

Approximately 23 MW of primary power and an additional 15 MW of alternate power would be necessary to supply the CAWRP, CAAWPF, and associated pump stations. A new transmission level substation (69-kilovolt power feed) would be required to provide this level of power to the facilities. The City would provide the funds to construct the new substation that would be owned and operated by San Diego Gas & Electric (SDG&E) and would be subject to a separate and subsequent environmental review. An approximately 2.5-acre site located between the CAWRP and CAAWPF would be required for the substation, the location of which is currently unknown.

South Bay Component

The South Bay component of the Program includes expansion of the existing SBWRP, construction of the new SBAWPF on the SBWRP site, a new sludge processing facility, pipelines, and support facilities such as pump stations (see Figure 3-5). The purified water produced at the SBAWPF would be piped to Otay Reservoir where it would blend with raw water in the reservoir. The South Bay component would yield an annual average of 15 MGD of purified water and 9 MGD AADF of recycled water for non-potable use.

South Bay Influent Pump Station and Force Main

The South Bay Influent Pump Station is proposed to be located at Sea Vale Street west of Woodland Avenue and would collect wastewater flows from the Spring Valley Trunk Sewer and South Metro Interceptor and pump it approximately 9 miles to the SBWRP through a 42-inch steel force main. The South Bay Influent Pump Station would divert an additional 17 MGD AADF of flow to the SBWRP to provide the additional recycled water flow needed to produce purified water at the SBAWPF.

SBWRP Expansion

The SBWRP would be expanded from its current design capacity of 15 MGD AADF to 44 MGD AADF. The expansion would include construction of two new flow equalization storage tanks; headworks, primary clarifiers, including chemical storage tanks and feed transfer pumps; secondary treatment (including clarifiers); ocean discharge train; purified water train; and tertiary filtration.

SBAWPF

The SBAWPF is proposed to be located on a 6.7-acre site at the southwest corner of the SBWRP site, immediately south of the existing SBWRP. Tertiary influent would be pumped from the SBWRP to be treated at the SBAWPF. The treatment process would involve MF or UF, RO, and UV/AOP. In addition to process areas for each stage of treatment at the SBAWPF, the facility would include feed storage tanks and feed pumps, chemical storage and feed systems, post-treatment chemical storage, product water storage tanks, a surge control tank, and an O&M building of approximately 4,400 square feet. The SBAWPF would yield approximately 15 MGD AADF of purified water.

South Bay Purified Water Pipeline and Pump Stations

A pump station located at the SBAWPF would pump purified water approximately 14.5 miles via a 30-inch steel force main to the Otay Reservoir. The Otay Reservoir Booster Station would be located along the pipeline alignment near the southernmost part of Otay Reservoir.

South Bay Solids Processing Facility

The South Bay Solids Processing Facility (SBSPF) is proposed to be located on the SBWRP site and would receive primary and waste activated sludge from the expanded SBWRP in lieu of conveying sludge to either PLWTP or MBC for processing. This would reduce the solids loading discharged from the Point Loma Outfall, while providing operational flexibility and redundancy for sludge processing system-wide. The SBSPF would process an average of 2.8 MGD (4.4 MGD peak day) and includes raw sludge storage, sludge degritting, centrifuge thickening,

thickened sludge blending, screening, anaerobic digestion, digested biosolids storage, centrifuge dewatering, and centrate pumping back to the SBWRP. Dewatered sludge cake would be trucked off site for landfill disposal.

South Bay SDG&E Power Supply Improvements

The existing SBWRP currently uses approximately 3 MW of power. The expanded SBWRP would require 5 MW; the SBAWPF would require 4 MW; and the SBSPF would require 1 MW. Each of the three pump stations would require 2 MW each. Therefore, a total of 13 MW of additional primary power (for a total of 16 MW) and 9 MW of alternate power (for a total of 12 MW) would be required to supply all of the South Bay facilities. A new power feed from one of the nearby distribution stations would be required to provide the additional power to the facilities and would be subject to separate and subsequent environmental review. The alternate power source would come from diesel generators on site at each facility.

3.4.2 CONSTRUCTION

As discussed above, construction and commissioning of the Program would occur in stages. The North City component would be constructed in approximately 36 months. The Central Area component would be constructed in approximately 30 months. Improvements at PLWTP and MBC would take approximately 24 months and 16 months, respectively. The South Bay component would take approximately 30 months to construct.

Treatment Facilities

Construction of treatment facilities includes the construction of new facilities, including the three AWPFs, the CAWRP, and the SBSPF, as well as improvements and/or expansion of existing facilities, including the NCWRP, SBWRP, PLWTP, MBC, and North City cogeneration facilities.

The construction phasing for treatment facilities generally begins with initial procurement of equipment and materials concurrent with physical mobilization on the facility site. Following the start of the procurement phase, general site civil work would begin, focused on rough grading, installation of yard piping, and preparation for structural work. As the general civil work progresses, structural work would commence and include the installation of foundation slabs and concrete or steel structures. Once foundation slabs are complete, equipment deliveries would begin and mechanical installation would commence. As equipment is installed, the electrical work would continue, tying each facility area to the on-site electrical system. After all mechanical and electrical work is complete, the facility would be tested and commissioned.

Equipment associated with the construction of treatment facilities would include dozers, rollers, dewatering pumps, backhoes, loaders, and delivery and haul trucks. The overall construction duration for each treatment facility would vary by project component, but the AWPFs and CAWRP are estimated to be constructed in approximately 24 to 36 months and improvements to existing facilities would take approximately 15 to 30 months depending on the type of facility and scope of improvements.

Pumping Facilities

Pump stations would be constructed within the footprint of each proposed treatment facility as well as along the proposed pipeline alignments. A total of fourteen pump stations are proposed, including four associated with the North City component, six with the Central Area component, and four with the South Bay component. Each pump station site would be approximately 4,000 to 5,000 square feet. The pump stations will have varying capacity to be determined during future project-level design. The pumps and ancillary facilities (instrumentation, control, and power supply systems) would be placed within a masonry enclosure to minimize interior noise. The pump station duty and standby power will be supplied from the regional power grid through two separate power connections taking power from independent power grid loops.

Equipment associated with the construction of the pump stations would include dozers, rollers, dewatering pumps, backhoes, loaders, and delivery and haul trucks. Pump stations would take approximately 12 months to construct.

Conveyance Facilities

All pipeline facilities will be located within public right-of-way where available corridors exist. The majority of the pipeline alignments are anticipated to be constructed using open trench construction techniques. Minimum cover will be based on the pipe diameter and purpose of the pipeline. Pipelines will typically follow agency guidelines with 5 to 8 feet of cover, and where feasible, would be constructed below the typical depth of other wet and dry utilities to avoid conflict and potential exposure during future improvements. Temporary construction easements and staging areas for construction will be determined based on pipeline diameter, recommended trench width, and depth of cover. An average easement for trenching operations, including required lay-down area for supplies and equipment, would be a temporary 30-foot easement. Impacts to traffic flow and the community will be considered in selecting alignments with the associated construction easement areas.

Portions of the pipeline alignments will also be constructed using trenchless construction methods such as auger boring/pipe jacking, horizontal directional drilling (HDD), or microtunneling. These

methods are typically used in sensitive environmental areas, heavily congested areas or to cross controlled access freeway and railroad crossings where open cut is not allowed.

The selection and suitability of specific trenchless methods is largely dependent upon the anticipated ground conditions along the alignment; geotechnical baseline reports will be prepared where trenchless methods are proposed. Several other design elements should also be considered in assessing appropriate trenchless methods, including pipeline material and diameter, drive length, alignment and grade tolerances, available staging areas, control of groundwater, ground loss, and the potential for heave or settlement and permit requirements for casings in a two-pass installation.

In a two-pass trenchless installation, the first pass installs an initial ground support system such as a casing pipe or tunnel liner. Steel pipes are typically required for California Department of Transportation (Caltrans) highways and railroads crossings. Tunnel liners may include steel casings, steel ribs and wood or metal lagging, steel liner plate, or precast concrete segments depending on the soil/rock conditions. After the initial support system is installed, a second pass installs a carrier or product pipeline of the desired diameter and the annular space is backfilled or grouted. Commonly used carrier pipes are welded steel pipe, ductile iron pipe (DIP), plastic pipe, or fiber reinforced pipe. Auger boring is typically a two-pass method. Steel is the most commonly used casing for auger boring and microtunneling two-pass methods. By comparison, a one-pass system directly installs a carrier pipe. Initial support is typically provided by pressurized slurry or a suitable pipe material that can be jacked or pulled into place. HDD is a one-pass system supporting the bore hole with pressurized slurry during multiple reaming passes to enlarge the bore and install pipe. Steel, fiberglass, DIP, and reinforced concrete pipes are the most commonly used pressure pipes for jacking and/or microtunneling one-pass methods.

Trenchless methods typically require excavation of jacking and receiving pits (one on each side of the area to be crossed) with shoring and bracing systems. Trenchless equipment such as a jacking frame and tunnel boring machine are utilized to bore a tunnel connecting the jacking and receiving pits. The construction footprint at grade is heavily dependent on the selected method and contractor's decisions on staging and means and methods; however, the likely size or "footprint" of the impacted area for trenchless technology would be approximately 20 feet wide by 40 feet long at the beginning of the tunnel, and 15 feet by 15 feet the end of the tunnel.

The overall construction duration for pipeline alignments would vary by project component, but is estimated to be approximately 24–36 months.

3.4.3 OPERATION

All projects will be planned and coordinated with existing operations, in full compliance with applicable federal, state, and local regulations.

Treatment Facilities

Operations at existing treatment facilities that will be improved or expanded will be integrated into existing operations processes and would continue to follow current protocol. Operations for new facilities are discussed below.

Advanced Water Purification Facilities

Advanced water purification would be achieved through a three-step process, including membrane filtration, RO, and UV/AOP. The process has been tested and proven reliable through use at the Demonstration Facility.

The following describes the operational characteristics associated with the advanced water purification process.

Treatment

The major process components of each AWPF include MF and/or UF, RO, and UV/AOP. Each of these processes is described below:

- ***Membrane Filtration*:** Membrane filtration is the first step in the water purification process. Water is passed through a material called a membrane, which has openings or "pores" that are large enough for water to pass through, but small enough to prevent particles such as suspended solids, bacteria, and protozoa from passing through. The demonstration-scale AWPF included two types of membrane filtration: MF and UF. The MF system had a nominal pore size of 0.1 micron. This means that any contaminants greater than 0.1 micron in size (approximately 300 times smaller than the diameter of a human hair) were removed from the purified water in the MF process. The UF process had a nominal pore size of 0.01 micron, meaning that any contaminants greater than 0.01 micron in size (approximately 3,000 times smaller than the diameter of a human hair) were removed.
- ***Reverse Osmosis*:** The second step in the water purification process, RO, is a common water treatment process that is used in many industries to produce purified water. In RO, water is forced under pressure through membranes capable of separating extremely small molecules, including salts, viruses, pesticides, and most organic compounds from water. RO produces water that is similar in quality to distilled water. The demonstration-scale AWPF included two side-by-side RO systems, enabling the City to compare the performance of equipment from two manufacturers and two system configurations.

- ***Ultraviolet Disinfection and Advanced Oxidation*:** UV/AOP is the third step in the water purification process, providing both the primary disinfection step and a second barrier to chemical compounds. In this step, hydrogen peroxide, which is a common household disinfectant, is added to the purified water. The purified water is then exposed to UV light, which is similar to concentrated sunlight. UV light is a powerful disinfectant that is commonly used to disinfect medical and dental equipment. Advanced oxidation is achieved when UV light breaks chemical bonds and converts hydrogen peroxide into reactive particles known as hydroxyl radicals. These hydroxyl radicals destroy low molecular weight contaminants, such as 1,4-dioxane, that are known to penetrate the RO membrane. In this way, advanced oxidation destroys trace contaminants that may have passed through the RO process. The hydroxyl radicals are combined into other molecules in this process and do not persist in the purified water.

Treatment components at the AWPFs would include an influent pump station; pretreatment chemical addition (chloramination for biofouling control); MF or UF, membrane filtration break tank, RO transfer pumps; RO pre-treatment chemical addition (antiscalant and sulfuric acid for scale control); cartridge filters; RO feed pumps; RO system; UV/AOP system using ultraviolet light with either hydrogen peroxide (UV/H2O2) or hypochlorite (UV/CIO); post treatment/stabilization chemical addition (pH and Langelier Saturation Index (LSI) adjustment for corrosion control); a purified water pump station; a dechlorination station; and pipeline to the San Vicente or Lower Otay Reservoir.

Energy Use

Power at the NCWRP is mainly generated from the cogeneration system and supplemented by SDG&E power from the Eastgate Mall substation. An additional cogeneration system will be installed to provide power to the NCAWPF. The Central Area components, including the CAWRP, CAAWPF, and pump stations, would be powered by SDG&E through construction of a new transmission-level substation to be constructed by SDG&E in the Mission Valley Area. The South Bay component facilities and pump stations will be powered by additional feed supplies from SDG&E.

The Demonstration Project report included a preliminary estimate of average energy consumption (expressed as annual electrical cost) for the AWPF located at North City and the pump station(s) required to transport the purified water to San Vicente reservoir. This AWPF treatment process energy consumption can be simplified to 3,646 kilowatt hours/million gallons (kWh/MG). The pump station(s) electricity use is estimated at 3,687 kWh/MG.

Staffing and Administration

Each AWPF would include an O&M building on site. Sixty-five new workers are anticipated to be required to operate each new AWPF, including a staff of approximately 12 researchers. The CAWRP would require 76 new workers to operate the facility, including researchers at the Environmental Monitoring and Technical Services Laboratory. These staff would be provided by the City. The facilities would be staffed in shifts 24 hours per day. A fully automated control system would allow for remote monitoring.

Reliability Features for Water Quality

The Program has been designed to include specific reliability features that are proposed to ensure production of highly purified water that meets potable drinking water standards. These reliability features of the AWPFs include the following:

- ***A fully automated control system:*** the membrane filtration, RO, and UV systems will each have a control system with 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.
- ***Equipment Redundancy:*** limited redundancy is required because the AWPFs could divert flows to the Metro system or stop receiving flows from the WRPs. Nonetheless, the following components would have redundant capacity: process mechanical (membrane filtration, RO, UV, chemicals); instrumentation and controls (networks, computers); monitoring/alarm/notification system; electrical (power); civil/site facilities (raw and purified water storage tank, yard piping); and other portions of the AWPF such as occupied structures, HVAC, electrical, plumbing, and conveyance systems.
- ***Integrity Monitoring:*** the City would develop an online monitoring and response plan to provide sufficient features and assurances that any foreseeable malfunction could be promptly identified and appropriate responses applied. Critical control points (e.g., membrane filtration, RO, and disinfection and advanced oxidation systems) were identified during the Demonstration Project as well as critical limit parameters, alert limits, critical limits, and corrective actions. The AWPFs would include water quality instruments to monitor various parameters and ensure that each system is operating correctly. Water quality instruments would include an oxidation reduction potential (ORP) analyzer, chlorine analyzers, turbidimeters, an UVT analyzer, a portable total organic carbon (TOC) analyzer, and a conductivity analyzer.

Operation under Unusual Conditions

Power Outages

The AWPFs would have backup power for critical functions only (dual power feed or emergency generators). Cogeneration, uninterrupted powers supply, and/or SDG&E power would be used to power critical equipment, including the distributed control system and RO flush pumps, during a power outage. For momentary outages, the AWPF would go offline and be restarted when power is restored. For extended outages (i.e., outages lasting longer than 5 to 10 minutes), the RO system would be flushed using the RO flush system discharged into a nearby waterway.

Equipment Failure, Maintenance, or Cleaning

The conceptual design of the AWPFs includes sufficient equipment redundancies to prevent the loss of purified water production if a single process unit is out of service due to malfunction, maintenance, or cleaning. The facility could continue to operate normally under these conditions. If more units than accounted for by redundancy need to be taken out of service, then the production of the AWPF would be reduced until the equipment is repaired. During these conditions, excess flows would be diverted to the PLWTP. Additionally, the AWPFs would not operate at full capacity year-round; rather, they would operate at maximum capacity in winter when recycled water demands are lowest and operate at less than maximum capacity during summer when recycled water demands are highest. During summer, when influent flows are lower, the AWP facility would have more equipment redundancy and could accommodate a higher number of units out of service for maintenance, cleaning, or equipment failure.

Pump stations are designed with one or more redundant pumps so that peak flows can be achieved even with one pump out of service for maintenance or repair. In the unlikely case of pipe failure, the AWPF would be shut down until the pipe is repaired.

Process Upsets

The AWPFs will be designed with online monitoring to identify any process performance issues and treatment redundancy so an identified process upset could be addressed by taking a unit offline for troubleshooting. In this manner, minor excursions will be quickly identified and will not result in a diversion or plant shutdown. In the case where a critical control point does not comply with permit requirements, that particular unit process will be taken offline, and the AWPF could continue to operate at a reduced capacity. In an extreme case, such as an unacceptably high filtered effluent turbidity for an extended period of time, the AWPF may need to be shut down to comply with the agreed critical control points in the Operations Optimization Plan reviewed and approved by the Division of Drinking Water.

If a malfunction occurs at the AWPF that results in off-specification water flowing into the purified water conveyance pipeline, travel time in the conveyance pipeline provides up to 10 hours (approximate as it varies by AWPF) to identify a malfunction, validate the malfunction, and stop flows in the conveyance pipeline before the off-specification water is released into the reservoir. If necessary, water in the purified water conveyance pipeline could be diverted to the sanitary sewer system, used in the non-potable recycled water system, or discharged into a nearby waterway.

Pumping Facilities

Pumping facilities would operate 24 hours per day. No permanent staff would be required, and monitoring would occur remotely. City staff would routinely visit pump stations that are not collocated with a treatment facility for maintenance and additional monitoring activities. Power for the pumping facilities, except for the pump station collocated with the NCAWPF, would come from SDG&E, with backup power being provided by diesel generators located at each pumping facility. The pump station collocated with the NCAWPF would be powered by the proposed Cogeneration Facility.

Conveyance Facilities

Conveyance facilities constructed under the Program would convey purified water, brine, wastewater, and sludge. Regular maintenance would be required to assure that adequate flow is maintained. Permanent easements along pipeline alignments would allow access for inspection and maintenance. Operation and maintenance of the conveyance facilities would consist of routine patrolling, emergency repair, exercising valves, repair and maintenance, inspections, and periodic pipeline dewatering to allow for interior inspections or repairs. Flows would also be maintained via cleansing and flushing activities with a variety of tools. Video inspections would be performed on selected sections of pipelines when necessary. Pipes are accessed through regular spaced openings, which are covered and commonly referred to as manways. Manways are large enough to allow large equipment and personnel to enter the system. Operations and maintenance activities also include no-dig rehabilitations such as epoxy coatings, polyurethane coatings, slip liners, and cured-in-place resin compound liners. Maintenance for elements of the proposed conveyance facilities would include activities similar to those performed throughout the existing water and wastewater system.

3.5 DISCRETIONARY ACTIONS

The Program would require a variety of discretionary actions, approvals, and permits by the City and various agencies. It is anticipated that this PEIR and future project-level EIRs will be used by these agencies in their decision-making process.

Activities associated with the Program would be subject to several permits and approvals from the SWRCB and the San Diego RWQCB. Implementation of the Program would require an amendment to the City's Water Supply Permit to acknowledge a change of source water, as well as issuance of individual Waste Discharge Requirements and NPDES permits to authorize discharge of advanced purified water to a surface water reservoir. The overall intent of the amendment to the City's Water Supply Permit is to protect public health and ensure water produced by the system continues to meet all state and federal potable water quality standards. The intent of Waste Discharge Requirements is to ensure proposed activities continue to support beneficial uses and meet basin plan objectives, which includes aquatic habitat and ecological considerations in addition to municipal supply. Both permit processes would include public hearings and findings of fact, and would require the City to submit for review and approval all the technical studies and monitoring and reporting plans necessary to demonstrate the actions would not adversely affect public health or adversely affect the beneficial uses of the reservoir (including freshwater aquatic habitat).

Table 3-3summarizes the future discretionary actions, approvals, and permits anticipated to be required as part of the future implementation of the various components of the Program, as well as identifying agencies that would be responsible for granting the approvals and permits.

Table 3-3
Future Discretionary Actions, Approvals and Permits

Discretionary Action/Approval/Permit	Agency
Property and Easement Acquisition	City of San Diego
Construction and Encroachment Permit(s)	City of San Diego
Site Development Permit	City of San Diego
Coastal Development Permit	City of San Diego
Construction and Encroachment Permit(s)	City of La Mesa
Construction and Encroachment Permit(s)	City of El Cajon
Construction and Encroachment Permit(s)	City of Santee
Construction and Encroachment Permit(s)	National City
Construction and Encroachment Permit(s)	City of Chula Vista
Construction and Encroachment Permit(s)	County of San Diego
Right-of-Way Encroachment Permit	California Department of Transportation
Joint Right of Entry Permit	Metropolitan Transit System/North County Transit District
Right of Entry Permit	Metropolitan Transit System
Coastal Development Permit	California Coastal Commission
Section 401 Permit – Water Quality Certification	Regional Water Quality Control Board
Section 404 Permit –Clean Water Act	U.S. Army Corps of Engineers
Section 2081 Incidental Take Permit	California Department of Fish and Wildlife
Section 1602 Streambed Alteration Agreement	California Department of Fish and Wildlife

Table 3-3
Future Discretionary Actions, Approvals and Permits

Discretionary Action/Approval/Permit	Agency
Section 7 Consultation or Section 10(a) Incidental Take Permit	U.S. Fish and Wildlife Service
Air Quality Permit to Construct/Permit to Operate	San Diego Air Pollution Control District
National Pollution Discharge Elimination System permit	State Water Resources Control Board
Construction General Permit, including the stormwater pollution prevention plan	State Water Resources Control Board/ Regional Water Quality Control Board
Domestic Water Supply Permit Amendment	State Water Resource Control Board, Division of Drinking Water
Obstruction Evaluation/Airport Airspace Analysis (OE/AAA), Form 7460-1	Federal Aviation Administration

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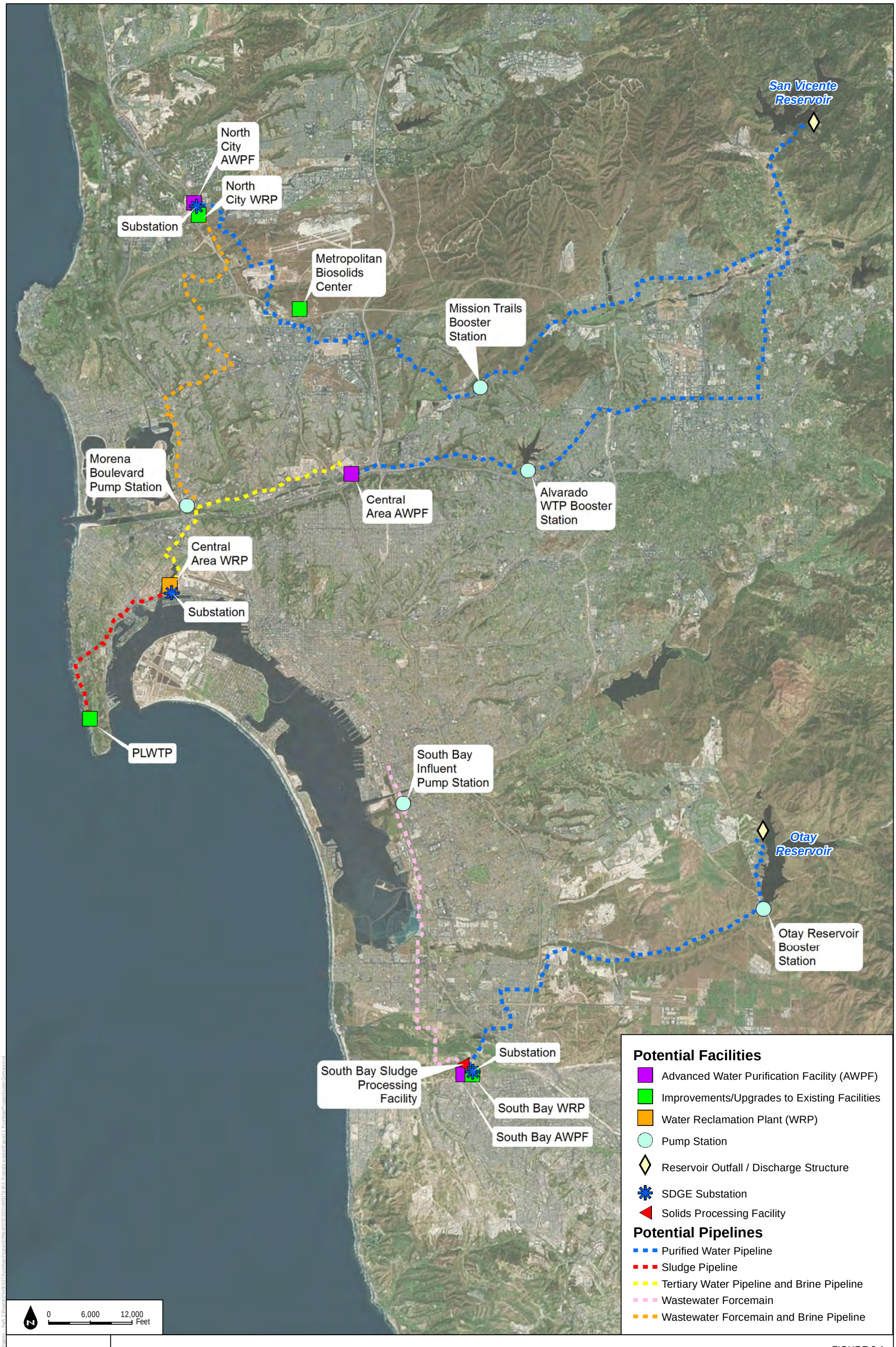

SOURCE: Bing Imagery, 2015, SANGIS, 2015.

FIGURE 3-1

Pure Water Program System Overview

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Pure Water Program EIR

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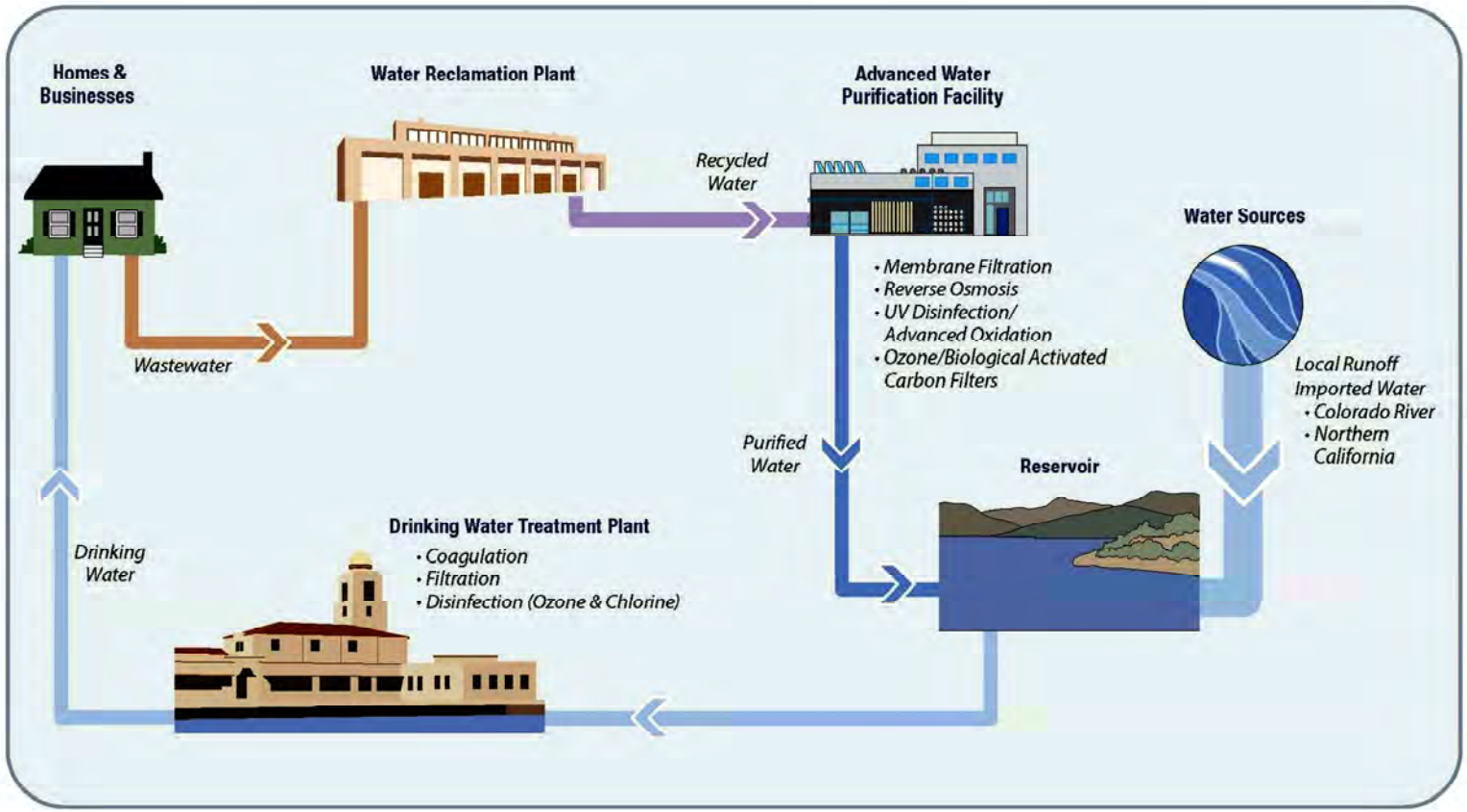
Water Purification Process



SOURCE: San Diego Recycled Water Study, 2012.

FIGURE 3-2

Advanced Water Purification Process

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Pure Water Program EIR

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SOURCE: Bing Imagery, 2015; SANGIS, 2015.

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FIGURE 3-3

North City Component

Pure Water Program EIR

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SOURCE: Bing Imagery, 2015, SANGIS, 2015.

FIGURE 3-4

Central Area Component

Pure Water Program EIR

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South Bay Influent Pump Station

Otay Reservoir

Otay Reservoir Booster Station

Substation

South Bay Sludge Processing Facility

South Bay AWPF

South Bay WRP

0 2,800 5,600 Feet

Potential Facilities

- Advanced Water Purification Facility (AWPF)
- Improvements/Upgrades to Existing Facilities
- Pump Station
- Reservoir Outfall / Discharge Structure
- SDGE Substation
- Solids Processing Facility

Potential Pipelines

- Purified Water Pipeline
- Wastewater Forcemain

SOURCE: Google Imagery, 2015, SANGIS, 2015.

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FIGURE 3-5

South Bay Component

Pure Water Program EIR

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CHAPTER 4 HISTORY OF PROJECT CHANGES

The original Pure Water Program design identified a shorter alignment for the North City component wastewater forcemain and brine conveyance pipeline; located the Morena Boulevard Pump Station at the northern end of Mission Bay, rather than at its current location near the intersection of Friars Road and Interstate 5; included an additional wastewater force main between the North City Water Reclamation Plant and the Central Area Advanced Water Purification Facility site; and included a pump station at Moreno Avenue in Lakeside south of the San Vicente Reservoir. The Program did not originally include improvements at the Point Loma Wastewater Treatment Plant or Metropolitan Biosolids Center, but since has recognized the need for new facilities to process additional sludge that would be pumped to these two facilities.

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CHAPTER 5 ENVIRONMENTAL ANALYSIS

5.1 LAND USE

5.1.1 INTRODUCTION

The following discussion analyzes the existing conditions related to land use, planning, and zoning in the vicinity of proposed facilities associated with the Pure Water Program (Program). As proposed, the Program includes a variety of facilities (including advanced water purification facilities (AWPFs), a new water reclamation plant, and pump stations), force mains, and pipelines located throughout the central and southern coastal areas of San Diego County. While new AWPFs, the Central Area Water Reclamation Plant (CAWRP), and the majority of pump stations would be located within the jurisdictional boundaries of the City of San Diego, pipelines would traverse a number of local jurisdictions, including the Cities of San Diego, La Mesa, El Cajon, Santee, Chula Vista, and unincorporated San Diego County. The examination of existing land uses was based on a review of land use maps and aerial photographs. Planned land use information was obtained from geographic information system (GIS) data and applicable planning documents (primarily General Plans) of the affected jurisdictions. In addition to existing conditions, this section also evaluates general impacts that may occur as a result of construction and operation of Program facilities and pipelines.

Aside from impacts to the existing and planned land uses analyzed by this section, a number of related topics are addressed elsewhere in this Program Environmental Impact Report (PEIR): Air Quality and Odor issues are described in Section 5.2; Noise is discussed in Section 5.5, and Transportation, Circulation, and Parking issues are discussed in Section 5.13.

5.1.2 EXISTING CONDITIONS

On-site and Surrounding Land Uses

Because the AWPFs, the CAWRP, and pump stations are relatively fixed in terms of their location/potential location, existing on-site land uses and land uses surrounding the locations are described below. At this stage, the specific alignments for force mains and pipelines have not been identified; instead, a general alignment of force mains and pipelines was approximated and assumed for the purposes of identifying potential land use conflicts with the land use and zoning designations of adjacent lands. Once the alignments have been finalized, land use and zoning designations of adjacent lands will be identified and evaluated during project-specific analysis.

North City Component

North City AWPF and Influent Conveyance

The North City AWPF (NCAWPF) site is located on an undeveloped and disturbed triangular-shaped parcel located north of the existing North City Water Reclamation Plant (NCWRP). Interstate 805 (I-805) is located downslope to the west of the site, and Eastgate Mall is located immediately to the south. An existing San Diego Gas & Electric (SDG&E) electrical substation is located directly north of the NCAWPF site, and a transmission corridor featuring multiple high-voltage electrical lines supported by tall wooden and steel poles borders the eastern extent of the site. Two large industrial warehouses and a cement mixing plant are located east of the transmission corridor and are accessible off Eastgate Drive. Land uses to the west of the NCAWPF site and west of I-805 consist of undeveloped canyon lands that slope upwards to the west and a mesa landform developed with several industrial office complexes.

The NCAWPF site is located within the boundaries of University community planning area. The community plan designates the southwestern corner of the site for Public Facility/Institutional use and the remainder of the site is designated for Industrial use. Land use designations of the City of San Diego General Plan are also applied to the site; the southern portion of the site is designated for Institutional & Public and Semi-Public Facilities use, and the northern portion of the site is designated for Industrial Employment use. The site is zoned RS-1-14, which provides for single unit residential use (minimum 5,000-square-foot lots) with in a Planned Urbanized Community or Proposition A Land (San Diego Municipal Code Section 131.0403(b)(2), City of San Diego 2008a). The general plan land use designations applied to the NCAWPF site and parcels in the surrounding area are depicted on Figure 5.1-1.

Lands to the north of the NCAWPF site are designated for Industrial Employment use and are zoned RS-1-14. The transmission corridor east of the site and undeveloped canyon lands to the northeast are designated Park, Open Space, & Recreation and are zoned IL-2-1, which provides for a mix of light industrial and office uses with limited commercial. South of Eastgate Mall, lands associated with the NCWRP are designated for Institutional & Public and Semi-Public Facilities use and are zoned RS-1-14. To the west, the I-805 corridor is designated for Roads, Freeway, and Transportation use, and office complexes are designated for Industrial Employment use. Zoning designations for industrial office development located west of I-805 and north and south of Eastgate Mall include Industrial-Heavy (IH-2-1, which provides for manufacturing uses with some office) and Industrial-Park (IP-1-1, which provides for research and development uses with some limited manufacturing).

San Vicente Purified Water Pipeline and Pump Stations

As proposed, the North City component includes the installation of a new purified water pipeline to convey water to the San Vicente Reservoir for temporary storage. As with all proposed conveyance facilities, the new purified water pipeline would be located in the roadway right-of-way (ROW), where feasible. For purposes of this analysis, it is assumed that the new purified water pipeline would proceed in a general southerly and easterly alignment primarily following existing roads from the NCAWPF through several City of San Diego communities, undeveloped federal lands within MCAS Miramar, the City of Santee, the rural community of Lakeside, and ending at the San Vicente Reservoir. A pump station at the NCWRP and a booster station (i.e., Mission Trails Booster Station) would also be constructed along the proposed pipeline alignment.

From the NCAWPF, the proposed pipeline would follow existing roadways located adjacent to industrial businesses and undeveloped lands. Near Miramar Road, the alignment would turn to the south partially following existing dirt access roads on federal lands near the Miramar National Cemetery. The alignment would proceed to the south across undeveloped, chaparral-covered federal lands and would also utilize an existing SDG&E utility access road located adjacent to the Miramar Wholesale Nursery. The remaining segment of the alignment on federal lands would traverse disturbed mesas and undeveloped canyon landscapes prior to passing beneath State Route 52 (SR-52) and entering an industrial-commercial area of Kearny Mesa. Development adjacent to the alignment typically consists of office buildings, occasional parks, surface parking lots, commercial strip development, and auto-oriented businesses. Single-family and multi-family residential developments are located east of SR-163 and I-15, and through the Tierrasanta community planning area, the pipeline alignment would proceed in a southeasterly direction toward Mission Gorge Road, passing residences, neighborhood schools, commercial shopping centers, several undeveloped canyons, and a large golf course. Travelling north along Mission Gorge Road through the community of Navajo, land uses adjacent to the proposed pipeline alignment include mining operations, undeveloped lands, multi-family apartment complexes, single-family residences, and Mission Trail Regional Park. As proposed, the Mission Trails Booster Station would be located on currently undeveloped, sloping lands in the Navajo community planning area adjacent to a small, commercial strip development to the west and single-family residences to the east.

South of San Diego River and SR-52, the pipeline alignment would traverse the City of Santee. Lands adjacent to the alignment within the City of Santee include mobile home parks, apartment complexes, single-family residences, commercial shopping centers, big-box retailers, schools, and undeveloped land including the San Diego River floodplain. East of the City of Santee, the proposed pipeline alignment traverses the community of Lakeside and would be located adjacent

to undeveloped parcels, recreation facilities, single-family residences, industrial office complexes, auto-storage yards, commercial strip development, and neighborhood schools. Other land uses adjacent to the proposed pipeline alignment in the community of Lakeside include mobile home parks, a mining operation, undeveloped hillsides, the San Diego River floodplain, disturbed grazing lands, rural residential development, equestrian facilities and undeveloped, chaparral-covered slopes.

Numerous general plan land use designations and zoning designations border the proposed pipeline alignment; this information is presented in Tables 5.1-1 and 5.1-2 by land use jurisdiction.

Table 5.1-1
North City Component: San Vicente Purified Water Pipeline and Pump Stations Adjacent General Plan Land Use Designations

Jurisdiction	Community Plan Area/Planning Areas/Neighborhood	General Plan Land Use Designations
City of San Diego	University	Park, Open Space, & Recreation
		Institutional & Public and Semi-Public Facilities
		Industrial Employment
Federal Government (USMC)	—	Military Use[1]
City of San Diego	Kearny Mesa	Military Use[1]
		Industrial Employment
		Commercial Employment, Retail, & Services
		Multiple Use
		Park, Open Space, & Recreation
		Institutional & Public and Semi-Public Facilities
City of San Diego	Tierrasanta	Military Use[2]
		Residential
		Institutional & Public and Semi-Public Facilities
		Park, Open Space, & Recreation
		Commercial Employment, Retail, & Services
		Industrial Employment
City of San Diego	Navajo	Industrial Employment
		Commercial Employment, Retail, & Services
		Residential
		Open Space, Parks & Preserves[2]
City San Diego	East Elliot	Commercial Employment Retail, & Services

Table 5.1-1
North City Component: San Vicente Purified Water Pipeline and Pump Stations Adjacent General Plan Land Use Designations

Jurisdiction	Community Plan Area/Planning Areas/Neighborhood	General Plan Land Use Designations
City of Santee	—	R2 (Low–Medium Density Residential)
		PD (Planned Development)
		P/OS (Park/Open Space)
		R14 (Medium–High Density Residential)
		NC (Neighborhood Commercial)
		R7 (Medium Density Residential)
		OP (Office Professional)
		R22 (High Density Residential)
		PUB (Public)
		IL (Light Industrial)
County of San Diego	Lakeside Community Planning Area	Specific Plan Area (Lakeside)
		General Commercial
		Village Residential (VR-4.3)
		Village Residential (VR-7.3)
		Open Space – Recreation
		Village Residential (VR-10.9)
		Semi-Rural Residential (SR-1)
		Rural Commercial
		Medium Impact Industrial
		Public/Semi-Public Facilities
		Semi-Rural Residential (SR-4)
		Open Space – Conservation
		Public Agency Lands (San Vicente Reservoir)

Notes:
1. While designated by the City of San Diego General Plan for Military Facilities use, MCAS Miramar is not subject to City of San Diego plans, policies, or regulations and is not under City land use jurisdiction.
2. The Mission Trails Booster Station is located on lands designated for Open Space, Park & Preserve use.

Table 5.1-2
North City Component: San Vicente Purified Water Pipeline Alignment and Pump Stations Adjacent Zoning Designations

Jurisdiction	Community Plan Area/Planning Areas/Neighborhood	Zoning Designations
City of San Diego	University	RS-1-4
		IL-2-1
		AR-1-1
Federal Government (USMC)	–	AR-1-1[1]

Table 5.1-2
North City Component: San Vicente Purified Water
Pipeline Alignment and Pump Stations Adjacent Zoning Designations

Jurisdiction	Community Plan Area/Planning Areas/Neighborhood	Zoning Designations
City of San Diego	Kearny Mesa	IL-2-1
		AR-1-1[2]
		IL-3-1
		CC-1-3
		Unzoned
City of San Diego	Tierrasanta	RS-1-1
		IH-2-1
		RM-2-5
		RS-1-7
		CC-1-3
		CN-1-2
		RM-1-1
City of San Diego	Navajo	AR-1-1[1]
		IL-3-1
		IL-2-1
		CC-1-3
		RM-2-5
		RM-1-1
		CN-1-2
		RS-1-5[2]
		RS-1-1
City of San Diego	East Elliott	RS-1-8
City of Santee	—	Same as adjacent land use designations (see Table 5.1-1)
County of San Diego	Lakeside Community Planning Area	S88 (Specific Planning Area)
		C36 (General Commercial)
		RS (Single-Family Residential)
		RMH (Mobile home Residential)
		RMH9 (Mobile home Residential 9 subject to limitations)
		RR (Rural Residential)
		A70 (Limited Agriculture)
		RMH6 (Mobile home Residential subject to limitations)
		M54 (General Impact Industrial)
		M58 (High Impact Industrial)
		A72 (General Agriculture)
		S80 (Open Space)

Notes:

1. While zoned by the City of San Diego General Plan, MCAS Miramar is not subject to City of San Diego plans, policies, or regulations and is not under City land use jurisdiction.
2. The Mission Trails Booster Station is located on lands zoned RS-1-5, R-2A, and CN.

Morena Boulevard Pump Station, Wastewater Force Main, and Brine Conveyance

As proposed, the North City component includes the installation of a new wastewater force main and brine conveyance pipeline to convey wastewater and brine from the NCAWPF to the Morena Boulevard Pump Station. As with all proposed conveyance facilities, the new force main and brine pipeline would be located in the roadway ROW, where feasible. For purposes of this analysis, it is assumed that the new force main and pipeline would proceed in a general southerly and westerly alignment primarily following existing roads from the NCAWPF through the University, Clairemont Mesa, and Linda Vista communities to the Morena Boulevard Pump Station.

From the NCAWPF, the wastewater force main and brine pipeline would follow a similar alignment as discussed above for the San Vicente Purified Water Pipeline; however, near Governor Drive, the force main and brine pipeline would turn west and follow an existing road towards Genesee Avenue. Land uses adjacent to this segment include industrial office buildings, undeveloped canyon lands, recreation facilities, multi-family apartment structures, single-family residences, and commercial shopping centers. The Genesee Avenue corridor through the community of Kearny Mesa is bordered by neighborhood shopping centers and commercial strip development, single-family and multi-family residential development, undeveloped canyon lands including densely vegetated slopes, neighborhood parks, and regional shopping centers featuring big-box style retail development. At the Genesee Avenue/Balboa Avenue intersection, the force main and brine pipeline would likely turn to the west towards the coast and pass undeveloped canyons and developed mesas supporting single-family and multi-family residential development, small shopping centers, schools and associated recreation facilities. East of I-5, conveyance facilities would turn to the south and parallel the interstate through the southwestern corner of the Kearny Mesa community planning area. Adjacent land uses primarily consist of single-family and multi-family residential; however, railroad tracks, commercial strip development, restaurant and small retail business, auto-oriented businesses, and mobile home parks are also present. The Linda Vista community planning area is located south of Tecolote Road, and land uses adjacent to the proposed pipeline alignment consist of nurseries, self-storage facilities, small industrial warehouses, surface parking lots, auto-oriented and home improvement businesses, office buildings, and a large UPS shipping and receiving facility.

As proposed, the Morena Boulevard Pump Station would be located at the site of an existing San Diego Humane Society/Project Wildlife facility. The pump station is proposed in an industrial neighborhood located north of Friars Road, east of Sherman Street, and north of the San Diego Trolley corridor; the immediate area features a large public storage facility, a Goodwill shipping and receiving facility, and industrial offices.

Between the proposed NCAWPF and the Morena Boulevard Pump Station, the proposed wastewater force main and brine pipeline would traverse three City of San Diego community planning areas. Numerous general plan land use designations and zoning designations border the proposed pipeline alignment; this information is presented in Tables 5.1-3 and 5.1-4 by land use jurisdiction and community plan area.

Table 5.1-3
North City Component: Morena Boulevard Pump Station, Wastewater Force Main, and Brine Conveyance Adjacent General Plan Land Use Designations

Jurisdiction	Community Plan Area	General Plan Land Use Designations
City of San Diego	University	Institutional & Public and Semi-Public Facilities
		Military Use
		Industrial Employment
		Park, Open Space, & Recreation
		Residential
		Commercial Employment, Retail, & Services
City of San Diego	Clairemont Mesa	Park, Open Space, & Recreation
		Residential
		Commercial Employment, Retail, & Services
		Institutional & Public and Semi-Public Facilities
		Industrial Employment
City of San Diego	Linda Vista	Industrial Employment[1]
		Commercial Employment, Retail, & Services

Note:
1. The Morena Boulevard Pump Station is located within the Linda Vista community planning area on lands designated for Industrial Employment use by the City of San Diego General Plan.

Table 5.1-4
North City Component: Morena Boulevard Pump Station, Wastewater Force Main, and Brine Conveyance Adjacent Zoning Designations

Jurisdiction	Community Plan Area/Planning Areas/Neighborhood	Zoning Designations
City of San Diego	University	RS-1-4
		AR-1-1
		CO-1-2
		IP-2-1
		OP-1-1
		CC-1-3
		CN-1-2
		RM-2-5
		RM-1-1

Table 5.1-4
North City Component: Morena Boulevard Pump Station,
Wastewater Force Main, and Brine Conveyance Adjacent Zoning Designations

Jurisdiction	Community Plan Area/Planning Areas/Neighborhood	Zoning Designations
City of San Diego	Kearny Mesa	OP-1-1
		RS-1-7
		CN-1-2
		RM-1-1
		CO-1-2
		CC-1-3
		RM-4-10
		RS-1-1
		CC-4-2
		RM-2-5
		IL-3-1
City of San Diego	Linda Vista	CC-4-2
		CC-1-1
		CC-3-4
		IL-3-1[1]

Note:
1. The Morena Boulevard Pump Station is located on lands zoned for a mix of light industrial, office, and commercial uses (IL-3-1).

NCWRP Expansion and North City Cogeneration Facilities Expansion

The proposed NCWRP expansion and North City Cogeneration Facilities Expansion would occur at the NCWRP, an existing facility located south of the NCAWPF and Eastgate Mall. The NCWRP is located immediately east of I-805, west of a high-voltage transmission corridor and undeveloped lands within the boundary of MCAS Miramar, and immediately north of Miramar Road. Similar to the NCAWPF site, the NCWRP is located in the University community planning area, is designated for Institutional & Public and Semi-Public Facilities use, and is zoned RS-1-14. The general plan land use designations applied to the NCWRP and parcels in the surrounding area are depicted on Figure 5.1-1.

Central Area Component

CAWRP

The CAWRP site is located north of North Harbor Drive, west of the San Diego International Airport (SDIA), and east of the northern boat channel of San Diego Bay. This land was a part of the former Naval Training Center San Diego, and was conveyed to the City of San Diego in

1998. The surrounding area located north of Spruance Road and east of Kincaid Street is developed with multi-story office buildings, former NTC Navy processing and recruit barracks, and a hotel site under construction. The City Public Utilities Department's Environmental Monitoring and Technical Services Laboratory, San Diego State University's (SDSU's) Coastal and Marine Institute Laboratory and lecture hall, surface parking lot, outdoor storage area, and landscaped grounds are located south and west of the proposed CAWRP site. Terminal 2 of the SDIA and a large airport surface parking lot are located east of the site. The City of San Diego Pump Station 2 is located to the south of this parking lot. On the approximate 15-acre site to the west, a 650-room business hotel development is currently under construction. Across the San Diego Bay channel, a shoreline esplanade, a 46-acre public park (City of San Diego 2015a), and the Liberty Station mixed-use residential, retail, educational, office, recreational, and cultural development are located to the west of the CAWRP site.

The CAWRP site is located within the Peninsula community planning area and within the NTC Precise Plan area. The site and surrounding lands to the north and west are designated by the City of San Diego General Plan for Institutional & Public and Semi-Public Facilities use. The CAWRP site is designated for Public Utility use by the Peninsula community plan, and the NTC Precise Plan designates the site for Regional Public Safety Training Institute use (RPSTI). The CAWRP site and land to the southwest are zoned CC-5-5. The Commercial Community CC-5-5 zone provides for a mix of high intensity, heavy commercial, and limited industrial and residential development with a pedestrian orientation. The general plan land use designations applied to the CAWRP site and surrounding lands are depicted on Figure 5.1-2.

Pursuant to the NTC Reuse Plan and the NTC Precise Plan, the CAWRP site occurs on lands designated for RPSTI use. The RPSTI site comprises the 26-acre land area located west of McCain Street and north of Spruance Street. The NTC Reuse Plan (City of San Diego 1998) and NTC Precise Plan (City of San Diego 2001a) also identify a Metropolitan Wastewater Department (MWWD) (now Public Utilities Department (PUD)) parcel south and west of the RPSTI. The parcel was designated for future use as a marine sciences laboratory by PUD. The City's Ocean Monitoring and Technical Services Laboratory (completed in 2004) and SDSU's Coastal and Marine Institute (completed in 2005) are now located on the PUD parcel. Lastly, lands located south of the PUD parcel are designated for business hotel use. The parcel is currently under construction for a 650-room business hotel development.

The SDIA and associated surface parking lots are designated for Institutional & Public and Semi-Public Facilities use by the City of San Diego General Plan but are identified as a "Reserve" on the City of San Diego zoning map. While lands associated with the City's Pump Station 2 are designated for Military Use and Reserve on the zoning map, the pump station facility is consistent with the Institutional & Public and Semi-Public Facilities

designation applied to nearby lands. The site of the business hotel (which is currently under construction) is designated for Commercial Employment, Retail, & Services use by the City of San Diego General Plan, commercial/recreation use by the Peninsula community plan, and business hotel use by the NTC Precise Plan. The site is zoned C-C-5-5 by the City of San Diego. The NTC Park and the adjacent esplanade within Liberty Station are designated Park, Open Space, & Recreation by the City of San Diego General Plan, park use by the Peninsula community plan, and Park/Open Space use by the NTC Precise Plan. The park and esplanade are zoned OP-1-1 (Open Space–Parks) which provides for developed, active parks. The Liberty Station development is primarily designated by the General Plan for Commercial Employment, Retail, & Services and Institutional & Public and Semi-Public Facilities use. The Peninsula community plan designates the site for a mix of uses including single- and multi-family residential, commercial recreation and commercial office, park, school, and public utility. The Liberty Station area is primarily zoned CR-1-1 (Commercial–Regional) by the City of San Diego which provides for a mix of regional serving commercial uses and residential uses with an auto orientation.

Central Area Tertiary Water Pipeline and Brine Pipeline

As proposed, the Central Area component includes the installation of a new tertiary water pipeline and brine pipeline to convey reclaimed water and brine from the Central Area AWPF (CAAWPF) to the CAWRP for treatment. As with all proposed conveyance facilities, the pipelines would be located in existing roadway ROW, where feasible. For purposes of this analysis, it is assumed that the new brine pipeline would proceed in a general westerly and southerly alignment primarily following Friars Road and other existing roads (where feasible) from the CAAWPF to the CAWRP.

From the CAAWPF, the proposed pipelines would proceed to the north along existing roads and would then traverse the San Diego River. North of the San Diego River, the pipelines would follow paved roadways bordered by two- and three-story apartment buildings, commercial businesses (i.e., restaurants, cleaners, banks), and surface parking lots along the western boundary of the Fenton Marketplace. The pipeline alignments would then proceed to the west along Friars Road through the community of Mission Valley to a likely southern turn at Morena Boulevard. Land uses along this segment of Friars Road include multi-story apartment complexes, large office buildings and associated surface parking lots, mining operations, big-box retailers restaurants, strip retail and grocery stores, and residences and lands under construction at the Civita project site. Condominium development, the Fashion Valley Mall, Riverwalk Golf Course, the Mission Valley YMCA, and undeveloped lands in the San Diego River floodplain are also located adjacent to this segment of Friars Road.

It is assumed that near Morena Boulevard the pipeline alignments would turn to the south to traverse the San Diego River and pass under I-8. South of I-8, the pipeline alignments follow existing roadways bordered by small retail businesses, inns, a neighborhood park, restaurants, a large California Department of Transportation facility, older office buildings, surface parking lots, and transit facilities (i.e., bus, trolley, AMTRAK, and Coaster) through the Old Town San Diego community planning area. West of I-5, the pipeline alignments would continue to the west through the Midway–Pacific Highway community planning area. Auto-oriented businesses, motels, the County of San Diego Health and Human Service complex, fast food restaurants, large retail stores, and commercial strip development and single-family residential development comprise the mix of land uses adjacent to the proposed alignment through the Midway–Pacific Highway community planning area. Near Lytton Street, the alignments would turn to the south and would pass auto-oriented businesses, golf course development, and a house of worship. In order to access the CAWRP from the north, a segment of the pipeline alignments would traverse federal government lands associated with Marine Corps Recruit Depot (MCRD) and the SDIA.

Between the proposed CAAWPF and the CAWRP, the proposed pipeline alignments would traverse four City of San Diego community planning areas and federal government lands. Numerous general plan land use designations and zoning designations border the proposed pipeline alignment; this information is presented in Tables 5.1-5 and 5.1-6 by land use jurisdiction and community planning area.

Table 5.1-5
Central Area Tertiary Water Pipeline and Brine Pipeline
Alignment Adjacent General Plan Land Use Designations

Jurisdiction	Community Plan Area	General Plan Land Use Designations
City of San Diego	Mission Valley	Institutional & Public and Semi-Public Facilities
		Park, Open Space, & Recreation
		Commercial Employment, Retail, & Services
		Multiple Use
		Residential
City of San Diego	Old Town San Diego	Multiple Use
		Park, Open Space, & Recreation
		Commercial Employment, Retail, & Services
City of San Diego	Midway–Pacific Highway	Commercial Employment, Retail, & Services
		Multiple Use
		Park, Open Space, & Recreation
Federal Government[1] (USMC)	—	Military Use (MCRD)
		Institutional & Public and Semi-Public Facilities (MCRD)
City of San Diego	Peninsula	Institutional & Public and Semi-Public Facilities

Note:
1. MCRD and the SDIA are designated for Military Use and Institutional & Public and Semi-Public Facilities Use by the City however, the City does not have land use jurisdiction over these areas. The areas are however located in the Peninsula community planning area.

Table 5.1-6
Central Area Tertiary Water Pipeline and Brine Pipeline Alignment
Adjacent Zoning Designations

Jurisdiction	Community Plan Area	Zoning Designations
City of San Diego	Mission Valley	MVPD-MV-CV
		OF-1-1
		CC-3-5
		CR-1-1
		MVPD-MVR-3
		MVPD-MV-CO
		IL-3-1
		MVPD-MV-M/SP
		MVPD-MVR-4
		RM-3-9
		MVPD-MV-CR
		OR-1-1
		CO-1-2
		MVPD-MVR-5
		RM-3-7
		CN-1-2
		CC-3-4
		RS-1-1
City of San Diego	Old Town San Diego	OTSDPD-PUB-PRO-PK
		OTSDPD-CORE
		OTSDPD-PUB-PRO-PKG-C
City of San Diego	Midway – Pacific Highway	CO-1-2
		CC-4-2
		CC-5-4
		CC-3-4
		CC-1-3
		RM-1-1
		RM-3-7
		RS-1-7
		CN-1-2
		CR-1-1
Federal Government[1] (MCRD)	—	N/A
City of San Diego	Peninsula	CC-5-5

Note:
[1] MCRD and SDIA are not zoned by the City of San Diego but are located within the Peninsula community planning area.

Central Area Sludge Conveyance: CAWRP to Point Loma Wastewater Treatment Plant

As proposed, the Central Area component includes the installation of a new sludge pipeline to convey sewerage sludge from the wastewater treatment process to the Point Loma Wastewater Treatment Plant (PLWTP). As with all proposed conveyance facilities, the new sludge pipeline would be located in existing roadway ROW, where feasible. For purposes of this analysis it is assumed that the new sludge pipeline would proceed in a general southwesterly alignment primarily following existing roads (where feasible) from the CAWRP to the PLWTP.

From the proposed CAWRP, the new sludge pipeline would follow North Harbor Drive into the community of Point Loma. Land uses adjacent to existing roadways and the pipeline alignment include airport parking facilities, linear waterfront parks, military facilities (Naval Base Point Loma), restaurant and harbor/water recreation businesses, office buildings, single-family residential development within the Liberty Station area, and several hotels along North Harbor Drive. South of Shelter Island Drive, the mix of uses in the Point Loma community located adjacent to the new pipeline alignment includes local shopping centers and restaurants, professional offices, and one- and two-story residential structures. South of Talbot Street, the land use character of the area transitions from residential and neighborhood uses to primarily single-family residential. For example, as the sludge pipeline alignment proceeds to the south towards the Naval Base Point Loma boundary, the area is marked by narrow, neighborhood streets and relatively large, one- and two-story single-family residences. Federal lands (U.S. Navy) are located south of established residential neighborhoods on San Gorgonio Street, San Fernando Street, and San Elijo Street, and the new sludge pipeline would deviate from existing roadways and would cross federal lands on the Point Loma peninsula featuring undeveloped, natural slopes and occasionally supporting single-story office style development. Existing roadways are established on the west-facing slope of the Point Loma peninsula; therefore, the new pipeline would likely follow existing roadways across federal lands bordered by steep undeveloped slopes, and the Space and Naval Warfare (SPAWAR) Systems Command office building and surface parking lot to the PLWTP.

Between the proposed CAWRP and the Otay Reservoir, the proposed wastewater force main would traverse four City of San Diego community planning areas and the City of Chula Vista. Numerous general plan land use and zoning designations border the proposed pipeline alignment, as presented in Tables 5.1-7 and 5.1-8.

Table 5.1-7
Central Area Sludge Conveyance: CAWRP to PLWTP
Adjacent General Plan Land Use Designations

Jurisdiction	Community Plan Area/Planning Areas/Neighborhood	General Plan Land Use Designations
Federal Government and Port of San Diego[1]	—	Military Use
		Park, Open Space, & Recreation
City of San Diego	Harbor	Water Bodies (San Diego Bay)
City of San Diego	Peninsula	Commercial Employment, Retail & Services
		Residential
		Park, Open Space, & Recreation
		Industrial Employment
		Commercial Employment, Retail, & Services
		Institutional & Public and Semi-Pubic Facilities
Federal Government[2]	—	Military Use (Naval Base Point Loma, Naval Facilities)

Notes:
1 City of San Diego Pump Station No. 2 is located on federal government (i.e., U.S. military) lands designated for Military Use by the City of San Diego. Spanish Landing Park is under the land use jurisdiction of the Port of San Diego and is designated for Park, Open Space, & Recreation by the City of San Diego.
2 While not under the land use jurisdiction of the City of San Diego, the majority of the primarily undeveloped Point Loma peninsula is designated for Military Use by the City of San Diego.

Table 5.1-8
Central Area Sludge Conveyance: CAWRP to PLWTP Adjacent Zoning Designations

Jurisdiction	Community Plan Area/Planning Areas/Neighborhood	Zoning Designations
Federal Government	—	Unzoned (City of San Diego Pump Station No. 2) [1]
City of San Diego	Harbor	N/A (spans a San Diego Bay channel via North Harbor Drive) [2]
City of San Diego	Peninsula	CC-5-5
		RM-4-10
		RM-3-7
		CC-4-2
		CV-1-2
		RM-3-9
		RS-1-7
		RS-1-4
		Unzoned (PLWTP)
Federal Government	—	N/A (Naval Base Point Loma, Naval Facilities, undeveloped lands)

Notes:
1 Federal government lands associated with Pump Station No. 2 are not zoned by the City of San Diego.
2 The segment of North Harbor Drive spanning the San Diego Bay channel and surrounding waters are not zoned by the City of San Diego.

CAAWPF

The CAAWPF site is located on undeveloped, triangular-shaped land bound by Camino del Rio North to the south and west and the San Diego River to the north. The site is located atop elevated lands situated approximately 20 feet greater in elevation than the river and adjacent floodplain. Westbound I-8 travel lanes are located approximately 65 feet south of the site's southern boundary and Mission City Parkway is located approximately 300 feet to the west. Several narrow dirt trails traverse the site in a general northwest–southeast direction. Immediately east of the proposed CAAWPF site is the San Diego River Wetlands Creation site. A shipping container, fenced area, several raised planter beds, an information kiosk, a graded parking lot, and a small native plant garden has been installed by the San Diego River Park Foundation. A large, private turf playing field and a fenced storage yard located adjacent to the southwestern corner of Qualcomm Stadium are located north of the site and north of San Diego River. City of San Diego Fire Station 45 is located within the fenced storage yard. Several two- to three-story office buildings and associated parking lots are located east of the CAAWPF site and Camino del Rio North; I-8 and associated ROW are located to the south. An undeveloped parcel is situated between Camino del Rio North and Mission City Parkway to the west. A three-story parking structure and two tall, glass and steel exterior office towers are located immediately west of Mission City Parkway and north of I-8.

While not located immediately adjacent to the CAAWPF site, it should be noted that the Fenton Marketplace commercial center (featuring a range of uses including the Mission Valley Library, Costco, Ikea, and Lowe's) and the Del Rio apartment homes are located north of the San Diego River and approximately 900 feet north and northwest of the site.

The CAAWPF site is located within the boundaries of the City of San Diego Mission Valley community planning area. The site is designated for Institutional & Public and Semi-Public Facilities use and is zoned MVPD-MV-CV which denotes location within the Mission Valley Planned District (MVPD) and provides for commercial visitor (CV) use in the Mission Valley (MV) community planning area. The commercial visitor zone is intended to provide for development of establishments catering to the lodging, dining, and recreational needs of tourists and local residents (City of San Diego 2013a). The general plan land use designations applied to the CAAWPF site and surrounding lands are depicted on Figure 5.1-3.

In addition to the turf playing field and fenced storage yard located to north of the CAAWPF site, Qualcomm Stadium and surrounding parking lots are designated for Commercial Employment, Retail & Services use, and are zoned MVPD-MV-CV. Office complex development located east of the site is designated for Commercial Employment Retail, & Services use and is zoned MVPD-MV-CO which provides for commercial office (CO)

development. The undeveloped, isolated parcel located west of the site between Mission City Parkway and Camino del Rio North is designated for Institutional & Public and Semi-Public Facilities use and is zoned MVPD-MV-CV. Parking structures and office towers located west of Mission City Parkway are designated for Commercial Employment Retail, & Services use and are zoned MVPD-MV-CO. The San Diego River corridor is densely vegetated north of the site, is designated for Park, Open Spaces, & Recreation use, and is zoned Open Space–Floodplain (OF-1-1) which is intended to control development within floodplains to protect public health, safety, and welfare.

CAAWPF Purified Water Pipeline and Pump Stations

As proposed, the Central Area component includes the installation of a new purified water pipeline between the CAAWPF to a point of connection in Willow Road within the Lakeside community planning area. From the point of connection, purified water would be conveyed to the San Vicente Reservoir for temporary storage via the proposed San Vicente Purified Water Pipeline. As with all proposed conveyance facilities, the pipelines would be located in existing roadway ROW, where feasible. For purposes of this analysis it is assumed that the purified water pipeline would proceed to the west and north from the CAAWPF, through the Mission Valley and Navajo community planning areas, the cities of La Mesa and El Cajon, and through the County of San Diego community of Lakeside to the proposed point of connection in Willow Road. Also, a pump station at the CAAWPF is proposed and would pump purified water from the CAAWPF through a booster station near the Alvarado Water Treatment Plant (WTP) (i.e., Alvarado WTP Booster Station) to the connection point with the San Vicente Reservoir Purified Water Pipeline in Willow Road.

From the CAAWPF, the proposed pipeline would travel east via existing roadway ROW along the San Diego River corridor that supports multi-story office development, surface parking lots, natural, undeveloped floodplain lands, and auto-oriented businesses. Through the Navajo community plan area, the proposed pipeline would briefly parallel I-8 and would travel through an urban industrial area featuring motels, transit facilities, two-story office complexes, auto-oriented businesses, and small strip industrial style development. The proposed pipeline alignment then traverses Navajo Canyon and climbs west-facing slopes into the neighborhood of Del Cerro and through an area of single-family residences, parks, and commercial, and institutional (i.e., house of worship) uses. An additional canyon crossing would be required as the pipeline transitions from Del Cerro east into adjacent City of La Mesa.

As proposed, the pipeline alignment through La Mesa would follow existing roadway ROW bordered primarily by residential development. Upon first entering La Mesa, the pipeline alignment passes water facilities located at the southern end of Lake Murray and then proceeds in a general

northeasterly direction through the city. The proposed Alvarado WTP Booster Station would be located along this segment and would be constructed on currently undeveloped lands covered with a small eucalyptus grove located south of the Alvarado WTP and north of Lake Murray Boulevard. In addition to single-family and multi-family residential development, the proposed alignment also borders an assortment of restaurants, gas stations, auto-oriented businesses, small shopping centers and commercial strip development, and retail stores. A similar assortment of land uses also border the alignment through the easternmost extent within the Navajo community planning area. West of SR-125, the proposed pipeline alignment would follow existing roadways surrounded by shopping centers, professional offices, restaurants and fast food establishments, single-family residences, commercial strip development, undeveloped canyon lands, apartment complexes, and shopping mall development (i.e., Westfield Parkway). East of SR-67, the proposed pipeline alignment would traverse a wide, commercial corridor through the Bostonia neighborhood of El Cajon prior to following existing roadways through the San Diego County community of Lakeside. Land uses adjacent to the pipeline alignment primarily consist of single-family residences with occasional schools, multi-family apartments and commercial shopping centers. Undeveloped lands and grazing lands occur near the Willow Road pipeline point of connection.

Between the proposed CAAWPF and Willow Road, the proposed purified water pipeline alignment traverses two City of San Diego community planning areas, lands within the cities of La Mesa and El Cajon, and the County of San Diego community of Lakeside. Numerous general plan land use designations and zoning designations border the proposed pipeline alignment and this information is presented in Tables 5.1-9 and 5.1-10.

Table 5.1-9
CAAWPF Purified Water Pipeline and Pump Stations
Adjacent General Plan Land Use Designations

Jurisdiction	Community Plan Area	General Plan Land Use Designations
City of San Diego	Mission Valley	Institutional Public and Semi-Public Facilities
		Commercial Employment, Retail, & Services
		Parks, Open Space, & Recreation
City of San Diego	Navajo	Commercial Employment, Retail, & Services
		Industrial Employment
		Residential
		Parks, Open Space, & Recreation
		Institutional Public and Semi-Public Facilities
City of La Mesa[1]		Rural Residential (1–2 du/ac[2])
		Recreation Uses (Regional Park)[3]
		Multiple Unit Residential (18–23 du/ac)
		Local Serving Commercial
		Urban Residential (7–10 du/ac)

Table 5.1-9
CAAWPF Purified Water Pipeline and Pump Stations
Adjacent General Plan Land Use Designations

Jurisdiction	Community Plan Area	General Plan Land Use Designations
City of El Cajon		Neighborhood Commercial (NC)
		Medium Density Residential 18–20 (MR)
		Office/Non-Retail (O/NR)
		General Commercial (GC)
		Public Institution (PI)
		Low Low Density Residential 0–3 (LLR)
		Community Park (CP)
		Open Space (OS)
		Low Density Residential 3–10 (LR)
		Regional Commercial (RC)
County of San Diego	Lakeside	Office Professional
		Village Residential (VR-4.3)
		General Commercial
		Village Residential (VR-30)
		Village Residential (VR-15)
		Medium Impact Industrial
		Village Residential (VR-20)
		Village Residential (VR-24)
		Public/Semi-Public Facilities
		Open Space (Conservation)
		Rural Lands (RL-20)
		Semi-Rural Residential (SR-1)
		Rural Commercial

Notes:

[1] Planned Land Uses as designated on Figure LD-7 of the City of La Mesa General Plan.

[2] du/ac = dwelling units per acre

[3] The booster station is proposed on undeveloped lands located south of Alvarado WTP facilities on lands designated for Recreational Uses (Regional Park). Although included and designated for use in the City of La Mesa General Plan, Lake Murray Reservoir and surrounding lands including those associated with the booster station are under the land use jurisdiction of the City of San Diego. Lands surrounding the reservoir and under City of San Diego land use jurisdiction are designated for Park, Open Space, & Recreation use.

Table 5.1-10
CAAWPF Purified Water Pipeline Alignment Adjacent Zoning Designations

Jurisdiction	Community Plan Area/Planning Areas/Neighborhood	Zoning Designations
City of San Diego	Mission Valley	MVPD-MV-CV
		MVPD-MV-CO
		OF-1-1
		MVPD-MVR-2
City of San Diego	Navajo	IL-3-1
		CV-1-1
		IL-2-1
		RS-1-1
		CO-1-2
		RS-1-7
		OP-1-2
		CN-1-2
		RS-1-4
		RS-1-2
		RS-1-14
		AR-1-1
		RM-1-1
City of La Mesa[1]		R1S (Suburban Residential)
		R3 (Multiple Unit Residential)
		CN (Neighborhood Commercial)
		R2 (Medium Low Density Residential)
		R1 (Urban Residential)
		CN-D (Neighborhood Commercial – Urban Design Overlay)
City of El Cajon		C-N (Neighborhood Commercial)
		O-P (Office Professional)
		RM-2200 (Residential, Multi-Family, 2,200 SF[2])
		RS-6 (Residential, Single-Family, 6,000 SF)
		C-G (General Commercial)
		RM-4300 (Residential, Multi-family, 4,300 SF)
		RS-9 (Residential, Single-Family, 9,000 SF)
		RS-14 (Residential, Single-Family, 14,000 SF)
		RS-9-H (Residential, Single-Family, 9,000 SF, Hillside Overlay)
		C-R (Regional Commercial)

Table 5.1-10
CAAWPF Purified Water Pipeline Alignment Adjacent Zoning Designations

Jurisdiction	Community Plan Area/Planning Areas/Neighborhood	Zoning Designations
County of San Diego	Lakeside	C36 (General Commercial)
		RS (Single-Family Residential)
		RU (Urban Residential)
		RV (Variable Family Residential)
		C31 (Residential-Office Professional)
		RM (Multi-Family Residential)
		C30 (Office Professional)
		M54 (General Impact Industrial)
		C37 (Heavy Commercial)
		C34 (General Commercial)
		C40 (Rural Commercial)
		S94 (Transportation and Utility Corridor)
		S88 (Specific Planning Area)
		S82 (Extractive Use)
		A70 (Limited Agricultural)
		C32 (Convenience Commercial)

Notes:
1. While surrounded by City of La Mesa lands near the Alvarado WTP, the Lake Murray reservoir and surrounding recreational and WTP lands (including the booster station site) are under the land use jurisdiction of the City of San Diego and are zoned AR-1-1.
2. SF = square feet.

PLWTP Improvements

The PLWTP is located on an approximate 40-acre site on the west-facing bluffs of the Point Loma Peninsula. Access to the WWTP is controlled by gates on driveways located off Cabrillo Memorial Drive and Cabrillo Road. Treatment plant-related facilities are located upslope of the WWTP to the east, Fort Rosecrans National Cemetery is located to the northeast, and the Cabrillo National Monument is located to the southeast. The U.S. Coast Guard's Ballast Point Lighthouse is located at the southern end of the Point Loma Peninsula. The PLWTP is located on an island of City-jurisdictional land surrounded by military (U.S. Navy) lands in the Peninsula community planning area. The land use map of the Peninsula community planning area designates the site for Public Utility use, and the City of San Diego General Plan designates the site for Institutional & Public and Semi-Public Facilities use. The site is not zoned by the City of San Diego.

Metropolitan Biosolids Center Improvements

The Metropolitan Biosolids Center (MBC) is an existing biosolids treatment facility located on approximately 39 acres adjacent to the Miramar Landfill. In addition to landfill facilities and undeveloped lands, nearby land uses include SR-52 and industrial businesses in the Kearny Mesa community planning area to the south and MCAS Miramar to the north. The MBC and Miramar Landfill are designated for Military Use and are zoned AR-1-1 by the City of San Diego. The MBC is located on federal lands on MCAS Miramar.

Harbor Drive SDG&E Power Supply Improvements

An approximately 2.5-acre site located between the CAWRP and CAAWPF would be required for a new transmission level substation that would supply the CAWRP, CAAWPF, and associated pump stations. At this time, the location of the substation site is unknown. In general, the area between the CAWRP and CAAWPF consists of urban land uses including neighborhood commercial and regional shopping centers, office complexes, restaurants, and industrial businesses, but also supports a golf course, multi-family apartments, and the San Diego River corridor. MCRD and the SDIA are also located near the CAWRP facility.

South Bay Component

South Bay Influent Pump Station and Force Main

As proposed, the South Bay component includes the installation of a new wastewater force main to convey additional wastewater to the proposed SBAWPF from the South Bay Influent Pump Station to be constructed near the confluence of I-5, SR-54, and the main, channelized segment of the Sweetwater River. As with all proposed conveyance facilities, the new wastewater force main would be located in the roadway ROW, where feasible. Therefore, for purposes of this analysis, it is assumed that the new wastewater force main would proceed from the SBAWPF in a general northwesterly alignment primarily following existing roads to the new pump station facility. The South Bay Influent Pump Station would be located at Sea Vale Street, west of Woodland Avenue and south of SR-54 and the Sweetwater River in the City of Chula Vista.

From the SBAWPF, the wastewater force main alignment would proceed north and east along Monument Road prior to turning to the north and following Hollister Road. This segment of the alignment would traverse a portion of the Tijuana River Valley featuring rural residences; equestrian barns, stables, and riding rings; occasional small farming operations; and undeveloped, densely vegetated river floodplain areas. After spanning the Tijuana River and exiting a primarily rural and agricultural component of the river valley, the alignment would continue to the north via existing roads (potentially Saturn Boulevard and 19th Street) through the City of San Diego Otay Mesa–Nestor community. In addition, the new wastewater force

main would be aligned within roadways adjacent to existing community parks, commercial shopping centers, gas stations, and restaurants. The alignment would also pass through currently undeveloped lands and agricultural lands in the Egger Highlands area located north of SR-75, west of I-5, and south of the San Diego Bay salt ponds in the Otay River Valley.

To the north of the Otay River Valley, the alignment would enter the Chula Vista city limits and would continue north along Bay Boulevard through a primarily industrial commercial area supporting warehouses, offices, occasional neighborhood park facilities, and vacant, disturbed lots. Prior to passing beneath I-5 (and adjacent railroad tracks) and proceeding north along Woodlawn Avenue through single- and multi-family residential neighborhoods, the proposed alignment would travel adjacent to the Sweetwater Marsh National Wildlife Refuge. A relatively short 1-mile-long segment of wastewater force main would extend north of the new pump station facility and would terminate near the intersection of Mile of Cars Way and Wilson Avenue in the City of Chula Vista. This short segment of the proposed alignment would be located within the City of National City jurisdictional boundary and would be installed beneath a channel of the Sweetwater River, within paved parking lots adjacent to existing office and warehouse complexes near Southport Way and Wilson Avenue, beneath the main channelized segment of the Sweetwater River, and within railroad ROW.

Between the proposed SBAWPF and the proposed South Bay Influent Pump Station, the proposed wastewater force main would traverse through two City of San Diego community planning areas, Chula Vista, and, briefly through National City. Numerous general plan land use designations and zoning designations border the proposed pipeline alignment and this information is presented in Table 5.1-11 and 5.1-12.

Table 5.1-11
South Bay Influent Pump Station and Force Main
Adjacent General Plan Land Use Designations

Jurisdiction	Community Plan Area/Planning Areas/Neighborhood	General Plan Land Use Designations
City of San Diego	Tijuana River Valley	Institutional & Public and Semi-Public Facilities
		Park, Open Space, & Recreation
		Agriculture
City of San Diego	Otay Mesa–Nestor	Military
		Residential
		Institutional & Public and Semi-Public Facilities
		Park, Open Space, & Recreation
		Commercial Employment, Retail, & Services
		Industrial Employment

Table 5.1-11
South Bay Influent Pump Station and Force Main
Adjacent General Plan Land Use Designations

Jurisdiction	Community Plan Area/Planning Areas/Neighborhood	General Plan Land Use Designations
City of Chula Vista	Bayfront Northwest	Mixed Use Commercial
		Limited Industrial
		Transit Focus Area
		General Industrial
		Commercial Visitor
		Regional Technology Park
		Residential (High Density)
		Open Space
City of National City	Mile of Cars	Open Space
		Industrial
		Major Mixed Use
		Westside Specific Plan

Table 5.1-12
South Bay Pump Station and Force Main Adjacent Zoning Designations

Jurisdiction	Community Plan Area/Planning Areas/Neighborhood	Zoning Designations
City of San Diego	Tijuana River Valley	AR-1-1 (Agricultural – Residential; AR-1-1 denotes minimum 10 acres lots)
		OF-1-1 (Open Space – Floodplain; OF-1-1 is intended to control development within floodplains to protect public health, safety, and welfare)
City of San Diego	Otay Mesa–Nestor	AR-1-1
		AR-1-2 (Agricultural – Residential; AR-1-2 requires minimum 1-acre lots)
		RS-1-7 (Residential-Single Unit; RS-1-7 requires minimum 5,000 square foot lots)
		RM-2-5 (Residential-Multiple Unit; RM-2-5 permits a maximum density of 1 dwelling unit for each 1,750 square feet of lot area)
		CN-1-2 (Commercial Neighborhood; CN-1-2 allows for development with an auto-orientation)
		RM-1-1 (Residential Multiple Unit; RM-1-1 permits a maximum density of 1 dwelling unit for each 3,00 square feet of lot area)
		CC-2-3 (Commercial Community; CC-2-3 is intended to accommodate development with an auto orientation)

Table 5.1-12
South Bay Pump Station and Force Main Adjacent Zoning Designations

Jurisdiction	Community Plan Area/Planning Areas/Neighborhood	Zoning Designations
		CC-4-2 (Commercial Community; CC-4-2 is intended to accommodate development with high intensity, strip commercial characteristics)
		OF-1-1
		IL-3-1 (Industrial – Light; IL-3-1 allows a mix of light industrial, office, and commercial uses)
		IL-2-1 (Industrial – Light; allows a mix of light industrial and office uses with limited commercial)
		IH-2-1 (Industrial – Heavy; allows manufacturing uses with some office)
City of Chula Vista	Bayfront Northwest (east of I-5)	M52 (Mixed Use Commercial
		IG (General Industrial)
		IRL (Industrial – Research and Limited)
		CV (Commercial Visitor)
		PQ (Public & Quasi Public)
		PR (Parks and Recreation)
		CT (Mixed Use Residential)
		CP (Professional and Office)
		R3 (Apartment Residential)
		OSR-CZ (Open Space Recreation w/in Coastal Zone)
		MHP (Exclusive Mobile Home Park) [1]
		UNZ (Unzoned) [3]
City of National City	Mile of Cars	OS (Open Space)
		IL (Light Industrial)
		MXD-1 (Minor Mixed Use District)
		CL (Limited Commercial; within Westside Specific Plan Area)

Notes:
1. According to the City of Chula Vista Municipal Code, "P" denotes presence within a precise plan modifying district.
2. The proposed South Bay pump station is proposed on unzoned lands adjacent to Apartment Residential (i.e., R3) zoned lands.

SBWRP Expansion and South Bay Solids Processing Facility

The SBWRP would be expanded from its current design capacity, and expansion would include construction of two new flow equalization storage tanks; headworks and primary clarifiers, including chemical storage tanks and feed transfer pumps; secondary treatment (including clarifiers); ocean discharge train; purified water train; and tertiary filtration. For purposes of this analysis, it is assumed that expansion activities would occur within the existing boundaries of the SBWRP. The South Bay Solids Processing Facility (SBSPF) is also proposed to be located on the SBWRP site.

Similar to the SBAWPF, the SBWRP is located in the southeastern corner the Tijuana River Valley, approximately 800 feet north of the U.S.–Mexico international border and south of Dairy Mart Road. Hilly, vacant, and disturbed lands traversed by a series of dirt trails are located to the west of the SBWRP; undeveloped floodplain is located to the north; and active agricultural fields (e.g., row crops) are located to the northeast. The SBWRP is designated for Institutional & Public and Semi-Public Facilities use and zoned AR-1-1 by the City of San Diego. The general plan land use designations applied to the SBWRP and surrounding lands are depicted on Figure 5.1-4.

SBAWPF

The SBAWPF site is located within the Tijuana River Valley, approximately 800 feet north of the U.S.–Mexico international border and south of Dairy Mart Road. The site is bound by Monument Road to the west and south and is comprised of undeveloped, disturbed, and fenced land situated immediately west and south of the existing SBWRP. Lands located to the south and west of Monument Road are densely stippled with shrubs and are traversed by a series of dirt trails. The local topography slopes upwards to the south and west. The various facilities of the SBWRP including the operations building, the headworks, and sedimentation basins are located to the north and to the east. A row of tall trees line the western and southern boundary of the SBWRP, and a paved trail is located within the fenced boundary of the plant along the eastern perimeter. Additional water treatment facilities are located to the east of the main SBWRP and are accessible via a locked gate off Clearwater Way.

The SBAWPF site and adjacent SBWRP are located on land designated for Institutional & Public and Semi-Public Facilities use by the City of San Diego General Plan. Undeveloped lands located west of the SBAWPF site are designated for Park, Open Space, & Recreation use. The site and the majority of the land on which the SBWRP is built is zoned AR-1-1. Facilities located east of the SBWRP are within a Special Flood Hazard Area of the Tijuana River Valley and are zoned OF-1-1. The general plan land use designations applied to the SBAWPF site and surrounding lands are depicted on Figure 5.1-4.

South Bay Purified Water Pipeline and Pump Stations

As proposed, the South Bay Component includes the installation of a new purified water pipeline to convey purified (i.e., treated) water to the Otay Reservoir for temporary storage. A pump station located at the SBAWPF and Otay Reservoir Booster Station located along the pipeline alignment near the southernmost part of Otay Reservoir where the existing Otay Water Treatment Plant currently operates are also proposed and would be required to pump the treated water. As with all proposed conveyance facilities, the new purified water pipeline would be located in the roadway ROW, where feasible. For purposes of this analysis, it is assumed that the new purified water pipeline would proceed in a general northeasterly alignment primarily following existing roads to the Otay Reservoir.

From the SBAWPF the proposed purified water pipeline would proceed in a northerly direction beneath the SBWRP to Dairy Mart Road. Through the Tijuana River Valley community planning area, lands adjacent to the proposed alignment within Dairy Mart Road include the undeveloped, natural floodplain of the Tijuana River and active agricultural operations. Near Camino De La Plaza, the pipeline alignment would deviate from the Dairy Mart Road alignment, and enter the San Ysidro community planning area, and would be installed within actively farmed lands and beneath the Tijuana River and I-5. North of I-5 the pipeline alignment would be located in roadway (i.e., via Sunset Lane and Smythe Avenue) ROW and would traverse an urban/suburban area featuring parking lots, gas stations, motels, apartment complexes, single-family residences, schools, railroad tracks, and vacant lands. Smythe Avenue turns into Picador Boulevard at SR-905, and the proposed alignment would follow Picador Boulevard into a primarily single-family residential area of southeastern Otay Mesa–Nestor.

The proposed pipeline alignment briefly traverses the Otay Mesa–Nestor community planning area before heading east and north via existing roadways through the Otay Mesa community planning area. The proposed alignment would pass beneath I-805 and proceed in a northerly direction via major roadways through an area supporting apartments; a large shopping center featuring a cinema, restaurants, and gas stations; a medical office complex; single-family and resort-style multi-family uses; undeveloped, densely vegetated slopes; and occasionally graded, vacant lots. As proposed, the alignment may also be located within neighborhood roads flanked by single-family residential development prior to exiting the Otay Mesa community planning area and entering the Chula Vista city limits near Aquatica, SeaWorld's Water Park and Sleep Train Amphitheatre (located west of Heritage Road and south of the Otay River). From here the alignment would follow existing dirt and paved roads through a primarily undeveloped floodplain and the river valley to the Otay WTP at the southern end of Lower Otay Lake. From the Otay WTP, the pipeline alignment would proceed to the north via an existing roadway bordered by undeveloped natural lands, surface parking lots, the U.S. Olympic Training Center, apartment-style residential development associated with the Olympic training center, manufactured and revegetated slopes, and a neighborhood park. The proposed alignment of the pipeline is depicted on Figure 3-8.

Between the proposed SBAWPF and the Otay Reservoir, the proposed pipeline would traverse four City of San Diego community planning areas and the City of Chula Vista. Numerous general plan land use designations and zoning designations border the proposed pipeline alignment, and this information is presented in Table 5.1-13 and 5.1-14.

Table 5.1-13
South Bay Purified Water Pipeline Adjacent General Plan Land Use Designations

Jurisdiction	Community Plan Area/Planning Areas/Neighborhood	General Plan Land Use Designations
City of San Diego	Tijuana River Valley	Institutional & Public and Semi-Public Facilities
		Park, Open Space, & Recreation
		Agriculture
City of San Diego	San Ysidro	Park, Open Space, & Recreation
		Commercial Employment, Retail, & Services
		Residential
		Institutional & Public and Semi-Public Facilities
City of San Diego	Otay Mesa–Nestor	Residential
		Commercial Employment, Retail, & Services
City of San Diego	Otay Mesa	Industrial Employment
		Residential
		Park, Open Space, & Recreation
		Commercial Employment, Retail, & Services
City of Chula Vista	East	Limited Industrial
		Open Space – Preserve
		Public & Quasi Public[1]
		Open Space
		Residential – High (18-27 du/ac)
		Parks & Recreation
		Residential – Medium (6-11 du/ac
		Residential- Low (0-3 du/ac)

Note:
[1]. The proposed booster station and the existing Otay WTP are located on lands designated for Public & Quasi Public use by the City of Chula Vista.

Table 5.1-14
South Bay Purified Water Pipeline Adjacent Zoning Designations

Jurisdiction	Community Plan Area/Planning Areas/Neighborhood	Zoning Designations
City of San Diego	Tijuana River Valley	AR-1-1
		OF-1-1
City of San Diego	San Ysidro	AR-1-2
		CV-1-1 (Commercial Visitor; CV-1-1 allows for a mix of large-scale, visitor-serving uses and residential uses)
		SYIO-CSF-3 (San Ysidro Implementing Ordinance; SYIO- CSF-3 allows for commercial strip development)
		RM-1-1
		RS-1-7

Table 5.1-14
South Bay Purified Water Pipeline Adjacent Zoning Designations

Jurisdiction	Community Plan Area/Planning Areas/Neighborhood	Zoning Designations
City of San Diego	Otay Mesa-Nestor	RS-1-7
		CC-2-3
		CN-1-2
		RM-1-1
City of San Diego	Otay Mesa	IL-3-1
		RM-2-5
		RS-1-14
		CC-1-3 (Commercial Community; CC-1-3- is intended to accommodate development with an auto orientation)
		RM-1-3 (Residential Multiple Unit; RM-1-3 permits a maximum density of 1 dwelling unit for each 2,500 square feet of lot area)
		RM-2-6 (permits a maximum density of 1 dwelling unit for each 1,500 square feet of lot area)
		RM-2-4 (permits a maximum density of 1 dwelling unit for each 1,750 square feet of lot area)
		AR-1-2
		AR-1-1
City of Chula Vista		ILP (Limited Industrial)[1]
		A8 (Open Space Preserve)[2]
		PC (Planned Community: Low–Medium Residential)
		PC5OS (Planned Community 5 (Eastlake) Open Space)
		PC5RM1 (Planned Community 5 (Eastlake) Open Space)
		PC5OS/P (Planned Community 5 (Eastlake) Open Space/Park[3]

Notes:
1 According to the City of Chula Vista Municipal Code, "P" denotes presence within a precise plan modifying district.
2 The Open Space Preserve zone is applied to undeveloped slopes and intervening valleys located south of the Sleep Train Amphitheatre and north of a single-family residential neighborhood accessible from Avenida De Las Vistas.
3 The reservoir outfall/discharge structure is proposed off Wueste Road, east of designated open space and Mountain Hawk Park.

South Bay SDG&E Power Supply Improvements

A new power feed from one of the area distribution stations would be required to provide the additional power to the expanded SBWRP and SBSPF, and the SBAWPF. An alternate power source at each facility is also proposed and would come from diesel generators on site at each facility.

5.1.3 REGULATORY FRAMEWORK

State

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires the evaluation of potential land use impacts, including project consistency with local land use policies and plans. Consistency with local land use plans and policies is one of several criteria that can be used to assess whether a project could have significant environmental impacts. The following paragraphs provide a discussion of local land use policies and plans and standards of significance for potential land use impacts.

California Government Code Section 53091

Pursuant to 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, wastewater, or electrical energy by a local agency." Furthermore, per California Government Code Section 53091 (e), "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." Although Section 53091 does not expressly exempt cities and counties from each other's building and zoning ordinances, it was held in 40 Ops.Cal.Atty.Gen. 243 (1962) that such exemption is implicit in section 53090, despite excluding cities and counties from the definition of "local agencies." (Id., at pp. 245-247.) 40 Ops.Cal.Atty.Gen. Thus, cities and counties are mutually exempt from each other's zoning regulations relative to property that one such entity may own within the territory of the other. (*Lawler v. City of Redding* (1992) 7 Cal.App.4th 778, 783-784; 40 Ops.Cal.Atty.Gen. 243 (1962).) ~~As such, for purposes of this analysis, the building and zoning ordinance of local cities and the County of San Diego are not considered to be applicable to the proposed facilities of the Program and are therefore not discussed further in this section.~~

California Coastal Act

The California Coastal Act went into effect on January 1, 1977, and granted the California Coastal Commission (CCC) authority to review and approve plans and projects located within the coastal zone. Under the California Coastal Act, cities and counties are encouraged to prepare local coastal programs (LCPs) that guide implementation of conservation, development, and regulatory policies required by the California Coastal Act within the local coastal zone.

In order to respond to individual community issues, the LCP of the City of San Diego is divided into 12 segments for the 12 coastal community plan areas. Project facilities including conveyance pipelines and force mains located in the Pacific Beach, Peninsula, Otay Mesa–Nestor and Tijuana River Valley community planning areas are located in the City's Coastal Overlay Zone and would therefore be subject to relevant goals and policies of the Pacific Beach LCP (certified by the CCC in1995), the Peninsula LCP (certified by the CCC in 1989), the Otay Mesa–Nestor LCP (certified by the CCC in 1997), and the Tijuana River Valley LCP (certified by the CCC in 1998 and subsequently amended in 1999).

Segments of the South Bay force main would also be located in the Coastal Zone of the Cities of Chula Vista and National City. Both cities have adopted LCPs. The Chula Vista LCP was last amended and certified by the CCC in 2012, and the National City LCP was last amended and certified by the CCC in 1997.

California Airport Land Use Planning Handbook

The California Airport Land Use Planning Handbook was released in October 2011. It supersedes the 2002 Handbook edition. The Handbook constitutes "guidance," Cal. Pub. Util. Code Section 21674.7, for Airport Land Use Commissions (ALUCs) in the determination of the scope of their jurisdiction over off-airport land uses as well as in the formulation of noise, overflight, safety and airspace protection policies, as mandated by Cal. Pub. Util. Code Section 21670, et seq.

Regional and Local

Section 15125(d) of the CEQA Guidelines requires that a discussion of the inconsistencies between the Program and applicable general plans and regional plans be provided. The consistency analysis for the Program with applicable plans, policies, and regulations is provided in this section. In addition to the City of San Diego, other jurisdictions in which Program components would be located include the Cities of La Mesa, El Cajon, Santee, Chula Vista, National City and the community of Lakeside in unincorporated San Diego County. The following describes the plans, policies, and regulations that are applicable to the Program.

City of San Diego General Plan (2008)

The City's General Plan was unanimously adopted by the City Council on March 10, 2008. It was amended in 2010 and 2012. The City's General Plan is a comprehensive, long-term planning document that prescribes overall goals and policies for development in the City. The General Plan builds upon many of the goals and strategies of the previously adopted 1979 General Plan, in addition to offering new policy direction in the areas of urban form, neighborhood character,

historic preservation, public facilities, recreation, conservation, mobility, housing affordability, economic prosperity, and equitable development. It recognizes and explains the critical role of the community planning program as the vehicle to tailor the "City of Villages" strategy for each neighborhood. It also outlines the plan amendment process and other implementation strategies, and considers the continued growth of the City beyond the year 2020 (City of San Diego 2008a).

Land Use and Community Planning Element. The purpose of this element is to guide future growth and development into a sustainable citywide development pattern, while maintaining or enhancing quality of life in the City's communities. The Land Use and Community Planning Element addresses land use issues that apply to the City as a whole. The community planning program is the mechanism to refine citywide policies, designate land uses, and make additional site-specific recommendations as needed. The Land Use and Community Planning Element establishes the structure to respect the diversity of each community and includes policy direction to govern the preparation of community plans. The element also provides policy direction in areas including zoning and policy consistency, the plan amendment process, coastal planning, airport land use compatibility planning, annexation policies, balanced communities, equitable development, and environmental justice.

Noise Element. The purpose of the Noise Element is to protect people living and working in the City from excessive noise. The Noise Element provides goals and policies to guide compatible land uses and incorporates noise attenuation measures for new uses to protect people living and working in the City from an excessive noise environment.

The City's General Plan Noise Element contains noise guidelines (City of San Diego 2008b) that are depicted in Table 5.1.-15. The table lists land use categories and identifies exterior noise levels that are compatible, conditionally compatible, and incompatible (compatibility is depicted by shading within the various table cells – see end of table for detail).

Table 5.1-15
Land Use – Noise Compatibility Guidelines

Land Use Category	Exterior Noise Exposure (dBA CNEL)				
	60	*65*	*70*	*75*	
Parks and Recreational					
Parks, Active and Passive Recreation					
Outdoor Spectator Sports, Golf Courses; Water Recreational Facilities; Indoor Recreation Facilities					

Table 5.1-15
Land Use – Noise Compatibility Guidelines

Land Use Category	Exterior Noise Exposure (dBA CNEL)				
	60	*65*	*70*	*75*	
Agricultural					
Crop Raising and Farming; Community Gardens, Aquaculture, Dairies; Horticulture Nurseries and Greenhouses; Animal Raising, Maintain and Keeping; Commercial Stables					
Residential					
Single Dwelling Units; Mobile Homes		**45**			
Multiple Dwelling Units **For uses affected by aircraft noise, refer to Policies NE-D.2. and NE-D.3.*		**45**	**45***		
Institutional					
Hospitals; Nursing Facilities; Intermediate Care Facilities; Kindergarten through Grade 12 Educational Facilities; Libraries; Museums; Child Care Facilities		**45**			
Other Educational Facilities including Vocational/Trade Schools and Colleges and Universities		**45**	**45**		
Cemeteries					
Retail Sales					
Building Supplies/Equipment; Food, Beverages, and Groceries; Pets and Pet Supplies; Sundries, Pharmaceutical and Convenience Sales; Wearing Apparel and Accessories			**50**	**50**	
Commercial Services					
Building Services; Business Support; Eating and Drinking; Financial Institutions; Maintenance & Repair Personal Services; Assembly and Entertainment (includes public and religious assembly); Radio and Television Studios; Golf Course Support			**50**	**50**	
Visitor accommodations		**45**	**45**	**45**	
Offices					
Business and professional; government; medical, dental and health practitioner; regional and corporate headquarters			**50**	**50**	
Vehicle and Vehicular Equipment Sales and Services Use					
Commercial or personal vehicle repair and maintenance; commercial or personal vehicle sales and rentals; vehicle equipment and supplies sales and rentals; vehicle parking					
Wholesale, Distribution, Storage Use Category					
Equipment and materials storage yards; moving and storage facilities; warehouse; wholesale distribution					

Table 5.1-15
Land Use – Noise Compatibility Guidelines

Land Use Category				Exterior Noise Exposure (dBA CNEL)				
				60	*65*	*70*	*75*	
Industrial								
Heavy manufacturing; light manufacturing; marine industry; trucking and transportation terminals; mining and extractive industries								
Research and development							**50**	
	Compatible	Indoor Uses	Standard construction methods should attenuate exterior noise to an acceptable indoor noise level.					
		Outdoor Uses	Activities associated with the land use may be carried out.					
45, 50	Conditionally Compatible	Indoor Uses	Building structure must attenuate exterior noise to the indoor noise level indicated by the number for occupied areas.					
		Outdoor Uses	Feasible noise mitigation techniques should be analyzed and incorporated to make the outdoor activities acceptable.					
	Incompatible	Indoor Uses	New construction should not be undertaken.					
		Outdoor Uses	Severe noise interference makes outdoor activities unacceptable.					

dBA = A-weighted decibels; CNEL = community noise equivalent level
Source: City of San Diego 2015b

Public Facilities, Services, and Safety Element. This element addresses facilities and services that are publicly managed and have a direct influence on the location of land use. These include Fire-Rescue, Police, Wastewater, Storm Water, Water Infrastructure, Waste Management, Libraries, Schools, Information Infrastructure, Disaster Preparedness, and Seismic Safety. Public Facilities, Services, and Safety Element goals and policies are associated with providing adequate public facilities and services to serve the existing population and new growth. Applicable recommendations include requiring development proposals to fully address impacts to public facilities and services.

City of San Diego Community Plans

The City has 50 distinct community planning areas, and 42 recognized community planning groups that provide input on planning and development. Each community planning area has its own land use plan that specifically addresses land use distribution and land use designations in more detail than is possible at the General Plan level. Community plans also provide community and site-specific guidance on community facilities, urban design, and other aspects of community planning as needed.

The community plan structure is necessary because of the City's diverse geography, development patterns, and cultural and ethnic communities, and other variations. Community plans provide the level of information that is needed in order to review and assess proposed public and private development projects. However, it is important to emphasize that community

plans are policy documents that do not contain regulatory requirements. While the community plan addresses specific community needs, its policies and recommendations must be in harmony with other community plans, the overall General Plan, and citywide policies.

Local Coastal Program

The City's community plans located within the State Coastal Zone Boundaries must be certified by the California Coastal Commission (CCC) as being appropriate to implement the Coastal Act. Community planning areas wholly or partially located within the Coastal Zone include: Barrio Logan/Harbor 101, Ocean Beach, Carmel Valley, Otay Mesa/Nestor, Del Mar Mesa, Pacific Beach, La Jolla, Pacific Highlands Ranch, Midway/Pacific Highway Corridor, Peninsula, Mira Mesa, Torrey Hills, Mission Bay Park, Tijuana River Valley, Mission Beach, Torrey Pines, North City Future Urbanizing Area, San Dieguito River Valley, North City Local Coastal Program, and University. Figure 5.1-5 shows the Coastal Zone boundaries within the City of San Diego.

Within the Coastal Zone, there are several categories of land associated with different types of permit authority. The City of San Diego has the authority to issue Coastal Development Permits for areas of the Coastal Zone where the CCC has certified the Local Coastal Program land use plan and related implementation program in the form of code regulations. This constitutes a majority of the area within the Coastal Zone and these areas are known as "Coastal Commission certified areas." These certified areas can lie within appealable or nonappealable areas. For instance, if a Coastal Development Permit falls within the appealable area, then the decision involving this development is appealable to the CCC. On the other hand, if a coastal development permit falls within the nonappealable area, then the decision rests with the City and is not appealable to the CCC.

"Areas of deferred certification" constitute another category of land in the Coastal Zone. In these areas, the CCC has not yet certified the City's land use plan, and therefore retains coastal development permit authority. There are also "areas of original jurisdiction" or "Coastal Commission permit jurisdiction" that are not a part of the City's Local Coastal Program and where the Coastal Act jurisdiction and permit authority to remain with the CCC.

General Plans - Other Jurisdictions

Adjacent jurisdictions to San Diego are generally urbanized with limited vacant land. Most of the cities are experiencing varying degrees of growth in residential uses and intensification of commercial and employment uses. Each municipality adjacent to the City of San Diego has a General Plan which is regularly consulted and used for project review and guidance. There are 12 jurisdictions bordering the City of San Diego. The jurisdictions are: Imperial Beach, San Diego County, Chula Vista, National City, La Mesa, Lemon Grove, El Cajon, Santee, Poway, Del Mar, Escondido, and Mexico.

City of San Diego Municipal Code and Land Development Code Regulations

Referred to as the Land Development Code (LDC), Chapters 11 through 14 of the City's Municipal Code contain the City's planning, zoning, subdivision, and building regulations that provide the framework for how land is to be developed within the City. The City of San Diego Zoning Ordinance, found in Chapter 13 of LDC, establishes base zones to help ensure that the general land use designations applied to properties under the jurisdiction of the City are properly located and that adequate space is provided for each type of development identified. Furthermore, base zones are intended to regulate uses; to minimize the adverse impacts of these uses; to regulate the zone *density* and intensity; to regulate the size of buildings; and to classify, regulate, and address the relationships of uses of land and buildings (San Diego Municipal Code Section 131.0101, City of San Diego 2008a). The LDC also contains overlay zones and supplemental regulations that provide additional development requirements.

City of San Diego Noise Ordinance Criteria

The City has adopted a quantitative noise ordinance to control excessive noise generated in the City (City of San Diego 2008c). The noise ordinance limits are in terms of a 1-hour average sound level. The allowable noise limits depend upon the land use zone, time of day, and duration of the noise, as depicted in Table 5.1-16.

Table 5.1-16
City of San Diego Sound Level Limits

Land Use	Time of Day	1-Hour Average Sound Level (dB)
Single-Family Residential	7 a.m. to 7 p.m. 7 p.m. to 10 p.m. 10 p.m. to 7 a.m.	50 45 40
Multifamily Residential (up to maximum density of 1/2,000)	7 a.m. to 7 p.m. 7 p.m. to 10 p.m. 10 p.m. to 7 a.m.	55 50 45
All other residential	7 a.m. to 7 p.m. 7 p.m. to 10 p.m. 10 p.m. to 7 a.m.	60 55 50
Commercial	7 a.m. to 7 p.m. 7 p.m. to 10 p.m. 10 p.m. to 7 a.m.	65 60 60
Industrial or Agricultural	Anytime	75

dB = decibel
Source: City of San Diego 2008c.

The City also regulates noise associated with construction activities. Construction is permitted between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturdays, with the exception of legal holidays. Construction equipment shall be operated so as not to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 decibels (dB) during the 12-hour period from 7:00 a.m. to 7:00 p.m.

City of San Diego Land Development Code – Environmentally Sensitive Lands Regulations

The purpose of the Environmentally Sensitive Lands (ESL) Regulations is to protect, preserve and, where damaged restore, the environmentally sensitive lands of San Diego and the viability of the species supported by those lands ((LDC Chapter 14, Article 1, Division 1; City of San Diego 2000). These regulations are intended to assure that development, including, but not limited to coastal development in the Coastal Overlay Zone, occurs in a manner that protects the overall quality of the resources and the natural and topographic character of the area, encourages a sensitive form of development, retains biodiversity and interconnected habitats, maximizes physical and visual public access to and along the shoreline, and reduces hazards due to flooding in specific areas while minimizing the need for construction of flood control facilities. These regulations are intended to protect the public health, safety, and welfare while employing regulations that are consistent with sound resource conservation principles and the rights of private property owners.

Environmentally sensitive lands include sensitive biological resources, steep hillsides, coastal beaches, sensitive coastal bluffs, and special flood hazard areas (San Diego Municipal Code Chapter 14, Article 3, Division 1; City of San Diego 2006).

City of San Diego Land Development Code - Historical Resources Regulations

The purpose of the Historical Resources Regulations is to protect, preserve and, where damaged, restore the historical resources of San Diego, which include historical buildings, historical structures or historical objects, important archaeological sites, historical districts, historical landscapes, and traditional cultural properties (San Diego Municipal Code Chapter 14, Article 3, Division 2; City of San Diego 2001b). These regulations are intended to assure that development occurs in a manner that protects the overall quality of historical resources. It is further the intent of these regulations to protect the educational, cultural, economic, and general welfare of the public, while employing regulations that are consistent with sound historical preservation principles and the rights of private property owners.

San Diego Unified Port District Port Master Plan

The Port of San Diego is a special government entity, created in 1963 by an act of the California legislature in order to manage San Diego Harbor and administer the public lands along San Diego Bay. The Port Master Plan was adopted and certified by the Coastal Commission in 1981 and was last amended in 2004. The master plan provides the official planning policies, consistent with a general statewide purpose, for the physical development of the tide and submerged lands conveyed and granted in trust to the San Diego Unified Port District. The City of San Diego controls a small amount of the San Diego Bay tideland area, which is occupied by the City Sewer Pump Station No.2 on Harbor Drive near Lindbergh Field.

NTC San Diego Reuse Plan and NTC Precise Plan and Local Coastal Program

The Central Area component, and more specifically the CAWRP, and a segment of the tertiary water pipeline and brine pipeline are located in the NTC Precise Plan (Precise Plan) area and the Camp Nimitz subarea as defined in the NTC San Diego Reuse Plan (Reuse Plan). Adopted by the San Diego City Council in October 1998, the intent of the Reuse Plan was to create a center that celebrates San Diego's maritime history, open public access to a waterway linking San Diego and Mission Bays, and anchor revitalization of the North Bay region (City of San Diego 1998). In addition, according to the Reuse Plan, the center is also intended to support education, training, and research and development programs that attract new industries to San Diego. The NTC Precise Plan and Local Coastal Program (LCP) (September 2001) is the City' implementing land use plan and furthers earlier efforts regarding redevelopment of the NTC and describes the development, design program, and implementation approach for the former military training center. General policies, zoning, and development standards for land uses at NTC are included in the Precise Plan.

The CAWRP is proposed on lands designated for the Regional Public Safety Training Institute (RPSTI). According to the Reuse Plan and the Precise Plan, the RPSTI site comprises the land area located west of McCain Street and north of Spruance Street from the RPSTI and is anticipated to reuse many of the existing on-site barrack buildings (City of San Diego 1998). The CAWRP is proposed at the undeveloped northeastern corner of the Spruance Road/Kincaid Road intersection. The Reuse Plan and Precise Plan identify a PUD parcel south and west of the RPSTI designated for future use as a marine sciences laboratory for PUD and SDSU. The City's Ocean Monitoring Laboratory (completed in 2004) and SDSU's Coastal and Marine Institute (completed in 2005) are located on the PUD parcel. According to the NTC Precise Plan , lands located south of the PUD parcel are designated for hotel development and more specifically, a 16-acre, 650-room business hotel is proposed (City of San Diego 2001a).

Regional Comprehensive Plan

The Regional Comprehensive Plan (RCP) is the long-range planning document developed by the San Diego Association of Governments (SANDAG) to address the region's housing, economic, transportation, environmental, and overall quality-of-life needs (2004). The City of San Diego's General Plan is intended to complement this plan and encourage smart growth principles. Goals of the RCP are to establish a planning framework and implementation actions that increase the region's sustainability and encourage smart growth. The plan seeks to achieve sustainability through planning and development that meets economic, environmental, and community needs, without jeopardizing the ability of future generations to meet these needs. Smart growth principles are provided to create a compact, efficient, and environmentally sensitive pattern of development that provides people with additional travel, housing and employment choices by focusing future growth away from rural areas and closer to existing and planned job centers and public facilities. The RCP contains an incentive-based approach to encourage and channel growth into existing and future urban areas and smart growth communities.

San Diego Forward: The Regional Plan

San Diego Forward: The Regional Plan, was adopted by the Board of Directors on October 9, 2015. The Regional Plan combines the big-picture version of how the San Diego region will grow over the next 35 years with an implementation program to help make that vision a reality. The Regional Plan, including its Sustainable Community Strategy (SCS), is built on an integrated set of public policies, strategies, and investments to maintain, manage, and improve the transportation system so that it meets the diverse needs of the San Diego region through 2050.

Regional Air Quality Plan

The San Diego Air Pollution Control District and SANDAG have jointly developed the San Diego Regional Air Quality Strategy (RAQS) to identify feasible emission control measures to achieve compliance with the state ozone standard. The RAQS addresses volatile organic compounds and oxides of nitrogen (NO_x), which are the precursors to the photochemical formation of ozone. The last RAQS was initially adopted in 1991 and most recently revised in 2009. The San Diego Air Pollution Control District has also developed the San Diego Air Basin's input to the State Implementation Plan, which is required under the federal Clean Air Act for areas that are in nonattainment of air quality standards. The RAQS relies on information from the California Air Resource Board and SANDAG, including mobile area source emissions and information regarding projected growth in the county to project future emissions. The RAQS then determines the strategies necessary for reduction of emissions through regulatory controls.

Water Quality Control Plan for the San Diego Basin

The U.S. Environmental Protection Agency has delegated responsibility for implementation of portions of the Clean Water Act to the State Water Resources Control Board and the Regional Water Quality Control Boards (RWQCBs), including water quality control planning and control programs, such as the National Pollutant Discharge Elimination System program. This program is a set of permits designed to implement the Clean Water Act that apply to various activities that generate pollutants with potential to impact water quality.

The RWQCB adopted a Water Quality Control Plan (Basin Plan) for the San Diego Basin. This Basin Plan sets forth water quality objectives for constituents that could potentially cause an adverse effect or impact on the beneficial uses of water. The plan is designed to preserve and enhance the quality of water resources in the San Diego region. The purpose of the plan is to designate beneficial uses of the region's surface and ground waters, designate water quality objectives for the reasonable protection of those uses, and establish an implementation plan to achieve the objectives. The Basin Plan incorporates by reference all applicable State Water Resources Control Board and RWQCB plans and policies.

Projects resulting in discharges, whether to land or water, are subject to Section 13263 of the California Water Code and are required to obtain approval of Waste Discharge Requirements from the RWQCB. During both construction and operation, private and public development projects are required to include stormwater best management practices to reduce pollutants discharged from the project site to the maximum extent practicable.

Regional Natural Community Conservation Planning

Jurisdictions within San Diego County have developed several multiple jurisdiction natural habitat planning and open space conservation programs in accordance with the California Department of Fish and Wildlife (CDFW) Natural Community Conservation Planning (NCCP) program. The NCCP program, enacted in 1991, was established to provide long-term, regional protection of native vegetation and wildlife diversity while allowing compatible land uses and appropriate development and growth. The NCCP process was initiated to provide an alternative to "single-species" conservation efforts that were relied on prior to the NCCP Act. The shift in focus from single-species, project-by-project conservation efforts to conservation planning at the natural community level was intended to facilitate regional protection of a range of species that inhabit a designated natural community. In terms of regional land use implications, these natural habitat planning and open space conservation programs delineate areas of biological value to the region and implement preservation strategies through public acquisition and/or development regulations. The Multiple Habitat Conservation Program (MHCP), approved in March 2003, was coordinated by SANDAG and includes the Cities of Carlsbad, Oceanside, Vista, Encinitas,

Solana Beach, San Marcos and Escondido. The County of San Diego is also conducting planning efforts for the North County and East County Multiple Species Conservation Program (MSCP) Plans. The Cities of Poway, La Mesa and El Cajon have also participated in the NCCP program. The NCCP efforts within the County of San Diego are illustrated in Figure 5.1-6. These habitat preserve planning efforts are discussed further in the following section.

Multiple Species Conservation Program

The MSCP is a comprehensive habitat conservation planning program for 582,243 acres in southwestern San Diego County. The MSCP will preserve a network of habitat and open space to protect biodiversity and enhance the region's quality of life. The MSCP will also provide an economic benefit by reducing constraints on future development and decreasing the costs of compliance with federal and state natural resource laws.

The City of San Diego is one of 11 jurisdictions within the MSCP study area. The City has adopted a subarea plan and implementing agreement with the U.S. Fish and Wildlife Service and CDFW. The adoption of the MSCP by the City of San Diego in March 1996 satisfied the mitigation requirement of the City's Clean Water Program (adopted in 1991). The preparation of the MSCP was a joint effort of the City of San Diego, member agencies, state and federal wildlife agencies, and citizen groups. The program addressed the wastewater facilities needs and improvements for the service area of the Metropolitan Sewerage System that included the City of San Diego as well as adjoining jurisdictions. The biological resource mitigation resulted from the provision of wastewater treatment capacity to accommodate current and projected growth in the southwestern portion of San Diego County. The City of San Diego implemented the MSCP, prepared a MSCP Subarea Plan, and established the MHPA as a planned habitat preserve for sensitive biological resources. The MHPA is currently being assembled through the preservation of public lands, public acquisition of private lands from willing sellers, and mitigation for development projects.

Other participating jurisdictions and special districts prepared separate subarea plans for their portion of the planned habitat preserve based on biological, economic, ownership, and land use criteria. The status of the subarea plans and assembly of the preserve for each of the jurisdictions are described below.

City of San Diego MSCP/MHPA

The City of San Diego MSCP Subarea Plan (City of San Diego 1997) has been prepared pursuant to the overall MSCP guidelines to address habitat conservation goals within the City boundaries. The City MHPA delineates 52,727 acres of core biological resource areas and corridors targeted for conservation. The City MSCP Subarea Plan also includes a Framework Management Plan and Specific Management Policies and Directives for management of resources within the MHPA.

Section 1.4, Land Use Considerations, of the MSCP Subarea Plan identifies land uses that are considered conditionally compatible with the biological objectives and thus allowed within the City's MHPA. These land uses include passive recreation, utility lines and roads in compliance with MSCP Subarea Plan General Planning Policies and Design Guidelines, limited water facilities and other essential public facilities, limited low density residential uses, brush management (Zone 2), and limited agriculture. In regards to utilities, all proposed utility lines (e.g., sewer, water, etc.) should be designed to avoid or minimize intrusion into the MHPA. These facilities should be routed through developed or developing areas rather than the MHPA, where possible. If no other routing is feasible, then the lines should follow previously existing roads, easements, rights-of-way and disturbed areas, minimizing habitat fragmentation. Furthermore, all new development for utilities and facilities within or crossing the MHPA shall be planned, designed, located and constructed to minimize environmental impacts. All such activities must avoid disturbing the habitat of MSCP covered species, and wetlands. If avoidance is infeasible, mitigation will be required. In addition, temporary construction areas and roads, staging areas, or permanent access roads must not disturb existing habitat unless determined to be unavoidable. All such activities must occur on existing agricultural lands or in other disturbed areas rather than in habitat. If temporary habitat disturbance is unavoidable, then restoration of, and/or mitigation for, the disturbed area after project completion will be required.

Section 1.4.3, Land Use Adjacency Guidelines, establish planning guidelines that are assessed on a project-by-project basis, during either the planning (new development) or management (new and existing development) stages to minimize impacts and maintain the function of the MHPA. Issues addressed in the adjacency guidelines include drainage, toxics, lighting, noise, barriers, invasives, brush management, and grading/land development. See Section 5.1.7 for additional detail regarding the project and land use adjacency guidelines.

County of San Diego MSCP

The County of San Diego MSCP Subarea Plan covers approximately 242,379 acres (County of San Diego 1998). The subarea is divided into three segments: 1) the Lake Hodges segment in the northern portion of the County; 2) the Metro–Lakeside–Jamul segment that covers 56,949 acres in the eastern portion of the county and; 3) the South County segment. As of January 2006, a total of 76,747.8 acres have been preserved and 8,323 impacted through development within the County of San Diego portion of the MSCP. The preservation of 76,747.8 acres represents approximately 78% of the 98,379-acre goal within the County subarea (City of San Diego 2008d).

City of Chula Vista MSCP

The City of Chula Vista Subarea Plan consists of 33,365 acres (City of Chula Vista 2003). The City of Chula Vista Subarea Plan was approved by the Chula Vista City Council in May 2003,

and was approved by the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG) in January 2005. Chula Vista's annual report of habitat gains and losses state that 90.7 acres were impacted and a cumulative total of 2,658.3 acres, approximately 8%, have been preserved as permanent open space.

Other MSCP Jurisdictions

For the remaining jurisdictions participating in the MSCP, subarea plans are in draft form and have not yet been approved by the USFWS and CDFG. The city of Santee has revised its draft MSCP Subarea Plan to address comments by the USFWS and the CDFG, and is currently proposing to encompass approximately 10,000 acres, of which 57% is developed and 43% is undeveloped. A previous draft of the plan sought to conserve approximately 2,300 acres.

MCAS Miramar Integrated Natural Resources Management Plan

MCAS Miramar adopted an Integrated Natural Resources Management Plan (INRMP) in 2011 (USMC 2012). The INRMP establishes guidelines for management of natural resources on lands administered by MCAS Miramar. The current INRMP covers 2011 through 2015, and is subject to annual review.

San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan

The San Diego Bay National Wildlife Refuge (NWR) which has an approved Comprehensive Conservation Plan (CCP) (USFWS 2014) that is referenced where applicable in this analysis for regulations pertaining to lands in the San Diego Bay NWR. The San Diego Bay NWR protects a rich diversity of endangered, threatened, migratory, and native species and their habitats in the midst of a highly urbanized coastal environment. This 2,620-acre NWR, covering land and water, is situated at the south end of San Diego Bay and was established to protect endangered and threatened species in and around San Diego Bay.

County of San Diego Resource Protection Ordinance

The County of San Diego's Resource Protection Ordinance (County RPO) establishes special controls on development for the County's wetlands, floodplains, steep slopes, sensitive biological habitats, and prehistoric and historic sites. The resources listed above are defined as follows in the County RPO:

- **Wetlands** – lands having one or more of the following attributes:
    - At least periodically, the land supports a predominance of hydrophytes (plants whose habitat is water or very wet places);

- The substratum is predominantly undrained hydric soil; or
- An ephemeral or perennial stream is present, whose substratum is predominately non-soil and such lands contribute substantially to the biological functions or values of wetlands in the drainage system.

- **Floodplains** – The relatively flat area of low lands adjoining and including the channel of a river, stream watercourse, bay, or other body of water which is subject to inundation by the flood waters of the 100 year frequency flood as shown on floodplain maps approved by the Board of Supervisors.
- **Steep Slopes** – All lands having a slope with natural gradient of 25% or greater and a minimum rise of 50 feet, unless said land has been substantially disturbed by previous legal grading. The minimum rise shall be measured vertically from the toe of slope to the top of slope within the project boundary.
- **Sensitive Biological Habitats** - Land which supports unique vegetation communities, or the habitats of rare or endangered species or sub-species of animals or plants as defined by Section 15380 of the State California Environmental Quality Act (CEQA) Guidelines (14 Cal. Admin. Code Section 15000 et seq.), including the area which is necessary to support a viable population of any of the above species in perpetuity, or which is critical to the proper functioning of a balanced natural ecosystem or which serves as a functioning wildlife corridor.

  "Unique vegetation community" refers to associations of plant species which are rare or substantially depleted. These may contain rare or endangered species, but other species may be included because they are unusual or limited due to a number of factors, for example: (a) they are only found in the San Diego region; (b) they are a local representative of a species or association of species not generally found in San Diego County; or (c) they are outstanding examples of the community type as identified by the California Department of Fish and Game listing of community associations.
- **Prehistoric and Historic Sites** – Sites that provide information regarding important scientific research questions about prehistoric or historic activities that have scientific, religious, or other ethnic value of local, regional, State, or Federal importance. Such locations shall include, but not be limited to:
  - Any prehistoric or historic district, site, interrelated collection of features or artifacts, building, structure, or object either:
    - Formally determined eligible or listed in the National Register of Historic Places by the Keeper of the National Register; or

- To which the Historic Resource ("H" Designator) Special Area Regulations have been applied; or

- One-of-a-kind, locally unique, or regionally unique cultural resources which contain a significant volume and range of data and materials; and

- Any location of past or current sacred religious or ceremonial observances which is either:

  - Protected under Public Law 95-341, the American Indian Religious Freedom Act or Public Resources Code Section 5097.9, such as burial(s), pictographs, petroglyphs, solstice observatory sites, sacred shrines, religious ground figures, or

    Other formally designated and recognized sites which are of ritual, ceremonial, or sacred value to any prehistoric or historic ethnic group.

San Diego River Park Master Plan

Conceived by the San Diego River Conservancy and the City of San Diego, the San Diego River Park Master Plan (Master Plan) acknowledges the disconnection between the river and adjacent lands and also expresses concern over the threatened integrity of the San Diego River and the wildlife habitat it supports. Accordingly, the Master Plan "provides the vision and guidance to reverse this condition and to restore the symbiotic relationship between the river and surrounding communities" by creating a linear river park stretching from the river's headwaters near Julian to the Pacific Ocean (City of San Diego 2013b). In addition to establishing a unifying vision and guiding principles, the Master Plan establishes design guidelines applicable to a 0.5-mile-wide area extending to each side of the river within the boundaries of the City of San Diego. Furthermore, the Master Plan divides the San Diego River Park into six reaches based upon topographic characteristics and river condition. Proposed Central Area components, including the proposed CAAWPF and the segment of the Central Area tertiary water pipeline and brine pipeline located within the Mission Valley and Old Town San Diego community planning areas, are located in the Lower Valley reach as identified in the Master Plan. The short segment of the Central Area purified water pipeline aligned within Camino del Rio North ROW is located within the Confluence reach. While the Master Plan does not include a detailed land use plan, a multi-purpose trail and pathway for pedestrians is envisioned north adjacent to the river. The Master Plan also contains general recommendations, specific reach recommendations, and design guidelines for trails, pathways, boardwalks, and other pedestrian amenities along the river corridor.

Point Loma Ecological Conservation Area Memorandum of Understanding

The Memorandum of Understanding (MOU) for the Point Loma Ecological Conservation Area (PLECA) covers the approximately 1500-acre area of the southern Point Loma peninsula generally corresponding to the original extent of the historic Fort Rosecrans military reservation. Point Loma is an important area for biodiversity in the southern California ecological region. Cooperative implementation of this MOU is intended to minimize the risk for loss to ecosystems on Point Loma from the cumulative effects of development and other land use. Although the habitat management initiative under this MOU is similar in character to other regional ecosystem management efforts (e.g., MSCP), it is a separate, non-regulatory program specific to federal and municipal lands on Point Loma.

City of San Diego Vernal Pool Habitat Conservation Plan

Specific to vernal pools, the preliminary Draft Vernal Pool Habitat Conservation Plan (VPHCP) was released for a 30-day public review on March 10, 2015 to provide the public an opportunity to review and provide comments. The VPHCP is intended to provide an effective framework to protect, enhance, and restore vernal pool resources within the City of San Diego, while improving and streamlining the environmental permitting process for impacts to threatened and endangered species associated with vernal pools. The VPHCP covers vernal pools and seven threatened and endangered covered species that do not have federal coverage under the City's MSCP Subarea Plan. Part of the VPHCP conservation strategy is to expand the City's existing MHPA to conserve targeted vernal pool complexes in a configuration that maintains habitat function and viability of the seven covered species, consistent with the Vernal Pool Recovery Plan (USFWS 1998); and to implement avoidance and minimization of impacts to vernal pools consistent with the VPHCP and the City's ESL Regulations. It is anticipated that the City of San Diego Final Draft VPHCP and associated environmental document will be released for public review in late 2015 with adoption anticipated in mid 2016. Portions of the proposed Program facilities are located within or interface with the North, Central, and South Planning Units of the preliminary Draft VPHCP.

Airport Land Use Compatibility Plan

The San Diego Regional Airport Authority acts as the Airport Land Use Commission for the San Diego region as provided in Section 21670.3 of the California Public Utilities Code, and is charged with developing Airport Land Use Compatibility Plans (ALUCPs) for each airport in the County, including military air installations. ALUCPs provide guidance on appropriate land uses surrounding airports to protect the health and safety of people and property within the vicinity of an airport, as well as the public in general. An ALUCP focuses on a defined area around each airport known as the Airport Influence Area (AIA). The AIA is comprised of noise, safety, airspace protection and overflight factors. ALUCPs have been adopted for six rural airports, two

military installations, five urban airports, and the San Diego International Airport. As proposed, Program components would be located within the AIAs of the SDIA, MCAS Miramar, Brown Field Municipal Airport, Montgomery Field Municipal Airport, and Gillespie Field (see Figure 5.1-7). Specifically, the North City component would be located within the AIA of MCAS Miramar, Montgomery Field, and Gillespie Field; the Central Area component would be located within the AIA of the SDIA; and the South Bay component would be located within the AIA of Brown Field. Although not governed by an ALUCP, the Naval Outlying Field at Imperial Beach is also in the vicinity of the South Bay component.

5.1.4 IMPACTS

Issue 1: Would the Pure Water Program be inconsistent or conflict with the environmental goals, objectives, and recommendations of the City of San Diego General Plan (General Plan), the City of San Diego Municipal Code, or the various community plans where the project would be located, the Naval Training REUSE Plan, or other applicable land use plans?

According to the City's CEQA Significance Determination Thresholds (City of San Diego 2011), land use compatibility impacts may be significant if a project would:

- Conflict or be inconsistent with the environmental goals, objectives, or guidelines of a community or general plan.
- Conflict with an adopted land use designation or intensity and indirect or secondary environmental impacts could occur (for example, development of a designated school or park site with a more intensive land use could result in traffic impacts).
- Be substantially incompatible with an adopted plan. For example: a rock crusher in a residential area would result in land use conflicts related to environmental consequences (i.e., noise), and environmental impacts would result. As a general rule, projects that are consistent with the zoning and compatible with surrounding uses should not result in land use impacts.
- Development or conversion of general plan or community plan designated open space or prime farmland to a more intensive land use.

Per the City's Significance Determination Thresholds, an inconsistency with a plan is not by itself a significant environmental impact; the inconsistency would have to relate to an environmental issue to be considered significant under CEQA.

The Program is considered consistent with the provisions of the identified regional and local plans if it meets the general intent of the plans, and would not preclude the attainment of the

primary intent of the land use plan or policy. In fact, "[a] given project need not be in perfect conformity with each and every general plan policy" nor does state law require precise conformity of a proposed project with every policy or land use designation for a site. (*Sierra Club v. County of Napa* (2004) 121 Cal.App.4th 1490, 1509 [quoting *Families Unafraid to Uphold Rural Etc. County v. Board of Supervisors* (1998) 62 Cal.App.4th 1332, 1336]; see also *San Franciscans Upholding the Downtown Specific Plan v. City & County of San Francisco* (2002) 102 Cal.App.4th 656; *Sequoyah Hills Homeowners Assn. v. City of Oakland* (1993) 23 Cal.App.4th 704, 719.) Rather, a project must be "compatible" with the objectives, policies, general land uses and programs specified in the plan. If the project is inconsistent with individual objectives or policies of an applicable land use plan, but is largely consistent with the other goals and policies of that plan and would not preclude the attainment of the primary intent of the land use plan, the project would be considered consistent with that plan. Furthermore, any such inconsistency must also result in a physical change in the environment that results in a significant environmental impact not analyzed in the other resource chapters of an EIR. The analysis in Section 5.1 provides an overview of the policies most relevant to the proposed Program contained in the various Cities' Planning documents. However, the City of San Diego Planning Department's conclusion as to whether the proposed Program is consistent with the Cities' planning documents is determined based upon the documents as a whole.

Pure Water Program

This analysis determines whether or not there is the potential for physical incompatibilities between land uses whereby construction, operation, and maintenance of the Program components would cause potential impacts. Secondary effects resulting from potential land use conflicts or incompatibility (specifically during construction activities) are usually the result of other environmental effects, such as noise generation or air quality issues resulting from grading activities and those issues are addressed within specific applicable resource sections. Construction and operational land use impacts of the proposed program are evaluated below.

The land use analysis provided in this section is organized by the three major geographic components of the Program: North City Area, Central Area, and South Bay Area.

North City Component

NCAWPF and Influent Conveyance

City of San Diego General Plan

The NCAWPF site is designated by the City of San Diego General Plan for Institutional & Public and Semi-Public Facilities use and Industrial Employment use.

University Community Plan

The NCAWPF site is located within the boundaries of the University Community Plan Area on lands designated for Public Facility/Institutional use and Industrial use.

The NCAWPF site consists of undeveloped and disturbed lands primarily surrounded by existing industrial uses. More specifically, an SDG&E electrical substation is located to the north of the site; a transmission corridor and industrial warehouse are located to the east; the NCWRP is located to the south; and I-805 is located downslope of the site to the west. The site is surrounded by existing industrial development including electrical and water utilities and once operational, the proposed NCAWPF would be consistent with surrounding land uses.

Because the NCAWPF would be similar to existing uses in the immediate area and would not conflict with the land use designations applicable to the site, the NCAWPF would generally be consistent with applicable planning documents. Therefore, land use conflicts/inconsistency impacts are anticipated to be less than significant. However, as with all Program components, the NCAWPF's consistency with specific goals, policies, and recommendations of local planning documents, including the University Community Plan and the City of San Diego General Plan, will be further evaluated during future required project-level analysis to ensure that impacts would be less than significant.

City of San Diego Zoning

The NCAWPF site is zoned RS-1-14 which provides for single unit residential use (minimum 5,000-square-foot lots) with in a Planned Urbanized Community or Proposition A Land. The NCAWPF site is zoned RS-1-14 which allows the development of single dwelling units on minimum 5,000-square-foot lots. However, pursuant to Section 53091 (e) of the California Government Code, the zoning ordinance of any county or city, including the City of San Diego, is not applicable to water infrastructure improvements such as those proposed under the Program.

San Vicente Purified Water Pipeline and Pump Stations

City of San Diego General Plan

The General Plan land use designations traversed by the San Vicente Purified Water Pipeline and designations upon which pump stations would be located are listed in Table 5.1-1. As proposed, the alignment traverses eight land use designations in the city including park, open space and recreation, industrial employment, commercial employment, retail & services, multiple use, institutional & public and semi-public facilities, and residential.

University, Kearny Mesa, Tierrasanta, Navajo, and East Elliot Community Plans

Within the city limits of San Diego, the San Vicente Purified Water Pipeline and pump stations would be located in the University, Kearny Mesa, Tierrasanta, Navajo, and East Elliot community plan areas. Through these communities, the proposed pipeline alignment would generally follow existing roadways and traverse an assortment of land use designations including residential, commercial, and open space.

MCAS Miramar

A segment of the San Vicente Purified Water Pipeline would traverse federal lands on MCAS Miramar.

City of Santee General Plan

A segment of the San Vicente Purified Water Pipeline alignment would be located within the City of Santee. As proposed, the alignment traverses ten land use designations in the city including residential, park/open space, neighborhood commercial, office professional, and light industrial.

County of San Diego General Plan

The eastern extent of the San Vicente Purified Water Pipeline alignment would be located within the County of San Diego and would traverse over ten separate land use designations.

Lakeside Community Plan (County of San Diego)

A segment of the San Vicente Purified Water Pipeline alignment would be located within the Lakeside Community Plan area. The land use designations of the Lakeside Community Plan area are consistent with those of the County of San Diego General Plan.

City of San Diego Zoning

The City of San Diego zoning designations traversed by the San Vicente Purified Water Pipeline and designations upon which pump stations would be located are listed in Table 5.1-2.

County of San Diego Zoning

The County of San Diego zoning designations traversed by the San Vicente Purified Water Pipeline and designations upon which pump stations would be located are listed in Table 5.1-2.

Linear project components (i.e., pipelines and force mains) would primarily be installed in roads and ROW, and once constructed, pipelines would not be noticeable. In some cases however, pipelines may be routed across private lands or in private or easement roads that provide access to private property and residences. For example, the San Vicente Purified Water Pipeline would generally be installed within the existing ROW of roads in the City of San Diego, but would deviate from existing paved roadway alignments south of Miramar Road and across both undeveloped and disturbed lands within MCAS Miramar, and east of Moreno Avenue across undeveloped slopes within the land use jurisdiction of the County of San Diego to the San Vicente Reservoir outfall. The purified water pipeline would also be installed within the ROW of roads located within the City of Santee. Therefore, while the installation of linear project components within the ROW of existing roads would minimize the potential for land use conflicts and would generally be consistent with applicable planning documents, coordination with the affected land use jurisdictions would be required during required project-level review to ensure that the proposed pipeline alignment would not conflict with existing and/or proposed uses. For the segment of the San Vicente Purified Water Pipeline located on MCAS Miramar, the proponent would be required to coordinate the design, alignment, and installation of the pipeline with MCAS Miramar and/or the Department of Defense (DoD). Furthermore, as the pipeline would traverse federal lands and would require a federal action, a National Environmental Policy Act (NEPA)-compliant document may be required for consideration by MCAS Miramar and/or the DoD during future project-level analysis.

As with all Program components, the San Vicente Purified Water Pipeline's consistency with specific goals, policies, and recommendations of local planning documents, including relevant City of San Diego community plans, the City of San Diego General Plan, the City of Santee General Plan, the County of San Diego General Plan and the Lakeside Community Plan, will be further evaluated during future required project-level analysis to ensure that impacts would be less than significant.

Morena Boulevard Pump Station, Wastewater Forcemain, and Brine Conveyance

City of San Diego General Plan

The General Plan land use designations traversed by the wastewater forcemain and brine conveyance and designations upon which the Moreno Boulevard pump station would be located are listed in Table 5.1-3. As proposed, the alignment traverses six land use designations in the city including park, open space and recreation, military use, industrial employment, commercial employment, retail & services , institutional & public and semi-public facilities, and residential.

University, Clairemont Mesa, and Linda Vista Community Plans

Within the city limits of San Diego, the wastewater forcemain and brine conveyance would be located in the University, Clairemont Mesa, and Linda Vista community plan areas. The Morena Boulevard pump station would be located in the Linda Vista community plan area. Through these communities, the proposed pipeline alignment would generally follow existing roadways and traverse an assortment of land use designations multiple use, commercial, and public utility.

MCAS Miramar

A segment of the North City wastewater force main and brine conveyance would traverse federal lands on MCAS Miramar.

City of San Diego Zoning

The zoning designations traversed by the wastewater forcemain and brine conveyance and designations upon which the Moreno Boulevard pump station would be located are listed in Table 5.1-4.

As with the San Vicente Purified Water Pipeline, the proposed wastewater force main and brine pipeline would be installed primarily within the ROW of existing roads but would also traverse disturbed lands and undeveloped lands on MCAS Miramar south of Miramar Road and north of Governor Drive. A short segment would also deviate from the ROW of Morena Boulevard (south of Baker Street) within the Kearny Mesa and Pacific Beach community planning areas. This short segment of the wastewater force main and brine pipeline would travel west from Morena Boulevard, and would cross railroad tracks, the north and southbound lanes of I-5, a northbound I-5 off-ramp, and Mission Bay Drive. While the ownership and land use designations applicable to segments of the wastewater force main and brine pipeline deviating from existing roadways do not preclude the installation of underground pipelines, and linear project components would generally be consistent with applicable planning documents, coordination with the affected land use jurisdictions and/or agencies would be required during project-level review to ensure that the proposed pipeline alignment would not conflict with existing and/or proposed uses.

Because a segment of the proposed North City wastewater force main and brine conveyance would traverse federal lands on MCAS Miramar, the proponent would be required to coordinate the design, alignment, and installation of the force main and conveyance with MCAS Miramar and/or the DoD. Furthermore, as the force main and conveyance would traverse federal lands and would require a federal action, a NEPA-compliant document may be required for consideration by MCAS Miramar and/or the DoD during future project-level analysis.

As with all Program components, the North City wastewater force main and brine pipeline's consistency with specific goals, policies, and recommendations of local planning documents, including relevant City of San Diego community plans and the City of San Diego General Plan, will be further evaluated during future project-level analysis to ensure that impacts would be less than significant.

NCWRP Expansion and North City Cogeneration Facilities Expansion

City of San Diego General Plan

The NCWRP and North City Cogeneration Facility are designated by the City of San Diego General Plan for Institutional & Public and Semi-Public Facilities use and Industrial Employment use.

University Community Plan

The NCWRP and North City Cogeneration Facility are located in the University community plan area and are designated for Public Facilities/Institutional use.

City of San Diego Zoning

The NCWRP and North City Cogeneration Facility are zoned RS-1-14.

The NCWRP expansion and North City Cogeneration Facilities expansion would be located within the existing fenced boundary of the NCWRP. Because the NCWRP is an existing facility and proposed activities would merely expand facility operations and components within the existing NCWRP boundary, implementation of the Program would not result in incompatible land uses. Proposed expansion activities would be consistent with the land use designation for the site (i.e., Institutional & Public and Semi-Public Facilities use) because water and electrical utilities and industrial warehouses comprise the primary land uses near the NCWRP. Similar to the NCAWPF, expansion of the NCWRP and existing cogeneration facilities are not allowed per the RS-1-14 zoning. However, pursuant to Section 53091 (e) of the California Government Code, the zoning ordinance of any county or city, including the City of San Diego, is not applicable to water infrastructure improvements such as those proposed under the Program. In addition, because the NCWRP is an existing operational facility, proposed expansion activities are not anticipated to result in substantially greater indirect or secondary environmental effects on surrounding land uses. Therefore, land use conflicts are anticipated to be less than significant. However, as with all Program components, the NCWRP expansion's consistency with specific goals, policies, and recommendations of local planning documents, including the University Community Plan and the City of San Diego General Plan, will be further evaluated during future project-level analysis to ensure that impacts would be less than significant.

Central Area Component

CAWRP

City of San Diego General Plan

The CAWRP site is designated by the City of San Diego General Plan for Institutional & Public and Semi-Public Facilities use.

Peninsula Community Plan

The CAWRP site is designated for Public Utility use by the Peninsula community plan.

City of San Diego Zoning

The CAWRP site is zoned CC-5-5 which provides for a mix of high intensity, heavy commercial, and limited industrial and residential development with a pedestrian orientation.

NTC Precise Plan

Pursuant to the NTC Precise Plan, the CAWRP site occurs on lands designated for Regional Public Safety Training Institute (RPSTI) use.

The CAWRP site is located along North Harbor Drive, west of the SDIA, and east of the San Diego Bay boat channel between NTC Park to the west and MRCD to the north. Existing uses on-site consist of an older, approximately four-story industrial office development with shipping and receiving facilities, and a series of large, three-story dormitory-style buildings. The dormitory-style buildings extend south of Spruance Road and west of McCain Road. SDSU's Coastal and Marine Institute is located to the southwest of the proposed CAWRP site.

While development of a water reclamation plant at the proposed site would be consistent with the Peninsula community plan and General Plan public utility and public facility land use designations, development of a water reclamation plant would conflict with the commercial community with a pedestrian orientation (i.e., CC-5-5) zoning applicable to the site. In addition, development of the CAWRP on the proposed site was not envisioned in the NTC Precise Plan and LCP Land Use Plan (certified by the CCC in September 2001), which shows the proposed RPSTI occupying the proposed CAWRP site. The NTC Precise Plan contemplates buildout of the RPSTI over a 26-acre area, including 201,000 square feet of rehabilitated buildings and 150,000 square feet of new construction (City of San Diego 2001a).

The Anticipated Development Program of the Precise Plan quantifies anticipated development at buildout. However, the Precise Plan states that the specific demolition and construction assumptions are not fixed, and that a use would be considered consistent with the plan, so long as the gross square footage outlined in the plan is not exceeded, and that the use is consistent with the governing policies described for each specific plan area. Governing policies of the RPSTI state that the San Diego Community College District, the San Diego Sheriff's Department, the San Diego Police Department, and the San Diego Fire & Life Safety Services (now San Diego Fire-Rescue Department) plan to consolidate fragmented venues used for training and bring them all together into one area for public safety training. Planned use for the site includes administrative and support areas, classroom training, and outdoor field training. Priority uses identified for the site are public agency or institutional uses, including educational and training facilities, office, administrative, and research and development activities. As noted earlier, an RPSTI training facility was identified in the Precise Plan at the proposed CAWRP site. Although not specifically identified in the Precise Plan, the proposed CAWRP would be consistent with the Precise Plan's designated land use of public agency or institutional uses.

The NTC Precise Plan and LCP also includes a hotel site located adjacent to North Harbor Drive, north of Kincaid Road. The site is specified for a mid-rise "Business Hotel," with priority uses stated as lodging facilities and water-oriented recreation uses, with ancillary uses such as food, retail, entertainment, and conference facilities. On June 4, 2013, the City Council approved Planned Development Permit No. 1001489, allowing the use of a 650-room hotel project on the site designated for Business Hotel. The approval included deviations to lot coverage, setbacks, and other development standards in order to facilitate recommendations of the NTC Precise Plan that include orienting guest rooms away from the planned RPSTI facility (which is the proposed CAWRP site) and airport activities. The hotel is currently under construction.

Pursuant to Section 53091 (e) of the California Government Code, the zoning ordinance of any county or city, including the City of San Diego, is not applicable to water infrastructure improvements such as those proposed under the Program. Construction of the CAWRP may result in short-term impacts related to air quality and odors, noise, and transportation, circulation and parking that could and could present a land use incompatibility with the future adjacent business hotel development. However, with implementation of an odor control system (MM-AQ-3; see Section 5.2, Air Quality and Odor), appropriate measures and noise design features providing appropriate sound and vibration attenuation, short-term construction impacts and operational noise impacts generated by the CAWRP could be reduced to less-than-significant levels. Because impacts to air quality and odors, noise, and transportation, circulation, and parking would not be significant, construction and operation of the CAWRP would present less-than-significant land use incompatibilities. More specifically, the CAWRP would not expose sensitive receptors at the future 650-room business hotel development to potentially significant

air quality and odors, noise, and transportation, circulation, and parking impacts, and thus the CAWRP would be considered a compatible land use pursuant to planned development envisioned in the Precise Plan. Therefore, land use impacts associated with operation of the CAWRP at the program level would be less than significant.

As with all Program components, the CAWRP's consistency with specific goals, policies, and recommendations of local planning documents, including the City of San Diego General Plan, the Peninsula community plan, and the NTC San Diego Reuse Plan and Precise Plan, will be further evaluated during future project-level analysis to ensure that impacts would be less than significant.

Lastly, the CAWRP site is located within City of San Diego Coastal Zone and within the Peninsula Community Plan and LCP. Since the City of San Diego has an approved LCP as of 1989, the City acts as the local permitting authority for the issuance of Coastal Development Permits (CDPs) for projects located within its Coastal Zone. As such, development of the CAWRP would require a CDP and review for consistency with the LCP and the California Coastal Act. The Land Use Plan for the Peninsula Community Plan and LCP identifies Public Utility uses for the CAWRP site, and relies on zoning and other land use controls as a means of implementing the LCP. Because of the Public Utility designation of the site, and for the reasons described earlier regarding the compatibility of the proposed uses, the impact of the Program and its implementation on the Peninsula Community Plan/ and LCP would be less than significant.

Central Area Tertiary Water Pipeline, Brine Pipeline, and Sludge Pipeline

City of San Diego General Plan

The General Plan land use designations traversed by the Central Area Tertiary Water Pipeline and Brine Pipeline are listed in Table 5.1-5. General Plan land use designations traversed by the Sludge Pipeline are listed in Table 5.1-7. As proposed, the alignment traverses several land use designations in the city including institutional & public and semi-public facilities, park, open space and recreation, commercial employment, retail & services, multiple use, residential, and military use.

Mission Valley, Old Town San Diego, Midway–Pacific Highway Corridor, Harbor, and Peninsula Community Plans

Within the city limits of San Diego, Central Area Tertiary Water Pipeline and Brine Pipeline would be located in the Mission Valley, Old Town San Diego, Midway –Pacific Highway Corridor, and Peninsula community plan areas. The Sludge Pipeline would be located in the Harbor and Peninsula community plan areas. Through these communities, the proposed pipeline alignments would generally follow existing and traverse an assortment of land use designations including residential, commercial, and open space

City of San Diego Zoning

The zoning designations traversed by the Central Area Tertiary Water Pipeline, Brine Pipeline, and Sludge Pipeline are listed in Tables 5.1-6 and 5.1-8. In addition to traversing commercial, industrial, and industrial zones, segments of the pipelines would be located in the Mission Valley and Old Town San Diego planning districts.

MCRD and SDIA

In order to interconnection with the CAWRP from the north, a segment of the pipeline alignments would traverse federal government lands associated with MCRD and the SDIA.

Linear project components (i.e., pipelines) would primarily be installed in roads and ROW and once constructed, would not be noticeable. In some cases, however, pipelines may be routed across private lands or in private or easement roads that provide access to private property and residences. For example, the Central Area purified water pipeline would deviate from existing roadways across Navajo Canyon and a narrow canyon located southwest of the Lake Murray reservoir. The Central Area tertiary water pipeline and brine pipeline would deviate from roadway ROW to cross the San Diego River and developed land within MCRD south of Barnett Avenue. Also, the Central Area sludge pipeline would deviate from roadway ROW to cross primarily undeveloped federal (i.e., U.S. Navy) lands between Naval Base Point Loma and Fort Rosecrans to reach the PLWTP. Therefore, while the installation of linear project components within the ROW of existing roads would minimize the potential for land use conflicts and would generally be consistent with applicable planning documents, coordination with the affected land jurisdictions and agencies would be required during project-level review to ensure that all segments of the proposed pipeline alignment would not conflict with existing and/or proposed uses.

Segments of the Central Area tertiary water pipeline and brine pipeline and the entirety of the sludge pipeline would be located in the Coastal Zone. Linear facilities within the Peninsula community planning area would require a CDP from the City and would be reviewed for consistency with the LCP and the California Coastal Act. The future project-level review and issuance of a CDP would ensure that Central Area linear facilities within the Peninsula community planning area would be consistent with the LCP and therefore, potential impacts would be less than significant.

A segment of the sludge conveyance traverses federal (U.S. Navy) lands and requires a federal consistency certification from the CCC pursuant to Chapter 3, Coastal Resources Planning and Management Policies, of the California Coastal Act. While the local LCP typically provides guidance for this standard of review, the Peninsula LCP does not address the federal consistency certification process.

Also, for the segment of the Central Area sludge conveyance located on federal lands on the Point Loma peninsula, the applicant would be required to coordinate the design, alignment, and installation of the pipeline with the relevant federal authority (i.e., Naval Base Point Loma, the U.S. Navy, and/or the DoD). Furthermore, as the pipeline would traverse federal lands, a NEPA-compliant document may be required for consideration by the applicable federal agency during future project-level analysis.

As with all Program components, the Central Area purified water pipeline, tertiary water pipeline and brine pipeline, and sludge pipeline would be reviewed for consistency with specific goals, policies, and recommendations of applicable local planning documents, including relevant City of San Diego community plans and General Plan would be further evaluated during future project-level analysis to ensure that potential land use impacts would be less than significant.

CAAWPF

City of San Diego General Plan

The CAAWPF site is designated for Institutional & Public and Semi-Public Facilities use by the City of San Diego General Plan.

Mission Valley Community Plan

The CAAWPF site is located within the boundaries of the City of San Diego Mission Valley community planning area and is designated for Visitor Commercial use.

City of San Diego Zoning

The site is zoned MVPD-MV-CV which denotes location within the Mission Valley Planned District (MVPD) and provides for commercial visitor (CV) use in the Mission Valley (MV) community planning area. The commercial visitor zone is intended to provide for development of establishments catering to the lodging, dining, and recreational needs of tourists and local residents.

San Diego River Park Master Plan

The CAAWPF is located in the Lower Valley reach as identified in the San Diego River Park Master Plan. Although the Master Plan does not include a detailed land use plan (general recommendations are instead made for each identified reach), a multi-purpose trail and pathway for pedestrians is envisioned north adjacent to the river.

The CAAWPF site consists of primarily undeveloped land bordered by Camino del Rio North to the south and west, the San Diego River to the north and the San Diego River Wetland Creation site and undeveloped floodplain to the east. Westbound I-8 travel lanes are located approximately 65 feet south of the site's southern boundary.

While the CAAWPF would be consistent with the land use designation applied to the site in the City of San Diego General Plan, construction and operation of an AWPF would not be consistent with the Visitor Commercial designation applied to the by the Mission Valley Community Plan. Also, development of the site with an AWPF would not be allowed per the commercial visitor zoning designation (MVPD-MV-CV) applied to the site. However, pursuant to Section 53091 (e) of the California Government Code, the zoning ordinance of any county or city, including the City of San Diego, is not applicable to water infrastructure improvements such as those proposed under the Program. Therefore, development of the CAAWPF on land zoned MVPD-MV-CV is not anticipated to result in substantial plan inconsistencies.

During project-level analysis, the CAAWPF would be evaluated to ensure that the facility is consistent with the San Diego River Park Master Plan. Specifically, the CAAWPF would be reviewed to ensure that the architectural, landscape architectural, and site planning guidelines applicable to proposed development within the River Corridor Area (i.e., within the floodway or within 35 feet of the floodway) and/or the River Influence Area (i.e., the 200-foot-wide area extending outward from the River Corridor Area as established by the San Diego River Master Plan) are incorporated into the design of the facility and development of the site. Particularly relevant site planning guidelines include maximum structural development coverage, building height and setbacks, outdoor storage areas, and site and parking lot lighting. Therefore, while the CAAWPF would generally be consistent with applicable planning documents, and land use impacts would be less than significant, a detailed review of the CAAWPF design and development of the site would be required during project-level analysis to ensure consistency with the San Diego River Park Master Plan.

As with all Program components, the CAAWPF's consistency with specific goals, policies, and recommendations of local planning documents, including the City of San Diego General Plan and Mission Valley community plan, and the San Diego River Park Master Plan, will be evaluated during future project-level analysis to ensure that impacts would be less than significant.

CAAWPF Purified Water Pipeline and Pump Stations

City of San Diego General Plan

The General Plan land use designations traversed by the Central Area Purified Water Pipeline and designations on which the pump station would be located are listed in Table 5.1-9. As proposed, the alignment traverses several land use designations in the city including institutional & public and semi-public facilities, park, open space and recreation, commercial employment, retail & services, multiple use, and residential.

Mission Valley and Navajo Community Plans

Through the City of San Diego the pipeline alignment would be located in the Mission Valley and Navajo community plan areas and would traverse visitor commercial, residential, and agricultural land use designations.

City of San Diego, City of La Mesa, and City of El Cajon Zoning

The zoning designations traversed by the Central Area Purified Water Pipeline and designations on which the pump station would be located in the City of San Diego, La Mesa, and El Cajon are listed in Table 5.1-10.

City of La Mesa General Plan

A segment of the pipeline would be located in the City of La Mesa and would traverse residential and commercial land use designations.

City of El Cajon General Plan

A segment of the pipeline would be located in the City of La Mesa and would traverse several land use designations including commercial, office-professional, and residential.

County of San Diego General Plan

The eastern extent of the PWP would be located in the County of San Diego and would traverse an assortment of residential, commercial, and industrial/extractive land uses.

Lakeside Community Plan

The land use designations of the Lakeside Community Plan are consistent with those of the County of San Diego General Plan and are depicted in Table 5.1-10.

The CAAWPF Purified Water Pipeline would generally be installed within the existing ROW of roads in the City of San Diego, La Mesa, El Cajon, and County of San Diego, but would occasionally deviate from existing paved roadway alignments. While the installation of linear project components within the ROW of existing roads would minimize the potential for land use conflicts and would generally be consistent with applicable planning documents, coordination with the affected jurisdictions would be required during future project-level review to ensure that the proposed pipeline alignment would not conflict with existing and/or proposed uses envisioned in local planning documents. As with all Program components, the CAAWPF Purified Water Pipeline and pump stations would be further evaluated during future project-level analysis to ensure that impacts would be less than significant.

PLWTP Improvements

City of San Diego General Plan

The City of San Diego General Plan designates the PLWTP for Institutional & Public and Semi-Public Facilities use.

Peninsula Community Plan

The land use map of the Peninsula community plan designates the PLWTP for Public Utility use.

City of San Diego Zoning

The PLWTP is not zoned by the City of San Diego.

Proposed improvements to the PLWTP would occur within the fenced existing boundary of the PLWTP on lands designated for Public Utility and Institutional & Public and Semi-Public Facilities use. In addition to undeveloped lands, surrounding land uses upslope and to the east and southeast includes Fort Rosecrans National Cemetery and Cabrillo National Monument. Both of these uses comprise the majority of land area on the peninsula and are under the jurisdiction of the federal government (U.S Navy). PLWTP improvements would be constructed within the existing PLWTP on lands designated for public utility use. As such, the construction and operation of proposed PLWTP improvements would not conflict with the relevant goals, objectives, or guidelines of the Peninsula community plan or the City of San Diego General Plan.

As with all Program components, the PLWTP Improvements' consistency with specific goals, policies, and recommendations of local planning documents, including the Peninsula community plan and the City of San Diego General Plan, will be further evaluated during future required project-level analysis to ensure that land use impacts would be less than significant.

MBC Improvements

City of San Diego General Plan

The MBC is designated for Military Use by the City of San Diego General Plan.

City of San Diego Zoning

The MBC is zoned AR-1-1 (Agricultural – Residential; AR-1-1 denotes minimum 10 acres lots) by the City of San Diego.

MCAS Miramar

The MBC is located on federal lands on MCAS Miramar.

Proposed improvements at the MBC would occur within the boundary of the existing facility which is located adjacent to the Miramar Landfill. In addition to the landfill, surrounding uses include SR-52 and industrial businesses in the Kearny Mesa community planning area to the south (south of SR-52). MBC improvements would be constructed within the existing MBC adjacent to the Miramar Landfill and SR-52 and because improvements would be compatible with surrounding land uses (including the existing MBC facility), a substantial conflict with an adopted plan relevant to the area is not anticipated. As with all Program components, the MBC Improvements' consistency with specific goals, policies, and recommendations of local planning documents would be further evaluated during future project-level analysis to ensure that land use impacts would be less than significant.

Harbor Drive SDG&E Power Supply Improvements

To accommodate the energy needs of the proposed Central Area components, an approximate 2.5-acre substation would be constructed in the future, but at this time, the location of the substation site is not known. The new substation would be constructed between the CAWRP and CAAWPF. The area between these two facilities encompasses an urban landscape that includes neighborhood commercial and regional shopping centers, office complexes, restaurants, and industrial businesses, but also supports a golf course and multi-family apartment-style development and the San Diego River corridor. Because the location of these two facilities is not yet known, the relevant land use and zoning designations are not yet known. Furthermore, depending on the location of the future facilities and their proximity to sensitive land uses and receptors, construction and operations could result in significant land use impacts. Therefore, for purposes of this Program analysis, construction and operation of the new substation could result in potentially significant impacts related to conflicts with the City of San Diego General Plan, community plan(s), and San Diego River Park Master Plan.

South Bay Component

South Bay Influent Pump Station and Force Main and South Bay Purified Water Pipeline and Pump Stations

City of San Diego General Plan

The City of San Diego General Plan land use designations traversed by the South Bay Force Main are listed in Table 5.1-11. The South Bay Influent Pump Station would be located in the

City of Chula Vista and is thus discussed below under City of Chula Vista General Plan. As proposed, in the City of San Diego the South Bay Force Main alignment traverses several land use designations including Institutional & Public and Semi-Public Facilities, Park Open Space & Recreation, Agriculture, Residential, and Commercial Employment, Retail & Services.

The City of San Diego General Plan land use designations traversed by the South Bay Purified Water Pipeline are listed in Table 5.1-13. The proposed Otay Reservoir Booster Station and the existing Otay Water Treatment Plant are located on lands designated for use by the City of Chula Vista and are thus discussed below under City of Chula Vista General Plan. As proposed, in the City of San Diego the South Bay purified water pipeline alignment traverses several land use designations including Institutional & Public and Semi-Public Facilities, Park Open Space & Recreation, Agriculture, Residential, Commercial Employment, Retail & Services, and Industrial Employment.

Tijuana River Valley Community Plan

Through the Tijuana River Valley Community Plan the South Bay Force Main would be aligned primarily within existing roads locate adjacent to lands designated for Utility, Multi-Species Conservation Open Space, Other Community Open Space/Agriculture, and Military use.

Between the SBAWPF and Camino De Laz Plaza, the South Bay purified water pipeline would be located in Tijuana River Valley Community Plan and would traverse lands designated for Utility, Multi-Species Conservation Open Space, and Other Community Open Space/Agriculture use.

San Ysidro Community Plan

Between Camino De La Plaza and I-905, the South Bay purified water pipeline would be located in the San Ysidro Community Plan and would traverse lands designated for Open Space, Community Commercial, Medium Density Residential, Low Density Residential, Institutional, and Low –Medium Density Residential use.

Otay Mesa–Nestor Community Plan

North of I-905 and west of I-805, the South Bay purified water pipeline would be located in the Otay Mesa-Nestor Community Plan. As proposed, the pipeline would be aligned within existing roadways located adjacent to lands designated for Low Density and Low-Medium Density Residential and Community Commercial use.

Otay Mesa Community Plan

East of I-805 and approximately Topsail Drive in the Oceanview Hills residential neighborhood, the South Bay purified water pipeline would be located in the Otay Mesa Community Plan. As proposed, the pipeline would be aligned within existing roadways located adjacent to lands designated for Residential – Medium, Parks, Regional Commercial, Residential – Low use.

City of Chula Vista General Plan

Land use designations traversed by segments of the proposed South Bay Force Main in the City of Chula Vista are listed in Table 5.1-11. The South Bay Influent Pump Station is also located in the City of Chula Vista and is proposed on lands designated for Open Space use. In the City of Chula Vista, the proposed force main alignment traverses several land use designations including Mixed Use Commercial, Limited Industrial, General Industrial, Commercial Visitor, Regional Technology Park, and Residential (High Density).

Near Sea World Aquatica, the proposed South Bay purified water pipeline would exit the City of San Diego and enter the City of Chula Vista. The remaining segment of the pipeline from this point east would be located in the City of Chula Vista and land use designations traversed in the City of Chula Vista are listed in Table 5.1-13. Through the Otay River Valley and the City of Chula Vista the purified water pipeline alignment traverses lands designated for Limited Industrial Open Space – Preserve, Public & Quasi-Public, Open Space, Residential – High, and Parks & Recreation use.

City of National City General Plan

North of the South Bay Influent Pump Station the proposed South Bay Force Main alignment would be located in the City of National City and would traverse lands designated for Open Space, Major Mixed Use, and Industrial use. The proposed alignment would also cross the Westside Specific Plan area.

City of San Diego, Chula Vista, and National City Zoning

Zoning designations traversed by South Bay Force Main and the South Bay Purified Water Pipeline are listed in Tables 5.1-12 and 5.1-14. The South Bay Influent Pump Station would be located in the City of Chula Vista on unzoned lands adjacent to Apartment Residential (i.e., R3) zoned lands. The Otay Reservoir Booster Station and the existing Otay Water Treatment Plant are located on lands zoned for Planned Community use by the City of Chula Vista.

Linear project components (i.e., pipelines) would primarily be installed in roads and ROW and once constructed, would not be noticeable. In some cases, however, pipelines may be routed

across private lands or in private or easement roads that provide access to private property and residences. For example, as proposed, the South Bay force main would deviate from existing roads and ROW north of E Street and west of I-5 in Chula Vista and north of the proposed South Bay Influent Pump Station in National City (the pump station would also be located outside of existing roadways and ROW). Within the City of Chula Vista, the proposed force main would traverse an existing utility access road located north of the Living Coast Discovery Center parking lot on Gunpowder Point Drive and would then follow an existing electrical distribution utility corridor east to I-5 where it would then cross beneath the freeway. The force main alignment would avoid the San Diego Bay National Wildlife Refuge. North of the proposed pump station (the facility is proposed near a single-family and multifamily residential neighborhood), the force main alignment traverses a small inlet of the Sweetwater River and proceeds to the north through the main channelized section of river and then through a paved parking lot to the terminus north of Mile of Cars Way. Due to its location within the Coastal Zone, the segments of the force main within the City of Chula Vista and City of National City would require a CDP. In addition, the proposed alignment through the Sweetwater River would require coordination with the ACOE. Once the specific alignment is known, the facility would be reviewed for consistency with the applicable LCP in accordance with the California Coastal Act by the cities of Chula Vista and National City, and would be reviewed by the ACOE. Issuance of a CDP and ACOE approval is not considered a potential conflict with an adopted plan, and therefore, for purposes of this analysis, impacts are anticipated to be less than significant.

The South Bay purified water pipeline would also traverse disturbed lands and the Tijuana River floodplain east of Dairy Mart Road and south of I-5. Near the Otay Water Treatment Plan, the pipeline alignment would traverse undeveloped chaparral. Please refer to Section 5.1.7, below, for an analysis regarding the proposed alignment of the South Bay purified water pipeline and the City of San Diego Environmentally Sensitive Lands (ESL) regulations.

As with all Program components, the South Bay Influent Pump Station and force main and South Bay purified water pipeline and pump stations would be reviewed for consistency with specific goals, policies, and recommendations of local planning documents, including relevant City of San Diego community plans, the City of San Diego General Plan, the City of Chula Vista General Plan, and the City of National City General Plan and further evaluated during future project-level analysis to ensure that plan consistency impacts would be less than significant.

SBAWPF, SBWRP Expansion, and SBSPF

City of San Diego General Plan

The SBAWPF, SBWRP Expansion, and SBSPF sites are designated for Institutional & Public Facility Use by the City of San Diego General Plan.

Tijuana River Valley Community Plan

The SBAWPF, SBWRP Expansion, and SBSPF sites are designated for Utility use by the Tijuana River Valley community plan and LCP.

City of San Diego Zoning

The sites are zoned AR-1-1 zoning applied to the sites. The AR-1-1 zone is intended to accommodate agricultural uses while also permitting the development of single-dwelling-unit homes on minimum 10-acre lots.

The SBAWPF site consists of undeveloped, disturbed land bound by Monument Road to the west and south and the existing SBWRP to the north and east. SBWRP expansion activities and the SBSPF would occur within the fenced boundary of the SBWRP. Construction activities at the SBAWPF and the SBWRP may result in short-term impacts related to air quality and odors, noise, and transportation, circulation and parking however, with implementation of appropriate mitigation measures and design features, it is anticipated that short-term construction impacts could be reduced to less-than-significant levels. Due to the location of the SBWRP, construction vehicles would likely rely on two-lane roadways including Dairy Mart Road and Hollister Street to access the SBAWPF and SBWRP construction sites. Because these roadways travel through rural and suburban residential neighborhoods, traffic calming and control measures would likely be required to minimize potential conflicts between motorists and construction vehicles. Air quality and odor measures and noise design features would also likely be required during construction.

The SBAWPF site and the SBWRP are designated for Institutional & Public Facility Use by the City of San Diego General Plan and Utility use by the Tijuana River Valley community plan and LCP. Because the SBAWPF and expanded SBWRP including the SBSPF would be consistent with the City of San Diego General Plan and Tijuana River Valley community plan land use designations, substantial land use plan conflicts are not anticipated at this program-level of analysis. However, once the specific design of facilities and location of components are finalized, a consistency analysis between the facilities and relevant goals, policies, and recommendations of the City of San Diego General Plan and Tijuana River Valley community plan and LCP and will be further evaluated during future project-level analysis to ensure that land use conflicts and plan incompatibilities would be less than significant.

Lastly, the SBAWPF and expanded SBWRP would conflict with the AR-1-1 zoning applied to the sites as these facilities would not entail agricultural uses or the development of single-dwelling-unit homes. Although operation of a water purification facility and a water reclamation facility are not permitted within the AR-1-1 zone, pursuant to Section 53091 (e)

of the California Government Code, the zoning ordinance of any county or city, including the City of San Diego, is not applicable to water infrastructure improvements such as those proposed under the Program.

South Bay SDG&E Power Supply Improvements

A new power feed from one of the nearby distribution stations in the area would be required to provide the additional power to the SBAWPF, SBWRP, and SBSPF. According to the City of San Diego General Plan, the nearest SDG&E substation is located approximately 3 miles northeast of the SBWRP, east of I-805 and south of SR-905. While the specific distribution station(s) and alignment of the power feed have not yet been identified, and the land uses and intensity of development surrounding the alignment are unknown, indirect or secondary land use impacts associated with air quality and odors, noise, and transportation, circulation, and parking resulting from construction of the proposed power feed are anticipated to be less than significant with the implementation of appropriate project design features and/or mitigation measures. Because of the known scale and operational aspects of power feeds and distribution lines and due to the existing presence of distribution lines along Dairy Mart Road and paved roadways within the Tijuana River Valley community planning area, as well as the regular occurrence of distribution facilities along roadways within the surrounding urban communities of San Ysidro and Otay Mesa, operational impacts associated with plan conflicts and indirect or secondary environmental effects are anticipated to be less than significant.

As with all Program components, the South Bay SDG&E power supply improvements' consistency with specific goals, policies, and recommendations of local planning documents, including the Tijuana River Valley community plan, the San Ysidro community plan, the Otay Mesa community plan, and the City of San Diego General Plan, will be evaluated during future project-level analysis to ensure that potential land use impacts would be less than significant.

Environmentally Sensitive Lands Regulations

Within the Program area, ESLs include sensitive biological resources including lands within the City's MHPA and special flood hazard areas (i.e., floodways in river valleys). Development of future Program components that would encroach into ESL resources would be subject to the development restrictions of the ESL Regulations (LDC, Section 143.0101 et. seq.). The ESL Regulations do not allow development of any parcel entirely within the MHPA to exceed 25% of the parcel, with 75% required to remain as open space. Additionally, development would be directed toward the least biologically sensitive portion of the parcel. Any future development associated with the Program located adjacent to the MHPA would be required to implement the City's MHPA Land Use Adjacency Guidelines.

None of the proposed Program facilities are located in a Special Flood Hazard Area (SFHA) identified in the Federal Emergency Management Agency maps (see Figure 5.7-1). However, three of the pump stations in the Central Area and South Bay, as well as the CAAWPF are located within 300 feet of a 100-year floodplain. Because the exact location, size and layout of these facilities are known only at a programmatic level of detail, these facilities could potentially extend into a mapped floodplain depending on final size and layout. A final determination as to the location of these proposed facilities relative to floodplains would be made as each individual facility is analyzed at a project level of detail under CEQA. Nearly all of the proposed Program pipelines cross a flood plain at one or more places along their alignments. Although these would be located underground, there is a risk that future floods could expose the pipelines through scour if buried at too shallow a depth.

Potential impacts to SFHAs resulting from development of future project components would be evaluated and mitigation would be provided in conformance with the City's Guidelines. Sections 143.0145 and 143.0146 of the ESL Regulations contain updated development regulations for projects within SFHAs. All project components located within the 100-year flood hazard area (as identified in a future project-level environmental documentation) would be subject to evaluation under CEQA and discretionary review of potential impacts to SFHA areas. At that time, appropriate site-specific mitigation in accordance with the Mitigation Framework MM-HYD-3 would be identified for impacts to SHFAs covered under the ESL regulations.

The development footprint of certain future project components would encroach into sensitive ESL areas including wetland/riparian habitat and sensitive Tier I, II, IIIA and IIIB upland habitat. Where applicable the development of all future Program components would be required to comply with the ESL Regulations and would be evaluated in accordance with the City's Biology Guidelines. Additionally, all Program components would be subject to future evaluation in accordance with CEQA. At that time, appropriate site-specific mitigation in accordance with the Mitigation Framework measures MM-LU-1 and MM-BIO-1 through BIO-3 would be identified for impacts to sensitive biological resources covered under the ESL regulations. For other resource areas covered under the ESL regulations, such as steep hillsides, future Program components would be designed to ensure compliance with the supplemental regulations and any other regulatory requirements to ensure that no impacts would occur.

Historical Resources Regulations

The Historical Resources Regulations (Section 143.0213(a) of the LDC) apply when historical resources are present. As defined by the HRR, historical resources include: historical buildings, historical structures or historical objects, important archaeological sites, historical districts, historical landscapes, and traditional cultural properties. The Program area contains known

historic resources, including 267 historic built-environment resources have been recommended for, or are currently listed in the local register, California Register of Historical Resources, or National Register of Historic Places. An additional 52 historic built-environment resources have been determined not eligible for listing. The Program includes project components within the Old Town historic district, which is a known location of both historic and prehistoric archaeological deposits. Additionally, there is potential for archaeological resources in the Program area. A total of 318 historical-era sites, 3 Ethnohistoric Kumeyaay village sites, 57 multi-component sites with both historical-era and prehistoric material, and 846 prehistoric sites were identified during a records search conducted at the SCIC by Dudek staff for the PEIR.

Given the presence of historical resources distributed throughout the Program area, implementation of the Program has the potential to result in significant impacts to historic built-environment resources and archaeological resources. Incorporation of the Mitigation Framework measure MM-LU-2 and Mitigation Framework measures MM-HIST-1 and MM-HIST-2 contained in Section 5.6, Historical Resources, would reduce the potential for significant impacts at the project-level to below a level of significance.

5.1.5 SIGNIFICANCE OF IMPACTS

Program components would be consistent with the environmental goals, objectives, or guidelines of applicable community or general plans. In addition, Program components are anticipated to be in conformance with adopted land use designations of applicable community or general plans. Therefore, impacts would be less than significant.

Potential impacts to Environmentally Sensitive Lands (including sensitive biological resources including lands within the City's MHPA, and special flood hazard areas) and Historical Resources are considered significant and require mitigation.

5.1.6 MITIGATION, MONITORING, AND REPORTING

Mitigation Framework

Environmentally Sensitive Lands Use Regulations

MM-LU-1 Subsequent project components implemented in accordance with the Program would be subject to discretionary review and further environmental review under CEQA and shall be reviewed in accordance with MM-LU-3; MM-BIO-1 through MM-BIO-3 in Section 5.4, Biological Resources; and MM-HYD-3 in Section 5.7, Hydrology and Water Quality.

Historical Resources Regulations

MM-LU-2 Subsequent project components implemented in accordance with the Program would be subject to discretionary review and further environmental review under CEQA and shall be reviewed in accordance with Mitigation Framework MM-HIST-1 and MM-HIST-2 in Section 5.6 Historical Resources.

Level of Significance after Mitigation

There are no impacts related to future conflicts or inconsistencies with the environmental goals, objectives, or guidelines of an applicable community or general plan or with an adopted land use designation of an applicable community or general plan; therefore, no mitigation is required.

Incorporation of Mitigation Framework measure MM-LU-1 would reduce potential conflicts with Environmentally Sensitive Lands Regulations to **below a level of significance**.

Incorporation of Mitigation Framework measure MM-LU-2 would reduce potential conflicts with Historical Resources Regulations to **below a level of significance**.

5.1.7 IMPACTS

Issue 2: Would the Pure Water Program result in a conflict with the provisions of the MSCP or other adopted environmental plans for the area?

According to the City's CEQA Significance Determination Thresholds (City of San Diego 2011), land use compatibility impacts may be significant if a project would:

- Conflict or be inconsistent with adopted environmental plans for an area. For example, a use incompatible with MSCP for development within the MHPA would fall into this category.

Pure Water Program

The study area for the proposed Program facilities was analyzed for potential conflicts with City, of San Diego, County of San Diego, and City of Chula Vista MSCP Subarea Plans, County RPO wetland buffer requirements, the San Diego Bay NWR CCP, the Preliminary Draft VPHCP, the MCAS Miramar INRMP, and the MOU for PLECA. Potential temporary and permanent impacts are discussed in the following paragraphs if the protected areas are located within, and in some cases adjacent to, the study area. This Program-level analysis is based upon a conceptual design only, and specific locations for each facility are not known or confirmed to a project-level or design-level of detail.

In addition, the proposed Program facilities within a definitive study area were analyzed for potential impacts through adverse edge effects to the MHPA based on the presence of MHPA lands adjacent to the proposed feature. The analysis is based on the 1997 MHPA boundaries provided by the City.

North City Component

NCAWPF

The proposed NCAWPF facility is not located adjacent to the MHPA. The nearest MHPA to the NCAWPF facility site consists of east-facing hillsides located west of I-5 and undeveloped canyonlands to the north. The site is currently non-native grassland and outside of any designated preserve.

The study area for the proposed NCAWPF facility includes vernal pools mapped in the USFWS-NWI (NWI), and vernal pools mapped in the San Diego vernal pool inventory. It is anticipated that the City of San Diego Final Draft VPHCP and associated environmental document will be released for public review in late 2015 with adoption anticipated in mid 2016. The VPHCP is intended to provide an effective framework to protect, enhance, and restore vernal pool resources within the City of San Diego. Initial review of the VPHCP indicates that this area is not targeted for conservation. However, should the adoption of the VPHCP occur prior to the project-level approval of the NCAWPF at the project level and this area is targeted for conservation, this may result in a potential conflict with the VPHCP.

NCWRP Upgrades

The proposed upgrades to NCWRP would occur in currently developed land. The nearest MHPA to this facility site is south across Miramar Road, and the proposed upgrades would not change the existing conditions at the site in a manner that would increase edge effects on the MHPA.

The proposed upgrades to this facility would not conflict with any adopted local plans or policies protecting biological resources. The site is currently developed and outside of any designated preserve. Based on the available biological data presented in Chapter 5.4, Biological Resources, no avoidance measures related to adopted local habitat conservation plans or policies are required.

Wastewater Force Main Pipeline from NCWRP to Morena Boulevard

Based on the available biological data, the proposed pipeline alignment would not conflict with any adopted local plans or policies protecting biological resources. The alignment would be located in existing streets except for at the northern end, which crosses City MHPA land in

Kearny Mesa between Miramar Road and Nobel Drive. Other City MHPA lands are adjacent to the proposed alignment in San Clemente Canyon and Tecolote Canyon. Essential public facilities are an allowable use within the City's MHPA. However, construction of the pipeline could potentially cause temporary adverse edge effects to the MHPA including noise, lighting, toxins, invasive species, and increased human incursion. Use of appropriate construction method such as horizontal directional drilling and other trenchless technology could reduce adverse edge effects along the length of the alignment; however, effects would remain at the entry and exit pits if located adjacent to MHPA. Operation of the pipeline would not cause adverse edge effects, as the pipeline would be subterranean.

San Vicente Purified Water Pipeline

The study area for the proposed pipeline alignment crosses several Plan areas or other protected areas. Their applicability to this proposed study area is briefly described as follows:

- Would not conflict with the City MSCP Subarea Plan. The proposed alignment crosses City MHPA in the San Diego River west of Mission Gorge and again at West Hills Parkway. All other places where the alignment is adjacent to MHPA, it is located in existing streets. Essential public facilities are an allowable use in the City MHPA; therefore, the proposed pipeline would not conflict with the City MSCP Subarea Plan at the two locations described above. Temporary impacts to MHPA in the San Diego River would be avoided or reduced by use of appropriate construction methods, such as horizontal directional drilling or other trenchless technology, in those locations along with implementation of the MHPA land use adjacency guidelines. Where the alignment would be located within existing streets, construction of the pipeline could potentially cause temporary adverse edge effects to the MHPA including noise, lighting, toxins, invasive species, and increased human incursion if sufficient buffer is not provided. Section 1.2.2 of the City MSCP includes special MHPA Guideline B-4, which calls for the preservation of 90% of the San Diego ambrosia population near the San Diego River at the eastern end of Mission Gorge. The proposed PWP-NC includes a portion of the area shown in Figure 3 of the City MSCP as the location of this San Diego ambrosia population. Special MHPA Guideline B-5 in Section 1.2.2 of the City MSCP calls for active management of brown-headed cowbird in the portion of the San Diego River in central Santee. The proposed PWP-NC passes through this area along Mast Boulevard and other streets, but would not contribute to brown-headed cowbird use of that portion of the San Diego River.
- The proposed San Vicente purified water pipeline crosses Cornerstone Lands between the proposed pump station at Moreno Avenue and the proposed ROD at the San Vicente Reservoir. Cornerstone Lands are large, contiguous tracts of land owned by the Water

Fund for the purpose of source water protection. The Cornerstone Lands are also included in the MHPA and are considered essential building blocks for the City's habitat preserve system. The City's Public Utilities Department has committed to a phased process of placing conservation easements over the Cornerstone Lands that allows the Public Utilities Department to continue to use the lands for watershed and water utilities facilities for the benefit of water rate payers. The proposed San Vicente purified water pipeline is compatible with the use of Cornerstone Lands by the Public Utilities Department to the benefit of water rate payers and would not conflict with a conservation easement, should one be placed over that portion of the San Vicente Cornerstone Lands prior to the time the proposed San Vicente purified water pipeline is constructed.

- Crosses an unnamed blue line stream and a complex of four vernal pools mapped in NWI in the grounds of Miramar National Cemetery. The blue line stream is mapped as supporting freshwater emergent wetland. The alignment study area crosses NWI-mapped riverine wetland in Rose Creek and passes through a complex of 12 scattered vernal pools on MCAS Miramar east of the nursery at Governor Drive and north of the Miramar Landfill.
- Crosses land designated as PAMA in the County MSCP Subarea Plan in the San Diego River at SR-67. Construction of public infrastructure facilities is allowed outside of the preserve in the Lakeside–Metro–Jamul segment of the County MSCP Subarea Plan. Lands designated as PAMA in the County MSCP Subarea Plan are considered to have preservation value and are targeted for preservation, but are not inside the preserve.
- ~~Crosses land designated as Hardline Preserve in the County MSCP Subarea Plan near the proposed ROD at San Vicente Reservoir. Routing the proposed alignment along the existing access road at the top of the steep slope southeast of the dam at San Vicente Reservoir would avoid the County Hardline Preserve lands near the proposed ROD. Use of directional drilling for the approximately 0.18-mile segment of the alignment located in County Hardline Preserve would avoid potential conflicts with the County MSCP Subarea Plan.~~
- Crosses County RPO wetlands in the form of southern coast live oak riparian forest as it leaves San Vicente Creek north of Moreno Avenue. The County RPO requires buffers of 50 to 200 feet in width around wetlands. The County RPO states that where oak woodland occurs adjacent to a wetland, the required buffer shall include the entirety of the oak habitat, up to 200 feet in width. Under Section 86.605(c) of the RPO, essential public facilities and projects are exempt from the RPO if they are consistent with adopted subregional plans, have minimized encroachments into RPO lands and mitigated for impacts, result in a net gain of wetland/riparian habitat if such is impacted by the project, and would not result in destruction or reductions in area of mature riparian woodland. Construction of the proposed pipeline by open trench construction methods in this location would result in destruction of mature riparian woodland and would, therefore,

conflict with the County RPO. Routing the proposed pipeline around the southern coast live oak riparian forest in northwest San Vicente Creek, or using an appropriate construction method such as auger boring/pipe jacking, horizontal directional drilling, or microtunneling at this location would avoid potential conflicts with County RPO wetland buffer requirements that prohibit destruction of mature riparian woodland.

Construction of the proposed pipeline in Shepherd Canyon, the unnamed canyon, and along Tierrasanta Boulevard in Tierrasanta, as well as along Mission Gorge Road would be considered an allowable use in the MHPA. Construction could potentially cause significant edge effects to the MHPA, including noise, lighting, drainage, toxins, invasive species, and increased human incursion. However, use of an appropriate construction methodology such as horizontal directional drilling and other trenchless technology could reduce adverse edge effects, which would occur only at the entry and exit pits if located adjacent to the MHPA. Alternatively, construction of pipelines within existing streets could also reduce potential edge effects if sufficient buffer is provided. Construction using open trench methods or in streets without adequate buffer with adjacent MHPA could result in potential adverse edge effects. Operation of the pipeline would not cause adverse edge effects, as the pipeline would be subterranean.

Depending on siting of the alignment and the methods implemented for construction of the proposed pipeline, there would be minimal impacts to the City MSCP Subarea Plan, designated PAMA in the County MSCP Subarea Plan~~, Hardline Preserve in the County MSCP Subarea Plan,~~ or County RPO.

Pump Stations at Mission Montana Drive and Morena Boulevard

The proposed Mission Trails Booster Station and Morena Boulevard Pump Station would be adjacent to the MHPA and would not conflict with any adopted local plans or policies protecting biological resources. The nearest MHPA to the Mission Trails Booster Station site is approximately 1200 feet to the northeast and is separated from the proposed pump station site by existing residential development. The nearest MHPA boundary to the proposed Morena Boulevard pump station site is 200 feet south across Friars Road. The proposed Morena site is currently developed. ; The proposed Mission Trails Booster Station site is currently undeveloped and situated behind commercial development along Mission Gorge Road and downslope from adjacent single-family residences. Both proposed locations are outside of any designated preserve, and therefore no avoidance measures would be required.

ROD at San Vicente Reservoir

The study area for the ROD is located within the City's San Vicente Reservoir Cornerstone Lands and City MHPA. The proposed site is currently undeveloped and supports chamise

chaparral vegetation. Construction and operation of the proposed facility would introduce new land uses inside the MHPA that could potentially cause adverse edge effects to the MHPA. These adverse effects could include noise, lighting, drainage, toxins, grading, invasive species, and increased human incursion. In the case of this facility, it would not be feasible to avoid impacts to City MHPA Cornerstone Lands from the proposed facility. Limited water facilities are an allowable use in the City MHPA; however, the City may choose to process an MHPA Boundary Line Adjustment to remove the facility area from the MHPA.

Cornerstone Lands are lands owned by the City's Public Utilities Department that are included in the MHPA through a process of phasing in conservation easements that allow the Public Utilities Department to continue to use the lands for watershed and water utilities facilities for the benefit of water rate payers. The proposed ROD is an allowable use with the Cornerstone Lands by the Public Utilities Department to the benefit of water rate payers and would not conflict with a conservation easement, should one be placed over that portion of the San Vicente Cornerstone Lands prior to the time the proposed ROD is constructed.

SANDAG mapping shows southern coast live oak riparian forest vegetation in the proposed ROD site. The County RPO states that where oak woodland occurs adjacent to a wetland, the required buffer would include the entirety of the oak habitat, up to 200 feet in width. Under Section 86.605(c) of the RPO, essential public facilities and projects are exempt from the RPO if they are consistent with adopted subregional plans, have minimized encroachments into RPO lands and mitigated for impacts, result in a net gain of wetland/riparian habitat if such is impacted by the project, and do not result in destruction or reductions in area of mature riparian woodland. Construction of the proposed facility would result in destruction of mature riparian woodland and would, therefore, conflict with the County RPO and wetland buffer requirements that prohibit destruction of mature riparian woodland unless the facility is relocated to avoid the southern coast live oak riparian forest. These conflicts would be considered permanent and unavoidable impacts.

Central Area Component

CAWRP

The proposed CAWRP facility would not be located adjacent to the MHPA and would not conflict with any adopted local plans or policies protecting biological resources. The site is currently developed and outside of any designated preserve. Based on the available biological data presented in Chapter 5.2, Biological Resources, no avoidance measures would be required for this facility.

Sludge Pipeline from CAWRP to PLWTP

While the study area for the proposed pipeline is adjacent to the MHPA on the grounds of the PLWTP, the proposed pipeline would not introduce new uses to the PLWTP that would increase the adverse effects on the MHPA over existing levels.

The study area for the proposed alignment is inside the PLECA on Naval Base Point Loma. The PLECA is established under an MOU among federal agencies and the City. The MOU is a non-regulatory agreement regarding management of biological resources on Point Loma. Locating the proposed pipeline in existing roads inside the PLECA would minimize potential conflicts with allowable uses in this area. Using an appropriate construction method, or using existing subterranean pipe in the portion of the alignment northeast of Gatchall Road, would avoid impacts to sensitive native vegetation and reduce PLECA mitigation requirements.

For portions of the proposed alignment that would impact native Diegan coastal sage scrub and southern maritime chaparral on Naval Base Point Loma, a determination of consistency with Section 30240 of the Coastal Act may be required. Section 30240 of the Coastal Act protects environmentally sensitive habitat areas from significant disruption of habitat values, and allows only uses dependent on those resources within those areas.

CAAWPF

The study area for the proposed facility is adjacent to MHPA in the San Diego River. Construction of the proposed facility at this site would potentially cause adverse edge effects to the MHPA from noise, lighting, drainage, grading, and increased human incursion. Although existing ambient conditions are influenced by disturbance related to noise, lighting, and human presence from Camino del Rio North and I-8, operation of the proposed pump station would potentially result in higher levels of adverse effects than are there currently due to the size and scope of activities at the facility. In addition, the conceptual location of this facility overlaps at its northern edge with a City mitigation site in the San Diego River; however, the practical development area for this facility is in Tier IIIB habitat outside of the San Diego River and outside of the City mitigation site.

Central Area Tertiary Effluent Force Main and Brine Conveyance

The study area for the proposed pipeline is adjacent to the MHPA in the San Diego River at Morena Boulevard, and in the San Diego River between Fenton Parkway and Camino del Rio North. Essential public utility infrastructure is an allowable use in the MHPA. If construction of the pipeline occurs in Morena Boulevard, along the existing Morena Boulevard bridge, and in Friars Road, it would not cause adverse edge effects to the MHPA in the San Diego River at

Morena Boulevard provided sufficient buffer is provided. Open trench construction between Fenton Parkway and Camino del Rio North could potentially cause adverse edge effects to the MHPA including noise, lighting, drainage, toxins, invasive species, and increased human incursion. The use of appropriate construction methods, such as horizontal directional drilling or other trenchless technology, at that location would avoid potential adverse edge effects to the MHPA, except where MHPA is within 100 feet of the entry and exit pits. Operation of the pipeline would not cause adverse edge effects to the MHPA, as the pipeline would be subterranean.

Central Area Purified Water Pipeline

The alignment crosses City MHPA in Navajo Canyon and below the Lake Murray Dam. The alignment also crosses County PAMA lands in the San Diego River at SR-67. Essential public utility infrastructure is an allowable use in the City MHPA, and construction of public infrastructure facilities is allowed outside of the preserve in the Lakeside–Metro–Jamul segment of the County MSCP Subarea Plan. Construction of the pipeline within or adjacent to the City's MHPA in the San Diego River, Navajo Canyon, or below Lake Murray Dam could potentially cause adverse edge effects to the MHPA including noise, lighting, drainage, toxins, invasive species, and increased human incursion. The use of appropriate construction methods, such as horizontal directional drilling or other trenchless technology, would avoid potential adverse edge effects to the MHPA, except where MHPA is within 100 feet of the entry and exit pits. Operation of the pipeline would not cause adverse edge effects to the MHPA, as the pipeline would be subterranean.

The study area for the proposed pipeline crosses southern arroyo willow riparian forest in the San Diego River at SR-67. Under Section 86.605(c) of the County RPO, essential public facilities and projects are exempt from the RPO if they are consistent with adopted subregional plans, have minimized encroachments into RPO lands and mitigated for impacts, result in a net gain of wetland/riparian habitat if such is impacted by the project, and do not result in destruction or reductions in area of mature riparian woodland. Construction of the proposed pipeline by open trench methods in this location would result in the destruction of mature riparian woodland and would, therefore, conflict with the County RPO. Using an appropriate construction method such as auger boring/pipe jacking, horizontal directional drilling, or microtunneling at the San Diego River, or locating the proposed pipeline on the existing SR-67 bridge over the San Diego River would avoid potential conflicts with County RPO wetland buffer requirements that prohibit destruction of mature riparian woodland.

Pump Station at Lake Murray Boulevard

The proposed Alvarado WTP Booster Station would not conflict with any adopted local plans or policies protecting biological resources. The study area for the proposed Alvarado WTP Booster

Station is not adjacent to the MHPA and the site is mapped as eucalyptus woodland and disturbed land. Surrounding land is developed. Based on the available biological data, no avoidance measures would be required.

Improvements to PLWTP and MBC Facilities

Both the PLWTP and MBC are existing facilities. Improvements at each location are anticipated to occur within the development footprint of each facility. Neither facility is within or adjacent to the MHPA. Based on the proposed Program conceptual design and available biological data presented in Chapter5.4, Biological Resources, there would be no conflicts with adopted local plans or policies protecting biological resources. No avoidance measures would be necessary.

South Bay Component

SBAWPF

The study area for the proposed facility is located adjacent to the MHPA; however, the site is currently developed as the SBWRP. The site encompasses developed and disturbed land and is outside of any designated preserve. County preserved lands in the Tijuana River Valley Regional Park are immediately adjacent to the site on the west, but would not be impacted. Construction of the proposed SBAWPF could potentially create adverse edge effects to the MHPA from noise, lighting, drainage, and toxins. Operation of the proposed facility would have a low potential to create additional adverse edge effects to the MHPA beyond the existing levels created by the SBWRP.

SBSPF

The proposed facility would be constructed on the existing SBWRP site. Impacts would be similar to those described above for the SBAWPF.

Wastewater Force Main Pipeline from National City to the SBAWPF

The study area for the proposed pipeline alignment passes through lands in the San Diego Bay NWR, Tijuana River Valley Regional Park, and City MHPA. More specifically, the alignment study area is adjacent to the City's MHPA at the southeast shore of San Diego Bay near the Salt Works property and the Otay River, and in the Tijuana River Valley along Sunset Avenue, Hollister Street, and Monument Road. The study area is currently centered on existing streets for most of its length and construction of the pipeline within existing streets would likely avoid impacts to resources in these preserve areas; however, compatibility with the land use adjacency guidelines would be required. Operation of the pipeline would not create adverse edge effects to the MHPA, as the pipeline would be subterranean.

Construction of the pipeline by open trench methods in the Otay River would potentially cause significant adverse edge effects to the MHPA, including noise, lighting, drainage, toxins, invasive species, and increased human incursion. The use of appropriate construction methods, such as horizontal directional drilling or other trenchless technology, in the Otay River would avoid adverse edge effects to the MHPA, except where entry and exit pits are within 100 feet of MHPA.

The alignment study area crosses undeveloped lands in the City MHPA in the Otay River, between Main Street and Saturn Boulevard, and crosses the San Diego Bay NWR. Essential public utility infrastructure is considered an allowable use in the City MHPA. However, the CCP for the San Diego Bay NWR does not include public utility infrastructure as an allowable use. Proposed impacts in the San Diego Bay NWR would likely require analysis under NEPA. Final NEPA determination would depend on the nature of the proposed impacts. As mentioned earlier, if construction of the pipeline occurs in the rights-of-way of existing streets, there would be no conflicts with local plans or policies, including the San Diego Bay NWR. Using appropriate construction methods, such as auger boring/pipe jacking and directional drilling, or using subterranean pipe, would further ensure that conflicts with adopted plans and policies would not occur. In addition, locating the proposed pipeline in existing streets and right-of-way in the remainder of the alignment would minimize impacts to preserved lands.

In the remainder of preserved areas, there are feasible options for siting the alignment in either existing developed roads, or in undeveloped rights-of-way that are outside of preserved lands. In these places, the proposed pipeline alignment would not conflict with preserve plans.

ROD at Otay Reservoir

The study area for the ROD site is within the City MHPA, but outside any other designated preserves. The site is currently undeveloped and the facility would introduce a new land use into the MHPA that would potentially cause adverse edge effects. Construction of the proposed facility would potentially cause adverse edge effects to the MHPA including noise, lighting, drainage, grading, toxins, and increased human incursion. Operation of the facility could potentially cause adverse edge effects to the MHPA, including noise and drainage.

The City MSCP Subarea Plan includes limited water facilities and other essential public utility infrastructure among allowable land uses in the MHPA. Essential public utility infrastructure in the MHPA is subject to siting and design policies that minimize impacts to sensitive biological resources, including avoidance of wetlands unless infeasible. Avoidance of wetlands in the MHPA will likely be infeasible, which will require mitigation. Siting the proposed facility to avoid wetlands would minimize mitigation requirements under the City MSCP Subarea Plan. The City may choose to process an MHPA Boundary Line Adjustment to remove this facility site from the MHPA.

South Bay Purified Water Pipeline

The study area for the proposed pipeline alignment passes through City MHPA, County lands in Tijuana River Valley Regional Park between Camino de la Plaza and I-5, the Chula Vista MSCP Subarea Plan area, and the City of Chula Vista Otay Ranch Preserve.

Essential public utility infrastructure is an allowable use in the City MHPA. The County MSCP Subarea Plan however requires a major amendment or minor amendment process for infrastructure development in preserve areas. Major amendments require approval from the Wildlife Agencies.

Construction of the pipeline in the alignments of Dairy Mart Road, Dennery Road, and Wueste Road would potentially cause adverse edge effects to the MHPA from noise, lighting, drainage, toxins, invasive species, and increased human incursion. Construction of the pipeline by open trench methods between Camino de la Plaza and I-5 could potentially create adverse edge effects to the MHPA from noise, lighting, drainage, toxins, invasive species, and increased human incursion. Construction of the pipeline by auger boring/pipe jacking or horizontal directional drilling methods, or routing the pipeline across the Dairy Mart Road bridge and along West San Ysidro Boulevard to Sunset Lane would likely avoid adverse edge effects to the MHPA.

The study area alignment passes through County preserve lands in the Otay Ranch Preserve east of SR-125. The alignment in this area generally follows the unpaved Wiley Road. This area within the City of Chula Vista has specific provisions allowing for infrastructure. The alignment also crosses the City of Chula Vista Otay Ranch Preserve west of SR-125 to the boundary of City lands at Otay Reservoir. The pipeline would be a Future Facility located in 100% Conservation Area. Temporary impacts from Future Facilities are not limited in extent, but are subject to the City of Chula Vista Narrow Endemic Species Policy, and Facilities Siting Criteria described in the Chula Vista MSCP Subarea Plan. All temporary impacts from future facilities must be revegetated. Portions of the proposed South Bay Purified Water Pipeline in Chula Vista would be subject to the Narrow Endemic Species Policy, except inside the development areas of covered projects, where the pipeline would be subject to any adopted project-specific Narrow Endemic Species requirements.

Locating the proposed pipeline in existing roads and disturbed areas, using less invasive construction methods, and avoiding all wetland and riparian areas would minimize conflicts with the Chula Vista MSCP Subarea Plan and the Otay Ranch Resource Management Plan.

Otay Reservoir Booster Station and South Bay Influent Pump Station

The study area for the proposed Otay Reservoir Booster Station is located ~~primarily~~ within City of San Diego lands within the fenced boundary of the existing Otay Water Treatment Plant. ~~but clips small p~~Portions of the site would be adjacent to the City of Chula Vista and the County of San Diego. County lands ~~in~~ adjacent t to the site are in Otay Lakes County Park, but designated as Take-Authorized Area in the County MSCP Subarea Plan. City lands ~~in~~ adjacent to the site are designated Otay Lakes Cornerstone Lands in the MHPA, and water facilities are an allowable use in the City MHPA. Approximately one-third of the study area is currently developed as a water treatment plant. The remaining area is mapped as eucalyptus woodland, Diegan coastal sage scrub, and non-native grassland. Locating the pump station in the existing developed areas would minimize impacts; however, construction of the proposed pump station could potentially create adverse edge effects to the MHPA from noise, lighting, drainage, toxins, and increased human incursion. Operation of this pump station would have a low potential to create adverse edge effects to the MHPA above existing levels created by the water treatment plant.

MHPA Land Use Adjacency Guidelines

The MHPA has been designed to maximize conservation of sensitive biological resources, including sensitive species. When land is developed within or adjacent to the MHPA, there is a potential for secondary impacts that may degrade the habitat value or disrupt animals within the preserve area. To address these concerns, the MSCP includes a set of MHPA Land Use Adjacency Guidelines that are to be evaluated and implemented at the project-level. The MHPA Land Use Adjacency Guidelines require certain measures to be incorporated into the project design where projects are located adjacent to the MHPA to reduce indirect impacts, but not to below a level of significance at the program level. Additionally, implementation of the Program would introduce land uses within or adjacent to MHPA which could potentially result in a significant impact at the program-level. The potential for direct and/or indirect impacts and general consistency with the MHPA Land Use Adjacency Guidelines would be evaluated at the project-level.

MHPA Boundary Line Adjustments

Permanent surface structures are proposed in the City MHPA at the following locations: the ROD at San Vicente Reservoir ~~, the Otay Reservoir Booster Station,~~ and the ROD at Otay Reservoir. The proposed pump station ~~at~~ adjacent to Otay Lakes County Park would be located in currently developed and disturbed areas and would not have an adverse effect on the MHPA. The proposed ROD at San Vicente and the ROD at Otay Reservoir would be located in currently undeveloped land. Minor water facilities and essential public infrastructure facilities are an allowable use in the MHPA, and therefore, proposed Program facilities would be considered compatible uses in the MHPA; however, if a Program component at these two locations would

encroach into the MHPA beyond the allowable development area a Boundary Line Adjustment would be required. Project level MSCP consistency analysis would be required to determine compatibility of proposed facilities within the City's MHPA.

~~County Preserve Easement Restrictions~~

~~Construction of the proposed San Vicente Purified Water Pipeline in County Hardline Preserve lands between San Vicente Creek and the proposed ROD at San Vicente Reservoir would not require an amendment to the County MSCP Subarea Plan to allow temporary impacts. If the Hardline Preserve lands are under a conservation easement or other restrictive covenant that does not allow temporary impacts, it would be necessary to modify the easement restrictions.~~

Chula Vista Preserve Boundary Adjustments

No adjustments to City of Chula Vista 100% Conserved Area boundaries would be required for the Program. Proposed facilities in Chula Vista preserve areas are compatible with the Chula Vista MSCP Subarea Plan and Otay Ranch Resource Management Plan, subject to meeting certain siting and design requirements.

PLECA Boundary Adjustments

The study area for the proposed alignment of the Sludge Pipeline from CAWRP to PLWTP is inside the PLECA on Naval Base Point Loma. The PLECA MOU considers construction of linear utilities within the PLECA as new construction and recommends that it be located in existing roads and utility corridors if possible. The PLECA Working Group would determine on a case-by-case basis if PLECA lands affected by construction should be removed from the PLECA.

5.1.8 SIGNIFICANCE OF IMPACTS

Project components implemented in accordance with the Program could result in direct and/or indirect impacts to the MHPA, ~~direct impacts to County of San Diego Preserves and RPO resources,~~ City of Chula Vista MSCP and Otay Ranch RMP, the MCAS Miramar INRMP and the San Diego Bay NWR CCP, the PLECA, and the City of San Diego VPHCP. These are considered potentially significant impacts at the program level, and mitigation is required.

5.1.9 MITIGATION, MONITORING, AND REPORTING

Mitigation Framework

MM-LU-3 All subsequent infrastructure implemented in accordance with the Program that are within or adjacent to designated MHPA areas shall comply with the Land Use

Adjacency Guidelines of the MSCP in terms of land use, drainage, access, toxic substances in runoff, lighting, noise, invasive plant species, grading, and brush management requirements. Mitigation measures include, but are not limited to: sufficient buffers and design features, barriers (rocks, boulders, signage, fencing, and appropriate vegetation) where necessary, lighting directed away from the MHPA, and berms or walls adjacent to commercial or industrial areas and any other use that may introduce construction noise or noise from future development that could impact or interfere with wildlife utilization of the MHPA. The project biologist for each proposed component/project would identify specific mitigation measures needed to reduce impacts to below a level of significance. Subsequent environmental review would be required to determine the significance of impacts from land use adjacency and compliance with the Land Use Adjacency Guidelines of the MSCP. Prior to approval of any subsequent development project in an area adjacent to a designated MHPA, the City of San Diego shall identify specific conditions of approval in order to avoid or to reduce potential impacts to adjacent the MHPA. Specific requirements shall include:

- **Drainage -** All new and proposed parking lots and developed areas in and adjacent to the MHPA shall be designed so they do not drain directly into the MHPA. All developed and paved areas must prevent the release of toxins, chemicals, petroleum products, exotic plant materials prior to release by incorporating the use of filtration devices, planted swales and/or planted detention/desiltation basins, or other approved permanent methods that are designed to minimize negative impacts, such as excessive water and toxins into the ecosystems of the MHPA.
- **Toxics/Project Staging Areas/Equipment Storage -** Projects that use chemicals or generate by-products such as pesticides, herbicides, and animal waste, and other substances that are potentially toxic or impactive to native habitats/flora/fauna (including water) shall incorporate measures to reduce impacts caused by the application and/or drainage of such materials into the MHPA. No trash, oil, parking, or other construction/development-related material/activities shall be allowed outside any approved construction limits. Provide a note in/on the CD's that states: "All construction related activity that may have potential for leakage or intrusion shall be monitored by the Qualified Biologist/Owners Representative or Resident Engineer to ensure there is no impact to the MHPA."
- **Lighting -** Lighting within or adjacent to the MHPA shall be directed away/shielded from the MHPA and be subject to City Outdoor Lighting

Regulations per LDC Section 142.0740.D. Overhead lighting shall be shielded and either have a fixed downward-aiming position or have a locking feature to fix the light in the downward position. Additionally, overhead lighting adjacent to the MHPA shall be placed on a timer to turn off from 11 pm to sunrise unless determined by t the City of San Diego that overhead lighting is necessary for public safety.

- **Noise -** New development adjacent to the MHPA must follow the protocol established under MM-BIO-1 and MM-BIO-3 with regard to Mitigation for Short-term Impacts on Sensitive Species from Project Construction.
- **Barriers -** New development within or adjacent to the MHPA shall be required to provide barriers (e.g., non-invasive vegetation; rocks/boulders; 6-foot high, vinyl-coated chain link or equivalent fences/walls; and/or signage) along the MHPA boundaries to direct public access to appropriate locations, reduce domestic animal predation, protect wildlife in the preserve, and provide adequate noise reduction where needed.
- **Invasive Species -** No invasive plant species shall be introduced into areas adjacent to the MHPA.
- **Brush Management -** New development adjacent to the MHPA shall be set back from the MHPA to provide required Brush Management Zone 1 area on the building pad outside of the MHPA. Zone 2 may be located within the MHPA provided the Zone 2 management will be the responsibility of an HOA or other private entity except where narrow wildlife corridors require it to be located outside of the MHPA. Brush management zones will not be greater in size than currently required by the City's regulations, the amount of woody vegetation clearing shall not exceed 50 percent of the vegetation existing when the initial clearing is done and vegetation clearing shall be prohibited within native coastal sage scrub and chaparral habitats from March 1 - August 15 except where the City ADD/MMC has documented the thinning would be consist with the City's MSCP Subarea Plan. Existing and approved projects are subject to current requirements of Municipal Code Section 142.0412.

MM-LU-4 All development for utilities within the MHPA shall be designed to minimize environmental impacts and must avoid disturbing the habitat of MSCP-covered species, and wetlands. If such avoidance is unfeasible, impacts shall be mitigated. Temporary access roads and staging areas in the MHPA shall be located in agricultural lands or existing disturbed areas rather than in habitat. If temporary disturbance to habitat in the MHPA is unavoidable, restoration of

and/or mitigation for the disturbed area shall be required after project completion. Construction and maintenance activities in wildlife corridors in the MHPA shall avoid significant disruption of corridor usage.

If a proposed project would encroach into the MHPA beyond the allowable development area pursuant to Sections 143.0142 and 131.0250(b) of the City of San Diego Land Development Code, Biology Guidelines, a MHPA boundary line adjustment shall be required. Under the City's MSCP Subarea Plan, an adjustment to the City's MHPA boundary is allowed only if the new MHPA boundary results in an exchange of lands that are functionally equivalent or higher in biological value. A determination of functionally equivalent or higher biological value shall be based on site-specific information (both quantitative and qualitative) that addresses the six boundary adjustment criteria outlined in Section 5.4.3 of the Final MSCP Plan (August 1998), which are as follows:

1. Effects on significantly and sufficiently conserved habitats (i.e., the exchange maintains or improves the conservation, configuration, or status of significantly and sufficiently conserved habitats, as defined in Section 3.4.2 [of the Final MSCP Plan]
2. Effects on covered species (i.e., the exchange maintains or increases the conservation of covered species).
3. Effects on habitat linkages and function of preserve areas (i.e., the exchange maintains or improves any habitat linkages or wildlife corridors);
4. Effects on preserve configuration and management (i.e., the exchange results in similar or improved management efficiency and/or protection of biological resources)
5. Effects on ecotones or other conditions affecting species diversity (i.e., the exchange maintains topographic and structural diversity and habitat interfaces of the preserve);
6. Effects on species of concern not on the covered species list (i.e., the exchange does not significantly increase the likelihood that an uncovered species will meet the criteria for listing under either the federal or state ESAs).

All proposed MHPA boundary adjustments require approval from the Wildlife Agencies. Approval is required prior to release of the environmental documentation for the project. Early consultation with the Wildlife Agencies shall

be required for any proposed MHPA boundary adjustment. Any proposed boundary adjustment shall also be disclosed in the environmental document (i.e., CEQA) for the project.

~~**MM-LU-5** Subsequent environmental documentation for future project components located in County of San Diego Hardline Preserve Areas shall include an equivalency analysis to demonstrate that revegetation/restoration of temporary impact areas would provide equivalent or superior biological resources value in the Preserve. Future project-level analysis shall determine whether mitigation at more than 1:1 is required. If the Hardline Preserve lands are under a conservation easement or other restrictive covenant, allowed activities in the Hardline Preserve area would be dictated by that easement.~~

MM-LU-~~6~~5 Subsequent environmental documentation for future project components with potential to impact resources protected by the County Resource Protection Ordinance shall complete a Resource Protection Study pursuant to Section 86.603 of the Resource Protection Ordinance. Specific actions and requirements determined by the County following review of the Resource Protection Study shall be considered by the City during subsequent environmental review for future project components.

MM-LU-~~7~~6 Future project components located within City of Chula Vista preserve shall be subject to the Facilities Siting Criteria established in the Chula Vista MSCP Subarea Plan and siting and design requirements in Otay Ranch Resource Management Plan. Consideration and implementation of siting and design criteria will ensure compatibility of Program components and the Chula Vista MSCP Subarea Plan and Otay Ranch Resource Management Plan.

MM-LU-~~8~~7 If the siting of Program components would require lands to be removed from the PLECA, an area of equal size and equal or greater ecological value will be added to the PLECA to offset the loss. Additional mitigation for impacts to habitat removed from the PLECA may be required and may consist of adding land to the PLECA or restoring habitat within or outside of the PLECA. Such mitigation shall be proposed in the associated NEPA/CEQA compliance document for future project components and this document shall be submitted to the PLECA Working Group for review. The PLECA Working Group shall determine if a PLECA boundary adjustment is required based on the final design and restoration/mitigation proposal(s) from the City or if alternative construction methods or use of existing utility corridors would be sufficient to satisfy the terms of the PLECA MOU and avoid a boundary adjustment.

For future project components that would impact native Diegan coastal sage scrub and southern maritime chaparral on Naval Base Point Loma, a determination of consistency with Section 30240 of the Coastal Act may be required. Section 30240 of the Coastal Act protects environmentally sensitive habitat areas from significant disruption of habitat values, and allows only uses dependent on those resources within those areas. The NEPA/CEQA compliance document associated with future project components on Naval Base Point Loma shall include a determination of consistency with Section 30240 of the Coastal Act and the document shall be submitted to the California Coastal Commission for review.

MM-LU-~~9~~8 Construction of facilities on federal lands in MCAS Miramar and the San Diego Bay NWR would require analysis under the National Environmental Policy Act (NEPA). As such, for proposed facilities on federal lands, appropriate NEPA documentation shall be prepared and submitted to necessary federal agencies and parties including MCAS Miramar, the San Diego Bay NWR, and USFWS. The City shall coordinate with MCAS Miramar and the San Diego Bay NWR regarding project components located on federal lands and shall ensure consistency with applicable land use regulations of MCAS Miramar INRMP and the San Diego Bay NWR CCP. Actions in existing rights-of-way or easements on MCAS Miramar lands may not require authorization from MCAS Miramar and therefore shall require that the City consult directly with the USFWS under Section 10 of the ESA to address potential species and habitat issues.

MM-LU-~~10~~9 All development for future project components with potential to impact vernal pools, the City shall implement avoidance and minimization measures to minimize potential impacts to vernal pools consistent with the VPHCP and the City's ESL Regulations. If impacts to vernal pools are unavoidable and/or infeasible, temporary impacts shall be mitigated on site through restoration of the impact area back to a level equal to or greater quality than pre-construction conditions in accordance with MM-BIO-2. Permanent impacts to vernal pools shall be addressed via appropriate compensatory mitigation as established in MM-BIO-2.

Level of Significance after Mitigation

Implementation of Mitigation Framework measures MM-LU-~~2~~ 3 through MM-LU-9 would reduce Program level impacts to below a level of significance.

5.1.10 IMPACTS

Issue 3: Would the Pure Water Program result in land uses which are not compatible with an adopted Airport Land Use Compatibility Plan (ALUCP)?

According to the City's CEQA Significance Determination Thresholds (City of San Diego 2011), land use compatibility impacts may be significant if a project would result in:

- Incompatible uses as defined in an airport land use plan or inconsistency with an airport's land use compatibility plan as adopted by the Airport Land Use Commission to the extent that the inconsistency is based on valid data. CEQA, Section 21096 and 15154, requires this land use/health and safety analysis. For additional information, consult the California Airport Land Use Planning Handbook or the applicable Comprehensive Land Use Plan:
    - Brown Field (adopted January 25, 2010, amended December 20, 2010)
    - Gillespie Field (adopted January 25, 2010, amended December 20, 2010)
    - Montgomery Field (adopted January 25, 2010, amended December 20, 2010)
    - MCAS Miramar (adopted October 2, 2008, amended December 20, 2010 and November 3, 2011)
    - San Diego International Airport (adopted April 3, 2014, amended May 1, 2014)

Program components would be located within the AIAs of SDIA, MCAS Miramar, Brown Field Municipal Airport, Montgomery Field Municipal Airport, and Gillespie Field (see Figure 5.1-7). Specifically, the North City component would be located within the AIA of MCAS Miramar, Montgomery Field, and Gillespie Field; the Central Area component would be located within the AIA of the SDIA; and the South Bay component would be located within the AIA of Brown Field. Although not governed by ALUCPs, NAS North Island is in the vicinity of the Central Area component and NOLF Imperial Beach is in the vicinity of the South Bay component.

North City Component

North City AWPF and Influent Conveyance

The North City AWPF (NCAWPF) would be located on a site within the AIA and Accident Potential Zone (APZ) 1 of MCAS Miramar. The NCAWPF would be located on approximately 6 acres of currently undeveloped land in an area that is primarily developed with industrial and commercial uses. The NCAWPF may include a pipe gallery/access tunnel under Eastgate Mall Road connecting to the North City WRP (NCWRP), an operations and maintenance building, electrical substations, pump stations, and various process areas. Buildings and other structures

would generally not be taller than other surrounding buildings and would not introduce any significant sources of glare (implementation of mitigation measure MM-AES-3 would ensure impacts are reduced to below a level of significance). The NCAWPF would not introduce any residential or other sensitive land uses and would not result in an incompatible land use with MCAS Miramar.

San Vicente Purified Water Pipeline and Pump Stations

The San Vicente Purified Water Pipeline traverses the AIA and APZ 1 of MCAS Miramar, and the AIAs of both Montgomery and Gillespie Fields. Construction of the pipeline would involve excavation and/or drilling, mostly within a roadway right-of-way (ROW). These activities would not present any hazard to airport operations. Once constructed, the pipeline would be underground and would not present an incompatible land use with the airports in the vicinity. The Mission Trails Booster Station would be located in the AIA of Montgomery Field. The pump station would not include any tall features or other features that would present incompatible land use to airport operations.

Morena Boulevard Pump Station, North City Wastewater Forcemain and Brine Pipeline

The Morena Boulevard Pump Station would not be located in an AIA. The North City Wastewater Forcemain and Brine Pipeline would traverse the AIA and APZ 1 of MCAS Miramar, and the AIA of Montgomery Field. Similar to the San Vicente Purified Water Pipeline, neither construction nor operation of the pipeline would present any hazard to airport operations or present an incompatible land use with airports in the vicinity.

NCWRP Expansion

The NCWRP is located within the AIA and APZ 1 of MCAS Miramar. Expansion of the NCWRP would add new process units and tankage to the existing NCWRP site; however, none of the proposed facilities include uncovered water features that would attract birds and create a potential hazard to aircraft or airport operations. The expansion would not introduce any feature that would present an incompatible land use with MCAS Miramar.

Central Area Component

CAWRP

The CAWRP is proposed to be located on a site just west of the SDIA near Pump Station 2 (PS2). The site is within the Outer Safety Zone of the SDIA. The CAWRP would include an administrative building, pump stations, electrical building, various process areas, and process

tanks. The existing San Diego State University Coastal and Marine Laboratory and Environmental Monitoring and Technical Services Laboratory would also remain on site. Buildings and other structures would generally not be taller than other existing buildings in the site vicinity. Process tanks would be covered, enclosed, or housed within buildings to prevent birds from being attracted to the site per FAA Policy A.7.6.3(b) and would not introduce a new source of glare. The CAWRP would not result in a large concentration of people in or near airport safety areas or introduce sensitive land uses within an airport compatibility zone, and therefore, would not result in an incompatible land use with SDIA.

Central Area Tertiary Water Pipeline and Brine Pipeline

The Central Area Tertiary Water Pipeline would head north from the CAWRP and would traverse the SDIA runway. The pipelines' alignment within the runway and immediately surrounding area would likely tunnel beneath the runway to minimize disruption to airport operations. The remaining portions of the pipeline alignment would be constructed through a combination of trenching within a roadway ROW and tunneling where the alignment would cross sensitive areas. Once constructed, the pipeline would be underground and would not present an incompatible use for SDIA.

Central Area Sludge Pipeline

The Central Area Sludge Pipeline would traverse the SDIA Sideline Zone and Traffic Pattern Zone. The Central Area Sludge Pipeline would be located across San Diego Bay approximately 1 mile west of NAS North Island (see Figure 5.1-7); however, NAS North Island does not have an ALUCP. Construction of the pipeline would involve trenching and drilling activities primarily within a roadway ROW and would not present any hazard to airport operations. Once constructed, the pipeline would be underground and would not present an incompatible land use for SDIA.

Central Area AWPF

The Central Area AWPF (CAAWPF) is proposed to be located within the Montgomery Field AIA. The CAAWPF is located in an area with existing high density residential and commercial development. The CAAWPF would include an operations and maintenance building, electrical substations, pump stations, and various process areas. Buildings and other structures would generally not be taller than other surrounding buildings and would not introduce any significant sources of glare (implementation of mitigation measure MM-AES-3 would ensure impacts are reduced to below a level of significance). The CAAWPF would not introduce any residential or other sensitive land uses or present an incompatible land use for Montgomery Field.

Central Area Purified Water Pipeline

The Central Area Purified Water Pipeline would pass through the AIA of Montgomery Field and the AIA, Traffic Pattern Zone and Outer Safety Zone of Gillespie Field. Construction of the pipeline would involve trenching and drilling activities primarily within a roadway ROW and would not present any hazard to airport operations. Once constructed, the pipeline would be underground and would not present an incompatible land use for Montgomery or Gillespie Fields or other airports in the vicinity.

Point Loma Wastewater Treatment Plant Upgrades

The Point Loma Wastewater Treatment Plant (PLWTP) is not located within an AIA, but is located approximately 1.5 miles southwest of NAS North Island. However, improvements to PLWTP would not be taller than other surrounding buildings and would not introduce any significant sources of glare that would result in a safety hazard or incompatible land use with NAS North Island.

MBC Improvements

The MBC is located within the APZ 1 of MCAS Miramar. Upgrades at MBC would include the addition of a new sludge degritter and a thickening centrifuge within an existing building, truck drive-underbays for offloading of dewatered sludge, a truck loadout station, sludge pumps, storage silos, an odor control building and chemical storage and feed pumps. All new process areas would be consistent with current uses on the site and would not present an incompatible land use with MCAS Miramar.

South Bay Component

South Bay Wastewater Forcemain and Pump Station

The South Bay Wastewater Forcemain would pass through the most western extent of the Brown Field AIA. Construction of the pipeline would involve trenching and drilling activities primarily within a roadway ROW and would not present any hazard to airport operations. Once constructed, the pipeline would be underground and would not present an incompatible land use with Brown Field or other airports in the vicinity. The South Bay Influent Pump Station at Sea Vale Drive would not be located in an AIA.

South Bay WRP Expansion and South Bay Solids Processing Facility

The SBWRP and SBSPF are not located within an AIA, and therefore, no further analysis is required.

South Bay AWPF

The South Bay AWPF (SBAWPF) is not located within any AIA. The SBAWPF is located approximately 2.5 miles southeast of Imperial Beach NOLF; however, the Imperial Beach NOLF does not have an ALUCP. The SBAWPF would not introduce any significant sources of glare (implementation of mitigation measure MM-AES-3 would ensure impacts are reduced to below a level of significance) or present an incompatible land use to operations at the Imperial Beach NOLF.

South Bay Purified Water Pipeline

The South Bay Purified Water Pipeline would pass through the AIA and Traffic Pattern Zone of Brown Field. Construction of the pipeline would involve trenching and drilling activities primarily within a roadway ROW and would not present any hazard to airport operations. Once constructed, the pipeline would be underground and would not present an incompatible use with Brown Field or other airports in the vicinity.

5.1.11 SIGNIFICANCE OF IMPACTS

Treatment and pumping facility upgrades and improvements would not introduce residential or other sensitive land uses within an airport compatibility zone or result in large concentrations of people within an airport safety area, and therefore, would generally not pose a land use conflict/inconsistency or safety hazard. No proposed facilities include uncovered water features that would attract birds and create a potential hazard to aircraft. Nonetheless, Program components would need to be reviewed by the ALUC and FAA to make a final determination of consistency during subsequent project review. As such, at the program level, potential inconsistencies with applicable ALUCPs would be considered potentially significant and mitigation is required.

5.1.12 MITIGATION, MONITORING, AND REPORTING

MM-LU-~~11~~10 Subsequent projects, implemented in accordance with the Program, shall submit a description of each Program component located in an airport influence area to the Airport Land Use Commission for consistency determinations with the applicable adopted Airport Land Use Compatibility Plan. In addition, any Program components located within the Part 77 imaginary surfaces for determining obstructions area or that meets the Part 77 criteria shall be required to submit a notification for review to the Federal Aviation Administration (FAA).

MM-LU-~~12~~11 Subsequent projects, implemented in accordance with the Program, that (1) are located in the Airport Approach Overlay Zone and receive an FAA determination of hazard and that are not exempt or (2) located within the Airport Land Use Compatibility Overlay Zone and proposing deviations from the overlay zone requirements, or that include a rezone or land use plan approval, shall obtain a Site Development Permit in accordance with San Diego Municipal Code Section 126.0502(e).

Level of Significance after Mitigation

Implementation of mitigation measures MM-LU-~~11~~10 and MM-LU-~~12~~11 would reduce potential impacts related to airport land use compatibility to **below a level of significance**.

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SOURCE: Bing Imagery, 2015, SANGIS, 2015.

FIGURE 5.1-1

North City AWPF On-Site and Surrounding Land Use

Pure Water Program EIR

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SOURCE: Bing Imagery, 2015, SANGIS, 2015.

FIGURE 5.1-2

Central Area WRP On-Site and Surrounding Land Use

Pure Water Program EIR

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SOURCE: Bing Imagery, 2015, SANGIS, 2015.

FIGURE 5.1-3

Central Area AWPF On-Site and Surrounding Land Use

Pure Water Program EIR

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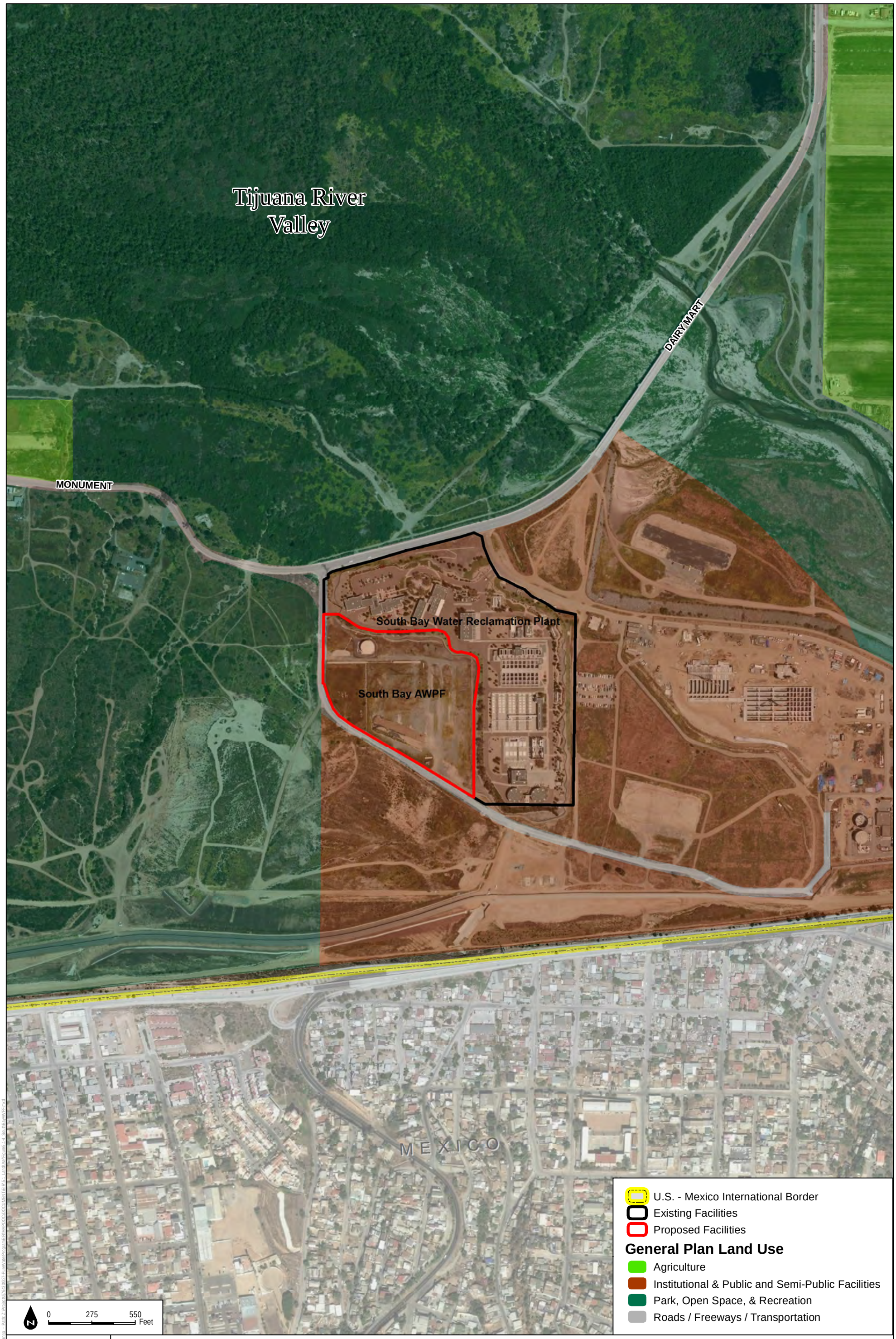

SOURCE: Bing Imagery, 2015, SANGIS, 2015.

FIGURE 5.1-4

South Bay AWPF On-Site and Surrounding Land Use

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Pure Water Program EIR

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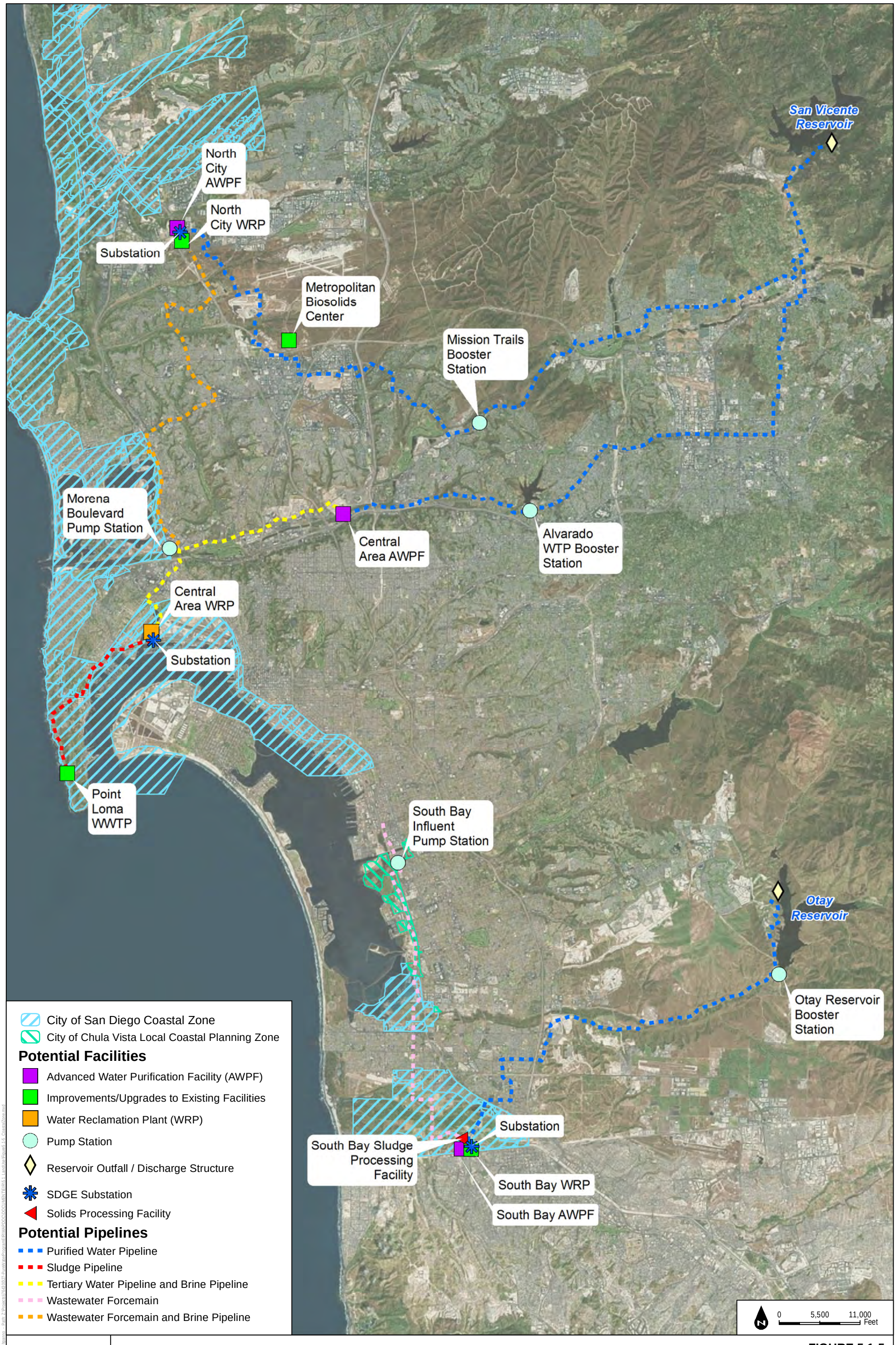

SOURCE: Google Imagery, 2015; SanGIS, 2015.

FIGURE 5.1-5
Coastal Zone

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Pure Water Program EIR

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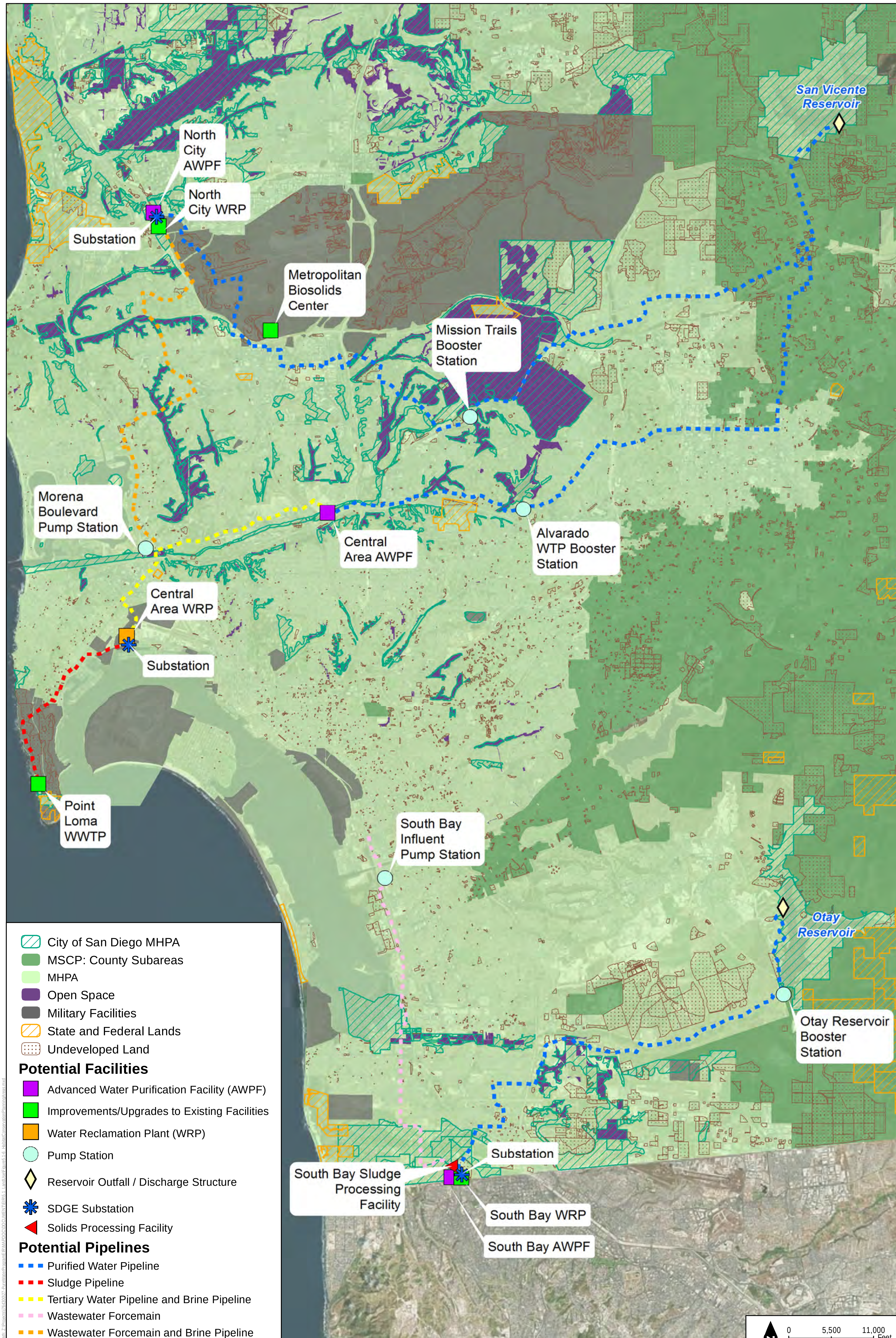

San Vicente Reservoir
North City AWPF
North City WRP
Substation
Metropolitan Biosolids Center
Mission Trails Booster Station
Morena Boulevard Pump Station
Central Area AWPF
Alvarado WTP Booster Station
Central Area WRP
Substation
Point Loma WWTP
South Bay Influent Pump Station
Otay Reservoir
Otay Reservoir Booster Station
Substation
South Bay Sludge Processing Facility
South Bay WRP
South Bay AWPF
City of San Diego MHPA
MSCP: County Subareas
MHPA
Open Space
Military Facilities
State and Federal Lands
Undeveloped Land
Potential Facilities
Advanced Water Purification Facility (AWPF)
Improvements/Upgrades to Existing Facilities
Water Reclamation Plant (WRP)
Pump Station
Reservoir Outfall / Discharge Structure
SDGE Substation
Solids Processing Facility
Potential Pipelines
Purified Water Pipeline
Sludge Pipeline
Tertiary Water Pipeline and Brine Pipeline
Wastewater Forcemain
Wastewater Forcemain and Brine Pipeline
N
0 5,500 11,000 Feet

DUDEK

SOURCE: Google Imagery, 2015; SanGIS, 2015; SANDAG.

FIGURE 5.1-6

Habitat Conservation Planning Areas

Pure Water Program EIR

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NCAWPF
NCWRP
Substation
MBC
San Vicente Reservoir
MTBS
MBPS
CAAWPF
ABS
CAWRP
Substation
North Island NAS Halsey Field
PLWTP
SBIPS
Otay Reservoir
ORBS
NOLF Imperial Beach
SBSPF
Substation
South Bay AWPF
SBWRP

Airport Safety Zones

- Airport Influence Area
- Inner Safety Zone
- Inner Turning Zone
- Outer Safety Zone
- Runway
- Runway Protection Zone
- Sideline Zone
- Traffic Pattern Zone
- Accident Potential Zone 1
- Accident Potential Zone 2
- Clear Zone
- Transition Zone

Potential Facilities

- Advanced Water Purification Facility (AWPF)
- Improvements/Upgrades to Existing Facilities
- Water Reclamation Plant (WRP)
- Pump Station
- Reservoir Outfall / Discharge Structure
- SDGE Substation
- Solids Processing Facility

Potential Pipelines

- Purified Water Pipeline
- Sludge Pipeline
- Tertiary Water Pipeline and Brine Pipeline
- Wastewater Forcemain
- Wastewater Forcemain and Brine Pipeline

N

0 6,000 12,000 Feet

SOURCE: Bing Imagery, 2015, SANGIS, 2015; City of San Diego, 05/02/2007.

FIGURE 5.1-7

Airport Compatibility

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Pure Water Program EIR

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5.2 AIR QUALITY AND ODOR

5.2.1 INTRODUCTION

The purpose of this section is to estimate and evaluate the potential air quality impacts associated with implementation of the Pure Water Program (Program) relative to the City of San Diego's *Significance Determination Thresholds* (City of San Diego 2011).

5.2.2 EXISTING CONDITIONS

Climate and Topography

The weather of the San Diego region, as in most of Southern California, is influenced by the Pacific Ocean and its semi-permanent high-pressure systems that result in dry, warm summers and mild, occasionally wet winters. The average temperature ranges (in degrees Fahrenheit (°F)) from the mid-40s to the high 90s. Most of the region's precipitation falls from November to April, with infrequent (approximately 10%) precipitation during the summer. The average seasonal precipitation along the coast is approximately 10 inches; the amount increases with elevation as moist air is lifted over the mountains.

The topography in the San Diego region varies greatly, from beaches on the west to mountains and desert on the east; along with local meteorology, it influences the dispersal and movement of pollutants in the basin. The mountains to the east prohibit dispersal of pollutants in that direction and help trap them in inversion layers.

The interaction of ocean, land, and the Pacific High Pressure Zone maintains clear skies for much of the year and influences the direction of prevailing winds (westerly to northwesterly). Local terrain is often the dominant factor inland, and winds in inland mountainous areas tend to blow through the valleys during the day and down the hills and valleys at night.

Air Pollution Climatology

The Program area is located within the San Diego Air Basin (SDAB) and is subject to the San Diego Air Pollution Control District (SDAPCD) guidelines and regulations. The SDAB is one of 15 air basins that geographically divide the State of California. The SDAB is currently classified as a federal nonattainment area for ozone (O_3) and a state nonattainment area for particulate matter less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), and O_3.

The SDAB lies in the southwest corner of California and comprises the entire San Diego region, covering 4,260 square miles, and is an area of high air pollution potential. The basin experiences warm summers, mild winters, infrequent rainfalls, light winds, and moderate humidity. This

usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds.

The SDAB experiences frequent temperature inversions. Subsidence inversions occur during the warmer months as descending air associated with the Pacific High Pressure Zone meets cool marine air. The boundary between the two layers of air creates a temperature inversion that traps pollutants. The other type of inversion, a radiation inversion, develops on winter nights when air near the ground cools by heat radiation and air aloft remains warm. The shallow inversion layer formed between these two air masses also can trap pollutants. As the pollutants become more concentrated in the atmosphere, photochemical reactions occur that produce O_3, which contributes to the formation of smog. Smog is a combination of smoke and other particulates, O_3, hydrocarbons, oxides of nitrogen (NO_x) and other chemically reactive compounds which, under certain conditions of weather and sunlight, may result in a murky brown haze that causes adverse health effects (CARB 2014a).

Light daytime winds, predominately from the west, further aggravate the condition by driving air pollutants inland, toward the mountains. During the fall and winter, air quality problems are created due to carbon monoxide (CO) and NO_x emissions. CO concentrations are generally higher in the morning and late evening. In the morning, CO levels are elevated due to cold temperatures and the large number of motor vehicles traveling. Higher CO levels during the late evenings are a result of stagnant atmospheric conditions trapping CO in the area. Since CO is produced almost entirely from automobiles, the highest CO concentrations in the basin are associated with heavy traffic. Nitrogen dioxide (NO_2) levels are also generally higher during fall and winter days.

Under certain conditions, atmospheric oscillation results in the offshore transport of air from the Los Angeles region to San Diego County. This often produces high O_3 concentrations, as measured at air pollutant monitoring stations within the County. The transport of air pollutants from Los Angeles to San Diego has also occurred within the stable layer of the elevated subsidence inversion, where high levels of O_3 are transported.

Sensitive Receptors

Air quality varies as a direct function of the amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. Air quality problems arise when the rate of pollutant emissions exceeds the rate of dispersion. Reduced visibility, eye irritation, and adverse health impacts upon those persons termed sensitive receptors are the most serious hazards of existing air quality conditions in the area.

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. People most likely to be affected by air pollution include children, the elderly, athletes, and people with cardiovascular and chronic respiratory diseases. Facilities and structures where these air pollution-sensitive people live or spend considerable amounts of time are known as sensitive receptors. Land uses where air pollution-sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (sensitive sites or sensitive land uses) (CARB 2005).

Pollutants and Effects

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The federal and state standards have been set, with an adequate margin of safety, at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include: O_3, NO_2, CO, sulfur dioxide (SO_2), PM_{10}, $PM_{2.5}$, and lead (Pb). These pollutants are discussed in the following paragraphs.[1] In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants.

Ozone. O_3 is a colorless gas that is formed in the atmosphere when volatile organic compounds (VOCs), sometimes referred to as reactive organic gases, and NO_x react in the presence of ultraviolet sunlight. O_3 is not a primary pollutant; it is a secondary pollutant formed by complex interactions of two pollutants directly emitted into the atmosphere. The primary sources of VOCs and NO_x, the precursors of O_3, are automobile exhaust and industrial sources. Meteorology and terrain play major roles in O_3 formation and ideal conditions occur during summer and early autumn, on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. Short-term exposures (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes.

Nitrogen Dioxide. Most NO_2, like O_3, is not directly emitted into the atmosphere but is formed by an atmospheric chemical reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively referred to as NO_x and are major contributors to O_3 formation. High concentrations of NO_2 can cause breathing difficulties and result in a brownish-red cast to the

[1] The following descriptions of health effects for each of the criteria air pollutants associated with project construction and operations are based on the U.S. Environmental Protection Agency's "Six Common Air Pollutants" (EPA 2012) and the California Air Resources Board's "Glossary of Air Pollutant Terms" (CARB 2014a) published information.

atmosphere with reduced visibility. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis and some increase in bronchitis in children (2 and 3 years old) has also been observed at concentrations below 0.3 parts per million by volume (ppm).

Carbon Monoxide. CO is a colorless and odorless gas formed by the incomplete combustion of fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, such as the Program area, automobile exhaust accounts for the majority of CO emissions. CO is a non-reactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions; primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February. The highest levels of CO typically occur during the colder months of the year when inversion conditions are more frequent. In terms of health, CO competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can be dizziness, fatigue, and impairment of central nervous system functions.

Sulfur Dioxide. SO_2 is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels. SO_2 is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. SO_2 can also yellow plant leaves and erode iron and steel.

Particulate Matter. Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Fine particulate matter, or $PM_{2.5}$, is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SO_x), NO_x, and VOC. Inhalable or coarse particulate matter, or PM_{10}, is about 1/7 the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances, such as Pb, sulfates, and nitrates, can cause lung damage directly or be absorbed into the blood stream, causing damage elsewhere in the body. Additionally, these substances can transport absorbed gases, such as chlorides or ammonium, into the lungs, also causing injury. Whereas PM_{10} tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility.

Lead. Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline, the manufacturing of batteries, paint, ink, ceramics, and ammunition and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phase-out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phase-out of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emission sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance including intelligence quotient performance, psychomotor performance, reaction time, and growth.

Toxic Air Contaminants. A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute and/or chronic noncancer health effects. A toxic substance released into the air is considered a toxic air contaminant (TAC). Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources such as automobiles; and area sources such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced either on short-term (acute) or long-term (chronic) exposure to a given TAC.

Local Air Quality

SDAB Attainment Designation

An area is designated in attainment when it is in compliance with the National Ambient Air Quality Standards (NAAQS) and/or California Ambient Air Quality Standards (CAAQS). These standards are set by the U.S. Environmental Protection Agency (EPA) or California Air Resources Board (CARB) for the maximum level of a given air pollutant that can exist in the outdoor air without unacceptable effects on human health or the public welfare. The criteria pollutants of primary concern that are considered in this analysis are O_3, NO_2, CO, SO_2, PM_{10}, and $PM_{2.5}$. Although there are no ambient standards for VOCs or NO_x, they are important as precursors to O_3.

The portion of the SDAB where the project site is located is designated by the EPA as an attainment area for the 1997 8-hour NAAQS for O_3 and as a marginal nonattainment area for the 2008 8-hour NAAQS for O_3.The SDAB is designated in attainment for all other criteria pollutants under the NAAQS with the exception of PM_{10}, which was determined to be unclassifiable. The SDAB is currently designated nonattainment for O_3 and particulate matter, PM_{10} and $PM_{2.5}$, under the CAAQS. It is designated attainment for the CAAQS for CO, NO_2, SO_2, lead, and sulfates.

Table 5.2-1, SDAB Attainment Classification, summarizes the SDAB's federal and state attainment designations for each of the criteria pollutants.

Table 5.2-1
SDAB Attainment Classification

Pollutant	Federal Designation[a]	State Designation[b]
O_3 (1-hour)	Attainment[1]	Nonattainment
O_3 (8-hour – 1997) (8-hour – 2008)	Attainment (Maintenance) Nonattainment (Marginal)	Nonattainment
CO	Unclassifiable/Attainment[2]	Attainment
PM_{10}	Unclassifiable[3]	Nonattainment
$PM_{2.5}$	Attainment	Nonattainment
NO_2	Unclassifiable/Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(no federal standard)	No designation
Hydrogen sulfide	(no federal standard)	Unclassified
Visibility-reducing particles	(no federal standard)	Unclassified

Sources: [a] EPA 2014; [b] CARB 2014b.

1 The federal 1-hour standard of 0.12 parts per million (ppm) was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in State Implementation Plans.

2 The western and central portions of the SDAB are designated attainment, while the eastern portion is designated unclassifiable/ attainment.

3 At the time of designation, if the available data does not support a designation of attainment or nonattainment, the area is designated as unclassifiable.

Air Quality Monitoring Data

The SDAPCD operates a network of ambient air monitoring stations throughout San Diego County, which measure ambient concentrations of pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. The SDAPCD monitors air quality conditions at 10 locations throughout the basin. Although the proposed Program would be implemented in various locations throughout San Diego County and thus, in various locations throughout the air basin, the Overland Avenue monitoring station concentrations for all pollutants, except CO and SO_2, were selected as the representative monitoring location concentrations for the project. The downtown San Diego monitoring station at Beardsley Street is the most representative location where CO and SO_2 concentrations are monitored. Ambient concentrations of pollutants from 2010 through 2013 are presented in Table 5.2-2, Ambient Air Quality Data. The number of days exceeding the ozone AAQS is shown in Table 5.2-3, Frequency of Air Quality Standard Violations; no AAQS for other pollutants were reported during the monitoring period. The state 8-hour and 1-hour O_3 standards were exceeded in 2010 and 2011, while the federal 8-hour O_3 standard was exceeded in 2011. Air quality within the project region was in compliance with both CAAQS and NAAQS for NO_2, CO, PM_{10}, $PM_{2.5}$, and SO_2 during this monitoring period.

Table 5.2-2
Ambient Air Quality Data (ppm unless otherwise indicated)

Pollutant	Averaging Time	2010	2011	2012	2013	Most Stringent Ambient Air Quality Standard	Monitoring Station
O_3	8-hour	0.074	0.087	0.047	0.053*	0.070	Overland Avenue
	1-hour	0.100	0.097	0.050	0.063*	0.090	
PM_{10}	Annual	18.7 µg/m³	20.3 µg/m³	—	—	20 µg/m³	Overland Avenue
	24-hour	32.0 µg/m³	47.0 µg/m³	22.0 µg/m³	36.0 µg/m³*	50 µg/m³	
$PM_{2.5}$	Annual*	8.7 µg/m³	8.9 µg/m³	—	10.4 µg/m³*	12 µg/m³	Overland Avenue
	24-hour	18.7 µg/m³	29.9 µg/m³	20.0 µg/m³	37.4 µg/m³*	35 µg/m³	
NO_2	Annual	0.013	0.012	—	—	0.030	Overland Avenue
	1-hour	0.073	0.073	0.055	0.072*	0.180	
CO	8-hour	2.17	2.44	1.81	2.10*	9.0	Beardsley Street
	1-hour*	2.8	2.8	2.6	3.0*	20	
SO_2	Annual	0.000	—	—	—	0.030	Beardsley Street
	24-hour	0.002	0.003	—	—	0.040	

ppm = parts per million; µg/m³ = micrograms per cubic meter
Sources: CARB 2013a; EPA 2013.
Data represent maximum values.
* Data were taken from EPA 2013.

Table 5.2-3
Frequency of Air Quality Standard Violations

Monitoring Site	Year	Number of Days Exceeding Standard		
		State 1-Hour O_3	*State 8-Hour O_3*	*National 8-Hour O_3*
Overland Avenue	2010	2	3	0
	2011	1	3	1
	2012	0	0	0
	2013	0	0	0

Source: CARB 2013a.

5.2.3 REGULATORY SETTING

Federal

Clean Air Act

The federal Clean Air Act (CAA), passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The EPA is responsible for implementing most aspects of the CAA, including the setting of NAAQS for major air pollutants, hazardous air pollutant standards, approval of state attainment plans, motor vehicle emission standards, stationary source emission standards and permits, acid rain control measures, stratospheric O_3 protection, and enforcement provisions.

NAAQS are established by the EPA for "criteria pollutants" under the CAA, which are O_3, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM_{10} and $PM_{2.5}$), and lead (Pb).

The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The CAA requires the EPA to reassess the NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a State Implementation Plan (SIP) that demonstrates how those areas will attain the standards within mandated time frames.

State

California Clean Air Act

The California Clean Air Act was adopted in 1988 and establishes the state's air quality goals, planning mechanisms, regulatory strategies, and standards of progress. Under the California Clean Air Act, the task of air quality management and regulation has been legislatively granted to CARB, with subsidiary responsibilities assigned to air quality management districts

(AQMDs) and air pollution control districts (APCDs) at the regional and county levels. CARB is responsible for ensuring implementation of the California Clean Air Act, responding to the federal CAA, and regulating emissions from motor vehicles and consumer products. Pursuant to the authority granted to it, CARB has established CAAQS, which are generally more restrictive than the NAAQS.

The NAAQS and CAAQS are presented in Table 5.2-4, Ambient Air Quality Standards.

Table 5.2-4
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	*Primary*[c,d]	*Secondary*[c,e]
O_3	1-hour	0.09 ppm (180 μg/m³)	—	Same as Primary Standard
	8-hour	0.070 ppm (137 μg/m³)	0.075 ppm (147 μg/m³)	
CO	1-hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	—
	8-hour	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	
NO_2[f]	1-hour	0.18 ppm (339 μg/m³)	0.100 ppm (188 μg/m³)	Same as Primary Standard
	Annual Arithmetic Mean	0.030 ppm (57 μg/m³)	0.053 ppm (100 μg/m³)	
SO_2[g]	1-hour	0.25 ppm (655 μg/m³)	0.75 ppm (196 μg/m³)	—
	3-hour	—	—	0.5 ppm (1300 μg/m³)
	24-hour	0.04 ppm (105 μg/m³)	0.14 ppm (for certain areas)[g]	
	Annual Arithmetic Mean	—	0.030 ppm (for certain areas)[g]	—
PM_{10}[h]	24-hour	50 μg/m³	150 μg/m³	Same as Primary Standard
	Annual Arithmetic Mean	20 μg/m³	—	
$PM_{2.5}$[h]	24-hour	—	35 μg/m³	Same as Primary Standard
	Annual Arithmetic Mean	12 μg/m³	12.0 μg/m³	15.0 μg/m³
Lead[i,j]	30-day Average	1.5 μg/m³	—	—
	Calendar Quarter	—	1.5 μg/m³ (for certain areas)[j]	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 μg/m³	
Hydrogen sulfide	1-hour	0.03 ppm (42 μg/m³)	—	—
Vinyl chloride[i]	24-hour	0.01 ppm (26 μg/m³)	—	—
Sulfates	24-hour	25 μg/m³	—	—
Visibility reducing particles[k]	8-hour (10:00 a.m. to 6:00 p.m. PST)	See footnote k	—	—

Source: CARB 2013b.
ppm= parts per million by volume; μg/m³ = micrograms per cubic meter; mg/m³= milligrams per cubic meter

[a] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than O_3, NO_2, SO_2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For NO_2 and SO_2, the standard is attained when the 3-year average of the 98th and 99th percentile, respectively, of the daily maximum 1-hour average at each monitor within an area does not exceed the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr.
Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

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

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

[f] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[g] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[h] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[i] CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[j] The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[k] In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Toxic Air Contaminants

California regulates TACs primarily through the Tanner Air Toxics Act (Assembly Bill 1807) and the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (Assembly Bill 2588). The Tanner Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB can designate a substance as a TAC. To date, CARB has identified over 21 TACs and has adopted the EPA's list of hazardous air pollutants as TACs. Once a TAC is identified, CARB then adopts an airborne toxics control measure for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate best available control technology for toxics to minimize emissions. None of the TACs identified by CARB have a safe threshold.

Under the Air Toxics "Hot Spots" Act existing facilities that emit air pollutants above specified levels were required to (1) prepare a TAC emission inventory plan and report, (2) prepare a risk assessment if TAC emissions were significant, (3) notify the public of significant risk levels, and (4) if health impacts were above specified levels, prepare and implement risk reduction measures.

California Health and Safety Code Section 41700

This section of the Health and Safety Code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health, or safety of any of those persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. This section also applies to sources of objectionable odors.

Local

San Diego Air Pollution Control District

While CARB is responsible for the regulation of mobile emission sources within the state, local AQMDs and APCDs are responsible for enforcing standards and regulating stationary sources. The project site is located within the SDAB and is subject to the guidelines and regulations of the SDAPCD.

In San Diego County, O_3 and particulate matter are the pollutants of main concern, since exceedances of CAAQS for those pollutants are experienced here in most years. For this reason, the SDAB has been designated as a nonattainment area for the state PM_{10}, $PM_{2.5}$, and O_3 standards. The SDAB is also a federal O_3 attainment (maintenance) area for 1997 8-hour O_3 standard, an O_3 nonattainment area for the 2008 8-hour O_3 standard, and a CO maintenance area (western and central part of the SDAB only). The project area is in the CO maintenance area.

The SDAPCD and the San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the AAQS in the SDAB. The County Regional Air Quality Strategy (RAQS) was initially adopted in 1991, and is updated on a triennial basis, most recently in 2009 (SDAPCD 2009a). The RAQS outlines SDAPCD's plans and control measures designed to attain the state air quality standards for O_3. The RAQS relies on information from CARB and SANDAG, including mobile and area source emissions, and information regarding projected growth in the cities and San Diego County, to project future emissions and determine the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth

projections are based on population, vehicle trends, and land use plans developed by the cities and San Diego County as part of the development of their general plans.

The *Eight-Hour Ozone Attainment Plan for San Diego County* indicates that local controls and state programs would allow the region to reach attainment of the federal 1997 8-hour O_3 standard by 2009 (SDAPCD 2007). In this plan, SDAPCD relies on the RAQS to demonstrate how the region will comply with the federal O_3 standard. The RAQS details how the region will manage and reduce O_3 precursors (oxides of nitrogen (NO_x) and VOCs) by identifying measures and regulations intended to reduce these contaminants. The control measures identified in the RAQS generally focus on stationary sources; however, the emissions inventories and projections in the RAQS address all potential sources, including those under the authority of CARB and the EPA. Incentive programs for reduction of emissions from heavy-duty diesel vehicles, off-road equipment, and school buses are also established in the RAQS. According to the *Redesignation Request and Maintenance Plan for the 1997 National Ozone Standard for San Diego County*, the SDAB did not reach attainment of the federal 1997 standard until 2011 (SDAPCD 2012). This plan, however, demonstrates the region's attainment of the 1997 O_3 NAAQS and outlines the plan for maintaining attainment status.

In December 2005, SDAPCD prepared a report titled *Measures to Reduce Particulate Matter in San Diego County* to address implementation of Senate Bill (SB) 656 in San Diego County (SB 656 required additional controls to reduce ambient concentrations of PM_{10} and $PM_{2.5}$) (SDAPCD 2005). In the report, SDAPCD evaluated the implementation of source-control measures that would reduce particulate matter emissions associated with residential wood combustion; various construction activities including earthmoving, demolition, and grading; bulk material storage and handling; carryout and trackout removal and cleanup methods; inactive disturbed land; disturbed open areas; unpaved parking lots/staging areas; unpaved roads; and windblown dust.

As stated earlier, the SDAPCD is responsible for planning, implementing, and enforcing federal and state ambient standards in the SDAB. The following rules and regulations apply to all sources in the jurisdiction of SDAPCD:

- **SDAPCD Regulation IV: Prohibitions; Rule 51: Nuisance.** Prohibits the discharge, from any source, of such quantities of air contaminants or other materials that cause or have a tendency to cause injury, detriment, nuisance, annoyance to people and/or the public, or damage to any business or property (SDAPCD 1969).
- **SDAPCD Regulation IV: Prohibitions; Rule 55: Fugitive Dust.** Regulates fugitive dust emissions from any commercial construction or demolition activity capable of generating fugitive dust emissions, including active operations, open storage piles, and

inactive disturbed areas, as well as track-out and carry-out onto paved roads beyond a project site (SDAPCD 2009b).

- **SDAPCD Regulation IV: Prohibitions; Rule 67.0.1: Architectural Coatings.** Requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories (SDAPCD 2015).

5.2.4 THRESHOLDS OF SIGNIFICANCE

The State of California has developed guidelines to address the significance of air quality impacts based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.), which provides guidance that a project would have a significant environmental impact if it would:

1. Conflict with or obstruct the implementation of the applicable air quality plan;
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for O_3 precursors);
4. Expose sensitive receptors to substantial pollutant concentrations; or
5. Create objectionable odors affecting a substantial number of people.

SDAPCD

As part of its air quality permitting process, the SDAPCD has established thresholds in Rule 20.2 requiring the preparation of Air Quality Impact Assessments for permitted stationary sources. The SDAPCD sets forth quantitative emission thresholds below which a stationary source would not have a significant impact on ambient air quality. Project-related air quality impacts estimated in this environmental analysis would be considered significant if any of the applicable significance thresholds presented in Table 5.2-5, SDAPCD Air Quality Significance Thresholds, are exceeded.

For CEQA purposes, these screening criteria can be used as numeric methods to demonstrate that a project's total emissions would not result in a significant impact to air quality.

Table 5.2-5
SDAPCD Air Quality Significance Thresholds

Construction Emissions			
Pollutant	*Total Emissions (Pounds per Day)*		
Respirable Particulate Matter (PM_{10})	100		
Fine Particulate Matter ($PM_{2.5}$)	55		
Oxides of Nitrogen (NO_x)	250		
Oxides of Sulfur (SO_x)	250		
Carbon Monoxide (CO)	550		
Volatile Organic Compounds (VOC)	137*		
Operational Emissions			
Pollutant	*Total Emissions*		
	Pounds per Hour	*Pounds per Day*	*Tons per Year*
Respirable Particulate Matter (PM_{10})	—	100	15
Fine Particulate Matter ($PM_{2.5}$)	—	55	10
Oxides of Nitrogen (NO_x)	25	250	40
Sulfur Oxides (SO_x)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	—	3.2	0.6
Volatile Organic Compounds (VOC)	—	137*	13.7

Sources: City of San Diego 2011; SDAPCD 1998.

* VOC threshold based on the significance thresholds recommended by the Monterey Bay Unified Air Pollution Control District for the North Central Coast Air Basin, which has similar federal and state attainment status as the SDAB for O_3.

The thresholds listed in Table 5.2-5 represent screening-level thresholds that can be used to evaluate whether project-related emissions would cause a significant impact on air quality. Emissions below the screening-level thresholds would not cause a significant impact. In the event that emissions exceed these thresholds, modeling would be required to demonstrate that the project's total air quality impacts result in ground-level concentrations that are below the CAAQS and NAAQS, including appropriate background levels. For non-attainment pollutants, if emissions exceed the thresholds shown in Table 5.2-5, the project could have the potential to result in a cumulatively considerable net increase in these pollutants and thus could have a significant impact on the ambient air quality.

SDAPCD Rule 51 (Public Nuisance) prohibits emission of any material that causes nuisance to a considerable number of persons or endangers the comfort, health, or safety of any person. A project that includes a use that would produce objectionable odors would be deemed to have a significant odor impact if it would affect a considerable number of off-site receptors.

City of San Diego

In order to determine the significance of the project's emissions on the environment, the City's *California Environmental Quality Act Significance Determination Thresholds* (City of San Diego 2011) were used.

The City's thresholds are consistent with the thresholds contained in Appendix G of CEQA Guidelines, with the addition of the following threshold:

6. Release substantial quantities of air contaminants beyond the boundaries of the premises upon which the stationary source emitting the contaminants is located.[2]

The potential for the project to release substantial quantities of air contaminants under the aforementioned threshold is addressed in the analysis of the project-generated criteria air pollutant emissions, toxic air contaminant emissions, and odors, as appropriate, in the impacts evaluation (Sections 5.2.8, 5.2.11, 5.2.14).

The SDAPCD Air Quality Significance Thresholds shown in Table 5.2-5 were used to determine significance of project-generated construction and operational criteria air pollutants; specifically, the project's potential to violate any air quality standard or contribute substantially to an existing or projected air quality violation (as assessed under the threshold criterion 2). In regards to the analysis of potential impacts to sensitive receptors, the City specifically recommends consideration of sensitive receptors in locations such as day care centers, schools, retirement homes, and hospitals, or medical patients in residential homes close to major roadways or stationary sources, which could be impacted by air pollutants. The City of San Diego also states that the significance of potential odor impacts should be determined based on what is known about the quantity of the odor compound(s) that would result from the project's proposed use(s), the types of neighboring uses potentially affected, the distance(s) between the project's point source(s) and the neighboring uses such as sensitive receptors, and the resultant concentration(s) at the receptors.

The air quality section of the City's *Significance Determination Thresholds* recognizes that the SDAB is in non-attainment status for both ozone and particulate matter. As such, the document recognizes that all new projects should include measures, pursuant to CEQA, to reduce project-

[2] San Diego Municipal Code, Chapter 14, Article 2, Division 7, — Off-Site Development Impact Regulations paragraph 142.0710 — Air Contaminant Regulations, which states: "Air contaminants including smoke, charred paper, dust, soot, grime, carbon, noxious acids, toxic fumes, gases, odors, and particulate matter, or any emissions that endanger human health, cause damage to vegetation or property, or cause soiling shall not be permitted to emanate beyond the boundaries of the premises upon which the use emitting the contaminants is located" (Added 12-9-1997 by O-18451 N.S.; effective 1-1-2000)

related ozone and particulate matter emissions to ensure new development does not contribute to San Diego's non-attainment status for these pollutants.

5.2.5 IMPACTS

Issue 1: Would the Pure Water Program conflict with or obstruct the implementation of the applicable air quality plan?

As stated in Section 5.2.3, the SDAPCD and SANDAG are responsible for developing and implementing the clean air plans for attainment and maintenance of the AAQS in the SDAB; specifically, the SIP and RAQS.[3] The federal O_3 maintenance plan, which is part of the SIP, was adopted in 2012. The SIP includes a demonstration that current strategies and tactics will maintain acceptable air quality in the SDAB based on the NAAQS. The RAQS was initially adopted in 1991 and is updated on a triennial basis (most recently in 2009). The RAQS outlines SDAPCD's plans and control measures designed to attain the state air quality standards for O_3. The SIP and RAQS rely on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in San Diego County and the cities in county, to project future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by San Diego County and the cities in the county as part of the development of their general plans.

If a project involves development that is greater than that anticipated in the local plan and SANDAG's growth projections, the project might be in conflict with the SIP and RAQS and may contribute to a potentially significant cumulative impact on air quality. The proposed Program may potentially be inconsistent with the existing zoning and General Plan land use designations for one or more of the project component locations in each jurisdiction in which the Program would occur. However, the Program would neither include a residential component that would increase local population growth, nor provide additional water supplies that would result in growth-inducing effects; rather, the Program would provide a replacement water source for the City of San Diego's existing water supply.

Implementation of the Program would result in an increase in employment of 65 personnel at each of the three AWPFs and 76 personnel at the CAWRP to operate the facilities. Therefore, the Program would result in a total of 271 new employees. The SANDAG Regional Comprehensive

[3] For the purpose of this discussion, the relevant federal air quality plan is the ozone maintenance plan (SDAPCD 2012). The RAQS is the applicable plan for purposes of state air quality planning (SDAPCD 2009a). Both plans reflect growth projections in the SDAB.

Plan, adopted in 2004, included a public facilities goal to "have a diversified water supply with a broad range of water resources including water recycling" (SANDAG 2004). To achieve their objective to "ensure a safe, sufficient, reliable, and cost-effective water supply for the San Diego Region," the Regional Comprehensive Plan further states as one of the recommended actions pursuant to this objective is to "maximize water resources through diversification strategies such as transfer agreements, water recycling and reclamation, seawater desalination, and sustainable groundwater development" (SANDAG 2004). Accordingly, it is reasonable to assume that the associated increase in employees to achieve the goal of diversifying water supplies using recycling and reclamation was included in the overall future growth projections for the region. San Diego County's population and employment base have grown and are expected to continue to grow at moderate rates. The County's population is projected to grow to 3.8 million by 2030, an additional increase of approximately 35.7% (SANDAG 2011). Because the County's employment base is projected to grow, and Program facilities and associated employment positions would be introduced incrementally over the Program's 12- to 13-year implementation period, new employees associated with the Program facilities would be gradually accommodated by the local population over time (i.e., within the City or County) and thus, would be included in the future growth projections for the County. Additionally, the addition of 271 employees to a regional population of 1.3 million residents is not considered a substantial increase in employment population such that implementation of local air quality strategies and air quality attainment goals cannot be achieved. However, it is too speculative to conclude that all employees would be local. As stated earlier, the Program does not include a residential component and the availability of water from the Program is not anticipated to have a substantial effect on growth planning within the City of San Diego.

The anticipated increase in the local employment base of 271 workers and associated vehicle source emissions is not anticipated to result in air quality impacts that were not envisioned in the growth projections and regional air quality strategies, and this minor increase in employment in the region would not obstruct or impede implementation of local air quality plans. Based on the nature of the proposed water utilities infrastructure improvements, and the incremental and gradual introduction of these new facilities and associated employment positions, implementation of the Program would not result in development in excess of that anticipated in local plans or increases in population/housing growth beyond those contemplated by SANDAG.

5.2.6 SIGNIFICANCE OF IMPACTS

Vehicle trip generation and planned development for the various project component locations is considered to be anticipated in the SIP and RAQS. Because the proposed land uses and associated vehicle trips are anticipated in local air quality plans, the Program would be consistent at a regional level with the underlying growth forecasts in the RAQS. As such, the Program

would not conflict with or obstruct implementation of a local air quality plan, and therefore, impacts associated with consistency of local plans would be **less than significant**.

5.2.7 MITIGATION, MONITORING, AND REPORTING

Impacts would be less than significant; therefore, no mitigation is required.

5.2.8 IMPACTS

Issue 2: Would the Pure Water Program result in a violation of any air quality standard or contribute substantially to an existing or projected air quality violation?

Issue 5: Would the Pure Water Program exceed 100 pounds per day of respirable particulate matter (PM_{10}) or 55 pounds per day of fine particulate matter ($PM_{2.5}$)?

Construction Impacts

Construction of the Program components would result in a temporary addition of pollutants to the local airshed caused by soil disturbance, fugitive dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions. Fugitive dust (PM_{10} and $PM_{2.5}$) emissions would primarily result from grading and site preparation activities. NO_x and CO emissions would primarily result from the use of construction equipment and motor vehicles.

Emissions from the construction phase of Program components were estimated using the California Emissions Estimator Model (CalEEMod) Version 2013.2.2, available online (www.caleemod.com). For the purposes of modeling, it was assumed that construction of Program components would commence in May 2019 and would occur intermittently over an approximately 13-year period; however, final commissioning and facility testing could continue to occur following completion of construction activities, and final facilities may come online as late as December 2035. It is anticipated that the 83 MGD[4] "buildout" of the Program would be completed at this time. Precise project-level construction schedule and phasing details are not known at this time.

[4] Although at least 83 MGD would be produced under the Pure Water Program, for the purposes of emissions calculations, 84.4 MGD was analyzed to account for an additional 1.4 MGD of recycled water to be generated at the NCAWPF.

The North City Advanced Water Purification Facility (NCAWPF) is anticipated to produce 31.4 MGD of purified water. Of the 31.4 MGD of purified water produced at the NCAWPF, 1.4 MGD would be diverted for non-potable reuse purposes. The Central Area Advanced Water Purification Facility (CAAWPF) is anticipated to produce between 38 to 53 MGD of purified water, and the South Bay Advanced Water Purification Facility (SBAWPF) is anticipated to produce up to 15 MGD of purified water.

Table 5.2-6 provides the conceptual construction timeline and potential phasing of the components that would come online to achieve the target milestones. The conceptual construction schedule has been developed based on available information, typical construction practices, and best engineering judgment. Conceptual construction phasing is intended to represent a general schedule of anticipated activities for use in estimating potential Program-generated construction emissions. Construction phasing and assumptions would be refined once final system programming and project-level design have been achieved. Subsequent project-level analysis would be conducted at that time as well.

Table 5.2-6
Conceptual Pure Water Program Construction Phasing Assumptions

Facility	Construction Begin	Construction Complete
North City Component		
NCAWPF	May 2019	May 2021
San Vicente Purified Water Pipeline	May 2019	May 2022
Mission Trails Booster Station	May 2019	May 2020
San Vicente Tunnel	May 2019	May 2022
Morena Boulevard Pump Station	May 2019	May 2020
WW Force Main and Brine Pipeline	May 2019	May 2021
NCWRP Expansion	May 2019	November 2020
North City Cogeneration Facilities Expansion	November 2020	February 2022
Central Area Component		
Central Area Water Reclamation Plant (CAWRP)	July 2025	December 2027
Central Area Tertiary Water Pipeline and Brine Pipeline	February 2026	January 2028
Sludge Conveyance	February 2026	January 2028
CAAWPF	April 2026	March 2028
Central Area Purified Water Pipeline	May 2026	April 2028
Alvarado WTP Booster Station	May 2026	May 2027
Point Loma Wastewater Treatment Plant (PLWTP) Improvements	May 2026	April 2028
MBC Improvements	May 2026	August 2027
Central Area SDG&E Power Supply Improvements	April 2026	March 2028
South Bay Component		
South Bay Influent Pump Station and Force Main	November 2029	October 2031
SBWRP Expansion	November 2029	October 2031

Table 5.2-6
Conceptual Pure Water Program Construction Phasing Assumptions

Facility	Construction Begin	Construction Complete
SBAWPF	August 2029	July 2031
South Bay Purified Water Pipeline	February 2030	February 2032
Otay Reservoir Booster Station	February 2030	February 2031
South Bay Solids Processing Facility	July 2029	January 2032
South Bay SDG&E Power Supply Improvements	July 2029	January 2032

Because this analysis was conducted at a program level, specific details on project-level design, schedule, construction methods, etc., were not known at the time of analysis. Therefore, in order to estimate the potential effects of construction on air quality, typical construction equipment used for similar water infrastructure projects are shown in Tables 5.2-7, 5.2-8, and 5.2-9, and reflect the construction of Program-related components such as pipelines, pump stations, and AWPF/WRPs and existing facility improvements, respectively. Equipment mix assumptions for construction activity are based on typical infrastructure construction practices, review of related projects conducted in the Southern California area,[5] and CalEEMod default equipment, where appropriate. The equipment mix is meant to represent a reasonably conservative estimate of construction activity. For the analysis, it is generally assumed that heavy construction equipment would be operating at the site for approximately 8 hours per day, 5 days per week. Default assumptions provided in CalEEMod were utilized to determine worker trips for each potential construction phase during pipeline, pump station, and facility construction. Generally, one worker per piece of construction equipment, a foreman, and several additional workers would be anticipated on a daily basis. Additionally, it was assumed approximately two vendor trucks per day would be required for general material deliveries, and approximately five haul trucks per day would be required when backfill/slurry deliveries would occur, if necessary. To conservatively estimate potential daily emissions, it was assumed pipelines and force main facilities would be constructed simultaneously with other construction components including pump stations and treatment facilities.

[5] City of Vista 2008 Sewer Master Plan Update (Dudek 2008); Vallecitos Water District 2008 Water, Wastewater and Recycled Water Master Plan PEIR (PBS&J 2011); Plano Lift Station Force Main Relocation Project (Dudek 2013a); El Toro Water District Recycled Water Distribution System Expansion Project and Addendum (Dudek 2012a; Dudek 2014); El Toro Water District Recycled Water Tertiary Treatment Plant (Dudek 2012b); Lee Lake Water District Temescal Canyon and Dawson Canyon Pipelines and Non-Potable Water Tank Project (Dudek 2012c); South Pasadena Sewer Rehabilitation and Replacement Project (Dudek 2013b); Carpinteria Sanitary District West Padaro Lane Main Sewer Extension Project (Dudek 2013c); and South Orange County Wastewater Authority Export Sludge Force Main Replacement Project (Dudek 2013d).

Pipelines

Pipeline construction would require both open-trench construction and trenchless tunneling depending on the location of the pipeline to be installed. A description of construction activities and equipment associated with each of these methods is provided.

Open Trench

Open-trench construction would involve an open trench to be dug for the direct installation of pipeline. The sequence of activities for open-trench pipeline construction would typically commence with trenching and excavation, followed by pipe installation and covering of the installed pipe, and concluding with paving the pipeline corridor area of disturbance. For the purposes of quantifying emissions from daily construction activity associated with pipeline construction, it was assumed that each contractor would complete construction of approximately 150 to 200 linear feet of pipeline per day; however, daily activity and linear feet installed would vary depending on field conditions, site/easement access, and other factors associated with continual site location changes. Assuming concurrent construction by two contractors, approximately 300 to 400 linear feet of pipeline installation could occur each day depending on the component under construction and total linear feet of pipeline or conveyance infrastructure to be constructed over a given period.[6] For the purposes of modeling, it was assumed that paving activities would occur for approximately 2 weeks every 6 months over a given construction period throughout the pipeline installation phases. It was also assumed that after pipe installation is completed, a portion of the paved roads would require light grading and reapplication of pavement, which was assumed to occur during the last month of pipeline construction for each project component. In addition, for the purposes of estimating emissions, it was assumed that typical open trench construction phasing would occur as follows:

- Trenching and excavation would be ongoing throughout pipeline construction phase
- Pipe installation would occur intermittently as trenching and excavation activities occur throughout the pipeline construction phase
- Paving, intermittent – approximately 2 weeks every 6 months for duration of pipeline construction
- Final paving – 1 month at the end of the construction phase

For the purposes of estimating daily construction activity and associated emissions from off-road equipment during open trench pipeline construction, it was assumed that the equipment mix

[6] Linear feet per day assumptions based on typical construction practices for pipeline construction, and review of related projects as listed in footnote 3.

shown in Table 5.2-7, or similar equipment, would be employed. Table 5.2-7 presents the number of equipment per potential contractor and total equipment, assuming simultaneous construction by two contractors working on several portions of a given project alignment. Due to the length of the alignment, it was assumed that two contractors would potentially be required for construction of the North City alignment, and one contractor each for the South Bay and Central Area alignments, as these alignments require fewer linear feet of total pipeline.

Table 5.2-7
Construction Equipment – Open Trench

Construction Phase	Equipment	Quantity per Contractor	Total Equipment*
Trenching	Dozers	1	2
	Excavators	1	2
	Tractors/loaders/backhoes	2	4
	Trenchers	1	2
Installation	Crane	1	2
	Forklift	1	2
	Tractors/loaders/backhoes	1	2
Paving (continual)	Pavers	1	2
	Rollers	1	2
	Paving equipment	1	2

* Assumes simultaneous construction by two contractors for worst-case daily construction scenario.

Additionally, it was assumed approximately two vendor trucks per day would be required for general material deliveries, and approximately five haul trucks per day would be required for backfill/slurry deliveries and soil export.

Trenchless Tunneling

Trenchless tunneling would involve the excavation of a portal at either end of the pipeline segment to be installed, where the pipeline would be fed through and connected. The sequence of activities for trenchless tunneling construction would typically commence with site preparation of the first portal location followed by excavation of the portal. Excavation of the tunnel would occur following portal excavation. It is assumed all excavated material would be hauled off site. The second portal location would then be prepped and excavated. Installation of pipeline would occur once the tunnel has been fully excavated and portals are clear. The pipeline would then be connected, and the portal sites would be restored to their pre-construction condition. Trenchless tunneling practices would be employed for the 1-mile San Vicente Tunnel as well as specific segments of other pipeline alignments such as freeway or waterway crossings or within avoidance areas where ground disturbance (i.e., an open trench) is not permitted such as wetlands or other environmentally sensitive locations.

For the purposes of estimating emissions, it was assumed that typical construction phasing would occur as follows during tunneling:

- Site preparation at first portal site
- Excavation of first portal site
- Tunnel excavation
- Site preparation at second portal site
- Excavation of second portal site
- Pipeline installation
- Pipeline connection
- Site restoration

Phase durations would depend on the location of the site to be tunneled. For the purposes of estimating daily construction activity and associated emissions from off-road equipment during tunneling activities, it was assumed that the equipment mix shown in Table 5.2-8, or similar equipment, would be employed.

Table 5.2-8
Construction Equipment – Tunneling

Construction Phase	Equipment	Total Equipment
Site Preparation at Portal Sites	Scraper	1
	Grader	1
	Tractors/Loaders/Backhoes	1
Portal Excavation	Dozer	1
	Excavator	1
	Tractors/Loaders/Backhoes	1
	Trencher	1
	Crushing/Processing Equipment	1
Tunnel Excavation	Dozer	1
	Excavator	1
	Tractors/Loaders/Backhoes	1
	Trencher	1
	Crushing/Processing Equipment	1
Pipe Installation	Tractors/Loaders/Backhoes	1
	Crane	1
	Welders	2
Pipe Connections	Other General Industrial Equipment	4
Site Restoration	Tractors/Loaders/Backhoes	1

Additionally, it was assumed that approximately two vendor trucks per day would be required for general material deliveries, and approximately five haul trucks per day would be required for backfill/slurry deliveries and soil export.

Pump Stations

For the purposes of estimating emissions, it was assumed that pump stations would take an average of 12 months to construct. Typical construction phasing would occur as follows:

- Site preparation and grading (4 weeks)
- Pump station construction (10 months)
- Paving (4 weeks)

For the purposes of estimating daily construction activity and associated emissions from off-road equipment, it was assumed that the equipment shown in Table 5.2-9, or similar equipment, would be employed for the construction of a single pump station. For components that would involve the construction of more than one pump station, it was assumed that multiple pump stations would be constructed simultaneously. Additionally, it was assumed that approximately two vendor trucks per day would be required for general material deliveries and five haul trucks per day would be required for soil export and other material hauling during pump station construction.

Table 5.2-9
Construction Equipment – Pump Stations

Construction Phase	Equipment	Total Equipment
Site preparation/grading	Dozers	1
	Tractors/loaders/backhoes	1
Facility construction	Excavator	1
	Tractors/loaders/backhoes	1
	Forklifts	1
	Pumps	1
	Welders	2
Paving	Pavers	1
	Rollers	1
	Paving equipment	1

Treatment Facilities

For the purposes of estimating emissions it was assumed that construction of new facilities such as AWPFs and the CAWRP would take approximately 24 to 36 months. Typical construction phasing would occur as follows during facility construction:

- Site preparation (4 weeks)
- Grading (8 weeks)
- Facility construction (28 – 36 months)
- Paving (4 weeks)

Improvements to existing facilities would take approximately 15 to 30 months depending on the type of facility and scope of facility improvements.

For the purposes of estimating daily construction activity and associated emissions from off-road equipment, it was assumed that the equipment shown in Table 5.2-10 would be employed during construction of AWPFs, the CAWRP, PLWTP upgrades, MBC Improvements, South Bay Solids Processing Facility, and SDG&E improvements. For components that would involve the construction or upgrade of more than one facility, it was assumed that multiple facilities would be constructed simultaneously.

Table 5.2-10
Construction Equipment –Treatment Facilities

Construction Phase	Equipment	Total Equipment
Site preparation	Dozers	1
	Tractors/loaders/backhoes	1
Grading	Excavators	1
	Tractors/loaders/backhoes	2
	Dozers	1
	Compactors	1
Facility construction	Cranes	1
	Forklifts	1
	Generator sets	1
	Tractors/loaders/backhoes	2
	Welders	2
Paving	Pavers	1
	Paving equipment	1

Additionally, it was assumed that approximately two vendor trucks per day would be required for general material deliveries, and approximately five haul trucks per day would be required for soil export and other material hauling, if necessary.

A detailed depiction of the program-level, conceptual construction schedule — including information regarding subphases and equipment assumed for each subphase — is included in Appendix B of this document. The information contained in Appendix B was used as CalEEMod model inputs.

Construction of Program components would be subject to SDAPCD Rule 55 – Fugitive Dust Control. This rule requires that construction of Program components include steps to restrict visible emissions of fugitive dust beyond the property line (SDAPCD 2009b). Compliance with Rule 55 would limit fugitive dust (PM_{10} and $PM_{2.5}$) that may be generated during grading and construction activities. Construction of Program components would also be subject to SDAPCD Rule 67.0.1 – Architectural Coatings. This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories (SDAPCD 2015).

Table 5.2-11, Estimated Maximum Daily Construction Emissions - Unmitigated, shows the estimated maximum unmitigated daily construction emissions associated with the conceptual construction phases of the Program. As discussed above, both open trench and trenchless construction methods were modeled for pipeline construction since each alignment is anticipated to be constructed using a combination of methods. Other than the San Vicente Tunnel, which is anticipated to be constructed using entirely trenchless methods, for each pipeline alignment, the highest daily emissions are reported in Table 5.2-11. Complete details of the emissions calculations are provided in Appendix B of this document.

Table 5.2-11
Estimated Maximum Daily Construction Emissions - Unmitigated (pounds per day)

	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
North City Component						
NCAWPF	2.05	20.90	19.46	0.03	7.65	4.34
San Vicente Purified Water Pipeline	7.42	75.26	66.06	0.10	10.65	7.04
Mission Trails Booster Station	1.90	13.69	14.46	0.02	6.76	3.94
San Vicente Tunnel	2.11	22.92	16.27	0.03	2.03	1.27
Morena Boulevard Pump Station	1.90	13.69	14.46	0.02	6.76	3.94

Table 5.2-11
Estimated Maximum Daily Construction Emissions - Unmitigated (pounds per day)

	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
WW Force Main and Brine Pipeline	7.42	75.22	66.03	0.10	17.07	10.63
NCWRP Expansion	2.58	20.59	19.41	0.03	6.97	4.02
North City Cogeneration Facilities Expansion	1.90	14.62	14.52	0.02	6.90	3.96
Maximum Daily Emissions – North City Component	***27.28***	***256.90***	***230.67***	***0.35***	***64.78***	***39.15***
Emission Threshold	*137*	*250*	*550*	*250*	*100*	*55*
Threshold Exceeded?	No	**Yes**	No	No	No	No
Central Area Component						
CAWRP	1.32	11.34	15.62	0.03	7.42	3.90
Central Area Tertiary Water Pipeline and Brine Pipeline	1.28	11.29	15.20	0.03	1.33	0.76
Sludge Conveyance	1.12	8.40	13.82	0.02	6.42	3.63
CAAWPF	1.31	11.32	15.58	0.03	7.08	3.86
Central Area Purified Water Pipeline	2.51	22.04	30.42	0.06	5.00	2.69
Alvarado WTP Booster Station	1.12	8.40	13.82	0.02	6.42	3.63
PLWTP Improvements	1.24	10.03	13.73	0.02	6.62	3.71
MBC Improvements	1.24	10.03	13.73	0.02	6.62	3.71
Central Area SDG&E Power Supply Improvements	1.28	10.98	15.02	0.03	6.84	3.82
Maximum Daily Emissions – Central Area Component	***12.41***	***103.83***	***146.95***	***0.27***	***53.76***	***29.71***
Emission Threshold	137	250	550	250	100	55
Threshold Exceeded?	No	No	No	No	No	No
South Bay Component						
South Bay Influent Pump Station and Force Main	1.12	8.40	14.14	0.02	6.42	3.63
SBWRP Expansion	1.47	11.61	15.88	0.03	6.78	3.72
SBAWPF	2.57	23.71	25.64	0.04	28.31	15.89
South Bay Purified Water Pipeline	2.71	13.96	28.02	0.06	9.90	3.52
Otay Reservoir	1.04	6.26	14.14	0.02	6.23	3.47

Table 5.2-11
Estimated Maximum Daily Construction Emissions - Unmitigated (pounds per day)

	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Booster Station						
South Bay Solids Processing Facility	1.35	11.29	15.49	0.03	6.96	3.85
South Bay SDG&E Power Supply Improvements	2.57	14.35	27.74	0.06	7.04	3.89
Maximum Daily Emissions – South Bay Component	***12.83***	***89.58***	***141.05***	***0.28***	***71.64***	***37.97***
Emission Threshold	137	250	550	250	100	55
Threshold Exceeded?	No	No	No	No	No	No
Maximum Daily Emissions For Entire Construction Period of Program	***27.28***	***256.90***	***230.67***	***0.35***	***64.78***	***39.15***
Emission Threshold	137	250	550	250	100	55
Threshold Exceeded?	No	**Yes**	No	No	No	No

Source: CalEEMod Version 2013.2.2. See Appendix B for complete results.
The values shown are the maximum summer or winter daily emissions results from CalEEMod.
VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter

As shown in Table 5.2-11, daily construction emissions for the Program would not exceed the City of San Diego's significance thresholds for VOC, CO, SO_x, PM_{10}, or $PM_{2.5}$. However, daily construction emissions for the Program would exceed the threshold for NO_x during construction of the North City component.

Operational Impacts

Mobile Sources (Motor Vehicles)

Following the completion of construction activities, the Program would generate VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from mobile sources (vehicular traffic), as a result of 195 new employees associated with the AWPF facilities (65 new employees per AWPF facility) associated operation and maintenance activities and 76 new employees to operate the CAWRP. It was assumed 271 additional staff per new manned facility would result in approximately 542 one-way trips during project operation. Additionally, operational trips would be generated as a result of routine maintenance, periodic inspections and repairs of system facilities, monitoring, brush maintenance, and other operational procedures similar to those under the City's current

water and wastewater treatment and conveyance system. It was assumed that only a minor increase in operations and maintenance trips (in addition to the 542 new employees) would be required; therefore, it was assumed on a worst-case day that an additional 30 operations and maintenance-related trips would occur. In total, Program operations would be expected to generate approximately 572 average daily trips across the entire Program area.

The CalEEMod Version 2013.2.2 model was used to estimate daily emissions from proposed vehicular sources (refer to Appendix B). CalEEMod Version 2013.2.2 default data, including temperature, trip characteristics, variable start information, emissions factors, and trip distances, were conservatively used for the model inputs. Program-related traffic was assumed to include a mixture of vehicles in accordance with the model outputs for traffic. Emission factors representing the vehicle mix and emissions for 2023 were conservatively used to estimate emissions associated with vehicular sources. The 2023 operational year represents the first phase of the Program that would come online associated with the initial 15 MGD.

Diesel Generators

In addition to operational emissions from vehicular sources, it was conservatively assumed that new diesel-powered emergency generators would be required for back-up power at the new CAWRP, AWPFs and the nine proposed pump station locations. The NCAWPF and SBAWPF would have separate power sources provided by SDG&E. Power at some reclamation facilities would use a combination of on-site generation and supplemental power supplied by SDG&E. The CAAWPF and pump stations would be powered by SDG&E power. Based on review of similar water and wastewater infrastructure projects in Southern California, it was assumed that approximately two emergency generators per facility location would be required for appropriate back-up power supply (2 generators located at the CAWRP, 2 generators per AWPF, and 2 generators per pump station = 18 new generators total). For the purposes of a conservative analysis, it was assumed that generators would be approximately 1,000 horsepower with a kilowatt rating of 750; however, most pump station generators would likely be smaller (between 300–500 horsepower) (PBS&J 2011). Moreover, pump stations installed for advanced purified water conveyance would require less power than pump stations designed for wastewater conveyance due to substantially reduced flows at advanced purified water facilities (City of San Diego 2012). It was assumed that generators would only be used for emergency back-up power in the event of power outages, as well as for routine testing and maintenance. CARB's Airborne Toxic Control Measure for stationary diesel engines restricts diesel engine operation for testing and maintenance to 50 hours per year, unless a diesel particulate filter is used to reduce PM_{10} emissions (CARB 2011). Thus, it was assumed that the engines would operate up to 50 hours per year (1 hour per week, 50 weeks per year) for testing and maintenance. Emission factors were

obtained from the CalEEMod User's Guide, Appendix D, for generators over 1,001 horsepower operating in 2023 (first year of first phase of Program operation).

Table 5.2-12, Estimated Daily Maximum Operational Emissions – Mitigated, presents the maximum daily emissions associated with the operation of the Program after all phases of construction have been completed. Complete details of the emissions calculations are provided in Appendix B of this document.

Table 5.2-12
Estimated Daily Maximum Operational Emissions – Mitigated

Emission Source	VOC (pounds/day)	NO_x (pounds/day)	CO (pounds/day)	SO_x (pounds/day)	PM_{10} (pounds/day)	$PM_{2.5}$ (pounds/day)
Mobile sources	1.86	4.01	20.53	0.07	5.12	1.42
Diesel generators	6.04	95.19	32.09	0.16	1.81	1.81
Total	**7.90**	**99.20**	**52.62**	**0.23**	**6.93**	**3.23**
Emission Threshold	*137*	*250*	*550*	*250*	*100*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: See Appendix B for complete results.

Emissions represent maximum of summer and winter. "Summer" emissions are representative of the conditions that may occur during the ozone season (May 1 to October 31), and "winter" emissions are representative of the conditions that may occur during the balance of the year (November 1 to April 30).

5.2.9 SIGNIFICANCE OF IMPACTS

As shown in Table 5.2-11, daily construction emissions would not exceed the City of San Diego's significance thresholds for VOC, CO, SO_x, PM_{10}, or $PM_{2.5}$. Daily construction emissions would exceed the threshold for NO_x during construction of the North City component only, resulting in a **potentially significant impact**. However, it should be noted that facilities associated with the North City component (similar to the Central Area and South Bay components) would be constructed across a broad geographic area, and therefore, would generally not result in substantial NO_x emissions in any one location. To reduce NO_x emissions during construction of the North City component, implementation of Mitigation Framework measures MM-AQ-1 and MM-AQ-2 would be required (see Section 5.2.10).

As shown on Table 5.2-12, the daily operational emissions would not exceed the City's significance threshold for VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$.

5.2.10 MITIGATION, MONITORING, AND REPORTING

Mitigation Framework

MM-AQ-1 The following best management practices shall be considered in all subsequent project-level environmental analysis and implemented during construction to comply with applicable SDAPCD rules and regulations, and to further reduce daily construction emissions:

- Best available control measures that shall be implemented during construction to reduce particulate emissions and reduce soil erosion and trackout include the following:
  - Cover or water, as needed, any on-site stockpiles of debris, dirt, or other dusty material.
  - Use adequate water and/or other dust palliatives on all disturbed areas in order to avoid particle blow-off. Due to current drought conditions, the contractor shall consider use of a SDAPCD-approved dust suppressant where feasible to reduce the amount of water to be used for dust control. Use of recycled water in place of potable water shall also be considered provided that the use is approved by the City of San Diego and other applicable regulatory agencies prior to initiation of construction activity.[7] Use of recycled water shall be in compliance with all applicable City of San Diego Rules and Regulation for Recycled Water (City of San Diego 2008), particularly for the protection of public health per the California Code of Regulations, Title 22, Division 4. Wash down or sweep paved streets as necessary to control trackout or fugitive dust.
  - Cover or tarp all vehicles hauling dirt or spoils on public roads if sufficient freeboard is not available to prevent material blow-off during transport.

[7] The use of recycled water for construction purposes requires approval of the City and other regulatory agencies on a case-by-case basis. The permit shall be obtained prior to beginning construction. Recycled water used for construction purposes may only be used for soil compaction during grading operations, dust control and consolidation and compaction of backfill in trenches for non-potable water, sanitary sewer, storm drain, gas and electric pipelines. Equipment operators shall be instructed about the requirements contained herein and the potential health hazards involved with the use of recycled water. Water trucks, hoses, drop tanks, etc. shall be identified as containing non-potable water and not suitable for drinking. Determinations as to specific uses to be allowed shall be in accordance with the standards set forth in Title 22, Division 4 of the California Code of Regulations and with the intent of this ordinance to preserve the public health. The City may, at its discretion, set forth specific requirements as conditions to providing such services and/or require specific approval from the appropriate regulatory agencies. (City of San Diego 2008)

- Use gravel bags and catch basins during ground-disturbing operations.
- Maintain appropriate soil moisture, apply soil binders, and plant stabilizing vegetation.

- Additional construction measures to reduce equipment emissions may include:
  - Properly tune and maintain construction equipment.
  - Encourage carpooling by all construction workers.
  - Limit any lane closures to off-peak travel periods.
  - Park construction vehicles off traveled roadways.
  - Encourage receipt of materials during non-peak traffic hours.

MM-AQ-2 The following measures shall be implemented during construction activities associated with the San Vicente Purified Water Pipeline component to reduce oxides of nitrogen (NO_x):

a. All construction equipment shall be equipped with Tier 3, or better (i.e., Tier 4) diesel engines.

b. The engine size of construction equipment shall be the minimum size suitable for the required job.

c. Construction equipment shall be maintained in accordance with the manufacturer's specifications.

Level of Significance after Mitigation

To reduce NO_x emissions during construction of the North City component implementation of Mitigation Framework measures MM-AQ-1 and MM-AQ-2 would be required for the San Vicente Purified Water Pipeline component, because that component would result in the highest emissions of all the North City components. Table 5.2-13 shows resulting construction emissions following implementation of MM-AQ-1 and MM-AQ-2.

Table 5.2-13
Estimated Maximum Daily Construction Emissions - Mitigated (pounds per day)

	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
North City Component						
NCAWPF	2.05	20.90	19.46	0.03	7.65	4.34
San Vicente Purified Water Pipeline	2.44	45.30	62.99	0.10	8.95	5.66
Mission Trails	1.90	13.69	14.46	0.02	6.76	3.94

Table 5.2-13
Estimated Maximum Daily Construction Emissions - Mitigated (pounds per day)

	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Booster Station						
San Vicente Tunnel	2.11	22.92	16.27	0.03	2.03	1.27
Morena Boulevard Pump Station	1.90	13.69	14.46	0.02	6.76	3.94
WW Force Main and Brine Pipeline	7.42	75.22	66.03	0.10	17.07	10.63
NCWRP Expansion	2.58	20.59	19.41	0.03	6.97	4.02
North City Cogeneration Facilities Expansion	1.90	14.62	14.52	0.02	6.90	3.96
Maximum Daily Emissions – North City Component	***22.31***	***226.94***	***227.59***	***0.35***	***63.08***	***37.78***
Emission Threshold	*137*	*250*	*550*	*250*	*100*	*55*
Threshold Exceeded?	No	No	No	No	No	No
Central Area Component						
CAWRP	1.32	11.34	15.62	0.03	7.42	3.90
Central Area Tertiary Water Pipeline and Brine Pipeline	1.28	11.29	15.20	0.03	1.33	0.76
Sludge Conveyance	1.12	8.40	13.82	0.02	6.42	3.63
CAAWPF	1.31	11.32	15.58	0.03	7.08	3.86
Central Area Purified Water Pipeline	2.51	22.04	30.42	0.06	5.00	2.69
Alvarado WTP Booster Station	1.12	8.40	13.82	0.02	6.42	3.63
PLWTP Improvements	1.24	10.03	13.73	0.02	6.62	3.71
MBC Improvements	1.24	10.03	13.73	0.02	6.62	3.71
Harbor Drive SDG&E Power Supply Improvements	1.28	10.98	15.02	0.03	6.84	3.82
Maximum Daily Emissions – Central Area Component	***12.41***	***103.83***	***146.95***	***0.27***	***53.76***	***29.71***
Emission Threshold	137	250	550	250	100	55
Threshold Exceeded?	No	No	No	No	No	No
South Bay Component						
South Bay Influent Pump Station and Force Main	1.12	8.40	14.14	0.02	6.42	3.63
SBWRP Expansion	1.47	11.61	15.88	0.03	6.78	3.72

Table 5.2-13
Estimated Maximum Daily Construction Emissions - Mitigated (pounds per day)

	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
SBAWPF	2.57	23.71	25.64	0.04	28.31	15.89
South Bay Purified Water Pipeline	2.71	13.96	28.02	0.06	9.90	3.52
Otay Reservoir Booster Station	1.04	6.26	14.14	0.02	6.23	3.47
South Bay Solids Processing Facility	1.35	11.29	15.49	0.03	6.96	3.85
South Bay SDG&E Power Supply Improvements	2.57	14.35	27.74	0.06	7.04	3.89
Maximum Daily Emissions – South Bay Component	***12.83***	***89.58***	***141.05***	***0.28***	***71.64***	***37.97***
Emission Threshold	137	250	550	250	100	55
Threshold Exceeded?	No	No	No	No	No	No
Maximum Daily Emissions For Entire Construction Period	***22.31***	***226.94***	***227.59***	***0.35***	***63.08***	***37.78***
Emission Threshold	137	250	550	250	100	55
Threshold Exceeded?	No	No	No	No	No	No

As shown in Table 5.2-13, construction emissions for VOCs, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ would be less than significant for Central Area and South Bay components.

Table 5.2-13 above, shows resulting emissions when Mitigation Framework measures MM-AQ-1 and MM-AQ-2 are applied to the San Vicente Purified Water Pipeline component *only*, because that component would result in the highest emissions of all the North City components. Following implementation of Mitigation Framework measures MM-AQ-1 and MM-AQ-2 to the San Vicente Purified Water Pipeline component, construction emissions for the North City component would be reduced to **below a level of significance**.

5.2.11 IMPACTS

Issue 3: Would implementation of the Pure Water Program result in air emissions that would substantially deteriorate ambient air quality, including the exposure of sensitive receptors to substantial pollutant concentrations?

In addition to impacts from criteria pollutants, project impacts may include emissions of pollutants identified by the state and federal government as TACs or hazardous air pollutants. State law has established the framework for California's TAC identification and control program, which is generally more stringent than the federal program, and is aimed at TACs that are a problem in California. The state has formally identified more than 200 substances as TACs, including the federal hazardous air pollutants, and is adopting appropriate control measures for sources of these TACs.

The greatest potential for TAC emissions during construction would be diesel particulate emissions from heavy equipment operations and heavy-duty trucks, and the associated health impacts to sensitive receptors. The closest sensitive receptors would be any receptor located directly adjacent to the proposed alignments and associated facilities.

Health effects from carcinogenic air toxics are usually described in terms of cancer risk. The SDAPCD recommends an incremental cancer risk threshold of 10 in a million. "Incremental cancer risk" is the likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 70-year lifetime will contract cancer based on the use of standard risk-assessment methodology. Construction of Program components would not require the extensive use of heavy-duty construction equipment, which is subject to a CARB Airborne Toxics Control Measure for in-use diesel construction equipment to reduce diesel particulate emissions, and would not involve extensive use of diesel trucks, which are also subject to an Airborne Toxic Control Measure. Construction of Program components would occur in three phases of 2–3 years each and would be periodic and short term within each phase. Following completion of construction activities, project-related TAC emissions would cease. Additionally, operational diesel-powered generators would only operate during testing and maintenance periods, and during emergency power outages. Therefore, the Program would not result in a long-term (i.e., 70-year), permanent source of TAC emissions. No residual TAC emissions and corresponding cancer risk are anticipated after construction, nor are any long-term sources of TAC emissions anticipated during operation of the Program.

5.2.12 SIGNIFICANCE OF IMPACTS

Program-generation of criteria pollutants and TACs were found to be less than significant, and associated impacts to sensitive receptors would be considered **less than significant** at the program level.

5.2.13 MITIGATION, MONITORING, AND REPORTING

Impacts would be less than significant; therefore, no mitigation is required.

5.2.14 IMPACTS

Issue 4: Would the Pure Water Program create objectionable odors affecting a substantial number of people?

Odors would be generated from vehicles and/or equipment exhaust emissions during construction of the Program facilities. Odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment and architectural coatings. Such odors are temporary and for the types of construction activities anticipated for Program components, would generally occur at magnitudes that would not affect substantial numbers of people.

Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, there are no quantitative or formulaic methodologies to determine if potential odors would have a significant impact. Examples of land uses and industrial operations that are commonly associated with odor complaints include agricultural uses, wastewater treatment plants, food processing facilities, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. In addition to the odor source, the distance between the sensitive receptor(s) and the odor source, as well as the local meteorological conditions, are considerations in the potential for a project to frequently expose the public to objectionable odors. Although localized air quality impacts are focused on potential impacts to sensitive receptors, such as residences and schools, other land uses where people may congregate (e.g., workplaces), or uses with the intent to attract people (e.g., restaurants and visitor-serving accommodations), should also be considered in the evaluation of potential odor nuisance impacts.

The Program would include AWPFs, a new reclamation plant, pump stations, and upgrades to the PLWTP. AWPFs would not result in nuisance odors because the AWPFs would accommodate flows that would have undergone previous tertiary treatment. The Program would involve the construction and operation of a new reclamation plant, six new pump stations, upgrades to existing water and wastewater treatment facilities and infrastructure, and expansion of existing wastewater treatment for long-distance conveyance of wastewater that could result in minor odor impacts. The CAWRP consists of a reclamation plant located at North Harbor Drive and McCain Road, just west of the San Diego International Airport and Pump Station No. 2. The CAWRP would include primary, secondary, and tertiary treatment processes. Operation of the new CAWRP and associated pump stations could result in potential nuisance odors if facilities would be located in proximity to sensitive receptors. The CAWRP may be a potential source of odors associated with the headworks (e.g., hydrogen sulfide from collection systems, odorous compounds from preliminary and primary treatment process) and biological treatment process

(e.g., aerobic and anaerobic processes). Although the proposed reclamation plant would be located in an area that is currently industrialized and not located adjacent to receptors that may be impacted as a result of potential odor impacts, long-range plans for the surrounding areas include uses that may contain sensitive receptors in the future. Existing and future sensitive receptors and other receivers that may be adversely affected by odors in the project area may include residential land uses (e.g., single- and multi-family residences) and commercial/retail land uses (e.g., offices, restaurants, and hotels).

Some of the proposed pump stations could be potentially located near sensitive receptors and, if left unabated, could result in nuisance odors reaching receptors nearby. It is anticipated that pump stations constructed for the purpose of transporting wastewater have a higher likelihood of causing odor nuisance than pump stations transporting recycled and purified water. As such, odor abatement design measures would be implemented if pump stations constructed for wastewater conveyance are located near sensitive receptors. The odor abatement design measures that would be employed at the wastewater treatment plants and sewage pump stations would include odor control "scrubbers," carbon filters, activated carbon units, and covers and ventilation systems or similar measures to capture and treat odors from the facilities. The characteristics of odor generation for a pump station are different from those of a treatment facility, primarily due to the scale and frequency of operation. Pump stations would handle substantially less quantity of wastewater than a treatment plant, and would contain flows in a manner that would limit the release of odor-affected air. However, as the potential for odor nuisance is based on multiple factors, including potential for flow turbulence, the potential for anaerobic conditions, exposed surface area where odorous compounds may be released, and the effectiveness of the existing capture controls, pump stations have the potential to result in a similar odor nuisance impacts as treatment facilities. Accordingly, odor abatement measures would be implemented as part of final pump station design and would be constructed to abate odors.

5.2.15 SIGNIFICANCE OF IMPACTS

Impacts associated with odors during construction would be considered **less than significant**.

AWPFs would not result in nuisance odors because the AWPFs would accommodate flows that would have undergone previous tertiary treatment. However, the Program would involve new treatment facilities, such as the CAWRP and associated pump stations, and upgrades to existing facilities that could result in potential nuisance odors if facilities would be located in proximity to sensitive receptors. Therefore, mitigation is required.

5.2.16 MITIGATION, MONITORING, AND REPORTING

Mitigation Framework

MM-AQ-3 Program components shall implement odor control systems specifically designed to abate the odorous potential of the specific facility. Odor control systems shall be similar to those currently employed at City of San Diego wastewater treatment facilities and pump stations to reduce odor impacts. The following odor control systems or equivalent measures shall be implemented upon final facility design to mitigate nuisance odors:

a. Treatment plants and major pump stations: NaOCl/NaOH Wet Scrubber plus carbon or Biofilter plus carbon, or equivalent alternative.

b. Treatment plants and pump stations with lower sulfide loads: Biotrickling filter plus carbon or carbon only, or equivalent alternative.

c. Smaller municipal pump stations and air/vacuum relief valves at high points along forcemains: carbon only, or equivalent alternative.

Alternatively, odors could be abated through the addition of chemicals such as iron chloride, nitrate, hydrogen peroxide, sodium hypochlorite, high purity oxygen, magnesium hydroxide, and/or caustic solutions to reduce the liquid phase concentration and thus, reduce the amount volatilized into the gas phase.

Level of Significance after MitigationThe reclamation facility and pump stations would include an odor control system, similar to what is employed at the City's other wastewater treatment facilities and pump stations (see Mitigation Framework measure MM-AQ-3). Following implementation of MM-AQ-3, odor impacts would be reduced to **below a level of significance**.

5.3 HEALTH AND SAFETY

5.3.1 INTRODUCTION

The purpose of this health and safety section is to identify potential hazards associated with development of the Pure Water Program (Program), and to identify Mitigation Framework measures that would reduce potential impacts to a less than significant level. No Environmental Site Assessments were conducted for this Program Environmental Impact Report (PEIR), due to the large number and scale of project components.

Potential hazards associated with implementation of the Program include natural hazards such as those associated with development of a Program component in high fire hazard areas. Other potential hazards are related to human activities such as the potential for leaks or spills of raw sewage from pipelines, the potential for leaks or spills of petroleum fuels during construction and operation of the Program, the potential for the release of a hazardous substance, and the potential for disturbance of a site containing hazardous materials. The Program could also cause hazards due to its proximity to airports.

5.3.2 REGULATORY SETTING

Hazardous materials and wastes are identified and defined by federal and state regulations for the purpose of protecting public health and the environment. Hazardous materials contain certain chemical, physical, or infectious properties that cause them to be considered hazardous. Hazardous wastes are defined in the Code of Federal Regulations (CFR) Title 40, Volume 25, Parts 260–265, and in the California Code of Regulations (CCR), Title 22 Division 4.5, Chapter 11, Article 1, Section 66261. Over the years, the laws and regulations have evolved to deal with different aspects of the handling, treatment, storage, and disposal of hazardous substances.

Federal

Federal Toxic Substances Control Act of 1976 and Resource Conservation and Recovery Act of 1976

The Federal Toxic Substances Control Act of 1976 and the Resource Conservation and Recovery Act of 1976 established a program administered by the U.S. Environmental Protection Agency (EPA) for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. The Resource Conservation and Recovery Act was amended in 1984 by the Hazardous and Solid Waste Act, which affirmed and extended the "cradle-to-grave" system of regulating hazardous wastes. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by the Hazardous and Solid Waste Act (EPA 2013).

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as "Superfund," was enacted by Congress on December 11, 1980. This law provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled the revision of the National Contingency Plan. The National Contingency Plan provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The National Contingency Plan also established the National Priorities List, which is a list of contaminated sites warranting further investigation by the EPA. CERCLA was amended by the Superfund Amendments and Reauthorization Act on October 17, 1986 (EPA 2011).

Federal Aviation Administration Part 77

Title 14 of the CFR Part 77, Objects Affecting Navigable Airspace, establishes imaginary surfaces for airports and runways as a means to identify objects that are obstructions to air navigation. The Federal Aviation Administration (FAA) uses Part 77 and Terminal Instrument Procedures obstruction standards as elevations above which structures may constitute a safety problem. Part 77 regulations require that anyone proposing to construct an object, which could affect the navigable airspace around an airport that meets Part 77 notification criteria, submit information about the proposed construction to the FAA. Notification criteria includes projects that exceed an imaginary 100:1 surface within 20,000 feet of a civilian or military airport or have a height exceeding 200 feet above ground level.

When notified, the FAA then conducts an aeronautical study, the outcome of which is a determination as to whether the object would be a potential hazard to air navigation. The FAA examines the Terminal Instrument Procedures surfaces for obstructions and safety issues as part of the obstruction evaluation for a proposed project. If the proposed object is concluded to pose a hazard, the FAA may object to its construction and issue a determination of a hazard to air navigation, examine possible revisions of the proposal to eliminate the problem, require that the project be appropriately marked and lighted as an airspace obstruction, and/or initiate changes to the aircraft flight procedures for the airport so as to account for the object. In addition to structures that pose an airspace obstruction, land uses that create wildlife hazards, particularly related to birds, and land use characteristics that create visual or electronic interference with air navigation can create particular hazards to air navigation.

For property surrounding the San Diego International Airport (SDIA), the City has adopted the Airport Approach Overlay Zone. The zone provides supplemental regulations that help to ensure that the FAA obstruction evaluation program and state law is being satisfied; the Airport Authority is provided the opportunity to participate in the evaluation process conducted by the FAA and the California Department of Transportation (Caltrans); and minimum vertical buffers are provided between the FAA-established approach path and structures constructed within the Airport Approach Overlay Zone.

National Fire Protection Association 820

The National Fire Protection Association 820 provides the standard for fire protection in wastewater treatment and collection facilities. National Fire Protection Association 820 provides requirements for ventilation, construction materials and electrical equipment, as well as fire protection measures and administrative controls designed to protect wastewater treatment facilities and associated collection systems against fire and explosion hazards.

State

California Environmental Protection Agency

The California Environmental Protection Agency (CalEPA) implements and enforces a statewide hazardous materials program known as the Certified Unified Program established by Senate Bill (SB) 1802 to consolidate, coordinate, and make consistent the administrative requirements, permits, inspections, and enforcement activities for the following environmental and emergency management programs for hazardous materials:

- Hazardous Materials Release Response Plans and Inventories (Business Plans)
- California Accidental Release Prevention Program
- Underground Storage Tank Program
- Aboveground Petroleum Storage Act Requirements for Spill Prevention, Control, and Countermeasure Plans
- Hazardous Waste Generator and On-Site Hazardous Waste Treatment Programs
- California Uniform Fire Code, Hazardous Materials Management Plans, and Hazardous Material Inventory Statements

California Hazardous Waste Control Law

The California Hazardous Waste Control Law is administered by CalEPA to regulate hazardous wastes. While the Hazardous Waste Control Law is generally more stringent than the Resource Conservation and Recovery Act, until the EPA approves the California hazardous waste control program (which is charged with regulating the generation, treatment, storage, and disposal of hazardous waste), both the state and federal laws apply in California. The Hazardous Waste Control Law lists 791 chemicals and approximately 300 common materials that may be hazardous; establishes criteria for identifying, packaging, and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal, and transportation; and identifies some wastes that cannot be disposed of in landfills.

22 CCR Section 66261.10 provides the following definition for hazardous waste:

> [a] (1) a waste that exhibits the characteristics may: (A) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, or disposed or otherwise managed.

According to 22 CCR, substances having a characteristic of toxicity, ignitability, corrosivity, or reactivity are considered hazardous waste. Hazardous wastes are hazardous substances that no longer have a practical use, such as material that has been abandoned, discarded, spilled, contaminated, or are being stored prior to proper disposal.

Toxic substances may cause short-term or long-lasting health effects, ranging from temporary effects to permanent disability or death. For example, toxic substances can cause eye or skin irritation, disorientation, headache, nausea, allergic reactions, acute poisoning, chronic illness, or other adverse health effects if human exposure exceeds certain levels (the level depends on the substance involved). Carcinogens (substances known to cause cancer) are a special class of toxic substances. Examples of toxic substances include most heavy metals, pesticides, and benzene (a carcinogenic component of gasoline). Ignitable substances (e.g., gasoline, hexane, and natural gas) are hazardous because of their flammable properties. Corrosive substances (e.g., strong acids and bases such as sulfuric (battery) acid or lye) are chemically active and can damage other materials or cause severe burns upon contact. Reactive substances (e.g., explosives, pressurized canisters, and pure sodium metal, which react violently with water) may cause explosions or generate gases or fumes.

Other types of hazardous materials include radioactive and biohazardous materials. Radioactive materials and wastes contain radioisotopes, which are atoms with unstable nuclei that emit

ionizing radiation to increase their stability. Radioactive waste mixed with chemical hazardous waste is referred to as "mixed wastes." Biohazardous materials and wastes include anything derived from living organisms. They may be contaminated with disease-causing agents, such as bacteria or viruses (22 CCR 66251.1 et seq.).

California Accidental Release Prevention Program

The California Accidental Release Prevention (CalARP) program was implemented on January 1, 1997, and replaced the California Risk Management and Prevention Program. The objectives of the CalARP program are to present accidental releases of substances that can cause serious harm to the public and the environment, to minimize the damage if releases do occur, and to satisfy community right-to-know laws. This is accomplished by requiring businesses that handle more than a threshold quantity of a regulated substance listed in the regulations to develop a risk management plan. A risk management plan is a detailed engineering analysis of the potential accident factors present at a business and the Mitigation Framework measures that can be implemented to reduce this accident potential. The CalARP program is implemented at the local government level by Certified Unified Program Agencies also known as administering agencies. The CalARP program is designed so these agencies work directly with the regulated businesses. Certified Unified Program Agencies determine the level of detail in the risk management plans, review the risk management plans, and conduct facility inspections (CalOES 2011).

California Department of Toxic Substances Control and California Highway Patrol Hazard Transportation Program

The California Department of Toxic Substances Control (DTSC) administers the transportation of hazardous materials throughout the state. Regulations applicable to the transportation of hazardous waste include 22 CCR, Division 4.5, Chapters 13 and 29, as well as Division 20, Chapter 6.5, Articles 6.5, 6.6, and 13 of the California Health and Safety Code. The DTSC requires that drivers transporting hazardous wastes obtain a certificate of driver training that shows the driver has met the minimum requirements concerning the transport of hazardous materials, including proper labeling and marking procedures, loading/handling processes, incident reporting and emergency procedures, and appropriate driving and parking rules. The California Highway Patrol also requires shippers and carriers to complete hazardous materials employee training before transporting hazardous materials.

California Health and Safety Code

The handling and storage of hazardous materials is regulated by Division 20, Chapter 6.95 of the California Health and Safety Code. Under Sections 25500–25543.3, facilities handling hazardous materials are required to prepare a Hazardous Materials Business Plan. Hazardous Materials

Business Plans contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the state.

Chapter 6.95 of the Health and Safety Code establishes minimum statewide standards for Hazardous Materials Business Plans. Each business shall prepare a Hazardous Materials Business Plan if that business uses, handles, or stores a hazardous material (including hazardous waste) or an extremely hazardous material in disclosable quantities greater than or equal to the following:

- 500 pounds of a solid substance
- 55 gallons of a liquid
- 200 cubic feet of compressed gas
- A hazardous compressed gas in any amount (highly toxic with a Threshold Limit Value of 10 parts per million or less)
- Extremely hazardous substances in threshold planning quantities

California Occupational Safety and Health Administration Hazard Handling Procedures

The California Occupational Safety and Health Administration (CalOSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the work place. CalOSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR 337–340). The regulations specify requirements for employee training, availability of safety equipment, accident prevention programs, and hazardous substance exposure warnings.

Safe Drinking Water and Toxic Enforcement Act 1986

Pursuant to the Safe Drinking Water and Toxic Enforcement Act of 1986, California Health Screening Levels were developed by the Office of Environmental Health Hazard Assessment and identify the concentration of hazardous chemicals in soil or soil gas that the CalEPA considers to cause cancer or reproductive toxicity. The thresholds of concern are an excess lifetime cancer risk of one in a million and a hazard quotient of 1.0 for non-cancer health effects. The California Health Screening Levels are used to screen sites for potential human health concerns where hazardous chemicals have been released into soils (OEHHA 2007).

Emergency Services Act

Under the Emergency Services Act, the State of California developed an emergency response plan to coordinate emergency services provided by federal, state, and local agencies. Rapid response to incidents involving hazardous materials or hazardous waste is an integral part of the plan, which is administered but the Governor's Office of Emergency Services. The Office of Emergency Services coordinates the responses of other agencies, including the EPA, California Highway Patrol, regional water quality control boards, air quality management districts, and county disaster response offices (Governor's Office of Emergency Services 2006).

The Emergency Planning Community Right-to-Know Act

The Emergency Planning Community Right-to-Know Act requires facilities to disclose to the State and Local Emergency Planning Committee the quantities and type of toxic chemicals stored. In order to avoid multiple reports to various agencies, the California Health and Safety Code requires notification of chemical inventory to the Administering Agency (DTSC). Notification of chemical inventory shall be accomplished through completion of the Hazardous Materials Business Plan and inventory (EPA 2015).

Local

Airport Land Use Compatibility Plans

The San Diego Regional Airport Authority acts as the Airport Land Use Commission (ALUC) for the San Diego region as provided in Section 21670.3 of the California Public Utilities Code and is charged with developing airport land use compatibility plans (ALUCPs) for each airport in the County, including military air installations. ALUCPs provide guidance on appropriate land uses surrounding airports to protect the health and safety of people and property within the vicinity of an airport, as well as the public in general. An ALUCP focuses on a defined area around each airport known as the Airport Influence Area (AIA). The AIA is comprised of noise (Section 5.5, Noise of this PEIR addresses aircraft noise), safety, airspace protection and overflight factors. ALUCPs have been adopted for 16 airports countywide, including rural airports, military installations, and urban airports, such as SDIA.

5.3.3 EXISTING CONDITIONS

Hazardous Materials

Hazardous materials are used in San Diego for a variety of purposes including maintenance and operations at airfields and waterfront ports, manufacturing, service industries, various small businesses, agriculture, medical uses, schools, and households.

Hazardous Materials Handlers/Generators

Many chemicals used in household cleaning, construction, dry cleaning, film processing, landscaping, and automotive maintenance and repair are considered hazardous. Businesses that handle/generate hazardous materials within the City of San Diego are monitored by the EPA. Small quantity hazardous waste generators include facilities such as automotive repair, dry cleaners, and medical offices.

San Diego County Area Plan

The County of San Diego Department of Environmental Health (DEH), Hazardous Materials Division established the San Diego County Area Plan (Area Plan) based on requirements of Chapter 6.95 of the California Health and Safety Code, Title 19 of the CCR, and the EPA Superfund Amendments and Reauthorization Act Title III for emergency response to a release or threatened release of a hazardous material within the County. The Hazardous Materials Program and Response Plan contained in the Area Plan serves the majority of the cities in San Diego County, including the City of San Diego.

As part of the Area Plan, the Federal Risk Management Plan, as incorporated and modified by the CalARP program, is designed to prevent harm to people and the surrounding environment by the use of various organized systems to identify and manage hazards. The goal of the CalARP program is to make all facilities that handle regulated substances free of catastrophic incidents.

Any stationary source (business) that exceeds the threshold quantities of regulated substances is required to submit a risk management plan under the CalARP program. A business emergency plan (BEP) must be submitted by all businesses that handle hazardous materials over a designated threshold quantity. Upon completion of a BEP, the BEP is submitted to San Diego's local Certified Unified Program Agency. The Certified Unified Program Agency with responsibility for the City of San Diego is the County of San Diego DEH, Hazardous Materials Division. A BEP contains vital information that may be utilized to minimize the effects and extent of a threatened release of hazardous materials. In addition, this information allows emergency response personnel to determine potential risks and hazards while developing a strategy for handling an emergency involving hazardous material. Annually submitted risk management plans are currently reviewed by DEH.

If a hazardous materials emergency occurred within the City of San Diego, the first response would be from the San Diego Fire-Rescue Department and the County of San Diego Hazardous Incident Response Team.

Leaking Underground Storage Tanks

According to the State Water Resources Control Board's Leaking Underground Storage Tank database (SWRCB 2006, as cited in City of San Diego 2008), 32 leaking underground storage tanks have been identified in the City of San Diego. These cases remain open and are currently being assessed. The majority of these tanks have leaked gasoline, and the remaining have leaked diesel and/or waste oil. The San Diego County DEH also maintains a list of open and closed sites on their website.

Oil and Gas Wells

According to the State Department of Conservation's Division of Oil, Gas, and Geothermal Resources database, 21 idle wells and 12 plugged and abandoned oil or gas wells have been identified within the City of San Diego. The division also maintains a list and maps oil and gas wells on their website. The state defines an idle well as a well that has not produced oil and/or gas or has not been used for fluid injection for 6 consecutive months during the last 5 years. Plugged and abandoned wells are wells that have ceased oil or gas production and have been sealed with a concrete plug.

Transportation of Hazardous Materials

Hazardous materials pass through the City via the freeway, rail, and surface street system. Interstates 5 (I-5), 805, 8, and 15, and State Routes (SR) 56, 52, 94, 163, and 905 pass through the City. The Burlington Northern and Santa Fe railway runs generally parallel to I-5. While train derailment can occur at any time, it is during an earthquake that a derailment and hazardous materials release would pose the greatest risk. The major automotive transportation routes through the City include the freeways previously listed, as well as dozens of major arterial roads dispersed across the City.

The City has no direct authority to regulate the transport of hazardous materials on state highways or rail lines. Transportation of hazardous materials by truck and rail is regulated by the U.S. Department of Transportation. The department's regulations establish criteria for safe handling procedures. Federal safety standards are also included in the California Administrative Code. The California Health Services Department regulates the haulers of hazardous waste.

Wildland Fires

Due to climate, topography, and native vegetation, the City of San Diego is subject to both wildland and urban fires. In October 2003, over 28,000 acres of the City of San Diego (12% of City acreage) between the communities of Scripps Ranch and Tierrasanta burned in what was

known as the Cedar Fire. Approximately 335 structures, mostly single-family homes, were destroyed and another 71 structures were damaged. In June 1985, a wildfire started and raced up the canyon hillsides of the dense neighborhood of Normal Heights, destroying 76 homes and damaging dozens more. These fires revealed the severity of the risk of wildland fires and the devastation that can result.

The extended droughts characteristic of the region's Mediterranean climate result in large areas of dry vegetation that provide fuel for wildland fires. The most critical times of year for wildland fires are late summer and fall when Santa Ana winds bring hot, dry desert air into the region. The air temperature quickly dries vegetation, thereby increasing the amount of natural fuel. Development pressures increase the threat of wildland fire on human populations and property as development is located adjacent to areas of natural vegetation.

Figure 5.3-1 depicts the areas of the City which are within a High Fire Hazard Area. For residents in these areas, wildfire is a potential hazard. The urbanized portions of the City are also subject to structural fires. The San Diego Fire-Rescue Department is responsible for the preparation, maintenance, and execution of Fire Preparedness and Management Plans. In the event of a large wildfire within or threatening City limits, they could be assisted by the California Department of Forestry and Fire Protection, Federal Fire Department, or other local fire department jurisdictions.

Emergency Preparedness

Local Emergency Operations Plans are intended to help local jurisdictions respond to emergency situations with a coordinated system of emergency service providers and facilities. San Diego recently updated its 1995 Multi-Hazard Functional Plan and modernized its Emergency Operations Center (EOC). The City would continue to make regular modifications to these in the future as hazards, threats, population and land use, or other factors change. The plan identifies resources available for emergency response and establishes coordinated action plans for specific emergency situations including earthquake, fire, major rail and roadway accidents, flooding, hazardous materials incidents, terrorism, and civil disturbances.

San Diego places a high priority on public disaster education. Citizens are provided a range of emergency management training, including Federal Emergency Management Agency (FEMA) Community Emergency Response Team (CERT) training, emergency preparedness workshops, disaster presentations at schools, CPR, first aid training, and terrorism awareness training. The Community Emergency Response Team, organized through the San Diego Fire-Rescue Department, is comprised of volunteers who are trained to assist during times of emergency.

The response phase includes increased readiness, initial response, and extended response activities. During an emergency response, the City would generally coordinate activities through its EOC. County, state, and federal emergency response resources are located in San Diego and are available to assist the EOC if a situation demanded additional support. The EOC is manned 24 hours a day by both public safety and other City personnel to coordinate emergency response activities. Recovery activities involve restoration of services and returning the affected area to pre-emergency conditions as soon as practical. Recovery activities range from restoring water and power to providing information to the public regarding state and federal disaster assistance programs. Mitigation efforts occur both before and after emergencies or disasters. Mitigation includes eliminating or reducing the likelihood of future emergencies.

Aircraft Hazards

The SDIA, Marine Corps Air Station (MCAS) Miramar, Brown Field Municipal Airport, and Montgomery Field Municipal Airport are located in the City of San Diego; Tijuana International Airport (also known as the General Abelardo L. Rodriguez International Airport), Gillespie Field, Naval Air Station (NAS) North Island, and Naval Outlying Field (NOLF) Imperial Beach are located adjacent to the City of San Diego, but have the potential to affect land use and people in the City as shown on Figure 5.1-7.

SDIA Lindbergh Field is the commercial air carrier airport serving the region and is located adjacent to downtown San Diego. Primarily commercial aircraft with a limited number of cargo, general aviation corporate jet, and military aircraft use SDIA, totaling over 210,000 flights per year. SDIA has the busiest single-runway airport in the nation. In 2007, SDIA served 18.3 million passengers. The Airport Authority has forecasted that by 2030 there could be 28.2 million annual passengers using SDIA. However, SDIA is currently constrained by the capacity of its single runway. Although various industrial, commercial, and residential uses surround the airport, residential is the primary use and the most affected by the airport due to its location in the City's urban center.

MCAS Miramar, which is located north of Kearny Mesa and south of Mira Mesa, operates a mixture of jet fighter, transport, and helicopter aircraft. Military readiness requires constant training which includes touch and goes (takeoffs and landings with a close-in circuit around the airport), aircraft carrier simulated landings, practice instrument approaches, and normal departures to and arrivals from other installations or training areas.

Brown Field and Montgomery Field municipal airports provide business, corporate, training, and charter aviation services that support commercial and industrial activities within the region for propeller and jet powered aircraft and helicopters. They serve as locations for public safety and law enforcement agencies to provide services to the region. Both airports help to relieve

general aviation congestion at SDIA. Brown Field is a port of entry for private aircraft coming from Mexico. Brown Field is located north of Otay Mesa Road in the Otay Mesa Community Planning Area, and is rapidly developing from an undeveloped mesa to an industrial, commercial, and residential community. Montgomery Field is located east of SR-163 in the Kearny Mesa Community Planning Area, which primarily contains industrial and commercial uses. Adjacent to Kearny Mesa are the residential communities of Serra Mesa, Tierrasanta, Linda Vista, and Clairemont Mesa.

Gillespie Field, the only County airport within the Program area, is located in the city of El Cajon and operates general aviation aircraft. Gillespie Field is the oldest and largest of the County's eight airports. In addition to the airport, the airport includes two business parks.

Military aircraft operations at NAS North Island and NOLF Imperial Beach primarily use the airspace over the Pacific Ocean and San Diego Bay, but have the potential to fly over land within the City of San Diego. The primary traffic pattern for helicopters training at NOLF Imperial Beach is along the Tijuana River Valley and then offshore. NAS North Island is located in the City of Coronado with a small portion in the City of San Diego tidelands and operates a mixture of jet fighter, transport, and helicopter aircraft. NOLF Imperial Beach is located in the city of Imperial Beach with a small portion in the City of San Diego and serves as a training area for helicopter aircraft. NAS North Island and NOLF Imperial Beach do not have current ALUCPs.

The Tijuana International Airport is the commercial air carrier airport serving the Tijuana, Baja California region and is located in Mexico adjacent to the U.S.–Mexico border south of Otay Mesa. It provides services to commercial passenger air carrier, cargo, and general aviation aircraft. Tijuana International Airport air traffic is directed to fly within Mexican airspace, but there is the potential for over flights that could affect land use and sensitive receptors within the City of San Diego.

5.3.4 IMPACTS

Issue 1: Would the Pure Water Program expose people or property to health hazards, including fire?

Wildland Fires

The Program components would primarily be located within developed areas and roadways; however, portions of the Program components may be located within and adjacent to open space areas with potentially flammable materials such as brush, grass, or trees. In areas within and adjacent to open space, construction and operation would pose a slight risk of wildland fires due to the possibility for engine-powered equipment and vehicles to produce exhaust particles that could ignite fire.

Water Contamination

The Program involves the production of a new water supply source through the advanced treatment of recycled wastewater. The advanced water purification process involves a three-step process, including microfiltration and/or ultrafiltration, reverse osmosis and ultraviolet disinfection and advanced oxidation (UV/AOP). Purified water would be pumped to either the San Vicente or Otay Reservoirs, where it would mix with imported and surface water supplies prior to treatment at a water treatment facility. ~~An equipment or process malfunction could result in off-specification water (i.e., purified water that does not meet permit requirements) contaminating the region's water supply.~~

The advanced water purification process has been tested and proven reliable through use at the Demonstration Project (City of San Diego 2013). A number of reliability features have been incorporated into the process to ensure that purified water meets potable drinking water standards and to reduce the potential for off-specification water (i.e., purified water that does not meet permit requirements)~~does not pose a risk of contamination~~. These features include use of a fully automated control system, equipment redundancy, and integrity monitoring. In addition, the Program would be required to have a mechanism, known as a failsafe disposal, to either store or divert water not meeting federal and state water quality requirements. Off-specification water, if detected, is proposed to be discharged into the sewer system or to the nearest waterway along the proposed pipeline alignment. Travel time in the conveyance pipeline provides up to 10 hours (approximate as it varies by advanced water purification facility (AWPF)) to identify a malfunction, validate the malfunction, and stop flows in the conveyance pipeline before the off-specification water is released into the reservoir. Off-specification water in the purified water conveyance pipeline could be diverted to the sanitary sewer system, used in the non-potable recycled water system, or discharged into a nearby waterway. See Section 5.7, Hydrology and Water Quality, for more discussion related to the failsafe disposal.

5.3.5 SIGNIFICANCE OF IMPACTS

Wildfire Hazards

Engine-powered equipment and vehicles associated with the construction and operation of the Program could increase wildfire hazards by introducing new ignition sources to areas adjacent to or within currently undeveloped areas; therefore, impacts related to wildfire hazards would be **potentially significant**.

Water Contamination

Reliability features have been incorporated into the advanced water purification process to ensure that purified water meets potable drinking water standards and does not pose a risk of contamination; these features and the process have been proven through operation of the Demonstration Project. Potential impacts to human health or public safety related to the potential of water contamination from mishandling, error, or equipment malfunction would be **less than significant**.

5.3.6 MITIGATION, MONITORING, AND REPORTING

MM-HAZ-1 A brush management plan shall be prepared by the City or its contractors prior to construction of Program components, as determined necessary by the City of San Diego. Construction within areas of dense foliage during dry conditions shall be avoided, when feasible. In cases where avoidance is not feasible, necessary brush fire prevention and management practices shall be incorporated. Details of the brush management program shall be determined as site plans for the Program components are finalized to the satisfaction of the City of San Diego Fire Marshal.

MM-HAZ-2 The City of San Diego shall provide fire safety information to construction crews during regular safety meetings. Fire management techniques shall be applied during construction as deemed necessary by the City of San Diego Fire Marshal based on vegetation within the site and surrounding areas.

Level of Significance after Mitigation

With implementation of Mitigation Framework measures MM-HAZ-1 and MM-HAZ-2, the Program would not expose people or property to wildfire hazards, including where wildlands are adjacent to urbanized areas or where Program components are intermixed with wildlands; therefore, impacts would be reduced to **below a level of significance**.

Potential impacts to human health or public safety related to the potential of water contamination would be **less than significant**.

5.3.7 IMPACTS

Issue 2: Would the Pure Water Program create future risk of an explosion or the release of a hazardous substance (including, but not limited to gas, oil, pesticides, chemicals, or radiation)? Would the proposed Program expose people or the environment to a significant hazard through the routine transport, use, or disposal of hazardous materials?

The City's *California Environmental Quality Act, Significance Determination Thresholds* (City of San Diego 2011) provide the following guidance to determine the significance of health and safety impacts:

- Projects which propose the handling, storage and treatment of hazardous materials, e.g., a Hazardous Waste Facility, falling under Municipal Code Section 141.1001 Hazardous Waste Research Facilities and Section 141.1002‖ must prepare a risk assessment in conformance with the Tanner Act. The Hazardous Materials Management Division of the County of San Diego Department of Environmental Health (DEH) determines if projects are subject to Tanner Act provisions.

  For non-residential projects, instruct the applicant to complete Development Services Department form DS-3163, "Hazardous Materials Questionnaire." Refer to City of San Diego Information Bulletin 116 for more information.

  www.sandiego.gov/development-services/industry/pdf/infobulletin/ib116.pdf

  Note: Please include the following in the environmental document as applicable: Existing and recently enacted legislation to protect the public from any potential impacts from the use of hazardous materials. This legislation includes the Clean Air Act, the Clean Water Act, the Comprehensive Environmental Response, Compensation and Liability Act, and the Toxic Substances Control Act.

  At the local level the City Fire-Rescue Department screens inventories of substances and inspects sites every 12 months; the County Health Department screens inventories, inspects facilities every 15 months and reviews the hazardous Materials Business Plan, and the County Air Pollution Control District evaluates projects for possible toxic emissions and issues permits as necessary.

Treatment Facilities and Pump Stations

The Program involves the implementation of new AWPFs, a new water reclamation plant (WRP), upgrades to existing WRPs and other treatment facilities, pump stations, and various conveyance facilities. Hazardous materials would be utilized for various components of

Program operation including (1) pretreatment chemical addition (chloramination for biofouling control); (2) reverse osmosis pretreatment chemical addition (antiscalant and sulfuric acid for scale control); (3) post-treatment/stabilization chemical addition (pH and Langelier Saturation Index (LSI) adjustment for corrosion control); and (4) storage of diesel fuel for emergency backup electricity generators at pump stations not collocated with a treatment facility.

Federal, state, and local regulations control the transportation, use, storage, generation, and disposal of hazardous materials to minimize potential health and environmental hazards that could occur through accidental spills or leakage. Pursuant to Chapter 6.95, Division 20 of the California Health and Safety Code, an annual business plan, more commonly referred to as a BEP, and Hazardous Materials Inventory would be prepared during future project-level review for each of the Program components for submittal to the County of San Diego DEH. In addition to identifying hazardous substances, the BEP includes details that facilitate coordination and emergency planning with on- and off-site response officials and facilities in the event of an emergency.

The Program involves the transportation of chemicals to each of the treatment facility sites and the pump station sites. The delivery of chemicals to these sites would occur along public roadways located within the vicinity of the facility sites. Major transport routes within the City and adjacent jurisdictions include I-5, I-805, I-8, and I-15; and SR-52, SR-163, and SR-905. Although specific delivery routes are unknown at this time, they would likely pass or be located within 0.25 mile of, schools, a park, and residential neighborhoods. Transportation of hazardous materials is required to comply with all U.S. Department of Transportation, Caltrans, EPA, DTSC, California Highway Patrol, and California State Fire Marshal regulations.

Chemicals would be delivered to the treatment facilities and pump station sites by trucks specifically designed and suitable for chemical storage and offloading. Where feasible, chemical deliveries would be coordinated to occur on the same day, once per week, for each facility to minimize conflicts with surrounding uses and provide adequate security during delivery. The transportation of hazardous materials to the treatment facilities and pump station sites would comply with all Caltrans regulations. The facilities would utilize registered haulers to further reduce the potential for accidental release or exposure of these hazardous materials to the environment and individuals during transport.

The design of Program facilities would incorporate leak and spill containment measures to minimize the risk of upset to both on-site employees and surrounding uses, consistent with all federal, state, county, and City regulations. Hazardous materials would be stored on each of the treatment facility sites or pump station sites in concrete containment structures with a 110% spill containment capability. If necessary, the inner housing of the concrete containment structure would be coated for resistance to chemicals, and each structure would be separated or divided

from other chemicals to prevent mixing in the case of accidental spillage. Storage tanks would be constructed of appropriate, non-reactive materials, compatible with the recommendations of the supplier of the hazardous material.

In the event of an accidental liquid chemical spill, the chemical would be contained within the concrete containment structure and evacuated through an individual drainage system. The spilled chemical would then be pumped into hazardous waste containment trucks and transported off site for disposal at an appropriate facility. This operation would be completed by a specialized contractor licensed in hazardous waste handling and disposal. Spill notification thresholds would be established and published, and appropriate agencies, such as the City of San Diego Police Department, San Diego Fire-Rescue Department, and the County of San Diego Hazardous Incident Response Team, would be contacted when necessary.

The chemical feed system connecting chemicals from their storage areas to their points of application would be protected from leaks utilizing one of the following leak protection measures:

- Use of piping with double containment walls to prevent potential chemical leaks from reaching the soil or groundwater.
- Installation of chemical conveyance and feed pipelines in designated plastic or concrete trenches that would contain potential leaks and drain the leaking chemical(s) to a designated containment sump or tank, from which the chemical(s) would be evacuated and disposed of in compliance with applicable federal, state, and local codes.

In addition, pump stations included as part of the project are designed with safety features, including an emergency generator in case of electrical failure and sufficient sewage detainment capacity in the event of generator and/or pump mechanism failure. This would allow time for repair and/or emergency conveyance of the sewage.

The project would also be in compliance with EPA Risk Management Planning Rule 40 CFR 68, which would require each treatment facility operator to register the facility with the EPA prior to on-site storage of hazardous chemicals. For security purposes, treatment facilities would allow site access to authorized personnel only via a secured entry point with a 24-hour guard; pump stations would be fenced and/or enclosed in a locked building. In addition, all chemicals would be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (22 CCR, Division 4.5).

Pipelines

During the operational stage of the Program, pipe rupture of a new wastewater forcemain or sludge line could result in spillage of raw sewage and exposure of the public and the environment to health hazards. However, the pipelines would be constructed with high-density polyethylene (HDPE) or steel pipe, which is highly resistant to rupture. Pipelines would be inspected frequently for damage or weakening.

5.3.8 SIGNIFICANCE OF IMPACTS

The use, storage, transportation, and disposal of these substances is regulated by the County DEH Hazardous Materials Division, and would be conducted according to all applicable federal, state, and local regulations. Existing and recently enacted legislation to protect the public from any potential impacts from the use of hazardous materials includes the Clean Air Act; the Clean Water Act; CERCLA; and the Toxic Substances Control Act. The Program components' adherence to statutory standards and practices would reduce the risk of an explosion or release of hazardous substances to the environment due to an accident or upset conditions. The Program would implement project-specific hazardous materials business plans (HMBPs) and other safety programs for each subsequent Program component, as required by law, substantially reducing the risk of an accidental release of a hazardous material. The use of hazardous materials at each treatment facility site for their intended purpose is not expected to pose a hazard to the public or environment. However, compliance with the Mitigation Framework would be required during subsequent project-level review to reduce potentially significant impacts.

5.3.9 MITIGATION, MONITORING, AND REPORTING

MM-HAZ-3 A Hazardous Materials Reporting Form and Hazardous Materials Review by the Development Services Department shall be prepared for each Program component in compliance with the City of San Diego's Information Bulletin 116.

MM-HAZ-4 In accordance with Article of Chapter 6.95 of California Health and Safety Code and San Diego County Code Section 68.1113, a hazardous materials business plan (HMBP) shall be submitted to the Department of Environmental Health (DEH) Hazardous Materials Division prior to operations of each treatment facility and every 3 years thereafter. Other safety programs, including a worker safety program, fire response program, a plant safety program, and the facility's standard operating procedures, shall be developed addressing hazardous materials storage locations, emergency response procedures, employee training requirements, hazard recognition, fire safety, first aid/emergency medical procedures, hazard communication training, and release reporting requirements.

MM-HAZ-5 All hazardous materials shall be handled and stored, transported and disposed in accordance with all applicable federal, state, and local codes and regulations. Specific requirements of the California Fire Code that reduce the risk of fire or the potential for a release of hazardous materials that could affect public health or environment include:

- Provide an automatic sprinkler system for indoor hazardous material storage areas.
- Separate incompatible materials by isolating them from each other with noncombustible partition.
- Locate incompatible materials as far away from each other as practical and safe.
- Provide spill control in all storage, handling, and dispensing areas.
- Separate secondary containment for each liquid chemical storage system.
- Chlorine in liquid form (sodium hypochlorite) instead of chlorine gas shall be used to mitigate concerns associated with accidental toxic gas plume releases and potential odor emissions from the chlorine storage facility.
- Aqua ammonia of a concentration below the regulatory threshold limit of 20% and amount below the regulatory threshold of 20,000 gallons shall be used to mitigate concerns associated with accidental release of toxic ammonia gas plume or measurable size.
- Equip all liquid chemical storage tanks with a pressure relief valve, vapor equalization, carbon filter vent, and vacuum breaker. Any potential vapor fume releases from the tanks would be absorbed by the carbon filter vent, thereby providing an additional odor control for volatile chemicals such as ammonia and chlorine.

Level of Significance after Mitigation

Compliance with regulatory requirements for safe handling and storage of materials (see Mitigation Framework measures MM-HAZ-3 through MM-HAZ-5) would minimize hazards associated with operation of the Program. As such, the Program would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Therefore, impacts in regards to the long-term operational use, storage, and transport of hazardous materials resulting from Program operation would be reduced to **below a level of significance** with implementation of mitigation.

5.3.10 IMPACTS

Issue 3: Would any component of the Pure Water Program interface or intersect with a site that is included on a hazardous material sites list compiled pursuant to Government Code Section 6596.25 and, as a result, pose a potential hazard to the public or environment?

The City's California Environmental Quality Act, Significance Determination Thresholds (City of San Diego 2011) provide the following guidance to determine the significance of health and safety impacts:

- Project sites on or near known contamination sources may result in a significant impact. Sources of this information are:
  - San Diego County Environmental Assessment Case Listing, http://ww.sdcounty.ca.gov/deh/hazmat/ust.html
  - State Department of Toxic Substances Control (DTSC) www.dtsc.ca.gov/database/index.cfm
  - Other possible sources – Sanborn maps, Fire Department records, topographic/ existing conditions surveys
  - Site-specific emission data from the San Diego Air Pollution Control District; www.sdapcd.org/index.html
  - State Water Resources Control Board; www.geotracker.swrcb.ca.gov
- Project sites that meet one or more of the following criteria may result in a significant impact:
  - Located within 1,000 feet of a known contamination site
  - Located within 2,000 feet of a known "border zone property" (also known as a "Superfund" site) or a hazardous waste property subject to corrective action pursuant to the Health and Safety Code
  - County of San Diego Department of Environmental Health (DEH) site file closed. These cases are especially important where excavation (e.g., sewer/water pipeline projects, below-grade parking, basements) is involved. DEH often closes a listing when there is no longer danger to the existing use on the property. Where a change in use is proposed, DEH should be consulted. Excavation, which would disturb contaminated soils, potentially resulting in the migration of hazardous substances (e.g., along utility trench lines), would require consultation by the applicant and analyst with DEH. The applicant may be required to obtain a concurrence letter from DEH subsequent to participation in the Voluntary Assistance Program.

Information regarding the County of San Diego Voluntary Assistance Program can be found on the internet at http://www.sdcounty.ca.gov/ deh/water/sam_voluntary_ assistance_program.html.

- Located in Centre City San Diego, Barrio Logan, or other areas known or suspected to contain contamination sites (check with DEH).
- Located on or near an active or former landfill. Hazards associated with methane gas migration and leachates should be considered.
- Properties historically developed with industrial or commercial uses which involved dewatering (the removal of groundwater during excavation), in conjunction with major excavation in an area with high groundwater (such as downtown).

As indicated above, no Environmental Site Assessments were conducted for this PEIR, due to the large number and scale of Program components. Hazardous material sites are located throughout the Program area, as indicated by a database search of the DTSC EnviroStor database (DTSC 2015). Hazardous materials sites include automotive uses such as gas and service stations, dry cleaners, disposal sites, power generation sites, and industrial or manufacturing uses, among other uses. Due to their extensive nature, Program components would likely be located in the vicinity of areas of known contamination included on a hazardous material sites list compiled pursuant to Government Code Section 6596.25.

5.3.11 SIGNIFICANCE OF IMPACTS

As detailed locations are not finalized for Program components, subsequent project-level analysis is required to determine the significance of potential hazardous effects for all Program components. Since hazardous materials sites are subject to changing conditions, e.g., closure of known sites, discovery of new hazardous materials sites, site leakages, and/or remediation of existing sites, site-specific hazardous materials analyses for each Program component would be required. Details on the known hazardous materials locations would need to be investigated at the project level of analysis for individual Program components to determine the specifics on location, type, and status of hazardous materials sites that may be affected. The analysis would include a discussion of whether any Program component would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

5.3.12 MITIGATION, MONITORING, AND REPORTING

MM-HAZ-6 Subsequent projects, implemented in accordance with the Program, shall conduct a site-specific record search for the locations and type of hazardous materials to the satisfaction of the City of San Diego. An analysis shall be conducted for each Program component to determine whether a proposed facility is (1) located within

1,000 feet of a known contamination site; (2) located within 2,000 feet of a known 'border zone property' (also known as a 'Superfund' site) or a hazardous waste property subject to corrective action pursuant to the Health and Safety Code; (3) where a DEH site file is closed; (4) located in Centre City San Diego (now known as Downtown San Diego), Barrio Logan or other areas known or suspected to contain contamination sites; (5) located on or near an active or former landfill; or (5) properties historically developed with industrial or commercial uses which involved dewatering. In the event that one of the above conditions is met, the City shall coordinate with the Department of Environmental Health to determine the appropriate corrective action (i.e., remediation) or avoidance measures (i.e. alternative facility siting).

Level of Significance after Mitigation

Implementation of Mitigation Framework measure MM-HAZ-6 which requires the preparation of site-specific hazardous materials analyses for each Program component would reduce potential impacts to **below a level of significance**.

5.3.13 IMPACTS

Issue 4: Would the Pure Water Program result in a safety hazard for people working in a designated airport influence area?

According to the City's *California Environmental Quality Act Significance Determination Thresholds* (City of San Diego 2011), airport compatibility impacts may be significant if a project would:

- Be located in a designated airport influence area and where the Federal Aviation Administration (FAA) has reached a determination of "hazard" through FAA Form 7460-1, "Notice of Proposed Construction or Alteration" as required by FAA regulations in CFR Title 14, Section 77.13.
- Be inconsistent with an Airport Land Use Compatibility Plan (ALUCP).

Program components would be located within the AIAs of SDIA, MCAS Miramar, Brown Field Municipal Airport, Montgomery Field Municipal Airport, and Gillespie Field. Specifically, the North City component would be located within the AIA of MCAS Miramar, Montgomery Field, and Gillespie Field; the Central Area component would be located within the AIA of the SDIA; and the South Bay component would be located within the AIA of Brown Field. Although not governed by ALUCPs, NAS North Island is in the vicinity of the Central Area component and NOLF Imperial Beach is in the vicinity of the South Bay component.

The Program would introduce elements associated with treatment facilities, pump stations and pipelines. Buildings and other structures such as maintenance buildings, electrical substations, pump stations and process areas would be one to two stories and would generally not be taller than other buildings in the surrounding area. Construction of pipelines would involve excavation and/or tunneling, primarily within roadway right-of-way, and would be underground once completed. See Section 5.1, Land Use, for a more detailed discussion on compatibility with airport land use plans.

Treatment and pumping facility upgrades and improvements would generally not pose a safety hazard for people working within an AIA. No proposed facilities include uncovered water features that would attract birds and create a potential hazard to aircraft.

5.3.14 SIGNIFICANCE OF IMPACTS

Program components are not anticipated to pose a safety hazard for people working within an AIA; however, Program components would require review by the ALUC and FAA to make a final determination of consistency during subsequent project review.

5.3.15 MITIGATION, MONITORING, AND REPORTING

Implementation of Mitigation Framework measures MM-LU-10~~1~~ and MM-LU-11~~2~~ would require review of subsequent project-level design by the ALUC and FAA to make a final determination of consistency.

Level of Significance after Mitigation

Implementation of Mitigation Framework measures MM-LU-10~~1~~ and MM-LU-11~~2~~ require review by the FAA and ALUC for compliance with applicable regulations and would ensure compatibility and avoid potential airport-related hazards; therefore, potential impacts would be reduced to **below a level of significance.**

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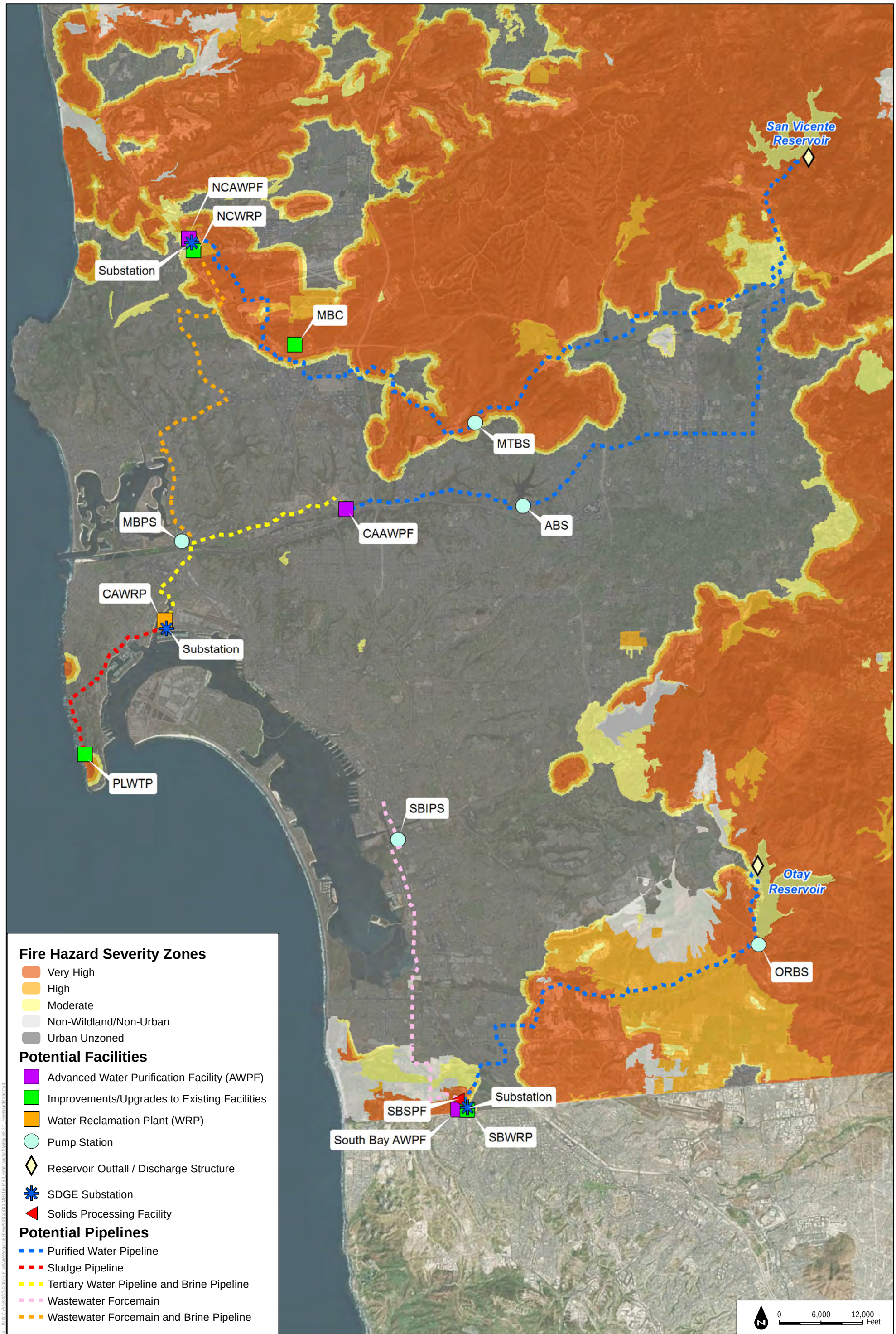

SOURCE: Bing Imagery, 2015, SANGIS, 2015.

FIGURE 5.3-1

Fire Hazard Areas

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Pure Water Program EIR

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5.4 BIOLOGICAL RESOURCES

5.4.1 INTRODUCTION

The purpose of this section is to evaluate general biological conditions at the program level and identify components which have the potential to impact sensitive biological resources. Potential impacts that may result from implementation of the Pure Water Program (Program) have been evaluated in accordance with the City of San Diego's *California Environmental Quality Act Significance Determination Thresholds* (City of San Diego 2011), City of San Diego Land Development Code, Environmentally Sensitive Lands Regulations (Section 143.0101; City of San Diego 2006), and Biology Guidelines (City of San Diego 2012).

The information provided in this section is based on the Biological Constraints Report for the Pure Water San Diego Program prepared by HELIX Environmental Planning Inc., dated April 22, 2015 (provided as Appendix C). The Biological Constraints Report (BCR) was based on a desktop analysis and relied on available sensitive biological resources data (Table 5.4-1) and other information from various sources. No field surveys were conducted. HELIX overlaid biological resources data and conceptual program information provided by the City using geographic information systems (GIS) onto recent aerial imagery. The overall study corridor was defined as 0.5 mile around the conceptual Program facility locations and conceptual pipeline alignments; impact analysis was limited to within 500 feet of proposed pipeline alignments (1,000 feet total) and 300 feet of the conceptual facility locations. Direct impacts were evaluated in the 1,000 foot corridor while indirect impacts were evaluated out to a 0.5-mile distance. Figures 5.4-1a-g provide an overview of the biological resources along the conceptual facilities, including pipeline alignments, pump stations, and other associated appurtenances.

5.4.2 EXISTING CONDITIONS

The following discussion describes the existing biological conditions within the Program area, first provided as biological resource descriptions and then generalized into the three major Program components: North City, Central Area, and South Bay. This Program-level analysis is based upon a conceptual design and a study area for each facility. Specific locations for each facility have not been confirmed at a project-level or design-level.

The biological resources data used to identify potential biological constraints within the study area are listed in Table 5.4-1.

Table 5.4-1
Sensitive Biological Resources Data Used For Constraints Analysis

Alpha Code	Data	General Description
CDFW-ER	California Department of Fish and Wildlife Ecological Reserve	Areas designated as California wildlife refuge and considered 100% conserved.
CNDDB	California Natural Diversity Data Base Species Records	Known locations of sensitive habitats and species with various levels of sensitivity based on statewide database.
CRPR	California Rare Plant Rank	Inventory of Rare, Threatened, and Endangered Plants of California
MHPA	Multi-Habitat Planning Area	City Multiple Species Conservation Program (MSCP) Preserve.
MSCP	MSCP	Areas included within the adopted Subregional Plans for San Diego County, City of San Diego, and the City of Chula Vista.
~~MSCP-HP~~	~~MSCP Hardline Preserve~~	~~County MSCP Subarea Plan Preserved areas.~~
PAMA	Pre-Approved Mitigation Area	County MSCP Subarea Plan areas targeted for preservation.
SANBIOS	SanBIOS Species Records	Known locations of sensitive species with various levels of sensitivity based on local database for San Diego County.
SANDAG-VD	San Diego Association of Governments Vegetation Data	Regional data on the type and distribution of vegetation communities within San Diego County.
SD-VPI	City of San Diego vernal pool inventory	City inventory of vernal pools updated in 2008.
VPHCP	Draft Vernal Pool Habitat Conservation Plan	Plan to protect, enhance, and restore vernal pool resources within the City of San Diego, while improving and streamlining the environmental permitting process for species associated with vernal pools.
USFWS-CH	U.S. Fish and Wildlife Service Critical Habitat	Land designation that delineates areas whereby the USFWS has formally designated habitat that is critical to the survival of species listed under the Endangered Species Act (ESA).
USFWS-NWI	USFWS National Wetlands Inventory	Areas where major water bodies, lakes, rivers, streams, and associated wetland and riparian habitat have been identified by the USFWS and other agencies.
USFWS-NWR	USFWS National Wildlife Refuge	Areas designated as federal wildlife refuge and considered 100%conserved.
USFWS-TE	USFWS Species Records	Known locations of sensitive plant and animal species listed under the ESA based on a national database inventory.
USGS-TOPO	U.S. Geological Survey Topographic Maps	USGS topographic map layer. This layer is scalable and therefore not at a fixed scale, nor separated into 7.5-minute quadrangles.

Figures 5.4-1 through 5.4-1G provide the vegetation communities taken from the San Diego Association of Governments Vegetation Data (SANDAG-VD) mapping; City of San Diego vernal pool inventory data (SD-VPI); wetlands and riparian habitat identified in the U.S. Fish and Wildlife Service National Wetlands Inventory (USFWS-NWI); City Multi-Habitat Planning Area (MHPA) lands; and other conserved lands, including California Department of Fish and Wildlife Ecological Reserve (CDFW ER), ~~Multiple Species Conservation Program Hardline Preserve (MSCP-HP),~~ Pre-Approved Mitigation Area (PAMA), and USFWS National Wildlife

Refuge (USFWS-NWR). Figures 5.4-2 through 5.4-2G provide listed and highly sensitive plant and wildlife species information taken from California Natural Diversity Database (CNDDB), SANBIOS, and USFWS Species Records (USFWS-TE); designated USFWS Critical Habitat (USFWS-CH); and the boundary of the local jurisdictions.

Vegetation Communities

The following vegetation communities are shown on SANDAG-VD mapping in the Program area. Descriptions and community codes follow Holland (1986) as revised by Oberbauer et al. (2008). Communities are organized into wetland/aquatic habitats, sensitive uplands, and non-sensitive uplands. Community codes are provided in parentheses where applicable.

Wetland/Aquatic Habitats

Vernal Pools (44000)

Vernal pools are seasonally flooded depressions that support a distinctive community adapted to extreme variation in hydrologic conditions. Vernal pools are distinguished from other seasonal wetlands by: (1) being at least partially vegetated during the normal growing season or being unvegetated due to heavy clay or hardpan soils that do not support plant growth; and (2) the basin contains at least one vernal pool indicator species (e.g., woolyheads (*Psilocarphus* spp.), toothed calicoflower (*Downingia cuspidata*), San Diego button-celery (*Eryngium aristulatum* var. *parishii*), branchiopod crustaceans). In San Diego, vernal pools often retain pooled water for approximately 2 weeks after significant rain events. Hardpan vernal pools occur where an iron silicate hardpan retards downward percolation of water, are typically located on coastal mesas, and are surrounded by chamise chaparral. Claypan vernal pools form where heavy clay soils retain water, are typically surrounded by grassland, and are located on coastal mesas and as far inland as Ramona, Poway, and San Marcos. Vernal pools support a diverse suite of characteristic species, most of which are endemic to vernal pools and many of which are listed as threatened or endangered.

Southern Coastal Salt Marsh (52120)

Southern coastal salt marsh is a low-growing, evergreen community of salt-tolerant species. It occurs along the margins of bays, lagoons, and estuaries, generally within the range of tidal fluctuation. Species are often stratified along an elevation gradient, with alkali-heath (*Frankenia salina*), seablite (*Suaeda* spp.), and pickleweed (*Salicornia pacifica*) at the drier upper margin, beachwort (*Batis maritima*) and fleshy jaumea (*Jaumea carnosa*) at middle elevations, and cordgrass (*Spartina foliosa*) nearest the water. Other characteristic species include salt heliotrope (*Heliotropium curassavicum*), saltgrass (*Distichlis spicata*), and western marsh-rosemary (*Limonium californicum*).

Freshwater Marsh (52400)

Freshwater marsh is dominated by perennial, winter-deciduous, emergent monocots reaching 4 to 5 meters (13 to 16.5 feet) tall and forming a closed canopy. Freshwater marsh forms in quiet sites lacking significant current, with deep, saturated, peaty soils. Characteristic species include cattails (*Typha* spp.), and bulrushes (*Schoenoplectus* spp.).

Southern Riparian Woodland (62500)

Southern riparian woodland is moderately dense woodland dominated by small trees or shrubs, with scattered taller emergent trees. It occurs in major river systems with regular flood scour. Characteristic species include broom baccharis (*Baccharis sarothroides*), western sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), willows (*Salix* spp.), and black elderberry (*Sambucus nigra*).

Southern Riparian Forest (61300)

Southern riparian forest is dense riparian forest that cannot be differentiated into a more specific sub-type. It is found along major streams and rivers. Characteristic species are numerous and include western sycamore, Fremont cottonwood, and willows.

Southern Coast Live Oak Riparian Forest (61310)

Southern coast live oak riparian forest is a sub-type of southern riparian forest dominated by coast live oak (*Quercus agrifolia*) with a closed or nearly-closed canopy, and abundant herbaceous understory. It occurs in bottomlands and outer floodplains along larger streams, on rich, fine-grained alluvial soil. Characteristic species include coast live oak, poison oak (*Toxicodendron diversilobum*), California blackberry (*Rubus ursinus*), toyon (*Heteromeles arbutifolia*), wild cucumber (*Marah macrocarpa*), and common eucrypta (*Eucrypta chrysanthemifolia*). This community is distinguished from southern riparian forest by the presence of coast live oak as dominants or co-dominants with willows, Fremont cottonwood, and western sycamore.

Southern Arroyo Willow Riparian Forest (61320)

Southern arroyo willow riparian forest is a sub-type of southern riparian forest dominated by moderately tall, winter-deciduous trees, primarily arroyo willow (*Salix lasiolepis*). The understory typically consists of shrubby willows. It occurs on frequently flooded lands along rivers and streams. Characteristic species include arroyo willow, Goodding's black willow (*Salix gooddingii*), mugwort (*Artemisia douglasiana*), mulefat (*Baccharis salicifolia*), and stinging nettle (*Urtica dioica*).

Southern Cottonwood–Willow Riparian Forest (61330)

Southern cottonwood-willow riparian forest is a sub-type of southern riparian forest dominated by tall, winter deciduous Fremont cottonwood, arroyo willow, and/or Goodding's black willow. This community is similar to southern arroyo willow riparian forest and also occurs in frequently flooded areas along rivers and streams. Characteristic species are the same as southern arroyo willow riparian forest except that Fremont cottonwood is dominant or co-dominant and western sycamore is common.

Mulefat Scrub (63310)

Mulefat scrub is a tall, species-poor, herbaceous riparian scrub heavily dominated by mulefat. It is an early-seral community and is succeeded by riparian forest without frequent flooding. Mulefat scrub occurs along intermittent stream channels with coarse soils. Characteristic species include mulefat, narrow-leaved willow (*Salix exigua*), and stinging nettle.

Saltbush Scrub (36110)

Saltbush scrub is a low-growing scrub heavily dominated by one or more species of saltbush (*Atriplex* spp.). In coastal San Diego County this is most often quail saltbush (*Atriplex lentiformis*), which forms dense, tangled mounds on alkaline soils in marshes, ravines, and on bluffs.

Tamarisk Scrub (63800)

Tamarisk scrub is a weedy near-monoculture of any of several species of highly-invasive species in the genus *Tamarix*. It usually supplants native riparian scrub after major disturbance. Tamarisk scrub occurs along rivers, streams, agricultural ditches, drains, and swales. There is usually minimal to no herbaceous or shrubby understory, due to deep shade and a thick layer of salty leaf litter.

Non-native Riparian (65000)

Non-native riparian is densely vegetated riparian thickets heavily dominated by non-native invasive species. Characteristic species include palms (*Washingtonia robusta, Phoenix canariensis*), river red gum (*Eucalyptus camaldulensis*), castor bean (*Ricinus communis*), giant reed (*Arundo donax*), pampas grass (*Cortaderia* spp.), Bermuda grass (*Cynodon dactylon*), and beardgrass (*Polypogon* spp.). It occurs along rivers and streams throughout San Diego.

Open Water (64100)

Open water includes marine bays (64120), estuarine (64130), or fresh water (64140) areas that are permanently inundated and support no vegetative cover.

Unvegetated Lakeshore (64200)

Unvegetated floodplain or channel (incl. lakeshore) is the rocky, gravelly, or sandy fringe of a waterway that exhibits variable water levels or regular deposition or removal of substrate. Vegetative growth is inhibited by either prolonged inundation, or removal or deposition of alluvium on a regular basis. In the case of lakeshore, fluctuating lake levels leave a sandy or rocky fringe that does not support vegetation.

Salt Pan/Mudflat (64300)

Mudflats are coastal wetlands that form when mud is deposited by rivers or tides. They are usually found in sheltered areas such as bays and estuaries. Salt pans are expanses of ground covered by salt and other minerals left behind by evaporating water.

Sensitive Uplands

Southern Maritime Chaparral (37C30)

Southern maritime chaparral is a low-growing, open chaparral dominated by wart-stemmed ceanothus (*Ceanothus verrucosus*) and Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*). It grows on weathered sandstone soils in the coastal fog belt. Characteristic species include wart-stemmed ceanothus, Del Mar manzanita, Encinitas baccharis (*Baccharis vanessae*), summer holly (*Comarostaphylis diversifolia*), scrub oak (*Quercus dumosa*), chamise (*Adenostoma fasciculata*), bushrue (*Cneoridium dumosum*), and mission manzanita (*Xylococcus bicolor*). Most of the indicator species for this community are considered sensitive.

Scrub Oak Chaparral (37900)

Scrub oak chaparral is dense, evergreen chaparral dominated by scrub oak with San Diego mountain mahogany (*Cercocarpus minutiflorus*) often sub-dominant. It usually occurs in more mesic sites than coastal sage scrub. Characteristic species include scrub oak, San Diego mountain mahogany, holly-leafed cherry (*Prunus ilicifolia*), spiny redberry (*Rhamnus crocea*), laurel sumac (*Malosma laurina*), and mission manzanita.

Maritime Succulent Scrub (32400)

Maritime succulent scrub is a low-growing, sparse coastal scrub dominated by drought deciduous shrubs with a large component of stem and leaf succulents. The proportion of cactuses is highest toward the south and inland. It is often on steep slopes on thin, rocky soils. Characteristic species include coastal prickly pear (*Opuntia littoralis*), coastal cholla (*Cylindropuntia prolifera*), San Diego sunflower (*Bahiopsis laciniata*), Shaw's agave (*Agave shawii*), San Diego barrel cactus (*Ferocactus viridescens*), California encelia (*Encelia californica*), California box-thorn (*Lycium californicum*), and California sagebrush (*Artemisia californica*).

Coast Live Oak Woodland (71160)

Coast live oak woodland is dominated by coast live oak, with a poorly-developed shrub understory of toyon, laurel sumac, and gooseberry (*Ribes* spp.). The herbaceous understory is typically non-native grasses. It occurs in shaded sites, slopes and ravines. Other characteristic species include poison oak and black elderberry.

Diegan Coastal Sage Scrub (32500)

Diegan coastal sage scrub is a low-growing, open scrub of drought-deciduous species dominated by California sagebrush, California buckwheat (*Eriogonum fasciculatum*), and black sage (*Salvia mellifera*). Larger shrubs such as laurel sumac and lemonadeberry (*Rhus integrifolia*) are present at low density. Stem and leaf succulents are present but at much lower density than in maritime succulent scrub. Diegan coastal sage scrub occurs in xeric sites such as south-facing slopes and well-drained soils. The coastal form (32510) is more heavily dominated by California sagebrush, while the inland form (32520) is dominated by white sage (*Salvia apiana*). Other characteristic species include deerweed (*Acmispon glaber*), chaparral mallow (*Malacothamnus fasciculatus*), Mojave yucca (*Yucca schidigera*), and chaparral beardtongue (*Keckiella antirrhinoides*).

Diegan Coastal Sage Scrub – Baccharis Dominated (32530)

Baccharis-dominated Diegan coastal sage scrub is similar to Diegan coastal sage scrub but dominated by species in the genus *Baccharis*, rather than California sagebrush. It occurs on disturbed sites and upper terraces of streams, usually on the margins of Diegan coastal sage scrub, or in areas with nutrient-poor soils. Characteristic species include broom baccharis, coyote brush (*Baccharis pilularis*), and goldenbush (*Isocoma menziesii*).

Southern Mixed Chaparral (37120)

Southern mixed chaparral is dense scrub up to several meters tall, consisting of evergreen sclerophyllous shrubs. It is often impenetrable and has minimal to no opening between plants. Southern mixed chaparral grows in more mesic sites than Diegan coastal sage scrub, often on north-facing slopes. Characteristic species include mission manzanita, laurel sumac, chamise, scrub oak, toyon, San Diego mountain mahogany, ceanothus (*Ceanothus* spp.), manzanita (*Arctostaphylos* spp.), and Mojave yucca. Ceanothus and manzanita become more dominant inland.

Chamise Chaparral (37200)

Chamise chaparral is overwhelmingly dominated by chamise, with other species minimally contributing to cover. Mature stands are dense with little herbaceous understory. It occurs in

more xeric sites than other chaparral communities. Other characteristic species include bush poppy (*Dendromecon rigida*), yerba santa (*Eriodictyon* spp.), manzanita, sugar bush (*Rhus ovata*), Mojave yucca, and white sage.

Non-native Grassland (42200)

Non-native grassland is dense to sparse cover of annual grasses up to 1 meter (3.2 feet) tall. Showy flowered native forbs might also be present, especially in areas of lower disturbance. More disturbed areas have a high proportion of non-native forbs. Non-native grassland occurs in areas disturbed by agriculture, grazing, grading, and dumping. Characteristic species include oats (*Avena* spp.), bromes (*Bromus* spp.), fescues (*Festuca* spp.), filaree (*Erodium* spp.), mustards (*Brassica* spp., *Hirschfeldia* spp., *Sisymbrium* spp.), asters (*Centaurea* spp., *Sonchus* spp., *Lactuca* spp., *Cynara cardunculus*), sweet-clover (*Melilotus* spp.), fennel (*Foeniculum vulgare*), and peppergrass (*Lepidium* spp.). Common native annuals include fascicled tarplant (*Deinandra fasciculata*), goldfields (*Lasthenia gracilis*), blue dicks (*Dichelostemma capitata*), and lupines (*Lupinus* spp.). Non-native grassland is considered sensitive in the MSCP because it can provide habitat for native plants and animals and foraging habitat for raptors, including burrowing owls.

Wildflower Field (42300)

Wildflower field describes an amorphous mix of mostly native, herb-dominated communities notable for conspicuous annual wildflower displays. Dominant species vary among sites and among years. This habitat type occurs in deserts, wet montane meadows, foothill grasslands, and formerly on coastal mesas. Soils are typically sandy and nutrient-poor. Characteristic species in coastal San Diego include goldfields, tidy-tips (*Layia platyglossa*), purple owl's clover (*Castilleja exserta*), California golden poppy (*Eschscholzia californica*), miniature lupine (*Lupinus bicolor*), and cryptantha (*Cryptantha* spp.).

Non-sensitive Uplands/Other Land Uses

Broadleaf-Dominated Non-native Grassland (42210)

This community is a sub-type of non-native grassland in which non-native forbs are at greater than 50% cover. Typically, it lacks native forbs and indicates a high level of disturbance. Characteristic species include those listed for non-native grasslands, especially mustards, asters, and fennel. This vegetation type provides minimal to no habitat value for native species.

Eucalyptus Woodland (79100)

Eucalyptus woodland ranges from single-species thickets with minimal to no understory to individual trees scattered over a well-developed understory. Most often, eucalyptus woodland is

a closed canopy of one species with only non-native ground cover in the understory. It occurs in canyons, along roads, and in developed areas. Characteristic species include river red gum, blue gum (*Eucalyptus globulus*), and sugar gum (*Eucalyptus cladocalyx*). Succulent groundcovers such as hottentot-fig (*Carpobrotus edulis*), iceplants (*Mesembryanthemum* spp., *Aptenia* spp.), and jade plant are often the only understory. Native shrubs found in coastal sage scrub can be present in sparse eucalyptus woodland.

Non-native Vegetation (11000)

Non-native vegetation is characterized by predominantly or exclusively non-native species that have been established through human action but are now growing without irrigation or maintenance. These are usually monocultures of non-native species such as hottentot-fig, wattle (*Acacia* spp.), jade plant, false sandalwood (*Myoporum laetum*), fountain grass (*Pennisetum setaceum*), cape honeysuckle (*Tecoma capensis*), and leadwort (*Plumbago* spp.).

General Agriculture (18000)

General agriculture includes lands that support active agricultural operations, including orchards (18100), nurseries (18200), pastures (18310), and row crops (18320).

Disturbed Land (11300)

Disturbed land is areas that have been heavily disturbed by human activity but retain a soil substrate. Disturbed lands are usually bare, and if vegetated do not support any recognizable vegetation association. Disturbed land is distinguished from non-native grassland and broadleaf dominated non-native grassland by a lower overall vegetative cover, especially lower cover of non-native grasses. Examples of disturbed land include graded pads, foot paths, dirt parking lots, off-road vehicle trails, construction staging areas, recently graded firebreaks, and heavily grazed pastures. Disturbed lands provide no viable habitat for uses other than dispersal.

Unvegetated Habitat (64000)

This includes eroded bluffs that have no vegetative cover.

Urban/Developed Land (12000)

Urban/Developed land is land that has been built upon or physically altered such that it no longer naturally supports vegetation. Development includes permanent and semi-permanent structures, pavement, hardscape, and landscaping that requires irrigation. Areas where no natural ground surface is evident due to debris dumping or placement of other materials (e.g., quarries and auto recycling yards) are also considered developed.

Sensitive Species

A total of 103 sensitive species, including 59 plant species and 44 wildlife species, are represented by database occurrence records within 0.5 mile of conceptual facility locations (Appendix C). Sensitive species are those listed under the Endangered Species Act (ESA) or California Endangered Species Act (CESA), wait-listed under the ESA or CESA, considered Species of Special Concern or Birds of Conservation Concern by state or federal resource agencies, considered Narrow Endemics in the MSCP Subregional Plans, considered sensitive by the County or City, and plants listed on the Inventory of Rare and Endangered Plants of California maintained by the California Native Plant Society.

Sensitive species were considered to have high or moderate potential to occur in the Program area if they were represented by database occurrence records that reflect current conditions and are located within the study area (500 feet on either side of proposed pipeline alignments and 300 feet of the conceptual facility locations). Species represented by occurrence records that are either out of date given existing conditions, or so imprecise as to make the location of the species relative to the proposed Program facilities impossible to determine, were considered to have low potential to occur in the Program area.

Resources in the North City Component

A variety of habitats, sensitive species, and other biological resources are present over a broad study area for each facility included in the three major Program components: North City, Central Area, and South Bay. As such, the discussions throughout the remainder of this Biological Resources section are based upon a separate study area for each facility associated with the three major Program components.

The North City component includes the proposed facilities described in this section and included in the study area for this analysis. This Program-level analysis is based upon a conceptual design only. Specific locations for each facility are not known or confirmed to a project-level or design-level of detail.

North City Facilities

1. A North City Advanced Water Purification Facility (NCAWPF) adjacent to the North City Water Reclamation Plant (NCWRP), including a new pump station
2. Upgrades to the existing NCWRP
3. Pump stations at Morena Boulevard (i.e., Morena Boulevard Pump Station), Mission Montana Drive (i.e., Mission Trails Booster Station), the NCWRP and NCAWPF

4. A wastewater forcemain and brine pipeline (WFBP) connecting the NCWRP to the proposed Morena Boulevard Pump Station
5. A purified water pipeline connecting the NCAWPF to San Vicente Reservoir
6. A reservoir outfall/discharge structure (ROD) at San Vicente Reservoir

The North City component would be located in developed areas, except for the NCAWFP, the San Vicente Purified Water Pipeline, and the ROD at San Vicente. The conceptual location for the NCAWPF is on undeveloped, disturbed land north of Eastgate Mall at Interstate 805 (I-805). The San Vicente Purified Water Pipeline would traverse undeveloped lands on Marine Corp Air Station (MCAS) Miramar, between Murphy Canyon Road and Clairemont Mesa Boulevard, the San Diego River east of the Admiral Baker Golf Course and again at West Hills Parkway, between disjunct portions of Mast Boulevard in the City of Santee, between Lakeside Avenue and Moreno Avenue in Lakeside, and between the proposed pump station at Moreno Avenue and the ROD at San Vicente. The ROD is conceptually located on undeveloped land on the south side of San Vicente Reservoir. Except for those areas and some minor deviations in other pipeline alignments, all proposed facilities in the North City component are conceptually situated on developed land and/or along existing paved streets.

Habitats and Land Covers in the North City Component

Habitat types and land covers mapped for the MSCP within the study area and surrounding vicinity for the North City component proposed facilities are provided in Table 5.4-2.

Table 5.4-2
Habitat Types and Land Covers in the North City Component

Wetland/Riparian
Vernal pools
Freshwater marsh
Southern riparian woodland
Southern riparian forest
Southern arroyo willow riparian forest
Southern cottonwood-willow riparian forest
Southern coast live oak riparian forest
Mulefat scrub
Non-native riparian
Open water
Unvegetated lakeshore
Sensitive Upland
Southern maritime chaparral (Tier I)
Scrub oak chaparral (Tier I)

Table 5.4-2
Habitat Types and Land Covers in the North City Component

Sensitive Upland
Maritime succulent scrub (Tier I)
Coast live oak woodland (Tier I)
Diegan coastal sage scrub (Tier II)
Chamise chaparral (Tier IIIA)
Southern mixed chaparral (Tier IIIA)
Non-native grassland (Tier IIIB)
Non-sensitive Upland
Eucalyptus woodland (Tier IV)
Non-native vegetation
Broadleaf-dominated non-native grassland
Developed lands
Disturbed lands (Tier IV)
Unvegetated habitat (eroded bluffs)

Special-Status Species in the North City Component

The sensitive species listed in Table 5.4-3 are represented by database occurrence records within 0.5 mile of the North City components.

Table 5.4-3
Special-Status Species in the North City Component

Common Name	Scientific Name	Federal/State/CNPS/County/Other
Animals		
Mammals		
American badger*	*Taxidea taxus*	None/SSC/ Group 2
Big free-tailed bat	*Nyctinomops macrotis*	None/SSC/ Group 2/ WBWG:MH
Mexican long-tongued bat	*Choeronycteris mexicana*	None/SSC/ Group 2/WBWG:M
Mule deer*	*Odocoileus hemionus*	None/ None/Group 2
Pallid bat	*Antrozous pallidus*	None/SSC/Group 2/ WBWG:H
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	None /SSC/ Group 2/ WBWG:M
San Diego black-tailed jackrabbit	*Lepus californicus*	None/SSC/Group 2
San Diego desert woodrat	*Neotoma lepida intermedia*	None/SSC/Group 2
Western yellow bat	*Lasiurus xanthinus*	None/SSC/None
Reptiles		
Blainville's horned lizard *	*Phrynosoma blainvilli*	None/SSC/Group 2
Coastal whiptail	*Aspidoscelis tigris stejnegeri*	None/None/Group 2
Coronado Island skink	*Plestiodon skiltonianus interparietalis*	None/SSC/Group 2
Orange-throated whiptail*	*Aspidoscelis hyperythra beldingi*	None/SSC/Group 2
Red diamond rattlesnake	*Crotalus ruber*	None/SSC/Group 2
Two-striped garter snake	*Thamnophis hammondii*	None/ SSC/ Group 1

Table 5.4-3
Special-Status Species in the North City Component

Common Name	Scientific Name	Federal/State/CNPS/County/Other
Birds		
Belding's savannah sparrow*	*Passerculus sandwichensis beldingi*	None/SE/ Group 1
California least tern*	*Sternula antillarum browni*	FE/SE, FP/ Group 1
Coastal cactus wren*	*Campylorhynchus brunneicapillus*	BCC/SSC/ Group 1
Coastal California gnatcatcher*	*Polioptila californica californica*	FT/SSC/Group 1
Cooper's hawk*	*Accipiter cooperii*	None/WL/Group 1
Least Bell's vireo*	*Vireo bellii pusillus*	FE/SE/ Group 1
Prairie falcon	*Falco mexicanus*	BCC/WL/ Group 1
Southern California rufous-crowned sparrow*	*Aimophila ruficeps canescens*	None/WL/Group 1
Invertebrates		
Monarch butterfly	*Danaus plexippus*	None/ None/Group 2
Quino checkerspot butterfly	*Euphydryas editha quino*	FE/None/ Group 1
San Diego fairy shrimp*	*Branchinecta sandiegonensis*	FE/None/ Group 1, Narrow Endemic
Plants		
San Diego thornmint*	*Acanthomintha ilicifolia*	FT/SE/ CRPR 1B.1/List A
Nuttall's lotus	*Acmispon prostratus*	None/None/ CRPR 1B.1/List A
California adolphia	*Adolphia californica*	None/None/CRPR 2B.1/List B
Singlewhorl burrobrush	*Ambrosia monogyra*	None/None/CRPR 2B.2/None
San Diego ambrosia*	*Ambrosia pumila*	FE/None/CRPR 1B.1/List A
San Diego goldenstar	*Bloomeria clevelandii*	None/None/ CRPR 1B.1/List A
Orcutt's brodiaea*	*Brodiaea orcuttii*	None/None/ CRPR 1B.1/List A
Lakeside ceanothus*	*Ceanothus cyaneus*	None/None/ CRPR 1B.2/List A
Wart-stemmed ceanothus*	*Ceanothus verrucosus*	None/None/ CRPR 2B.2/List B
Delicate clarkia	*Clarkia delicata*	None/None/ CRPR 1B.2/List A
Summer holly	*Comarostaphylis diversifolia* ssp. *diversifolia*	None/None/ CRPR 1B.2/List A
Variegated dudleya*	*Dudleya variegata*	None/None/ CRPR 1B.2/List A
San Diego button-celery*	*Eryngium aristulatum* var. *parishii*	FE/SE/ CRPR 1B.1/List A
San Diego barrel cactus*	*Ferocactus viridescens*	None/None/ CRPR 2B.1/List B
Palmer's grapplinghook	*Harpagonella palmeri*	None/None/CRPR 4.3/List D
Decumbent goldenbush	*Isocoma menziesii* var. *decumbens*	None/None/ CRPR 1B.2/List A
Coulter's goldfields	*Lasthenia glabrata* ssp. *coulteri*	None/None/ CRPR 1B.1/List A
Willowy monardella*	*Monardella viminea*	FE/SE/ CRPR 1B.1/List A
Prostrate vernal pool navarretia	*Navarretia prostrata*	None/None/ CRPR 1B.1/List A
Coast woolly-heads	*Nemacaulis denudata* var. *denudata*	None/None/ CRPR 1B.2/List A
San Diego mesa mint*	*Pogogyne abramsii*	FE/SE/ CRPR 1B.1/List A
Nuttall's scrub oak	*Quercus dumosa*	None/None/ CRPR 1B.1/List A
Chaparral ragwort	*Senecio aphanactis*	None/None/ CRPR 2B.2/List B
Purple stemodia	*Stemodia durantifolia*	None/None/ CRPR 2B.1/List B
Oil neststraw	*Stylocline citroleum*	None/None/ CRPR 1B.1/List A
Estuary seablite	*Suaeda esteroa*	None/None/ CRPR 1B.2/List A

* Indicates species covered by the Multiple Species Conservation Program

Federal Designations:
BCC USFWS Birds of Conservation Concern
FE Federally listed Endangered
FT Federally listed as Threatened
State Designations:
FP CDFW Protected and Fully Protected Species
SE State-listed as Endangered
ST State-listed as Threatened
SSC CDFW Species of Special Concern
CRPR: California Rare Plant Rank
1A (formerly List 1A): Plants Presumed Extinct in California
1B (formerly List 1B): Plants Rare, Threatened, or Endangered in California and Elsewhere
2 (formerly List 2): Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
3 (formerly List 3): Plants About Which We Need More Information—A Review List
4 (formerly List 4): Plants of Limited Distribution—A Watch List
- 0.1: Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
- 0.2: Fairly threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)
- 0.3: Not very threatened in California (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known).

WBWG Western Bat Working Group
WBWG: H—Western Bat Working Group: High Priority
WBWG: M—Western Bat Working Group: Medium Priority
WBWG: MH—Western Bat Working Group: Medium–High Priority

Designated Critical Habitat in the North City Component

The study area and surrounding vicinity of the North City component encompasses USFWS-CH for the following listed species:

- Coastal California gnatcatcher (*Polioptila californica californica*) north of Mast Boulevard in Carlton Hills
- San Diego ambrosia (*Ambrosia pumila*) along West Hills Parkway between Mission Gorge Road and State Route 52 (SR-52)
- Least Bell's vireo (*Vireo bellii pusillus*) north of Mission Gorge Road at Jackson Drive, the San Diego River at West Hills Parkway, and the San Diego River in and east of Carlton Oaks Country Club

Jurisdictional Waters in the North City Component

The study area and surrounding vicinity of the North City component encompasses aquatic and riparian resources potentially regulated by federal, state, and local agencies. These resources include wetlands and waters mapped in the NWI and riparian vegetation. Aquatic resources mapped in the NWI in the vicinity of the North City component include freshwater emergent wetland (including vernal pool), freshwater forested/shrub wetland, riverine, estuarine and marine deepwater, freshwater pond, and lake. Blue line streams not mapped in the NWI but shown on U.S. Geological Survey (USGS) maps also occur in the North City component. Wetland and riparian vegetation types mapped in the North City component include vernal pool,

freshwater marsh, southern riparian woodland, southern riparian forest, southern arroyo willow riparian forest, southern cottonwood-willow riparian forest, southern coast live oak riparian forest, mulefat scrub, non-native riparian, open water, and unvegetated lakeshore.

Wildlife Corridors and Linkages in the North City Component

The study area and surrounding vicinity of the North City component includes MSCP core areas associated with MCAS Miramar and adjacent lands east of I-805 (Kearny Mesa), San Clemente and Rose Canyons, Mission Trails Regional Park, East Elliott/Santee, and San Vicente Reservoir. Linkages within or near the North City component include portions of the San Diego River and Mission Bay.

Preserved Lands in the North City Component

The study area and surrounding vicinity of the North City component includes lands preserved by the City, County, CDFW, City of Santee, and private landowners. City preserved lands include Marian Bear Memorial Park, Tecolote Canyon Natural Park, Mission Trails Regional Park, San Diego River Park, Serra Mesa Open Space, Tierrasanta Open Space, Rancho Mission Canyon, San Diego River Flood Control Channel, and San Vicente Reservoir Cornerstone Lands. County preserved lands include Mission Trails Regional Park. Lands preserved by CDFW include the San Diego River Ecological Reserve. City of Santee preserved lands include the San Diego River Park. Private preserved lands in the North City component include homeowners associations (HOAs) at Stonecrest Village in Serra Mesa and The Trails in Mission Gorge, Sentry Storage LLC at Eastgate Mall, private homeowners in Santee and Lakeside, and portions of the San Diego River Park preserved by the Environmental Trust.

The study area and surrounding vicinity of the North City component also includes lands inside the City's MHPA and additional lands east of I-805 between Eastgate Mall and Nobel Drive, San Clemente Canyon at Copley Drive and Hickman Field Drive, Serra Mesa Recreation Center, and in central Tierrasanta south of Tierrasanta Boulevard.

In addition, the study area and surrounding vicinity of the North City component includes lands in the County's MSCP area which are categorized as follows: (1) Take Authorized Areas approved for development; (2) PAMA approved for conservation as mitigation for impacts elsewhere and targeted for preservation, and known to support sensitive resources; and (3) MSCP HP areas already preserved or with sufficient planning to accurately draw future preserve boundaries, and known to support sensitive resources. The North City component includes MSCP HP and PAMA lands in the San Diego River in Lakeside, in San Vicente Creek, and in the vicinity of the ROD at San Vicente Reservoir.

Resources in the Central Area

The Central Area component includes the proposed facilities described in this section and included in the study area for this analysis. This Program-level analysis is based upon a conceptual design only, and specific locations for each facility are not known or confirmed to a project-level or design-level of detail.

Central Area Facilities

1. A water reclamation plant at Harbor Drive (Central Area Water Reclamation Plant (CAWRP)) located on developed land; Including a new pump station (i.e., CAWRP Effluent Pump Station) and demolition of several two- to three-story buildings
2. A sludge pipeline connecting the CAWRP to the Point Loma Wastewater Treatment Plant (PLWTP)
3. An advanced water purification facility (AWPF) at Camino del Rio North (Central Area AWPF (CAAWPF)) in Mission Valley and associated pump station
4. A tertiary effluent force main and brine conveyance pipeline connecting the proposed CAWRP to the proposed CAAWPF in Mission Valley
5. A purified water pipeline connecting the CAAWPF to the San Vicente Purified Water Pipeline
6. A pump station located on undeveloped land at Lake Murray Boulevard (i.e., Alvarado Water Treatment Plant (WTP) Booster Station); and
7. Improvements to the existing PLWTP and MBC facilities.

The Central Area component is located in developed areas except for lands on Naval Base Point Loma (NBPL), undeveloped land in urbanized areas at the CAAWPF site and Lake Murray Boulevard pump station site, and scattered points along the Central Area purified water pipeline where the alignment crosses open space in the San Diego River, Navajo Canyon, and Mission Trails Regional Park near Lake Murray Dam. Except for those areas, and some minor deviations in other pipeline alignments, all proposed facilities in the Central Area component within areas that are developed or disturbed and/or within areas with opportunities for siting pipeline alignments along existing paved streets.

Habitats and Land Covers in the Central Area Component

Habitat types and land covers within the study area and surrounding vicinity for the Central Area component proposed facilities are listed in Table 5.4-4.

Table 5.4-4
Habitat Types and Land Covers in the Central Area Component

Wetland/Riparian
Freshwater marsh
Southern riparian woodland
Southern arroyo willow riparian forest
Southern cottonwood-willow riparian forest
Non-native riparian
Open water
Sensitive Upland
Southern maritime chaparral (Tier I)
Maritime succulent scrub (Tier I)
Diegan coastal sage scrub (Tier II)
Non-native grassland (Tier IIIB)
Non-sensitive Upland
Eucalyptus woodland (Tier IV)
Non-native vegetation
Developed lands
Disturbed lands (Tier IV)
Unvegetated habitat (eroded bluffs)

Special-Status Species in the Central Area Component

Table 5.4-5 lists special-status species represented by database occurrence records within 0.5 mile of the Central Area component.

Table 5.4-5
Special-Status Species in the Central Area Component

Common Name	Scientific Name	Federal/State/CNPS/County/Other
Animals		
Mammals		
American badger*	*Taxidea taxus*	None/SSC/ Group 2
Big free-tailed bat	*Nyctinomops macrotis*	None/SSC/ Group 2/ WBWG:MH
Mexican long-tongued bat	*Choeronycteris mexicana*	None/SSC/ Group 2/WBWG:M
Pallid bat	*Antrozous pallidus*	None/SSC/Group 2/ WBWG:H
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	None /SSC/ Group 2/ WBWG:M
Western mastiff bat	*Eumops perotis californicus*	None/SSC/ Group 2/ WBWG: H
Western yellow bat	*Lasiurus xanthinus*	None/SSC/None
Yuma myotis	*Myotis yumanensis*	

Table 5.4-5
Special-Status Species in the Central Area Component

Common Name	Scientific Name	Federal/State/CNPS/County/Other
Reptiles		
Blainville's horned lizard *	*Phrynosoma blainvillii*	None/SSC/Group 2
Orange-throated whiptail*	*Aspidoscelis hyperythra beldingi*	None/SSC/Group 2
Birds		
American peregrine falcon*	*Falco peregrinus anatum*	BCC, Delisted/ FP, Delisted/ Group 1
California least tern*	*Sternula antillarum browni*	FE/SE, FP/ Group 1
Coastal cactus wren*	*Campylorhynchus brunneicapillus*	BCC/SSC/ Group 1
Coastal California gnatcatcher*	*Polioptila californica californica*	FT/SSC/Group 1
Least Bell's vireo*	*Vireo bellii pusillus*	FE/SE/ Group 1
Prairie falcon	*Falco mexicanus*	BCC/WL/ Group 1
Southern California rufous-crowned sparrow*	*Aimophila ruficeps canescens*	None/WL/Group 1
Western snowy plover*	*Charadrius nivosus nivosus*	FT, BCC/ SSC/ Group 1
Invertebrates		
Quino checkerspot butterfly	*Euphydryas editha quino*	FE/None/ Group 1
Western beach tiger beetle	*Cicindela latesignata obliviosa*	None/None/ Group 2
Western tidal-flat tiger beetle	*Cicindela gabbii*	None/None/ Group 2
Plants		
California adolphia	*Adolphia californica*	None/None/CRPR 2B.1/List B
Shaw's agave	*Agave shawii* var. *shawii*	None/None/CRPR 2B.1/List B
San Diego ambrosia*	*Ambrosia pumila*	FE/None/CRPR 1B.1/List A
Aphanisma*	*Aphanisma blitoides*	None/None/ CRPR 1B.2/List A
Coulter's saltbush	*Atriplex coulteri*	None/None/ CRPR 1B.2/List A
Golden-spined cereus	*Bergerocactus emoryi*	None/None/ CRPR 2B.2/List B
Wart-stemmed ceanothus*	*Ceanothus verrucosus*	None/None/ CRPR 2B.2/List B
Orcutt's pincushion	*Chaenactis glabriuscula* var. *orcuttiana*	None/None/ CRPR 1B.1/List A
Orcutt's spineflower*	*Chorizanthe orcuttiana*	FE/SE/ CRPR 1B.1/List A
Long-spined spineflower	*Chorizanthe polygonoides* var. *longispina*	None/None/ CRPR 1B.2/List A
San Diego sand aster	*Corethrogyne filaginifolia* var. *incana*	None/None/ CRPR 1B.1/List A
Snake cholla	*Cylindropuntia californica* var. *californica*	None/None/ CRPR 1B.1/List A
Variegated dudleya*	*Dudleya variegate*	None/None/ CRPR 1B.2/List A
Cliff spurge	*Euphorbia misera*	None/None/ CRPR 2B.2/List B
San Diego barrel cactus*	*Ferocactus viridescens*	None/None/ CRPR 2B.1/List B
Decumbent goldenbush	*Isocoma menziesii* var. *decumbens*	None/None/ CRPR 1B.2/List A
San Diego marsh-elder	*Iva hayesiana*	None/None/ CRPR 2B.2/List B
Coulter's goldfields	*Lasthenia glabrata* ssp. *coulteri*	None/None/ CRPR 1B.1/List A
Robinson's peppergrass	*Lepidium virginicum* var. *robinsonii*	None/None/ CRPR 4.3/List A
Sea dahlia	*Leptosyne maritima*	None/None/ CRPR 2B.2/List B
Coast woolly-heads	*Nemacaulis denudata* var. *denudata*	None/None/ CRPR 1B.2/List A

Table 5.4-5
Special-Status Species in the Central Area Component

Common Name	Scientific Name	Federal/State/CNPS/County/Other
Nuttall's scrub oak	*Quercus dumosa*	None/None/ CRPR 1B.1/List A
Chaparral ragwort	*Senecio aphanactis*	None/None/ CRPR 2B.2/List B
Purple stemodia	*Stemodia durantifolia*	None/None/ CRPR 2B.1/List B
Oil neststraw	*Stylocline citroleum*	None/None/ CRPR 1B.1/List A
Estuary seablite	*Suaeda esteroa*	None/None/ CRPR 1B.2/List A

* Indicates species covered by the Multiple Species Conservation Program

Federal Designations:

BCC USFWS Birds of Conservation Concern
FE Federally listed Endangered
FT Federally listed as Threatened

State Designations:

FP CDFW Protected and Fully Protected Species
SE State-listed as Endangered
ST State-listed as Threatened
SSC CDFW Species of Special Concern

CRPR: California Rare Plant Rank

1A (formerly List 1A): Plants Presumed Extinct in California
1B (formerly List 1B): Plants Rare, Threatened, or Endangered in California and Elsewhere
2 (formerly List 2): Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
3 (formerly List 3): Plants About Which We Need More Information—A Review List
4 (formerly List 4): Plants of Limited Distribution—A Watch List

- 0.1: Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
- 0.2: Fairly threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)
- 0.3: Not very threatened in California (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known).

WBWG Western Bat Working Group

WBWG: H—Western Bat Working Group: High Priority
WBWG: M—Western Bat Working Group: Medium Priority
WBWG: MH—Western Bat Working Group: Medium–High Priority

Designated Critical Habitat in the Central Area Component

The study area and surrounding vicinity of the Central Area component includes USFWS-CH for Coastal California gnatcatcher on both sides of Fletcher Parkway at Hillside Park in El Cajon.

Jurisdictional Waters in the Central Area Component

The study area and surrounding vicinity of the Central Area component encompass aquatic and riparian resources potentially regulated by federal, state, and local agencies. These resources include wetlands and waters mapped in the NWI and riparian vegetation. Aquatic resources mapped in the NWI in the Central Area component include estuarine and marine deepwater, estuarine and marine wetland, riverine, freshwater forested/shrub wetland, and freshwater pond. Blue line streams not mapped in the NWI but shown on USGS maps also occur in the Central Area component. Wetland and riparian vegetation types mapped in the Central Area component

include freshwater marsh, southern riparian woodland, southern arroyo willow riparian forest, southern cottonwood–willow riparian forest, non-native riparian, and open water.

Wildlife Corridors and Linkages in the Central Area Component

The study area and surrounding vicinity of the Central Area component includes MSCP core areas in Point Loma and Lakeside. Linkages within the Central Area component include the San Diego River and Lakeside at the I-8.

Preserved Lands in the Central Area Component

The study area and surrounding vicinity of the Central Area component includes lands preserved by the City, CDFW, City of El Cajon, and private landowners. City preserved lands include open space at the PLWTP, Point Loma Ecological Conservation Area lands on Point Loma, San Diego River Flood Control Channel, San Diego River Park, Public Utilities Department mitigation sites, Navajo Canyon, and Mission Trails Regional Park (below Lake Murray Dam). Preserved land owned by CDFW includes the San Diego River Ecological Reserve; City of El Cajon preserved land includes Hillside Park. Private preserved lands in the Central Area component include the Fletcher Hills Terrace HOA across Fletcher Parkway from Hillside Park, and Avalon Fashion Valley lands north of Friars Road near Fashion Valley Mall.

With the exceptions of private lands and City of El Cajon lands, all preserved lands listed above are also in the City's MHPA. The western half of the proposed CAAAWPF site at Camino del Rio North is also inside the MHPA.

The Central Area component also includes County MSCP PAMA lands in the San Diego River in Lakeside.

Resources in the South Bay Component

The South Bay component includes the proposed facilities described in this section and included in the study area for this analysis. This Program-level analysis is based upon a conceptual design only, and specific locations for each facility are not known or confirmed to a project-level or design-level of detail.

South Bay Facilities

1. A South Bay AWPF (SBAWPF) at the existing South Bay Water Reclamation Plant (SBWRP); a new pump station and South Bay Solids Processing Facility (SBSPF) will also be constructed on SBWRP
2. A wastewater forcemain from National City to the SBAWPF
3. A ROD at Otay Reservoir

4. A purified water pipeline connecting the SBAWPF to Otay Reservoir
5. Pump Stations at Otay Lakes County Park (i.e., Otay Reservoir Booster Station) and at Sea Vale Street (i.e., South Bay Influent Pump Station)

The South Bay component is located in a mix of developed and undeveloped areas. The Otay River Valley, Tijuana River Valley, Otay Reservoir, and lands along the shore of San Diego Bay are undeveloped, while National City, Imperial Beach/Nestor, and San Ysidro/Otay areas are generally developed. Opportunities for siting the proposed wastewater force main and South Bay purified water pipeline alignments include existing roads in some areas, but also would need to traverse extensive undeveloped areas in the Tijuana River and Otay River Valleys.

Habitats and Land Covers in the South Bay Component

Habitat types and land covers within the study area and surrounding vicinity for South Bay component proposed facilities are listed in Table 5.4-6.

Table 5.4-6
Habitat Types and Land Covers in the South Bay Component

Wetland/Riparian
Southern coastal salt marsh
Freshwater marsh
Saltbush scrub
Southern riparian woodland
Southern arroyo willow riparian forest
Mulefat scrub
Non-native riparian
Tamarisk scrub
Salt Pan/Mudflat
Open water
Sensitive Upland
Maritime succulent scrub (Tier I)
Diegan coastal sage scrub (Tier II)
Diegan coastal sage scrub – baccharis dominated
Non-native grassland (Tier IIIB)
Wildflower field
Non-sensitive Upland
Broadleaf-dominated non-native grassland
Eucalyptus woodland (Tier IV)
General agriculture (Tier IV)
Developed lands
Disturbed lands (Tier IV)

Special-Status Species in the South Bay Component

The special-status species listed in Table 5.4-7 are represented by database occurrence records within 0.5 mile of the South Bay component.

Table 5.4-7
Special-Status Species in the South Bay Component

Common Name	Scientific Name	Federal/State/CNPS/County/Other
Animals		
Mammals		
Northwestern San Diego pocket mouse	*Chaetodipus fallax fallax*	None/SSC/Group 2
Pallid bat	*Antrozous pallidus*	None/SSC/Group 2/ WBWG:H
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	None /SSC/ Group 2/ WBWG:M
San Diego black-tailed jackrabbit	*Lepus californicus bennettii*	None/SSC/Group 2
Western red bat	*Lasiurus blossevillii*	None/ SSC/Group 2/ WBWG: H
Yuma myotis	*Myotis yumanensis*	None/None/Group 2/WBWG:LM
Reptiles		
Green turtle	*Chelonia mydas*	FE/None/None
Orange-throated whiptail*	*Aspidoscelis hyperythra beldingi*	None/SSC/Group 2
Rosy boa	*Lichanura trivirgata*	None/None/Group 2
Birds		
Belding's savannah sparrow*	*Passerculus sandwichensis beldingi*	None/SE/Group 1
Burrowing owl*	*Athene cunicularia*	BCC/SSC/Group 1
California black rail	*Laterallus jamaicensis coturniculus*	BC/ST, FP/Group 2
California least tern*	*Sternula antillarum browni*	FE/SE, FP/Group 1
Coastal cactus wren*	*Campylorhynchus brunneicapillus*	BCC/SSC/Group 1
Coastal California gnatcatcher*	*Polioptila californica californica*	FT/SSC/Group 1
Least Bell's vireo*	*Vireo bellii pusillus*	FE/SE/Group 1
Northern harrier*	*Circus cyaneus*	None/SSC/Group 1
Light-footed Ridgway's rail (taxonomic change in 2014; previously light-footed clapper rail)*	*Rallus obsoletus levipes*	FE/SE, FP/Group 1
Southern California rufous-crowned sparrow*	*Aimophila ruficeps canescens*	None/WL/Group 1
Western snowy plover*	*Charadrius nivosus nivosus*	FT, BCC/ SSC/Group 1
Western yellow-billed cuckoo	*Coccyzus americanus*	FC, BCC/SE/Group 1
Yellow-breasted chat	*Icteria virens*	None/SSC/Group 1
Invertebrates		
Monarch butterfly	*Danaus plexippus*	None/ None/Group 2
Quino checkerspot butterfly	*Euphydryas editha quino*	FE/None/Group 1
Riverside fairy shrimp*	*Streptocephalus woottoni*	FE/None/Group 1, Narrow Endemic
San Diego fairy shrimp*	*Branchinecta sandiegonensis*	FE/None/Group 1, Narrow Endemic
Thorne's hairstreak*	*Callophrys gryneus thornei*	None/None/Group 1

Table 5.4-7
Special-Status Species in the South Bay Component

Common Name	Scientific Name	Federal/State/CNPS/County/Other
Western tidal-flat tiger beetle	*Cicindela gabbii*	None/None/Group 2
Western beach tiger beetle	*Cicindela latesignata obliviosa*	None/None/Group 2
	Plants	
San Diego thorn-mint*	*Acanthomintha ilicifolia*	FT/SE/ CRPR 1B.1/List A
Nuttall's lotus	*Acmispon prostratus*	None/None/CRPR 1B.1/List A
California adolphia	*Adolphia californica*	None/None/CRPR 2B.1/List B
San Diego bur-sage	*Ambrosia chenopodiifolia*	None/None/CRPR 2B.1/List B
Singlewhorl burrobrush	*Ambrosia monogyra*	None/None/CRPR 2B.2/List B
South coast saltscale	*Atriplex pacifica*	None/None/CRPR 1B.2/List A
San Diego sunflower	*Hulsea californica*	None/None/1B.3/List A
Golden-spined cereus	*Bergerocactus emoryi*	None/None/CRPR 2B.2/List B
San Diego goldenstar	*Bloomeria clevelandii*	None/None/CRPR 1B.1/List A
Round-leaved filaree	*California macrophylla*	None/None/CRPR 1B.1/List B
Wart-stemmed ceanothus*	*Ceanothus verrucosus*	None/None/CRPR 2B.2/List B
Salt marsh bird's beak*	*Chloropyron maritimum* ssp. *maritimum*	FE/SE/CRPR 1B.2/List A
Tecate cypress	*Hesperocyparis forbesii*	None/None/CRPR 1B.1/List A
Snake cholla	*Cylindropuntia californica* var. *californica*	None/None/CRPR 1B.1/List A
Otay tarplant*	*Deinandra conjugens*	FT/SE/CRPR 1B.1/List A
Orcutt's bird's-beak*	*Dicranostegia orcuttiana*	None/None/CRPR 2B.1/List B
Variegated dudleya*	*Dudleya variegata*	None/None/CRPR 1B.2/List A
Palmer's goldenbush*	*Ericameria palmeri* var. *palmeri*	None/None/CRPR 1B.1/List B
San Diego button-celery*	*Eryngium aristulatum* var. *parishii*	FE/SE/CRPR 1B.1/List A
Cliff spurge	*Euphorbia misera*	None/None/CRPR 2B.2/List B
San Diego barrel cactus*	*Ferocactus viridescens*	None/None/CRPR 2B.1/List B
Palmer's frankenia	*Frankenia palmeri*	None/None/CRPR 2B.1/List B
Palmer's grapplinghook	*Harpagonella palmeri*	None/None/CRPR 4.3/List D
Beach goldenaster	*Heterotheca sessiliflora* ssp. *sessiliflora*	None/None/1B.1/None
San Diego marsh-elder	*Iva hayesiana*	None/None/CRPR 2B.2/List B
Decumbent goldenbush	*Isocoma menziesii* var. *decumbens*	None/None/CRPR 1B.2/List A
Coulter's goldfields	*Lasthenia glabrata* ssp. *coulteri*	None/None/CRPR 1B.1/List A
Robinson's peppergrass	*Lepidium virginicum* var. *robinsonii*	None/None/CRPR 4.3/List A
Sea dahlia	*Leptosyne maritima*	None/None/CRPR 2B.2/List B
Little mousetail	*Myosurus minimus* ssp. *apus*	None/None/CRPR 3.1/List C
Spreading navarretia*	*Navarretia fossalis*	FT/None/CRPR 1B.1/List A
Prostrate vernal pool navarretia	*Navarretia prostrata*	None/None/CRPR 1B.1/List A
Coast woolly-heads	*Nemacaulis denudata* var. *denudata*	None/None/CRPR 1B.2/List A
Slender cottonheads	*Nemacaulis denudata* var. *gracilis*	None/None/CRPR 2B.2/List B
Baja California birdbush	*Ornithostaphylos oppositifolia*	None/SE/CRPR 2B.1/List B
Otay Mesa mint*	*Pogogyne nudiuscula*	FE/SE/CRPR 1B.1/List A

Table 5.4-7
Special-Status Species in the South Bay Component

Common Name	Scientific Name	Federal/State/CNPS/County/Other
Nuttall's scrub oak	*Quercus dumosa*	None/None/CRPR 1B.1/List A
Munz's sage	*Salvia munzii*	None/None/CRPR 2B.2/List B
Ashy spike moss	*Selaginella cinerascens*	None/None/CRPR 4.1/List D
Chaparral ragwort	*Senecio aphanactis*	None/None/CRPR 2B.2/List B
Purple Stemodia	*Stemodia durantifolia*	None/None/CRPR 2B.1/List B
Laguna Mountains jewelflower	*Streptanthus bernardinus*	None/None/CRPR 4.3/List D
Estuary seablite	*Suaeda esteroa*	None/None/CRPR 1B.2/List A
Parry's tetracoccus*	*Tetracoccus dioicus*	None/None/CRPR 1B.2/List A

* Indicates species covered by the Multiple Species Conservation Program

Federal Designations:
BCC USFWS Birds of Conservation Concern
FE Federally listed Endangered
FT Federally listed as Threatened

State Designations:
FP CDFW Protected and Fully Protected Species
SE State-listed as Endangered
ST State-listed as Threatened
SSC CDFW Species of Special Concern

CRPR: California Rare Plant Rank
1A (formerly List 1A): Plants Presumed Extinct in California
1B (formerly List 1B): Plants Rare, Threatened, or Endangered in California and Elsewhere
2 (formerly List 2): Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
3 (formerly List 3): Plants About Which We Need More Information—A Review List
4 (formerly List 4): Plants of Limited Distribution—A Watch List
- 0.1: Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
- 0.2: Fairly threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)
- 0.3: Not very threatened in California (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known).

WBWG: Western Bat Working Group
WBWG: H—Western Bat Working Group: High Priority
WBWG: M—Western Bat Working Group: Medium Priority
WBWG: MH—Western Bat Working Group: Medium–High Priority

Designated Critical Habitat in the South Bay Component

The study area and surrounding vicinity of the South Bay component includes USFWS-CH for the following listed species:

- Quino checkerspot butterfly (*Euphydryas editha quino*) at Otay Lakes County Park;
- Otay tarplant (*Deinandra conjugens*) east of Robinhood Ridge, the Otay River Valley, and Otay Ranch Preserve in Chula Vista; and
- Least Bell's vireo in the Tijuana River Valley at Hollister Street, and the Tijuana River at Dairy Mart Road and Camino de la Plaza.

Jurisdictional Waters in the South Bay Component

The study area and surrounding vicinity of South Bay component encompass aquatic and riparian resources potentially regulated by federal, state, and local agencies. These resources include wetlands and waters mapped in the NWI and riparian vegetation. Aquatic resources mapped in the NWI in the South Bay component include estuarine and marine wetland, estuarine and marine deepwater, freshwater pond, freshwater forested/shrub wetland, freshwater emergent wetland, riverine, and lake. Blue line streams not mapped in the NWI but shown on USGS maps also occur in the South Bay component. Wetland and riparian vegetation types mapped in the South Bay component include southern coastal salt marsh, freshwater marsh, saltbush scrub, southern riparian woodland, southern arroyo willow riparian forest, mulefat scrub, non-native riparian, tamarisk scrub, salt pan/mudflat, and open water.

Wildlife Corridors and Linkages in the South Bay Component

The study area and surrounding vicinity of the South Bay component includes MSCP core areas in Otay Valley, the Tijuana River Valley, the south end of San Diego Bay, Otay Reservoir, and Otay Mesa. Linkages within the South Bay component include portions of the Sweetwater River and Otay River.

Preserved Lands in the South Bay Component

The study area and surrounding vicinity of the South Bay component include lands preserved by the City, County, USFWS, U.S. Department of Defense, International Boundary and Waters Commission (IBWC), City of Chula Vista, and private landowners. Preserved lands in the South Bay component fall into four general areas: the southeastern shore of San Diego Bay, Tijuana River Valley Regional Park (TRVRP), Otay Mesa North, and Otay Ranch/Otay Lakes.

Portions of the southeastern shore of San Diego Bay, including the estuaries of the Sweetwater and Otay Rivers, are protected by the USFWS in the San Diego Bay National Wildlife Refuge (NWR) and additional Cities of Chula Vista, Coronado, Imperial Beach, National City and San Diego property outside the NWR. San Diego Bay NWR lands in the City are also included in the MHPA, as is the Salt Works property which is owned by the City of Chula Vista, but outside the NWR. Additional private lands in the City of San Diego east of Bay Boulevard are included in the MHPA but not preserved. San Diego Bay NWR lands in Chula Vista, Imperial Beach, and National City are also not in the MHPA.

Preserved lands in the TRVRP include lands owned by the Department of Defense, USFWS, County, City, and IBWC. County, Department of Defense, and some USFWS service lands are not included in the MHPA, but all other preserved lands in the TRVRP are also in the MHPA.

Preserved lands in Otay Mesa North include lands owned by the City of San Diego, Pardee Homes, California Terraces HOA, Dolphin Cove Maintenance Association, Western Pacific Housing, and the Environmental Trust. Except for the California Terraces HOA and Pardee Homes lands on Dennery Road, all preserved lands in Otay Mesa North are also included in the MHPA. Additional undeveloped land across Dennery Road from Palm Promenade is not preserved but is in the MHPA. Otay Mesa North includes City and private preserved lands in Robinhood Ridge. Environmental Trust preserved lands in Robinhood Ridge inside the City of Chula Vista are not in the MHPA.

The study area and surrounding vicinity of the South Bay component also includes extensive areas in the Otay Ranch Preserve, near the east end of the Otay Valley Regional Park. Otay Ranch Preserve lands owned by the County and the City of Chula Vista are included in the South Bay component and are within the City of Chula Vista MSCP Preserve. City preserved lands in this area include Otay Lakes Cornerstone Lands, which are in the MHPA. Additional City property on the west shore of the Otay Reservoir is also in the MHPA but not preserved. Private preserved lands in this area include PR II Windstar Pointe Master LLC lands on the west side of Wueste Road near the Olympic Training Center.

The South Bay component does not include any County MSCP HP or PAMA lands, and County lands in Otay Lakes County Park are Take Authorized areas.

5.4.3 REGULATORY SETTING

Wetlands and Waters

Federal Wetland Regulation

Federal wetland regulation applicable to the Program is guided by the Clean Water Act (CWA). The purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all waters of the United States. Permitting for projects that propose dredge and fill activities in waters of the United States (including wetlands) is overseen by the U.S. Army Corps of Engineers (ACOE) under Section 404 of the CWA. Projects are typically permitted on an individual basis or are covered under one of several approved general or nationwide permits. In addition, under Section 401 of the CWA, an applicant for a federal permit for an activity that may result in a discharge to a water body must obtain certification from the state that the proposed activity will comply with state water quality standards and water quality objectives. Section 401 provides the Regional Water Quality Control Board (RWQCB) with regulatory authority to certify or deny the proposed activity. A Section 401 Certification must be obtained from the RWQCB prior to issuance of a 404 Permit by the ACOE.

State Wetland Regulation

The CDFW exercises jurisdiction over waters of the State under Sections 1600–1616 of the California Fish and Game Code (FGC) based on the definition of regulated activity provided in Section 1602 of the FGC and the definition of a stream provided in Title 14 Section 1.72 of the California Code of Regulations.

Section 1602 of the FGC states: "An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake" without notifying CDFW. Title 14 Section 1.72 of the California Code of Regulations defines a stream as: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation." This definition includes a broad range of vegetation communities, including some that do not contain wetland species but are in a riparian landscape position. CDFW jurisdiction typically extends to the outer limit of riparian vegetation, or to the top of bank of an unvegetated stream channel.

Under Section 1603 of the FGC, upon notification, CDFW "shall determine whether the activity may substantially adversely affect an existing fish and wildlife resource." If such a determination is made, CDFW reaches an agreement with the notifying entity (a Streambed Alteration Agreement) that includes measures to protect the resources CDFW has determined the activity may substantially adversely affect.

The California Coastal Commission (CCC) exercises jurisdiction over wetlands and waters in the coastal zone under the California Coastal Act. The coastal zone varies in width from a few hundred feet to several miles, and the CCC can take jurisdiction over actions far inland if they are deemed to have significant effect on coastal waters. State wetland buffers within the coastal zone are required to be 100 feet. Outside the coastal zone, buffers are determined based upon resources functions and values.

Local Wetland Regulation

The County requires avoidance of wetlands as defined by the Resource Protection Ordinance (RPO) except when the impacts cannot be avoided, such as for a required road access. The County also requires buffer zones around RPO wetlands. The buffer zone around RPO wetlands ranges from a minimum of 50 feet up to 200 feet.

The extent of City wetland jurisdiction is determined based on the City definition of wetland provided in the Environmentally Sensitive Lands (ESL) regulations. The City's Biology Guidelines (2012) and MSCP Subarea Plan require that impacts to wetlands, including vernal pools, be avoided, and that a sufficient wetland buffer be maintained, as appropriate, to protect resource functions/values. For vernal pools, this includes avoidance of the watershed necessary for the continued viability of the ponding area. Where wetland impacts are unavoidable (determined case-by-case), they would be minimized to the maximum extent practicable and fully mitigated per the City's Biology Guidelines.

A deviation from the application of the ESL may be warranted when an essential public project serving basic infrastructure needs of the community or the region must be implemented and no feasible alternative exists which will comply with the policies and regulation of the ESL. Deviations from wetland requirements in ESL would be considered under the Essential Public Projects (EPP) Option when a proposed project(s) meets the required criteria.

Sensitive Species

Federal Sensitive Species Protection

The USFWS takes jurisdiction over species listed as threatened or endangered under the federal ESA. The USFWS also identifies critical habitat for endangered and threatened species. Critical habitat is defined as areas of land that are considered necessary for endangered or threatened species to recover.

Sections 4(d), 7, and 10(a) of the federal ESA regulate actions that could jeopardize endangered or threatened species. Section 7 describes a process of federal interagency consultation for use when federal actions may adversely affect listed species. A biological assessment is required for any major construction activity if it may affect listed species. In this case, take can be authorized via a letter of biological opinion, issued by the USFWS for non-marine related listed species issues. Section 10(a) allows issuance of permits to non-federal entities for "incidental" take of endangered or threatened species. The term "incidental" applies if the taking of a listed species is incidental to and not the purpose of an otherwise lawful activity. Participants in approved habitat conservation plans such as the MSCP Subregional Plan receive delegated authority for incidental take authorization from USFWS for species covered by the plan(s) through a Section 10(a) permit, for actions within the planning area(s).

All migratory bird species that are native to the United States or its territories are protected under the federal Migratory Bird Treaty Act as amended under the Migratory Bird Treaty Reform Act of 2004 (FR Doc. 05-5127). The Migratory Bird Treaty Act is generally protective of migratory birds but does not actually stipulate the type of protection required

and does not include a process for permitting incidental take, nor does it include a component for recovery, designation of critical habitat, or protection of habitat.

State Sensitive Species Protection

The California FGC regulates species listed as threatened or endangered under CESA. CESA is similar to ESA in that it contains a process for listing of species and regulating potential impacts to listed species. Section 2081 of the CESA authorizes the CDFW to enter into a memorandum of agreement for take of listed species for scientific, educational, or management purposes. Sections 3500–3502 of the FGC also provide general protection to all birds, especially raptors.

Management Plans and Policies

The Final MSCP (County of San Diego 1998) covers all of western San Diego County. Individual jurisdictions adopt MSCP Subarea Plans in conformance with the Final MSCP. Once adopted and approved by resource agencies, MSCP Subarea Plans provide individual jurisdictions with incidental take authority for covered species that are adequately protected by their Subarea Plan. Protection for covered species is provided in dedicated preserves. The County, City, and Cities of Chula Vista and La Mesa have adopted MSCP Subarea Plans. The City of San Diego MSCP Subarea Plan covers all lands in the City of San Diego, as well as City-owned lands outside of the City limits (City of San Diego 1997). The Program would not affect any resources in the City of La Mesa covered by the La Mesa MSCP Subarea Plan (City of La Mesa 1998).

The County preserve is made up of HP areas that have been set aside, and PAMAs that are targeted for preservation but where preserve boundaries cannot be definitively established yet. The City preserve is the MHPA, which consists of preserved lands and lands targeted for preservation. The Chula Vista Preserve is made up of 100% Conserved Areas and 75% Conserved Areas. In all three cases, lands are typically conveyed into the preserve as mitigation for impacts in development areas outside the preserve.

The County requires permits for development in unincorporated areas. Sensitive resources in the unincorporated county are covered by the RPO and the County of San Diego MSCP Subarea Plan (County of San Diego 1997), which provides protection to sensitive habitats, plants, animals, wetlands, and other biological resources.

The City requires permits for development within its corporate limits. The type of permit required depends on the scale of development and the resources present in the project site. Major development or development of sites that contain sensitive resources requires a Site Development Permit and/or a Coastal Development Permit for sites inside the coastal overlay zone. Sensitive

resources in City jurisdiction are protected by the ESL Regulations (City of San Diego 2012) and include MHPA Lands, wetlands, sensitive uplands, habitat for sensitive plants and animals, and steep hillsides. State wetland buffers within the coastal zone are required to be 100 feet. Outside the coastal zone, buffers are determined based upon wetland functions and values.

Specific to vernal pools, the preliminary Draft Vernal Pool Habitat Conservation Plan (VPHCP) was released for a 30-day public review on March 10, 2015 to provide the public an opportunity to review and provide comments. The VPHCP is intended to provide an effective framework to protect, enhance, and restore vernal pool resources within the City of San Diego, while improving and streamlining the environmental permitting process for impacts to threatened and endangered species associated with vernal pools. The VPHCP covers vernal pools and seven threatened and endangered covered species that do not have federal coverage under the City's MSCP Subarea Plan. Part of the VPHCP conservation strategy is to expand the City's existing MHPA to conserve targeted vernal pool complexes in a configuration that maintains habitat function and viability of the seven covered species, consistent with the Vernal Pool Recovery Plan (USFWS 1998); and to implement avoidance and minimization of impacts to vernal pools consistent with the VPHCP and the City's ESL Regulations. Portions of the proposed Program facilities are located within or interface with the North, Central, and South Planning Units of the preliminary Draft VPHCP.

As mentioned above in Section 5.4.3, Local Wetland Regulations, pursuant to the City's ESL Regulations, Section 143.0510 (d), a wetland deviation, including impacts to vernal pools, may be considered when a proposed project meets all the criteria as outlined under the EPP Option. Any EPP project that would propose impacts to vernal pool resources would be analyzed in accordance with ESL Regulations, the City's Biology Guidelines, and the VPHCP, and would provide mitigation consistent with those requirements. There is a potential for impacts to occur to vernal pool resources during the construction of the City's EPP, which the City has included in the Program.

MCAS Miramar adopted an Integrated Natural Resources Management Plan (INRMP) in 2011 (USMC 2012). The INRMP establishes guidelines for management of natural resources on lands administered by MCAS Miramar. The current INRMP covers 2011 through 2015, and is subject to annual review.

The San Diego Bay NWR which has an approved Comprehensive Conservation Plan (CCP) (USFWS 2014) protects a rich diversity of endangered, threatened, migratory, and native species and their habitats in the midst of a highly urbanized coastal environment. This 2,620-acre NWR, covering land and water, is situated at the south end of San Diego Bay and was established to protect endangered and threatened species in and around San Diego Bay.

The Memorandum of Understanding (MOU) for the Point Loma Ecological Conservation Area (PLECA) covers the approximately 1500-acre area of the southern Point Loma peninsula generally corresponding to the original extent of the historic Fort Rosecrans military reservation. Point Loma is an important area for biodiversity in the southern California ecological region. Cooperative implementation of this MOU is intended to minimize the risk for loss to ecosystems on Point Loma from the cumulative effects of development and other land use. Although the habitat management initiative under this MOU is similar in character to other regional ecosystem management efforts (e.g., MSCP), it is a separate, non-regulatory program specific to federal and municipal lands on Point Loma.

5.4.4 IMPACTS

This section provides analysis of potential biological constraints relative to the Program components. The BCR (Appendix C) evaluated potential direct impacts to biological resources in the study corridor identified by the City as 500 feet on either side of the conceptual alignments of proposed pipelines and a 300-foot study area around proposed buildings and other facilities. Potential indirect impacts to sensitive wildlife species and preserves were evaluated in a 0.5-mile corridor around all proposed facilities, including pipelines.

Sensitive biological resources are defined in the City of San Diego Land Development Code as:

- Lands that have been included in the Multi-Habitat Planning Area (MHPA) as identified in the City of San Diego Multiple Species Conservation Program (MSCP) Subarea Plan (City of San Diego 1997);
- Wetlands (as defined by the Municipal Code, Section 113.0103);
- Lands outside the MHPA that contain Tier I, II, IIIA or IIIB Habitats as identified in the Biology Guidelines (July 2012) of the Land Development Manual;
- Lands supporting species or subspecies listed as rare, endangered or threatened;
- Lands containing habitats with narrow endemic species as listed in the Biology Guidelines of the Land Development Manual; and
- Lands containing habitats of covered species as listed in the Biology Guidelines of the Land Development Manual.

Sensitivity and/or significance of impacts are considered in the context of a proposed project, as discussed below for direct and indirect impacts. Impacts could potentially occur during construction and operations, including long-term maintenance activities and at locations of supporting infrastructure along the pipelines (e.g., manholes, access points, air release

valves) not known at this Program's conceptual design phase. A discussion of cumulative impacts to biological resources is provided in Chapter 9.

Direct Impacts

A direct impact is a physical change in the environment which is caused by and immediately related to the project. Construction, operation, and maintenance activities associated with implementation of the Program could result in direct impacts on biological resources including:

- Direct removal of vegetation and habitat during construction and maintenance activities by means of grading/grubbing for vehicle access, proposed facilities and construction footprints, etc.;
- Access road and/or improvements of existing access roads;
- Temporary staging areas;
- Soil compaction that precludes reestablishment of native vegetation;
- Ground-disturbing activities that result in soil erosion;
- Removal of riparian habitats;
- Maintenance and emergency activity access in undisturbed habitats;
- Fill and/or dredge activities in jurisdictional resources and potential encroachment into wetland buffers;
- Human incursion into sensitive habitats;
- Mortality of sensitive wildlife species from vehicular collision;
- Disruption in normal breeding, nesting, and foraging behavior; and
- Destruction or abandonment of nests.

Lands containing Tier I, II, IIIA and IIIB (Table 3, City's Biology Guidelines) and all wetlands (Tables 2A and 2B, City's Biology Guidelines) are considered sensitive and declining habitats. As such, impacts to these resources may be considered significant. Lands designated as Tier IV are not considered to have significant habitat value and impacts would not be considered significant.

Impacts to individual sensitive species, outside of any impacts to habitat, may also be considered significant based upon the rarity and extent of impacts. Impacts to state- or federally listed species and all narrow endemics would be considered significant. Certain species covered by the MSCP (Attachment A of the Biology Guidelines) and other species not covered by the MSCP, may be

considered significant on a case-by-case basis taking into consideration all pertinent information regarding distribution, rarity, and the level of habitat conservation afforded by the MSCP.

The City's permit to "take" covered species under the MSCP is based on the concept that 90% of lands within the MHPA will be preserved. Any encroachment into the MHPA (in excess of the allowable encroachment by a project) would be considered significant and require a boundary adjustment which would include a habitat equivalency assessment to ensure that what will be added to the MHPA is at least equivalent to what would be removed.

The City's Biology Guidelines also include additional information regarding significance as follows:

a. Total upland impacts (Tiers I- IIIB) less than 0.1 acre are not considered significant and do not require mitigation. See Section 3 (Cumulative Impacts) relative to native grasslands.

b. Impacts to non-native grasslands totaling less than 1.0 acre which are completely surrounded by existing urban developments are not considered significant and do not require mitigation. Examples may include urban infill lots.

c. Total wetland impacts less than 0.01 acre are not considered significant and do not require mitigation. This does not apply to vernal pools or wetlands within the Coastal Zone.

d. Brush management Zone 2 thinning activities, while having the potential to adversely affect biological resources, are not considered potentially significant inside the MHPA or, to the extent that non-covered species are not impacted, outside the MHPA, because of the implementation of the MSCP. Brush management Zone 2 thinning outside the MHPA which affects non-covered species is potentially significant. Brush management not conducted in accordance with brush management regulations, regardless of where it is located, is also potentially significant.

e. Habitat mitigation is not required for impacts to manufactured slopes or areas that have been planted with native species for the purpose of erosion control. For example, in order to qualify for this exception, substantiation of previous permits and mitigation must be provided. However other mitigation may be required, such as noise mitigation, for significant noise impacts to certain avian species during their breeding season depending upon the location of the slope (such as adjacent to an MHPA) and what birds may be present in the area.

f. Removal/control of non-native plants is not considered to constitute a significant habitat impact for which compensatory habitat acquisition, preservation, or creation for the area impacted is required.

Indirect Impacts

Indirect impacts are reasonably foreseeable effects caused by project implementation on remaining or adjacent biological resources outside the direct limits of disturbance. A change which is speculative or unlikely to occur is not reasonably foreseeable. Indirect impacts may affect areas within a defined facility or pipeline area but outside the limits of disturbance, including non-impacted areas, such as downstream effects. Indirect impacts include short term effects immediately related to construction activities and long term or chronic effects related to long-term maintenance of the facilities, including pipelines. In most cases, indirect effects are not quantified, but in some cases quantification might be included at project-level implementation, such as using a noise contour to quantify indirect impacts to nesting birds.

Some impacts may be considered direct impacts in some circumstances and indirect impacts under other circumstances. Indirect impacts may include the generation of fugitive dust, habitat fragmentation, chemical pollutants, altered hydrology, non-native invasive species, increased human activity, alteration of the natural fire regime, and noise, and are discussed as follows:

Generation of Fugitive Dust. Excessive dust can decrease the vigor and productivity of special-status plants through effects on light, penetration, photosynthesis, respiration, transpiration, increased penetration of phytotoxic gaseous pollutants, and increased incidence of pests and diseases. These impacts to plants can result in changes to community structure and the function of vegetation communities, resulting in impacts to suitable habitat for wildlife species.

Habitat Fragmentation. Habitat fragmentation and isolation of plant and wildlife populations may cause extinction of local populations as a result of two processes: reduction in total habitat area, which reduces effective population sizes; and insularization of local populations, which affects dispersal rates (Wilcox and Murphy 1985; Wilcove et al. 1986). In addition, habitat fragmentation can reduce diversity of species, spread invasive species, and reduce access to important habitats (Lovich and Ennen 2011).

Chemical Pollutants. Erosion and chemical pollution (releases of fuel, oil, lubricants, paints, release agents, and other construction materials) can decrease the number of plant pollinators, increase the existence of non-native plants, and cause damage to and destruction of native plants. Accidental spills of hazardous chemicals could contaminate nearby surface waters and groundwater and indirectly impact wildlife species through poisoning or altering suitable habitat.

Changes in Hydrology. Hydrologic alterations include changes in flow rates and patterns in streams and rivers and dewatering, which may affect adjacent and downstream aquatic, wetland, and riparian vegetation communities. Water-quality impacts include chemical-compound pollution (fuel, oil, lubricants, paints, release agents, and other construction materials), erosion,

increased turbidity, and excessive sedimentation. Direct impacts can remove native vegetation and increase runoff from roads and other paved surfaces, resulting in increased erosion and transport of surface matter into special-status plant occurrences. Altered erosion, increased surface flows, and underground seepage can allow for the establishment of non-native plants. Changed hydrologic conditions can also alter seed bank characteristics and modify habitat for ground-dwelling fauna that may disperse seed.

Alteration of the on-site hydrologic regime may potentially affect plants and wildlife. Altered hydrology can allow for the establishment of non-native plants and invasion by Argentine ants, which can compete with native ant species that could be seed dispersers or plant pollinators. Changes in plant composition could affect the native vegetation communities and wildlife habitat.

Non-Native, Invasive Plant, and Animal Species. Invasive plant species that thrive in edge habitats are a well-documented problem in Southern California and throughout the United States. Development could also fragment native plant populations, which may increase the likelihood of invasion by exotic plants due to the increased interface between natural habitats and developed areas. Bossard et al. (2000) list several adverse effects of non-native species in natural open areas, including but not limited to the fact that exotic plants compete for light, water, and nutrients and can create a thatch that blocks sunlight from reaching smaller native plants. Exotic plant species may alter habitats and displace native species over time, leading to extirpation of native plant species and subsequently suitable habitat for wildlife species. The introduction of non-native, invasive animal species could negatively affect native species that may be pollinators of or seed dispersal agents for special-status plant species. In addition, trash can attract invasive predators such as ravens and coyotes that could impact the wildlife species in the project area.

Increased Human Activity. Increased human activity could result in the potential for trampling of vegetation outside of the impacts footprint, as well as soil compaction, and could affect the viability of plant communities and the function of suitable habitat for wildlife species. Trampling can damage individual special-status plants and alter their ecosystem, creating gaps in vegetation and allowing exotic, non-native plant species to become established, leading to soil erosion. Trampling may also affect the rate of rainfall interception and evapotranspiration, soil moisture, water penetration pathways, surface flows, and erosion. An increased human population increases the risk for the collection of and damage to plant species, and thus the risk of damage to suitable habitat for wildlife species. In addition, increased human activity can deter wildlife from using habitat areas in the project vicinity.

Alteration of the Natural Fire Regime. An increased risk of fire can lead to a shorter-than-natural fire return intervals, which can preclude recovery of the native vegetation between fires, weaken the ecological system, allow for invasion of exotic species, and result, in some cases, in

permanent transition of the vegetation to non-native communities, such as annual grassland and weedy communities (Malanson and O'Leary 1982; Keeley 1987; O'Leary et al. 1992). If the natural fire regime is suppressed, longer-than-natural fire return intervals can result in excessive buildup of fuel loads so that when fires do occur, they are catastrophic. Unnaturally long fire intervals can also result in senescence of plant communities, such as chaparral, that rely on shorter intervals for rejuvenation. Alterations of plant communities could affect wildlife that relies on those habitat types.

Noise. Noise impacts can have a variety of indirect impacts on wildlife species, including increased stress, weakened immune systems, altered foraging behavior, displacement due to startle, degraded communication with conspecifics (e.g., masking), damaged hearing from extremely loud noises, and increased vulnerability to predators (Lovich and Ennen 2011; Brattstrom and Bondello 1983, as cited in Lovich and Ennen 2011).

Artificial Lighting. Night lighting can a variety of indirect impacts to wildlife, including altering the behavior of prey sources for nocturnal animals and their ability to catch prey, disruption of behavioral patterns that are associated with natural day length, altering and nesting behavior and reproductive cycles, and deterrence from using nocturnal foraging areas (Outen 1992).

Impacts to biological resources are assessed by the City staff through the CEQA review process guidance in accordance with ESL Regulations, the Biology Guidelines, and the City's MSCP Subarea Plan. Before a determination of the significance of an impact can be made, the presence and nature of the biological resources must be established. There is a two-step procedure for collecting the necessary information to determine significance of impacts to biological resources. The first step involves visiting the site and reviewing existing biological information. If significant resources are found present, the second step involves a specific survey to determine the nature and extent of the biological resources present on the project site and in the immediate vicinity of the site. It is this second step in which the project-level significance and/or sensitivity of the resource may be determined.

As discussed above in Section 5.4.1, HELIX conducted a desktop biological constraints analysis relying on available data and other information from internal and external sources. No field surveys were conducted. Due to the conceptual nature of the proposed facility designs and pipeline alignments, it is not possible to determine the precise level of direct and indirect impact significance for the Program facilities. However, this impact discussion does provide a full disclosure of the range of potential impacts within the defined study area, and the feasible measures that could be available to mitigate impacts. It should also be noted that this analysis assumes that avoidance measures would be implemented where feasible and practicable, and therefore reports the level of significance of impacts on that basis.

Moreover, Section 1.4.2 of the City's MSCP Subarea Plan identifies general planning policies and design guidelines to be applied in the review and approval of development projects within or adjacent to the MHPA. Applicable elements of these policies and guidelines as they relate to the Program include the following:

1. All proposed utility lines (e.g., sewer, water, etc.) should be designed to avoid or minimize intrusion into the MHPA. These facilities should be routed through developed or developing areas rather than the MHPA, where possible. If no other routing is feasible, then the lines should follow previously existing roads, easements, rights-of-way and disturbed areas, minimizing habitat fragmentation.
2. All new development for utilities and facilities within or crossing the MHPA shall be planned, designed, located and constructed to minimize environmental impacts. All such activities must avoid disturbing the habitat of MSCP covered species, and wetlands. If avoidance is infeasible, mitigation will be required.
3. Temporary construction areas and roads, staging areas, or permanent access roads must not disturb existing habitat unless determined to be unavoidable. All such activities must occur on existing agricultural lands or in other disturbed areas rather than in habitat. If temporary habitat disturbance is unavoidable, then restoration of, and/or mitigation for, the disturbed area after project completion will be required.
4. Construction and maintenance activities in wildlife corridors must avoid significant disruption of corridor usage. Environmental documents and mitigation monitoring and reporting programs covering such development must clearly specify how this will be achieved, and construction plans must contain all the pertinent information and be readily available to crews in the field. Training of construction crews and field workers must be conducted to ensure that all conditions are met. A responsible party must be specified.
5. For the most part, existing roads and utility lines are considered a compatible use within the MHPA and therefore will be maintained. Exceptions may occur where underutilized or duplicative road systems are determined not to be necessary as identified in the Framework Management Section 1.5 of the Subarea Plan.

These measures and considerations would be applied through the siting and design process future project-level components to avoid and minimize impacts on the MHPA. In addition, specific guidelines applicable to development in or adjacent to the MHPA are found in Section 1.2 of the Subarea Plan. The applicable elements of these guidelines to the Program relate to restoration of native habitats that are disturbed during construction. Mitigation Framework measures required throughout this analysis address this restoration requirement.

As indicated above, this analysis relies on avoidance and minimization as the primary means of ensuring that significant impacts to biological resources do not occur. It is assumed that implementing appropriate construction methods such as horizontal directional drilling and other trenchless technology would achieve this goal. However, with any technology, complications can arise for which implementation of Best Management Practices (BMPs) and other contingencies would address. For example, there is a potential of the drilling equipment to encounter obstructions or become compromised along the underground length of the bore thus resulting in leaks and possible contamination. These potential issues are addressed with continuous monitoring of the ground surface and along the alignment, retrieval and disposal of drilling fluid, containing any inadvertent return of drilling fluid to the ground surface, and implementing applicable Storm Water Pollution Prevention Plan (SWPPP) BMPs.

The analysis below is organized first according to the seven questions listed in the City's Notice of Preparation (provided as Appendix A), and then by potential impacts resulting from Program facilities. Recommendations for impact avoidance, where appropriate, and mitigation/permitting requirements for unavoidable impacts are provided for each question.

Issue 1: Would the proposed Pure Water Program result in impacts to a sensitive habitat or sensitive natural community as identified in local, regional, state or federal plans, policies, or regulations?

The study area for the proposed Program facilities was analyzed for potential impacts to sensitive upland habitats and communities. Potential impacts are being discussed below if they are located within, and in some cases adjacent to, the study area. This Program-level analysis is based upon a conceptual design only, and specific locations for each facility are not known or confirmed to a project-level or design-level of detail. Potential impacts to wetland habitats and communities are discussed below in Section 5.4.7.

According to the City's *California Environmental Quality Act Significance Determination Thresholds* (City of San Diego 2011), biological impacts may be significant if the project would cause a substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in the MSCP or other local or regional plans, policies, or regulations, or by the CDFW or USFWS. According to the City's Biology Guidelines, the different habitat tiers of sensitivity are classified as follows starting with the most sensitive: Tier I Habitats include lands classified as southern fore dunes, Torrey pines forest, coastal bluff scrub, maritime succulent scrub, maritime chaparral, native grasslands, and oak woodlands. Tier II includes lands classified as coastal sage scrub and coastal sage scrub/chaparral. Tier IIIA includes lands classified as mixed chaparral and chamise chaparral. Tier IIIB includes lands classified as non-native grassland. Tier IV includes lands considered

non-sensitive, classified as disturbed, agriculture, and eucalyptus. Significant sensitive habitat or sensitive natural communities may also be considered present if the site could support the vegetation in different seasons/rainfall conditions. Further, a determination of significant impacts may be based on what was previously on the site (e.g. if illegal grading or vegetation removal occurred, etc.), as appropriate.

In addition to the City's MSCP tier classification, communities are also ranked according to the relevant planning document as follows: County Subarea Plan (CoTier) and Chula Vista MSCP Subarea Plan (CVTier).

The intent of the Program is to avoid or minimize all impacts where possible. However, direct permanent and temporary impacts may still occur during construction as a result of sensitive vegetation removal for access roads, work areas and equipment staging, and during operations as a result of O&M vegetation trimming and weed abatement. Further, indirect permanent and temporary impacts may occur to sensitive vegetation communities as a result of dust generation during construction, introduction of invasive species into the disturbance areas, chemical pollutants, and the alteration of fire regimes. Vegetation removal may result in other issues such as increased erosion and sedimentation, and other water quality issues.

Potential Impacts

North City Component

NCAWPF

Non-native grassland (Tier IIIB) is present within the entire study area for this proposed site. Some impacts resulting from this facility to Tier IIIB vegetation may be permanent. Based on the extent of this vegetation within the study area, impacts to this vegetation resulting from the NCAWPF may be unavoidable.

NCWRP Upgrades

Non-native grassland (Tier IIIB) occurs in small undeveloped peripheral areas of the study area. Most of the NCWRP site is currently developed; however, some impacts may be permanent. Avoiding undeveloped peripheral portions of the existing NCWRP site would avoid permanent impacts to Tier IIIB vegetation at this facility.

Wastewater Force Main/Brine Pipeline from the NCWRP to the Proposed Morena Boulevard Pump Station

- Southern maritime chaparral (Tier I) is present in the study area alignment; southern maritime chaparral, maritime succulent scrub, scrub oak chaparral, coast live oak woodland in areas adjacent to the existing streets in which the alignment is located.
- Diegan coastal sage scrub (Tier II) is present in the study area alignment and in areas adjacent to the existing streets in which the alignment is located.
- Non-native grassland (Tier IIIB) is present in the study area alignment and in areas adjacent to the existing streets in which the alignment is located.

Based on the vegetation present within the study area, impacts to Tier I, Tier II, and/or Tier IIIB communities in the proposed pipeline alignment would be unavoidable. Impacts to other sensitive upland communities could be avoided by constructing the proposed pipeline in existing streets. Because the proposed pipeline is an underground pipeline, impacts would be temporary.

San Vicente Purified Water Pipeline

- Diegan coastal sage scrub (Tier II/CoTier II) is present in the study area alignment and in areas adjacent to the existing streets in which the alignment is located.
- Southern mixed chaparral, chamise chaparral (Tier IIIA/CoTier III) is present in the study area alignment and in areas adjacent to the existing streets in which the alignment is located.
- Non-native grassland (Tier IIIB/CoTier III) is present in the study area alignment and in areas adjacent to the existing streets in which the alignment is located.

Based on the data available in the study area, impacts to non-native grassland and chamise chaparral would be unavoidable, but would be minimized by constructing the proposed purified water pipeline in existing streets where possible. Because the proposed pipeline would be underground, impacts would be temporary.

Pump Stations at Mission Montana Drive and Morena Boulevard

Based on the type or lack of vegetation within in the study area and vicinity of each of these facilities, no impacts to sensitive habitat or sensitive natural communities are anticipated. No avoidance measures would be required.

ROD at San Vicente Reservoir

Chamise chaparral (CoTier III) is present throughout the entire study area for this facility. Some impacts resulting from this facility are likely permanent and unavoidable.

Central Area Component

CAWRP

Based on the vegetation communities in the study area and vicinity of this facility, no impacts to sensitive habitat or sensitive natural communities are anticipated, and no avoidance measures would be required.

Sludge Pipeline from the CAWRP to the PLWTP

- Southern maritime chaparral (Tier I) is present in the alignment study area.
- Diegan coastal sage scrub (Tier II) is present in the alignment study area and in areas adjacent to the existing streets in which the alignment is located.

Based on the vegetation present within the study area, impacts to Tier I and Tier II communities would be unavoidable for open trench construction. However, impacts could be avoided or minimized by using an appropriate construction method, such as auger boring/pipe jacking, horizontal directional drilling or microtunneling, or by using existing subterranean pipe in that location. Because the proposed sludge pipeline is an underground pipeline, depending on the construction methods implemented, impacts may be avoidable or unavoidable, but all impacts would be temporary.

CAAWPF

Non-native grassland (Tier IIIB) is present in the western two-thirds of the study area for the site. Based on conceptual design of this facility, impacts to Tier IIIB vegetation would likely be permanent and unavoidable.

Central Area Tertiary Effluent Force Main and Brine Conveyance

Based on the vegetation communities in the study area and vicinity of these pipelines, no impacts to sensitive habitat or sensitive natural communities are anticipated, and no avoidance measures are necessary.

Central Area Purified Water Pipeline

- Maritime succulent scrub (Tier I) is present in the alignment study area and in areas adjacent to the existing streets in which the alignment is located.
- Diegan coastal sage scrub (Tier II) is present in the alignment study area and in areas adjacent to the existing streets in which the alignment is located.
- Non-native grassland (Tier IIIB) is present in areas adjacent to the existing streets in which the alignment is located.

Based on the available data for the study area, impacts to small areas of sensitive upland communities in Navajo Canyon and below Lake Murray Dam are likely unavoidable using open trench construction methods. However, impacts could be avoided or minimized by using an appropriate construction method, such as auger boring/pipe jacking, horizontal directional drilling or microtunneling in that location. Locating the proposed pipeline in existing streets where possible would avoid direct impacts to sensitive upland communities in the remainder of the alignment. Because the proposed pipeline is underground, impacts to sensitive habitat or sensitive natural communities would be temporary.

Pump Station at Lake Murray Boulevard

Based on the vegetation communities in the study area and vicinity of this facility, no impacts to sensitive habitat or sensitive natural communities are anticipated, and no avoidance measures are necessary.

Improvements to PLWTP and MBC Facilities

Both facilities currently exist, and as such, improvements are anticipated to occur within the development footprint of each facility where no biological resources currently exist. Based on the proposed Program conceptual design and available biological data, there would be no impacts to sensitive habitat or sensitive natural communities. No avoidance measures would be necessary.

South Bay Component

SBAWPF

Based on the vegetation communities in the study area and vicinity of this facility, limiting the proposed SBAWPF to the existing SBWRP site would avoid impacts to adjacent sensitive upland communities.

SBSPF

The proposed facility would be constructed on the existing SBWRP site. There would be no impacts to sensitive habitat or sensitive vegetation communities.

Wastewater Force Main Pipeline from National City to the SBWRP

Diegan coastal sage scrub (Tier II/CVTier II) is present in areas adjacent to the existing streets within the alignment study area. Impacts to sensitive upland communities would be avoided by locating the proposed pipeline in existing streets. Because the proposed pipeline is underground, impacts to sensitive habitat or sensitive natural communities would be temporary.

ROD at Otay Reservoir

Diegan coastal sage scrub (CvTier II) is present in the western half of the study area for the site. The proposed ROD would be an aboveground facility, and based on the vegetation present within the study area and surrounding vicinity, impacts to CVTier II vegetation from the proposed ROD would be permanent and unavoidable.

South Bay Purified Water Pipeline

- Maritime succulent scrub (Tier I/CVTier I) is present in the study area alignment and in areas adjacent to the existing streets and roads along the conceptual alignment.
- Diegan coastal sage scrub (Tier II/CVTier II) is present in the study area alignment and in areas adjacent to the existing streets and roads along the conceptual alignment.
- Non-native grassland (Tier IIIB/CVTier III) is present in the study area alignment and in areas adjacent to the existing streets and roads along the conceptual alignment.

Most of the impacts to sensitive upland communities from the proposed pipeline would likely be to non-native grassland and maritime succulent scrub. Given the overall undeveloped nature of lands in the study area, impacts to sensitive upland communities from the proposed pipeline may be unavoidable. However, locating the pipeline in existing streets and unpaved roads could minimize impacts to sensitive upland communities. Because the proposed pipeline is underground, impacts would be temporary.

Otay Reservoir Booster Station

Diegan coastal sage scrub (Tier II/CoTier II) is present in the eastern third to half of the study area for this facility. Given that the proposed Otay Reservoir Booster Station is an aboveground facility and Tier II/Group C vegetation is present within the study area for this pump station,

impacts would be permanent and unavoidable. However, impacts to this vegetation could be minimized by locating the pump station in the western (developed) portion of the proposed site.

Pump Station at Sea Vale Street

Based on the available data within the study area for the proposed South Bay Influent Pump Station, no sensitive habitat or sensitive natural communities vegetation are present, and no avoidance measures would be required.

5.4.5 SIGNIFICANCE OF IMPACTS

Impacts to sensitive habitat or sensitive natural communities at the proposed NCAWPF (Tier IIIB), the ROD at San Vicente Reservoir (CoTier III), the ROD at Otay Reservoir, and the Otay Reservoir Booster Station (Tier II/CoTier II) would be permanent and unavoidable. Without implementation of the mitigation described below, permanent impacts would be considered **potentially significant.**

Impacts to sensitive habitat or sensitive natural communities at all other proposed Program facilities, whether direct or indirect, would be temporary. Without implementation of the mitigation described below, temporary impacts would be considered **potentially significant.**

Implementation of the Mitigation Framework measures described below would ensure that all temporary and permanent impacts, both direct and indirect, to sensitive habitat or sensitive natural communities during construction and operations would be **reduced to below a level of significance**.

5.4.6 MITIGATION, MONITORING, AND REPORTING

Mitigation Framework

The following Mitigation Framework measures are being proposed based on a Program-level analysis of sensitive habitats and sensitive natural communities. All measures shall apply to O&M activities as well, where applicable. Additional details regarding the appropriate performance standard of each measure will be provided at the project-level analysis. Given that specific locations of the proposed facilities are only conceptual at this time, detailed avoidance and minimization measures specific to future facility construction and operation shall be provided during the project-level analysis.

MM-BIO-1 Prior to subsequent project level review, all projects which could have potentially significant impacts resulting in a reduction in the number of unique, rare,

endangered, sensitive, or fully protected species of plants or animals shall be analyzed in accordance with the CEQA Significance Thresholds, which require that site-specific biological resources surveys be conducted in accordance with City of San Diego Biology Guidelines (2012) and MSCP Subarea Plan. Where sensitive biological resources are known or suspected on or adjacent to a proposed project site, a biological assessment shall be performed by a qualified City-approved biologist familiar with MSCP Subarea Plans for the City of San Diego, County of San Diego, and City of Chula Vista for that project. Based on available habitat within the project areas, focused presence/absence surveys shall be conducted in accordance with the Biology Guidelines and applicable resource agency survey protocols. Engineering design specifications based on project-level grading and site plans shall be incorporated into the design of future projects to minimize or eliminate direct impacts on sensitive plant and wildlife species consistent with the FESA, MBTA, CESA, MSCP Subarea Plan, and ESL Regulations. Mitigation for impacts on rare plant species shall be in accordance with the City's Biology Guidelines (City of San Diego 2012), which require habitat-based mitigation according to the established MSCP mitigation ratios (see Table MM-BIO-1A below, Table 3 in the City's Biology Guidelines), soil salvage, and/or translocation or restoration of species.

It is expected that the majority of sensitive species not covered by the MSCP will be adequately mitigated through the habitat-based mitigation required by the City of San Diego (2012) and detailed below. However, mitigation requirements and protocols may be required to ensure that impacts on sensitive species are reduced to below a level of significance. Sensitive wildlife mitigation must be developed in accordance with all applicable federal, state, and local laws and protocols (including the MSCP Subarea Plan Appendix A Conditions of Coverage) in effect at the time when permits are applied for. Mitigation measures for general nesting birds and some individual species, including least Bell's vireo, coastal California gnatcatcher, and coastal cactus wren, have been standardized by the City's Mitigation Monitoring and Reporting Program (MMRP) and would be implemented at a project level. Mitigation measures may include, but are not limited to, the following:

Mitigation for Impacts on Sensitive Upland Habitats

Future projects resulting in impacts on sensitive upland Tier I, II, IIIA, or IIIB habitats shall implement avoidance and minimization measures consistent with the City Biology Guidelines and MSCP Subarea Plan and provide suitable

mitigation in accordance with Table 3 in the City's Biology Guidelines (see Table MM-BIO-1A) and MSCP Subarea Plan. Future project-level grading and site plans shall incorporate project design features to minimize direct impacts on sensitive vegetation communities including but not limited to riparian habitats, wetlands, maritime succulent scrub, coastal sage scrub, and grasslands consistent with federal, state, and City guidelines. Any required mitigation for impacts on sensitive vegetation communities shall be outlined in a conceptual mitigation plan following the outline provided in the City Biology Guidelines.

Mitigation for impacts on sensitive vegetation communities shall be implemented at the time future projects are proposed. Project-level analysis shall determine whether the impacts are within or outside the MHPA. Any MHPA boundary adjustments shall be processed by the individual project applicants through the City and Wildlife Agencies during the early project planning stage.

Mitigation for impacts on sensitive upland habitats shall occur in accordance with the MSCP mitigation ratios as specified within the City's Biology Guidelines (City of San Diego 2012). These mitigation ratios are based on the tier level of the vegetation community, the location of the impact, and the location of the mitigation site(s). For example, impacts on lands inside the MHPA and mitigated outside the MHPA would have the highest mitigation ratio, whereas impacts on lands outside the MHPA and mitigated inside the MHPA would have the lowest mitigation ratio.

Mitigation for Impacts to Wetlands

Please refer to Mitigation Framework MM-BIO-2 under Impact 5.4-7.

Mitigation for Short-term Impacts on Sensitive Species from Project Construction

Within the Program area, for proposed project components adjacent to or within the MHPA, construction noise that exceeds the maximum levels allowed shall be avoided during the breeding seasons for protected avian species such as: western snowy plover (March 1-September 15); California least tern (May 1-August 30); coastal California gnatcatcher (March 1-August 15); least Bell's vireo (March 15-September 15); coastal cactus wren (February 15-August 15); burrowing owl (February 1-August 31); southwestern willow flycatcher (May 1-August 30); light-footed Ridgway's rail (March 1-August 31); and western yellow-billed cuckoo (mid-June-late August). If construction is proposed during the breeding season for these species, USFWS protocol

surveys shall be required in order to determine species presence/absence. When applicable, adequate noise reduction measures shall be incorporated.

Additional specific measures necessary for reducing potential indirect impacts on sensitive bird species are further detailed in Mitigation Framework MM-LU-3.

A revegetation plan must be prepared by a qualified City-approved biologist familiar with Multiple Species Conservation Program (MSCP) Subarea Plans for the City of San Diego, County of San Diego, and City of Chula Vista.

Other Agency Mitigation Requirements

Permanent impacts to sensitive upland communities in the Chula Vista MSCP Subarea Plan area shall require mitigation at the following ratios, assuming mitigation is provided inside the Preserve: CVTier I – 1:1 for impacts outside the Preserve and 2:1 for impacts inside the Preserve; CVTier II – 1:1 for impacts outside the Preserve and 1.5:1 for impacts inside the Preserve; CVTier III – 0.5:1 for impacts outside the Preserve and 1:1 for impacts inside the Preserve.

Permanent impacts to sensitive upland communities in the County MSCP Subarea Plan area shall require mitigation at the following ratios, assuming the land conserved as mitigation meets the definition of biological resource core area: CoTier II – 1:1 if impacted land does not meet the definition of biological resource core area and 1.5:1 if impacted land meets the definition of biological resource core area; CoTier III – 0.5:1 if impacted land does not meet the definition of biological resource core area and 1:1 if impacted land meets the definition of biological resource core area. Non-native grassland shall be mitigated at 0.5:1. Mitigation may be proposed through preservation of biological resource core areas by fee title transfer, conservation easement, or other appropriate title encumbrances.

Permanent impacts to sensitive upland communities on MCAS Miramar shall require mitigation at the ratios provided in the MCAS Miramar Integrated Natural Resources Management Plan (INRMP). Mitigation for impacts by non-military entities shall be provided on land outside of MCAS Miramar. Tables 6.2.2.2a and 6.2.2.2b of the INRMP provide mitigation ratios for temporary and permanent impacts, respectively. Compensatory mitigation shall be required only when threatened or endangered species are present in the impact area, and ratios range from 1:1 to 2:1 for temporary impacts and between 1:1 and 3:1 for permanent impacts.

All mitigation for unavoidable wetland impacts within the Coastal Overlay Zone shall occur within the Coastal Overlay Zone.

Table MM-BIO-1A
Mitigation Ratios for Impacts on Upland
Vegetation Communities and Land Cover Types

Tier	Habitat Type	Mitigation Ratios			
TIER 1 (rare uplands)	Southern Foredunes Torrey Pines Forest Coastal Bluff Scrub Maritime Succulent Scrub Maritime Chaparral Scrub Oak Chaparral Native Grassland Oak Woodlands			Location of Preservation	
				Inside	Outside
		Location of Impact	Inside	2:1	3:1
			Outside	1:1	2:1
TIER II (uncommon uplands)	Diegan Coastal Sage Scrub (CSS) CSS/Chaparral			Location of Preservation	
				Inside	Outside
		Location of Impact	Inside*	1:1	2:1
			Outside	1:1	1.5:1
TIER IIIA (common uplands)	Chamise Chaparral Southern Mixed Chaparral			Location of Preservation	
				Inside	Outside
		Location of Impact	Inside*	1:1	1.5:1
			Outside	0.5:1	1:1
TIER IIIB (common uplands)	Non-native Grassland			Location of Preservation	
				Inside	Outside
		Location of Impact	Inside*	1:1	1.5:1
			Outside	0.5:1	1:1

Notes:
For all Tier I impacts, the mitigation could (1) occur within the MHPA portion of Tier I or (2) occur outside of the MHPA within the affected habitat type (in-kind).
For impacts on Tier II, IIIA, and IIIB habitats, the mitigation could (1) occur within the MHPA portion of Tiers I – III (out-of-kind) or (2) occur outside of the MHPA within the affected habitat type (in-kind). Project-specific mitigation will be subject to applicable mitigation ratios at the time of project submittal.

Other Approvals

In addition to the mitigation proposed above, several other approvals related to sensitive habitats or sensitive natural communities are anticipated to be required during the future project-level review. The following is not intended to be a complete list of approvals for impacts to sensitive habitats or sensitive natural communities, but rather a general idea of future project-level approvals that may be required depending on the location of the proposed Program facilities.

Construction of proposed Program facilities on City-owned land would require a Site Development Permit, and for facilities in the coastal zone, a Coastal Development Permit.

~~The proposed San Vicente Purified Water Pipeline alignment study area includes lands in the Metro Lakeside Jamul segment of the County MSCP Subarea Plan designated as Hardline Preserve. Lands designated as Hardline Preserve in the County MSCP Subarea Plan have already been preserved and are restricted from development. Permits for temporary impacts to Hardline Preserve require an equivalency analysis to demonstrate that revegetation/restoration of temporary impact areas would provide equivalent or superior biological resources value in the Preserve, and might require mitigation at more than 1:1. If the Hardline Preserve lands are under a conservation easement or other restrictive covenant, allowed activities in the Hardline Preserve area may be dictated by that easement.~~

Construction in Chula Vista would generally be governed by the Chula Vista Habitat Loss and Incidental Take Ordinance process outside of the development area of Covered Projects, and by project-specific conditions inside Covered Projects. However, the Chula Vista MSCP Subarea Plan does include provisions for siting infrastructure within the Preserve. Future Facilities inside 100% Conserved Areas such as the Otay Ranch Preserve would also be subject to the infrastructure siting provisions.

Construction of facilities on federal lands in MCAS Miramar and the San Diego Bay NWR would require analysis under the National Environmental Policy Act (NEPA). Actions in existing rights-of-way or easements on MCAS Miramar lands may not require authorization from MCAS Miramar and therefore would require that the City consult directly with the USFWS under Section 10 of the ESA to address potential species and habitat issues.

Level of Significance after Mitigation

Implementation of MM-BIO-1 would reduce potential impacts to sensitive habitats or sensitive natural community to **below a level of significance**.

5.4.7 IMPACTS

Issue 2: Would the proposed Pure Water Program result in an impact on City, State, or Federally regulated wetlands through direct removal, filling, hydrological interruption or other means?

The study area for the proposed Program facilities was analyzed for potential impacts to wetlands mapped in the USFWS-NWI, wetland and riparian vegetation shown in SANDAG VD mapping, and blue line streams shown on USGS topographic maps. Impacts to wetlands located

within, and in some cases adjacent to, the study area are discussed in the following paragraphs. This Program-level analysis is based upon a conceptual design only, and specific locations for each facility are not known or confirmed to a project-level or design-level of detail. Impacts to regulated wetlands can be direct or indirect, and permanent or temporary. Direct impacts may be described as the removal or alteration of wetlands and/or the species and habitats associated with them. Direct impacts would potentially occur at the location of construction activities (e.g., grading, ground disturbance, trampling of vegetation). While indirect impacts to wetlands are typically more difficult to detect and track, indirect impacts can undermine species viability or wetland habitat quality, especially if multiple indirect or direct impacts work cumulatively to impair the species or to degrade the wetland functions and values. Indirect impacts to wetlands may be similar to those affecting other sensitive vegetation communities, such as dust generation during construction, introduction of invasive species into the disturbance areas, chemical pollutants, and the alteration of fire regimes. Vegetation removal around wetland areas may result in other issues such as increased erosion and sedimentation, and other water quality issues associate with urban run-off.

While the potential for avoidance is included below with the impacts discussion where applicable, the feasibility or infeasibility of such avoidance and recommendations for sustaining wetland functionality will be evaluated during future project-level analyses.

Potential Impacts

North City Component

Proposed facilities in the North City component would potentially impact City, state, and federally regulated wetlands included in the USFWS-NWI and SD-VP databases.

NCAWPF

The study area for this proposed facility includes vernal pools mapped in the USFWS-NWI (NWI), and vernal pools mapped in the SD-VPI. The NWI vernal pools are scattered throughout the southern two-thirds of site, and impacts to them at this location are likely unavoidable. Three SD-VPI vernal pools occur along a dirt road near the southern and western edge of the site. Because this is a Program-level analysis, the extent of the watersheds of pools that are potentially affected cannot be determined at this time. Incorporating required avoidance buffers could severely restrict the development area. However, without incorporating required buffers, impacts would be permanent and unavoidable.

NCWRP Upgrades

The study area for this proposed facility encompasses freshwater emergent wetland mapped in the NWI. This consists of the western end of a stream channel that is shown on USGS topographic maps as a blue line stream tributary to Rose Canyon. This feature lies at the extreme eastern edge of the site, outside of the existing fence, and continues upstream to the east of the site. Aerial imagery suggests that this stream has been filled or culverted for construction of the NCWRP, I-805, and development west of I-805, and no longer appears as a surface feature west of the eastern edge of the site. SANDAG vegetation mapping shows non-native grassland at this location, not wetland vegetation. Impacts to resources would be avoided by restricting development to the area within the existing fence. Depending on the level of expansion and placement of upgraded features, impacts would be avoidable and temporary.

Wastewater Force Main Pipeline from NCWRP to Morena Boulevard

The study area for this proposed pipeline alignment encompasses regulated wetlands that would potentially be impacted at four points north of Governor Drive.

The study area for this alignment also crosses USGS blue line streams 0.07 mile south of Miramar Road, 0.14 mile north of Rose Creek, at Rose Creek in Rose Canyon, and 0.27 mile south of Rose Creek. The northernmost stream is mapped as freshwater emergent wetland in the NWI but no longer appears as a surface feature west of Sydney Court, which is west of I-805. This stream presumably enters the City's stormwater system at this point. The two unnamed streams in the south are tributaries to Rose Creek, which then flows into the Pacific Ocean via Mission Bay. Rose Creek is mapped as riverine in the NWI, and the unnamed tributary to the south is mapped as freshwater forested/shrub wetland. SANDAG-VD mapping does not show any jurisdictional riparian vegetation in these streams. This tributary flows parallel to the proposed study area for the alignment for approximately 0.27 mile, varying from approximately 30 to 130 feet west of the proposed alignment.

Between Governor Drive and Mission Bay, the alignment study area traverses existing streets except at Chateau Drive, the intersection of Balboa Avenue and Morena Boulevard, and where Morena Boulevard crosses Tecolote Creek. The alignment study area crosses Tecolote Creek south of Chateau Drive at Genesee Avenue. The alignment study area crosses Tecolote Creek immediately west of the Morena Boulevard bridge, in a reach of Tecolote Creek mapped as estuarine in the NWI. No wetlands are mapped in the 1,000-foot study area at the intersection of Balboa Avenue and Morena Boulevard.

The alignment study area also crosses USGS blue line streams in existing streets at San Clemente Canyon and two points in upper Tecolote Canyon.

Additional jurisdictional wetlands mapped in the NWI inside the 1,000-foot study area of the proposed alignment include: riparian scrub in the San Diego River across Friars Road from the southern end of the WFBP, riverine wetland in Tecolote Creek at Morena Boulevard, estuarine wetland in Tecolote Creek at Morena Boulevard, approximately 1,700 linear feet of riparian scrub parallel to the proposed alignment along Balboa Avenue north of Clairemont High School, approximately 1,400 linear feet of riparian scrub in Tecolote Creek parallel to the alignment at Balboa Avenue, riparian scrub in Tecolote Canyon at Chateau Drive, riparian scrub at North Clairemont Community Park, riparian scrub/forest in San Clemente Canyon, and riparian scrub in a canyon northeast of University Garden Park.

The proposed alignment study area avoids all wetland resources except where it crosses streams that extend across the entire 1,000-foot study area. Those resources that run parallel to the alignment study area would potentially be impacted if they are not located at the top of the bank and outside of riparian areas.

Impacts would be avoided or minimized by using appropriate construction methods, such as auger boring/pipe jacking, horizontal directional drilling or microtunneling, or using existing subterranean pipe, underneath stream channels, and/or suspending the pipeline from existing bridges. In places where the current alignment runs parallel to streams, such as south of Rose Creek, Tecolote Canyon at Balboa Avenue, and Balboa Avenue north of Clairemont High School, the WFBP may be located above the top of bank and outside any riparian vegetation associated with these channels.

San Vicente Purified Water Pipeline

The proposed study area encompasses regulated wetlands at 10 locations between Eastgate Mall and the proposed ROD to San Vicente that could potentially be impacted by the proposed facility.

The proposed alignment study area crosses an unnamed blue line stream and a complex of four vernal pools mapped in NWI in the grounds of Miramar National Cemetery. The blue line stream is mapped as supporting freshwater emergent wetland. The alignment study area crosses NWI-mapped riverine wetland in Rose Creek and passes through a complex of 12 scattered vernal pools on MCAS Miramar east of the nursery at Governor Drive and north of the Miramar Landfill. The alignment study area crosses a feature mapped as riverine wetland at the northeast corner of Miramar Landfill; this appears to be a brow ditch or drainage channel constructed for the landfill. The alignment runs parallel and close by this feature for approximately 0.6 mile until the drainage enters a culvert at a Miramar Landfill access road.

The proposed alignment study area also crosses freshwater forested/shrub wetland in San Clemente Canyon south of the Miramar Landfill and follows existing streets in developed areas until reaching I-15. The alignment study area crosses freshwater forested/shrub wetland in Murphy Canyon immediately west of I-15 and follows existing streets through Tierrasanta to the end of Tierrasanta Boulevard.

The proposed alignment study area crosses the San Diego River and a pond associated with the quarry in Mission Gorge, then crosses the San Diego River again at West Hills Parkway near Santee. The alignment study area crosses riverine wetlands in San Vicente Creek east of SR-67 runs along the edge of riverine wetlands in San Vicente Creek next to Moreno Avenue and then crosses a southern coast live oak riparian forest at the edge of San Vicente Creek before terminating at the proposed ROD at San Vicente Reservoir.

Other NWI wetlands in the 1,000-foot study area for the proposed alignment include blue line streams and isolated vernal pools that may be avoided by the alignment depending on where the pipeline is located, and in the case of steams, if located in existing streets.

The proposed alignment may impact streams, vernal pools, and riparian vegetation on the alignment in the western portion of MCAS Miramar, Rose Creek, San Clemente Creek, the San Diego River, and San Vicente Creek. However, impacts could be avoided or minimized by using appropriate construction methods, such as auger boring/pipe jacking, horizontal directional drilling, or microtunneling, or by using existing subterranean pipe at stream crossings. Routing the pipeline around vernal pool complexes or avoiding individual pools and their associated watersheds within more diffuse vernal pool complexes would avoid impacts to vernal pools. In addition, use of existing subterranean pipe in western MCAS Miramar would avoid potential impacts to all mapped vernal pools within the proposed alignment at this location.

Pump Stations at Mission Montana Drive and Morena Boulevard

No wetland resources occur within the 300-foot study area for the Mission Trails Booster Station. Based on the available biological data and Program-level design information, no wetland resources would be impacted by the Mission Trails Booster Station, and no avoidance measures would be necessary.

The proposed pump station study area for the Morena Boulevard Pump Station encompasses southern cottonwood–willow riparian forest across Friars Road from the pump station. However, this area is not anticipated to be impacted by the proposed pump station, and no avoidance measures would be necessary.

ROD at San Vicente Reservoir

The proposed study area for the ROD at San Vicente includes an unnamed USGS blue line stream that runs through the center of the proposed facility from south to north. This stream also supports southern coast live oak riparian forest vegetation, under ACOE and/or CDFW jurisdiction, which occupies approximately one-third to one-half of the proposed study area for this facility.

Additional wetlands mapped in the NWI inside the 300-foot study area for the ROD include a small area mapped as lake. Current aerial imagery shows this area above the existing level of the lake shore.

Based on the available biological data, wetland impacts at the proposed ROD are likely unavoidable. Avoidance of impacts to jurisdictional wetlands for the ROD would likely require relocating this facility.

Central Area Component

Proposed facilities in the Central Area component would potentially impact City, state, and federally regulated wetlands included in the USFWS-NWI and SD-VP databases.

CAWRP

The proposed WRP site includes no mapped wetland areas. The 300-foot study area includes portions of San Diego Bay in Harbor Island Marina and near Liberty Station. However, based on the available biological data and Program-level information, no impacts to these waters would result from construction of the proposed facility, and no avoidance measures are necessary.

Sludge Pipeline from CAWRP to PLWTP

The proposed study area crosses three unnamed blue line streams along Gatchall Road on NBPL, north of the PLWTP. The alignment also crosses an engineered pond that appears to be a water treatment facility on Transdec Road on NBPL. Other NWI wetlands in the 1,000-foot study area for the pipeline alignment are shoreline of San Diego Bay, the Pacific Ocean along Point Loma, and an arm of San Diego Bay which the alignment crosses on the existing Harbor Drive bridge.

Depending on the nature of the blue line streams crossing Gatchall Road on NBPL, construction methods such as auger boring/pipe jacking, horizontal directional drilling, or microtunneling, or by use of existing subterranean pipe, may be necessary to avoid wetland impacts in those three locations. Furthermore, if Gatchall Road provides existing crossings, or if the streams can be bridged, avoidance measures may not be necessary.

CAAWPF

The study area for the proposed facility does not include NWI wetlands. This study area is adjacent to southern riparian woodland in the San Diego River, but would not be impacted by construction or operation of this proposed facility. Based on the available biological data and Program-level information, no impacts to wetlands would result from the proposed facility, and no avoidance measures are necessary.

Central Area Tertiary Effluent Force Main and Brine Conveyance

The study area for the proposed alignment crosses southern arroyo willow riparian forest and southern riparian woodland in the San Diego River between Fenton Parkway and Camino del Rio North. Other wetland areas in the 1,000-foot study area include parts of San Diego Bay, the San Diego River at Morena Boulevard, and a blue line stream east of Mission Center Road. Avoidance of these features can be achieved if the pipeline is constructed in existing streets, and crosses the San Diego River on the existing Morena Boulevard bridge.

Impacts to the San Diego River between Fenton Parkway and Camino del Rio North could be avoided or minimized by using an appropriate construction method such as auger boring/pipe jacking, horizontal directional drilling, or microtunneling, or by using existing subterranean pipe.

Central Area Purified Water Pipeline

The proposed pipeline facility could potentially impact regulated wetlands at three locations.

The alignment study area crosses riverine wetland in Navajo Canyon at Waring Road and Alvarado Canyon Road, a blue line stream supporting non-native riparian vegetation below the Lake Murray Dam, and southern arroyo willow riparian forest in the San Diego River at SR-67. Other wetlands in the 1,000-foot wide study area include freshwater marsh and riparian forest in the San Diego River at the confluence with Alvarado Creek, Alvarado Creek east of Mission Gorge Road and at the mouth of Navajo Canyon, and riparian scrub at Marengo Avenue and in Winter Gardens near Rockcrest Road.

Use of existing roads and bridges where Waring Road and Alvarado Canyon Road cross Navajo Canyon would avoid impacts to regulated waters at that location. Impacts could also be avoided or minimized by using an appropriate construction method such as auger boring/pipe jacking, horizontal directional drilling, or microtunneling in that location. Construction of a bridge over the small canyon, or use of an appropriate construction method would avoid impacts to blue line stream and non-native riparian vegetation at Lake Murray Dam. Use of the existing SR-67 bridge

over the San Diego River, or use of appropriate construction methods identified above would avoid impacts to wetland and riparian habitats in the San Diego River at SR-67.

Pump Station at Lake Murray Boulevard

The study area for the proposed Alvarado WTP Booster Station is currently developed, and therefore, the pump station would not impact regulated wetlands. No avoidance measures are necessary.

Improvements at PLWTP and MBC

Both facilities currently exist, and improvements to them are anticipated to occur within the development footprint of each. Based on the proposed Program conceptual design and available biological data, there would be no impacts to sensitive habitat or sensitive natural communities. No avoidance measures would be necessary.

South Bay Component

Proposed facilities, including pipelines, in the South Bay component could potentially impact City, state, and federally regulated wetlands included in the USFWS-NWI and SD-VP databases.

SBAWPF

The study area for this proposed facility is located within developed and disturbed land, and does not encompass regulated wetlands. Based on the available biological data and Program-level information, there would be no impacts to wetlands, and no avoidance measures are necessary.

SBSPF

The proposed facility would be constructed on the existing SBWRP site. There would be no impacts to wetlands on or adjacent to the facility site.

Wastewater Force Main Pipeline from National City to SBWRP

The study area for the proposed pipeline alignment crosses riverine wetland on Bay Boulevard south of J Street, Salt Pan and mudflat along Bay Boulevard in the salt works north of Main Street, and a blue line stream and the Tijuana River on Saturn Boulevard. The alignment study area is mostly in the right-of-way of existing streets in these areas and would not impact these wetland resources.

The alignment study area also crosses estuarine and marine wetland next to the San Diego Trolley tracks south of West 30th Street, saltbush scrub and southern coastal salt marsh in Paradise Creek, freshwater marsh and mulefat scrub in the Otay River, and the Tijuana River between Saturn

Boulevard and Sunset Avenue. In this area, the entirety of the alignment is not likely to be located within existing streets and therefore would potentially impact these wetland resources.

Other regulated wetlands in the 1,000-foot study area for this proposed pipeline include blue line streams crossing Dairy Mart Road, the Tijuana River at Hollister Street, southern coastal salt marsh at the northern end of Bay Boulevard, and the Sweetwater River.

Locating the proposed pipeline in existing streets and bridges would avoid impacts to regulated wetlands at most locations along the proposed alignment. At points where the alignment would cross wetlands outside of existing streets, such as Paradise Creek, the Otay River, and the Tijuana River between Saturn Boulevard and Sunset Avenue, use of an appropriate construction method such as auger boring/pipe jacking, horizontal directional drilling, or microtunneling, or by using existing subterranean pipe would avoid impacts to regulated wetlands.

ROD at Otay Reservoir

The study area for the proposed facility encompasses freshwater marsh in the eastern half of the site. Impacts would occur if this facility is not located in the western half of the site.

Locating the proposed ROD in the western half of the site, outside of freshwater marsh areas would minimize impacts to regulated wetlands at the site. Total avoidance of regulated wetlands is likely not feasible given the need to construct an outfall to the lakeshore, which is lined with freshwater marsh vegetation.

South Bay Purified Water Pipeline

The proposed alignment study area crosses the Tijuana River between Camino de la Plaza and I-5, a blue line stream west of Heritage Road, the Otay River south of the quarry on Wiley Road, and numerous blue line streams and riparian areas in the eastern portion of the Otay Valley. Most of the NWI wetland areas in the eastern Otay Valley are mapped as tamarisk scrub or non-native riparian in SANDAG vegetation data. The study area alignment follows unpaved roads in this area and would likely avoid most riparian areas. Other NWI wetlands in the 1,000-foot study area for the proposed pipeline include blue line streams that the alignment crosses through existing streets.

Locating the proposed pipeline in existing streets and unpaved roads, and in disturbed uplands in Otay Valley wherever possible, would avoid impacts to regulated wetlands along most of the alignment. Impacts could also be avoided or minimized by using an appropriate construction method such as auger boring/pipe jacking, horizontal directional drilling, or microntunneling, or

by using existing subterranean pipe in the Tijuana River between Camino de la Plaza and I-5, at Heritage Road, and in Otay Valley where blue line streams are unavoidable by other means.

Otay Reservoir Booster Station and South Bay Influent Pump Station The study area of the proposed Otay Reservoir Booster Station includes NWI stream at the southwestern edge, south of an existing access road in the water treatment plant. This stream is mapped as supporting eucalyptus woodland in the proposed pump station site and southern arroyo willow riparian forest outside of the site.

The site of the proposed South Bay Influent Pump Station at Sea Vale Street includes saltbush scrub and southern coastal salt marsh in Paradise Creek in the northern portion of the site.

Locating the proposed Otay Reservoir Booster Station at Otay Lakes County Park north of the existing access road in the southern part of the site would avoid impacts to regulated waters. Locating the proposed South Bay Influent Pump Station at Sea Vale Street in the disturbed portion of the lot south of Paradise Creek would avoid impacts to regulated wetlands and riparian vegetation present in the study area for the proposed facility.

5.4.8 SIGNIFICANCE OF IMPACTS

Where possible, siting of the facilities within existing streets and unpaved roadways and on existing bridges, as well as using an appropriate construction methods, such as auger boring/pipe jacking, horizontal directional drilling or microtunneling, or by using existing subterranean pipe, would provide an opportunity for avoidance. However, impacts to wetlands would occur at the NCAWPF, the ROD at San Vicente Reservoir, and the ROD at Otay Reservoir. Although some level of minimization at these proposed facility sites would be possible, impacts would be permanent and unavoidable. Without implementation of the Mitigation Framework described below, permanent impacts would be considered **potentially significant.**

Impacts to wetlands at all other proposed Program facilities, whether direct or indirect, would be temporary. Without implementation of the Mitigation Framework described below, temporary impacts would be considered **potentially significant.**

5.4.9 MITIGATION, MONITORING, AND REPORTING

Mitigation Framework

The following Mitigation Framework measures are being proposed based on a Program-level analysis of potential impacts to wetlands. Mitigation Framework measure MM-BIO-1 is also applicable to wetlands. All measures shall apply to O&M activities as well, where applicable. Mitigation shall also be subject to the local, state, and federal jurisdiction that has regulatory

oversight specific to the wetland or waters potentially being impacted. Given that specific locations of the proposed facilities are only conceptual at this time, detailed mitigation, avoidance, and minimization measures to offset potential impacts to each wetland or regulated waters, and how the measures are dependent upon applicable jurisdictional oversight, would also be provided during the project-level analyses.

MM-BIO-2 To reduce potential direct impacts on City, state, and federally regulated wetlands, all subsequent projects shall be required to comply with ACOE CWA Section 404 requirements and special conditions, RWQCB in accordance with Section 401 of the CWA, CDFW Section 1602 Streambed Alteration Agreement requirements and special conditions, and the City of San Diego ESL Regulations for minimizing impacts on wetlands. Achieving consistency with these regulations for impacts on wetlands and special aquatic sites would reduce potential impacts on regulated wetlands and provide compensatory mitigation (as required) to ensure no net loss of wetland habitats. In addition, the USFWS would be involved under Section 7 of the FESA during consultation initiated by the ACOE during the 404 permit process if federal listed species are present. If there is no federal nexus to jurisdictional waters, then a Section 10(A) authorization from USFWS would be required to cover any potential effects on federal listed species.

Prior to obtaining discretionary permits for future actions implemented in accordance with the Program that are subject to ESL, and/or where the CEQA review has determined that there may be a significant impact on other biological resources considered sensitive under CEQA, a site-specific biological resources survey shall be completed in accordance with City of San Diego Biology Guidelines. In addition, a preliminary or final jurisdictional waters/wetlands delineation of the project site shall be completed following the methods outlined in the ACOE's 1987 *Wetlands Delineation Manual*, the 2008 *Regional Supplement to the Corps of Engineers Delineation Manual for the Arid West Region*, and any required updated or additional standards. A determination of the presence/absence and boundaries of any waters of the U.S. and waters of the state shall also be completed following the appropriate ACOE guidance documents for determining the OHWM boundaries. The limits of any riparian habitats on-site under the sole jurisdiction of CDFW shall also be delineated, as well as any special aquatic sites (excluding vernal pools) that may not meet federal jurisdictional criteria but are regulated by the RWQCB. Engineering design specifications based on project-level grading and site plans shall be incorporated into the project design to minimize direct impacts to wetlands, jurisdictional

waters, riparian habitats, and vernal pools consistent with federal, state, and City guidelines. Any required mitigation for proposed impacts shall be outlined in a conceptual wetland mitigation plan prepared in accordance with the City's Biology Guidelines (2012).

Additionally, any impacts on wetlands in the City of San Diego would require a deviation from the ESL wetland regulations. Under the wetland deviation process, development proposals that have wetland impacts shall be considered only pursuant to one of three options: Essential Public Project, Economic Viability Option, or Biologically Superior Option. ESL Regulations require that impacts on wetlands be avoided. Unavoidable impacts on wetlands shall be minimized to the maximum extent practicable and mitigated as follows for Essential Public Projects:

- As part of the project-specific environmental review pursuant to CEQA, all unavoidable wetland impacts shall be analyzed, and mitigation shall be required in accordance with Table 2A in the City's Biology Guidelines (see Table MM-BIO-2A). Mitigation shall be based on the impacted type of wetland and project design. Mitigation shall prevent any net loss of wetland functions and values of the impacted wetland.

Table MM-BIO-2A
City of San Diego Wetland Mitigation Ratios
(for Essential Public Projects and with Biologically Superior Design)

Vegetation Community	Mitigation Ratio
Riparian	2:1 to 3:1
Vernal pool[1]	2:1 to 4:1
Basin with fairy shrimp[1]	2:1 to 4:1
Freshwater marsh	2:1

Note:
[1] The City does not have "take" authority for vernal pool species. A draft vernal pool HCP is currently being prepared by the City in coordination with the Wildlife Agencies. If adopted, the City would have "take" authority for the vernal pool species occurring within the vernal pool HCP areas.

As part of any future project-specific environmental review pursuant to CEQA, all unavoidable wetlands impacts (both temporary and permanent) shall be analyzed and mitigation required in accordance with the City Biology Guidelines; mitigation shall be based on the impacted type of wetland habitat. Mitigation shall prevent any net loss of wetland functions and values of the impacted wetland.

Operational definitions of the four types of activities that constitute wetland mitigation under the ESL Regulations are as follows:

- **Wetland creation** is an activity that results in the formation of new wetlands in an upland area. An example is excavation of uplands adjacent to existing wetlands and the establishment of native wetland vegetation.
- **Wetland restoration** is an activity that re-establishes the habitat functions of a former wetland. An example is the excavation of agricultural fill from historic wetlands and the re-establishment of native wetland vegetation.
- **Wetland enhancement** is an activity that improves the self-sustaining habitat functions of an existing wetland. An example is removal of exotic species from existing riparian habitat.
- **Wetland acquisition** may be considered in combination with any of the three mitigation activities above.

Wetland enhancement and wetland acquisition focus on the preservation or the improvement of existing wetland habitat and function and do not result in an increase in wetland area; therefore, a net loss of wetland may result. As such, acquisition and/or enhancement of existing wetlands shall be considered as partial mitigation only for any balance of the remaining mitigation requirement after restoration or creation if wetland acreage is provided at a minimum of a 1:1 ratio.

For permanent wetland impacts that are unavoidable and minimized to the maximum extent feasible, mitigation shall consist of creation of new in-kind habitat to the fullest extent possible and at the appropriate ratios. If on-site mitigation is not feasible, then at least a portion of the mitigation must occur within the same watershed. The City's Biology Guidelines and MSCP Subarea Plan require that impacts on wetlands, including vernal pools, shall be avoided, and that a sufficient wetland buffer shall be maintained, as appropriate, to protect resource functions/values. The project specific biology report shall include an analysis of on-site wetlands (including City, state, and federal jurisdiction analysis) and, if present, include project alternatives that fully/substantially avoid wetland impacts. Detailed evidence supporting why there is no feasible less environmentally damaging location or alternative to avoid any impacts must be provided for City staff review, as well as a mitigation plan that specifically identifies how the project is to compensate for any unavoidable impacts. A conceptual wetland mitigation plan (which includes identification of the mitigation site) shall be approved by City staff prior to the release of the draft

environmental document. Avoidance shall be the first requirement; mitigation shall only be used for impacts clearly demonstrated to be unavoidable.

Prior to the commencement of any construction-related activities on-site for projects impacting wetland habitat (including earthwork and fencing), the applicant shall provide evidence of the following to the Mayor-appointed Environmental Designee prior to any construction activity:

- Compliance with ACOE Section 404 nationwide permit;
- Compliance with the RWQCB Section 401 Water Quality Certification; and
- Compliance with the CDFW Section 1601/1603 Streambed Alteration Agreement.

Other Approvals

Unavoidable impacts to jurisdictional wetlands would require the following permits:

1. CWA Section 404 Permit from ACOE for unavoidable impacts to waters of the United States
2. CWA Section 401 Water Quality Certification or Report of Waste Discharge from RWQCB for unavoidable impacts to waters of the State
3. FGC Section 1602 Streambed Alteration Agreement from CDFW for unavoidable impacts to jurisdictional wetlands (streambed and riparian habitat)
4. Coastal Development Permit from CCC for unavoidable impacts to coastal wetlands

Impacts to wetlands and vernal pool habitat in the City of San Diego may also require a deviation from the City's ESL. Any impacts to vernal pools must be mitigated "in-kind" and achieve a "no-net loss" of wetland function and values (except as provided for in the City's ESL Wetland Deviation Section 143.0510 (d)(2) Economic Viability Option, Appendix E).

Level of Significance after Mitigation

5.4.10 IMPACTS

Issue 3: Would implementation of the proposed Pure Water Program result in a reduction in the number of any unique, rare, endangered, sensitive, or fully protected species of plants or animals?

A total of 103 sensitive species, including 59 plant species and 44 wildlife species, are represented by database occurrence records within 0.5 mile of Pure Water Program potential pipeline alignments or proposed facilities (refer to Appendix A of Appendix C). Of those 103

sensitive species, 50 are covered by the MSCP Subregional Plan and 1 (Quino checkerspot butterfly [*Euphydryas editha quino*]) is covered only by the Chula Vista MSCP Subarea Plan. The 51 species are subject to conditions of coverage (refer to Appendix B of Appendix C). Sensitive species are those listed under the ESA or CESA, wait-listed under the ESA or CESA, considered Species of Special Concern or Birds of Conservation Concern by state or federal resource agencies, considered Narrow Endemics in the MSCP Subregional Plan, considered sensitive by the County or City, and plants listed on the Inventory of Rare and Endangered Plants of California maintained by the California Native Plant Society (CNPS 2015).

The study area for the Program facilities was analyzed for potential impacts to sensitive species based on occurrence records in the databases listed in Table 5.4-1 in section 5.4.2. The potential for impacts was considered moderate or high for species represented by database occurrence records that satisfied the following conditions: (1) the record is presumed extant; (2) the record reflects current conditions such as land use changes; (3) the location of the record is sufficiently precise as to allow the conclusion that the species might reasonably be judged to have potential to occur in, or in some case adjacent to, the 1,000-foot study area.

Impacts to sensitive plant and wildlife species can be direct or indirect, and permanent or temporary. Direct impacts may be described as direct harm to an individual or population of sensitive plants or wildlife species, the removal or degradation of habitats associated with the species, and/or the impairment to essential behavioral patterns of species, particularly during reproductive seasons,

Direct impacts would potentially occur at the location of construction activities due to vegetation removal, grading, trenching, ground disturbance, human incursion, nest abandonment and vehicular collisions. Species may also be indirectly impacted by noise and artificial lighting during construction and operations, dust generation during construction, introduction of invasive species into the disturbance areas, chemical pollutants, erosion and sedimentation, and the alteration of fire regimes.

This Program-level analysis is based upon a conceptual design only; specific locations for each facility relative to sensitive plants and wildlife are not known or confirmed to a project-level or design-level of detail. However, the potential for impacts to sensitive species at each facility is provided below. Species with low potential to occur are included in the list of species for each area, but are not included in the analysis for individual components.

North City Component

NCAWPF

San Diego fairy shrimp (*Branchinecta sandiegonensis*) is anticipated to have a moderate to high potential to occur in the study area for this proposed facility. Based on the presence of vernal pools, impacts to San Diego fairy shrimp and sensitive plants from construction of this proposed facility would be unavoidable.

NCWRP Upgrades

Based on the available data, there are no sensitive species anticipated to have a moderate to high potential to occur in the study area for this proposed facility. Should sensitive plants be encountered on the undisturbed areas of the site prior to construction, direct impacts to sensitive plant species would be avoided by confining project activities to currently developed areas, to the greatest extent practicable. The coastal California gnatcatcher may be present in areas adjacent to the study area, but the potential for impacting this species would be low.

The project would have low potential for significant noise impacts to coastal California gnatcatcher, given the high levels of ambient noise from I-805 and Eastgate Mall. Noise impacts to coastal California gnatcatcher inside the MHPA would be further avoided by scheduling construction and vegetation removal activities outside of the breeding season or by using noise attenuation measures during the breeding season. Breeding season restrictions for noise do not apply to coastal California gnatcatcher outside the MHPA.

Wastewater Force Main Pipeline from NCAWPF to Morena Boulevard

Sensitive species with moderate to high potential to occur in the study area for the proposed pipeline alignment are:

- coastal California gnatcatcher
- San Diego fairy shrimp
- mule deer
- Nuttall's scrub oak
- Coulter's goldfields
- wart-stemmed ceanothus

Potential direct impacts to sensitive species from construction of the proposed pipeline would be minimized by locating the pipeline in existing streets where possible. Impacts would likely be

unavoidable between Eastgate Mall and Nobel Drive if open trench construction methods or trenchless technology are utilized (e.g., directional drilling or tunneling). Noise impacts would be avoided by scheduling construction and vegetation removal outside the breeding season or by using noise attenuation measures during the breeding season.

San Vicente Purified Water Pipeline

Sensitive species with moderate to high potential to occur in the study area for the proposed pipeline alignment include:

- coastal California gnatcatcher
- least Bell's vireo
- coastal cactus wren
- southern California rufous-crowned sparrow
- Quino checkerspot butterfly
- San Diego fairy shrimp
- orange-throated whiptail
- two-striped garter snake
- coast horned lizard
- Coronado Island skink
- San Diego desert woodrat
- pallid bat
- San Diego black-tailed jackrabbit
- American badger
- mule deer
- San Diego button-celery
- San Diego mesa mint
- willowy monardella
- San Diego ambrosia
- Lakeside ceanothus
- variegated dudleya
- Orcutt's brodiaea
- Nuttall's scrub oak
- San Diego goldenstar
- Coulter's goldfields
- Palmer's grapplinghook
- summer holly
- wart-stemmed ceanothus
- singlewhorl burrobrush

Potential for impacts to Quino checkerspot butterfly between Tierrasanta Boulevard and Mission Gorge Road is low, as the occurrence records for this species in that area date from 1953 and earlier. Potential for impacts to Lakeside ceanothus and San Diego ambrosia between Lakeside Avenue and Kulmer Way is possible, but low given the imprecise occurrence records for these species in that area. The proposed alignment study area overlaps a very large record for Lakeside ceanothus that covers the entire general area of Lakeside and eastern Santee, while the San Diego ambrosia record is considered "possibly extirpated." Potential for impacts to delicate clarkia, San Diego goldenstar, and Orcutt's brodiaea in San Vicente Creek and west of the proposed ROD is

also low, as the occurrence record is a very large area, and those species occur in clay soils not associated with the chaparral vegetation in the vicinity of the proposed alignment.

Locating the pipeline in existing streets or existing subterranean pipelines would avoid direct impacts to sensitive species in those areas. Potential impacts to San Diego ambrosia in the San Diego River at West Hills Parkway could be avoided by using an appropriate construction method in this area. Rare plant surveys and avoidance of any identified patches of those species would avoid impacts to those species. Noise impacts would be avoided by scheduling construction and vegetation removal outside the breeding season or by using noise attenuation measures during the breeding season.

Proposed Pump Stations at Mission Montana Drive and Morena Boulevard

Based on the available data, there are no sensitive species anticipated to have a moderate to high potential to occur in the study area for the proposed Mission Trails Booster Station and Morena Boulevard Pump Station. The Mission Trails Booster Station would be located on currently undeveloped, sloping lands adjacent to a small, commercial strip development to the west and single-family residences to the east. The Morena Boulevard Pump Station would be located in an industrial neighborhood; the immediate area features a large public storage facility, a Goodwill shipping and receiving facility, and industrial offices.

If necessary, any potential direct impacts to sensitive species would be avoided by locating the proposed pump stations in currently disturbed areas at the proposed sites. The proposed pump stations both have a low potential for significant noise impacts due to high levels of ambient noise and existing transportation corridors and commercial and/or industrial development in the immediate surroundings.

ROD at San Vicente Reservoir

Based on the available data, there are no sensitive species anticipated to have a moderate to high potential to occur in the study area for the proposed facility site.

Construction and operation of the proposed facility would also have low potential for noise impacts to sensitive animals, as there are no database occurrence records for sensitive animal species within 0.5 mile of the proposed site. Potential direct impacts to sensitive plant species, if present at the proposed facility site, would be avoided by conducting rare plant surveys and providing avoidance, translocation, or mitigation for impacts to any individuals of sensitive species found on the site.

Blended water would leave the reservoir as emergency spill water or during routine testing of valves. Since the reservoir water will need to meet certain water quality objectives to meet the

basin plan objectives, there would be no downstream impacts different from the raw water that would leave the reservoir). As such, there is minimal to no potential for impacts to sensitive species from proposed blending of purified water from the purified water pipeline with raw water in San Vicente Reservoir.

The Biological Technical Report prepared for the Carryover Storage and San Vicente Dam Raise Project (TAIC 2008) reported seven non-native species of game fish introduced into the reservoir for sport fishing and no native fish species occurring in San Vicente Reservoir. The sensitive southwestern pond turtle has been reported from San Vicente Reservoir, but was not observed during surveys conducted for the Carryover Storage and San Vicente Dam Raise project. Sensitive birds associated with open water reported historically from San Vicente Reservoir include osprey (*Pandion haliaetus*), bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*) (foraging only), and belted kingfisher (*Ceryle alcyon*); however, the latter ~~two~~ three species were not observed during surveys conducted for the Carryover Storage and San Vicente Dam Raise Project.

Water quality analysis using calibrated models (Flow Science Inc. 2012a, 2012b), predicted that mixing of purified water into San Vicente Reservoir would: (1) increase the hypolimnetic anoxia period—the number of days the deepest, coldest layer in the lake is oxygen poor—by 4%; (2) increase average surface algal growth (increase surface chlorophyll—a concentration by 0.6 milligrams per Liter); and (3) decrease average water clarity (increase Secchi depth by 0.5 meter). The latter two effects are related, as increased surface algal concentration would decrease water quality (the depth at which a patterned disk can be clearly seen). These slight changes to water quality in San Vicente Reservoir are not expected to result in any adverse effects on southwestern pond turtle or sensitive birds that forage over the reservoir, as the changes are slight.

Central Area Component

CAWRP

Database occurrence records overlapping the study area for the proposed facility site are all large areas centered outside of the site, and likely do not indicate presence of sensitive species within or adjacent to the site itself. Based on the available data, there are no sensitive species anticipated to have a moderate to high potential to occur in the study area for the proposed CAWRP.

However, any potential direct impacts to sensitive species that could occur during construction of the proposed CAWRP would be avoided by locating the proposed facility in developed parts of the site.

Sludge Pipeline from CAWRP to PLWTP

Sensitive species with moderate to high potential to occur in the study area for the proposed pipeline include:

- coast horned lizard
- western mastiff bat
- San Diego sand aster
- long-spined spineflower
- Robinson's peppergrass
- aphanisma
- snake cholla
- wart-stemmed ceanothus
- Nuttall's scrub oak
- San Diego barrel cactus
- cliff spurge
- sea dahlia

Potential direct impacts to sensitive species from the proposed pipeline outside of NBPL would be avoided by locating the pipeline in existing streets. Use of an appropriate construction method, or use of the existing subterranean pipelines between Gatchall Road and San Gorgonio Street in NBPL, would avoid most potential impacts to sensitive species from pipeline construction. Along Gatchall Road, potential impacts to cliff spurge, San Diego sand aster, sea dahlia, and aphanisma would be avoided by locating the pipeline in Gatchall Road or disturbed areas along its shoulders.

Specific to marine life, the potential for impacts to sensitive species from proposed reductions in the discharge from the PLWTP is low. In 2013 (the most recent year for which data are publicly available), the facility discharged an average of 144 million gallons a day (MGD) of treated wastewater to the Point Loma Ocean Outfall (PLOO). Under the proposed Program, this discharge would be reduced by up to 83 MGD. The PLOO extends approximately 4.5 miles offshore and discharges in approximately 330 feet of water.

The City conducts sampling of sediments, water, benthic animal diversity, and marine animal tissue annually around the PLOO and throughout the Point Loma area. Data from 2013 indicate that the treated wastewater plume from the PLOO is restricted to deep, offshore waters, and that discharge from the PLOO does not affect the abundance or diversity of benthic invertebrates and fish, concentrations of metals or other chemicals in animal tissues, or water quality (clarity or chemistry) compared to the general Southern California marine environment. Reducing the discharge from the PLOO would not result in adverse effects to sensitive marine species, as the current discharge of treated wastewater does not significantly affect the marine environment around the PLOO. Impacts to sensitive species from reduced discharges at the PLOO are anticipated to be beneficial given that the Program facilities would result in reduced inputs of treated wastewater into the marine environment.

CAAWPF

Based on available biological data, sensitive species with moderate to high potential to occur in the study area for the proposed CAAWPF include:

- least Bell's vireo
- western mastiff bat

Based on this Program-level analysis, the potential for direct impacts to sensitive species from the proposed facility is considered low. Occurrence records were also noted for prairie falcon and oil neststraw but they cover the region of central San Diego and likely do not reflect presence of those species in the proposed site. The record for oil neststraw is dated 1883.

Potential noise impacts to least Bell's vireo in the San Diego River during construction would be avoided by scheduling construction and vegetation removal outside the breeding season or by using noise attenuation measures during the breeding season.

Central Area Tertiary Effluent Force Main and Brine Conveyance

Based on available biological data, sensitive species with moderate to high potential to occur in the study area for the proposed pipeline alignment include:

- least Bell's vireo
- coastal California gnatcatcher
- pocketed free-tailed bat
- Mexican long-tongued bat
- decumbent goldenbush

Based on this Program-level analysis, the potential to impact these species is considered low. Much of the area is developed and the pipeline could be located in the existing streets. Further, potential direct impacts to sensitive species in the San Diego River between Fenton Parkway and Camino del Rio North would be avoided by using an appropriate construction method such as auger boring/pipe jacking or horizontal directional drilling in that area.

The potential for noise impacts to least Bell's vireo during construction would be low, given the high levels of ambient noise from I-8, Morena Boulevard, and Friars Road. Potential noise impacts would be further avoided by scheduling construction and vegetation removal outside of the breeding season or by using noise attenuation measures during the breeding season.

Central Area Purified Water Pipeline

Based on available biological data, sensitive species with moderate to high potential to occur in the study area for the proposed pipeline alignment include:

- coastal California gnatcatcher
- least Bell's vireo
- western mastiff bat
- big free-tailed bat
- western yellow bat
- pocketed free-tailed bat
- pallid bat
- orange-throated whiptail
- coast horned lizard
- American badger
- San Diego marsh-elder

The potential for direct impacts to sensitive species other than coastal California gnatcatcher from the proposed pipeline is low, as occurrence records for those species are either very large areas covering the general region of eastern San Diego and La Mesa (e.g., prairie falcon, Quino checkerspot butterfly, oil neststraw), or located in suitable habitat within 500 feet of the proposed alignment but not immediately adjacent, and generally separated from it by development.

Potential direct impacts to sensitive species from the proposed pipeline would be avoided in most of the alignment by locating the proposed pipeline in existing streets. Potential direct impacts to coastal California gnatcatcher below Lake Murray Dam would be avoided by using an appropriate construction method, such as horizontal directional drilling or tunneling, in that area.

The potential for significant noise impacts to sensitive bird species in habitat adjacent to the proposed pipeline would also be avoided by scheduling construction and vegetation removal outside the breeding season or by using noise attenuation measures during the breeding season.

Pump Station at Lake Murray Boulevard

Based on the available data, there are no sensitive species anticipated to have a moderate to high potential to occur in the study area for the proposed Alvarado WTP Booster Station. The potential for direct impacts to coastal California gnatcatcher, least Bell's vireo, prairie falcon, and Quino checkerspot butterfly from the proposed pump station is low, as those occurrence records cover large areas not centered on the proposed pump station site. In addition, the site does not contain suitable habitat for any of those species.

The potential for noise impacts is also low, given the high levels of ambient noise from Lake Murray Boulevard and I-8. No suitable habitat for sensitive animal species is within 500 feet of the proposed pump station site. Based on the available data, no sensitive species would be impacted at this facility, and no avoidance measures are needed.

Improvements to PLWTP and MBC Facilities

Both facilities currently exist, and improvements to them are anticipated to occur within the existing development footprint. Based on the proposed Program conceptual design and available biological data, there would be no impacts to sensitive species. There is a low potential for impacts to sensitive bird species in habitat adjacent to the MBC; however, those temporary impacts would be avoided by scheduling construction and vegetation removal outside the breeding season or by using noise attenuation measures during the breeding season. No other avoidance measures would be necessary.

South Bay Component

SBAWPF

Based on the available data, there are no sensitive species anticipated to have a moderate to high potential to occur in the study area for this proposed facility. Database occurrence records for coastal California gnatcatcher overlap parts of the proposed site from adjacent suitable habitat areas, and occurrence records for tiger beetle (*Cicindela oregona*) are general to the entire area of the southwestern portion of the County. However, the proposed site is currently developed and disturbed, and potential for sensitive species to be impacted is low. Critical habitat for least Bell's vireo has been recorded northeast of the study area with recorded wetlands just northwest of the study area boundary.

Potential noise impacts to coastal California gnatcatcher and least Bell's vireo would be avoided by scheduling construction and vegetation removal activities outside of the breeding season or by using noise attenuation measures during the breeding season if construction noise exceeded allowed thresholds.

The potential for impacts to sensitive species from the minimization of treated wastewater flows to the South Bay Ocean Outfall (SBOO) is low. In 2013 (the most recent year for which data are publicly available), the SBWRP discharged 3.22 MGD of treated wastewater to the SBOO. Under the proposed Program, this discharge would be reduced to nearly 0 MGD, as the proposed SBAWPF would handle the entire 15 MGD capacity of the SBWRP. The SBOO extends approximately 3.5 miles offshore and discharges in approximately 100 feet of water.

Discharge at the SBOO includes suspended solids (measured in milligrams per Liter), grease and oil (milligrams per Liter), and trace quantities (micrograms per Liter) of metals such as aluminum, lead, iron, zinc and copper. In 2013, these metals were found at similar concentrations in fish tissue samples taken from the SBOO and greater than 5 miles from the SBOO. Concentrations of total suspended solids and grease and oil were similar in water samples taken at the SBOO and greater than 10 miles from the SBOO. Discharges of coliform bacteria and chlorides from the SBOO did exceed daily limits on a few occasions in 2013. Chloride is not considered a health threat.

Reducing outflows from the SBOO to nearly 0 MGD would have no potential adverse effects on sensitive marine species, as current discharges do not significantly affect levels of suspended solids, grease and oil, metals, or hundreds of other chemical compounds for which the City samples in annual monitoring of SBOO discharges. Impacts to sensitive marine species from reduced discharges at the SBOO are anticipated to be beneficial from reduced outputs of coliform bacteria, suspended solids, and oil and grease into the marine environment.

SBSPF

The proposed facility would be constructed within the existing SBWRP site. There would be no impacts to sensitive species on or adjacent to the facility site.

Wastewater Force Main from National City to the SBAWPF

Based on available data and this Program-level analysis, sensitive species with moderate to high potential to occur in the study area for the proposed facility include:

- least Bell's vireo
- Belding's savannah sparrow
- light-footed Ridgway's rail
- burrowing owl
- pocketed free-tailed bat
- pallid bat
- orange-throated whiptail
- Nuttall's lotus
- estuary seablite
- decumbent goldenbush
- singlewhorl burrobrush
- San Diego marsh-elder
- Palmer's frankenia
- coast woolly-heads
- Coulter's goldfields

Potential for impacts to sensitive species from the proposed pipeline is highest at the northern end of Bay Boulevard, between Main Street and Saturn Boulevard, and at the Tijuana River between Saturn Boulevard and Sunset Avenue. The potential for impacts to light-footed

Ridgway's rail (taxonomic change in 2014; previously referred to as the light-footed clapper rail) and least Bell's vireo at these locations would be high if using open trench construction.

Most potential direct impacts to sensitive species from the proposed pipeline would be avoided by locating the proposed pipeline in existing streets at the north end of Bay Boulevard, and by using auger boring/pipe jacking, horizontal directional drilling, or microtunneling, or by using existing subterranean pipe between Main Street and Saturn Boulevard and at the Tijuana River. Potential noise impacts to sensitive species in adjacent habitat would be avoided by scheduling construction and vegetation removal outside of the breeding season or by using noise attenuation measures during the breeding season.

ROD at Otay Reservoir

Based on the available data, there are no sensitive species anticipated to have a moderate to high potential to occur in the study area for the proposed facility site.

The database occurrence records that overlap the site are large, ill-defined records covering the general area of Otay Reservoir and its environs. The proposed facility site is currently undeveloped, but it is small, adjacent to a road, and includes non-native vegetation. Only a small area encompasses habitat suitable for the species included in the database occurrences that can be found. There may be a limited potential for coastal California gnatcatcher to occur in adjacent areas.

Blended water would leave the reservoir as emergency spill water or during routine testing of valves. Since the reservoir water will need to meet certain water quality standards or mandates to meet the basin plan objectives, there would be no downstream impacts different from the raw water that would leave the reservoir). As such, there is minimal to no potential for impacts to sensitive species from proposed blending of purified water from the purified water pipeline with raw water in the Otay Reservoir.

Studies performed by Flow Science Inc. that modeled the effects of purified water mixing at San Vicente Reservoir found that adding purified water to San Vicente Reservoir would have small effects on the hypolimnetic anoxia period, the surface algal concentration, and the surface water clarity (see previous discussion for the proposed ROD at San Vicente). Assuming purified water mixing at Otay Reservoir would have similar effects, there is no potential for these changes to adversely affect sensitive species (southwestern pond turtle and open water foragers such as osprey) that might be present in Otay Reservoir. Furthermore, there are no native fish species in Otay Reservoir.

South Bay Purified Water Pipeline

Sensitive species with moderate to high potential to occur in the study area for the proposed pipeline alignment include:

- least Bell's vireo
- coastal California gnatcatcher
- coastal cactus wren
- yellow-breasted chat
- burrowing owl
- San Diego fairy shrimp
- Quino checkerspot butterfly
- orange-throated whiptail
- rosy boa
- San Diego black-tailed jackrabbit
- Otay tarplant
- singlewhorl burrobrush
- Parry's Tetracoccus
- Nuttall's scrub oak
- San Diego bur-sage
- California adolphia
- San Diego barrel cactus
- cliff spurge
- purple stemodia
- San Diego marsh-elder
- variegated dudleya
- snake cholla
- coast woolly-heads
- south coast saltscale

Few of the occurrence records for sensitive plant species that overlap the 1,000-foot study area or 0.5-mile extents around the alignment are located in the proposed alignment itself, and thus do not indicate a high potential for impacts to plant species.

Most of the occurrence records immediately adjacent to the proposed alignment in Otay Valley are least Bell's vireo in riparian areas along the Otay River and coastal California gnatcatcher on the north slope of Otay Valley. These areas would be avoided by locating the pipeline in Wiley Road.

The potential for direct impacts to Quino checkerspot butterfly is moderate in eastern Otay Valley; however, most recent occurrence records are located to the south of the proposed study area, on the southern slopes of Otay Valley.

Potential direct impacts to sensitive species from the proposed pipeline would be minimized by locating the pipeline in existing streets where possible, and by using an appropriate construction method such as auger boring/pipe jacking, horizontal directional drilling, or microtunneling, at the Tijuana River between Camino de la Plaza and I-5. Designing the proposed pipeline in the existing Wiley Road in Otay Valley would reduce the potential for direct impacts to sensitive species in that undeveloped area.

Pre-construction surveys and avoidance of suitable habitat patches by realigning the pipeline or and using an appropriate construction method would further reduce the potential for impacts to Quino checkerspot butterfly.

Potential noise impacts to sensitive animal species in adjacent habitat would be avoided by scheduling construction and vegetation removal outside of the breeding season or by using noise attenuation measures during the breeding season.

Otay Reservoir Booster Station

Based on the available biological data, sensitive species with moderate to high potential to occur in the study area for the proposed Otay Reservoir Booster Station include:

- western yellow-billed cuckoo
- Yuma myotis

Most of this site is currently developed and/or has non-native vegetation coverage. Although there is a low potential for sensitive species to be impacted, potential direct impacts to sensitive species would further be avoided by locating the pump station in currently developed parts of the site.

Potential noise impacts to sensitive species in surrounding habitat would be avoided by scheduling construction and vegetation removal outside of the breeding season or by using noise attenuation measures during the breeding season. Based on the available data, no direct impact avoidance measures are necessary on this site.

South Bay Influent Pump Station

Sensitive species with moderate to high potential to occur in the study area for the proposed South Bay Influent Pump Station site at Sea Vale Street include:

- estuary seablite
- Palmer's frankenia

The potential for direct impacts to sensitive species from the proposed pump station at Sea Vale Street is low. The proposed site is currently disturbed, and the database occurrence records that overlap it are either ill-defined or centered in suitable habitat off site. No avoidance measures are necessary for this site.

5.4.11 SIGNIFICANCE OF IMPACTS

A majority of the study area for the proposed Program is located in existing streets and developed areas in an urbanized setting. Most of the database occurrence records for sensitive species that overlap the proposed Program study area do not reflect species locations actually within the footprint of the proposed facilities, as those facilities are likely to be sited on currently developed lands and minimal, if any, suitable habitat is present. Siting proposed pipelines in existing streets would avoid direct impacts to sensitive species for most of the lengths of the proposed pipeline alignments. Minor deviations from existing streets would not result in impacts to sensitive species, as long as the proposed pipelines remain in developed areas.

The potential for direct impacts to sensitive species is highest where the proposed facilities and/or alignments would be located in undeveloped land; however, many of those locations are also in urbanized areas where the potential for sensitive species in the study area footprint is low. High potential for direct impacts is restricted to river crossings, vernal pool complexes, and places such as Otay Valley where proposed facilities would be located outside of urbanized areas. In the case of river crossings and vernal pool complexes, use of an appropriate construction method such as auger boring/pipe jacking, horizontal directional drilling or microtunneling, or by using existing subterranean pipelines would avoid potential impacts to sensitive species that would be difficult or impossible to avoid using open trench construction. In places outside of existing development, locating proposed facilities in disturbed areas such as dirt roads or patches of non-native vegetation would minimize the potential for impacts to sensitive species.

Construction noise would potentially result in impacts to sensitive species occupying adjacent habitat. In urbanized areas and along existing streets, the potential for such impacts is low, given the existing high levels of ambient noise from streets and nearby freeways. Noise impacts would be avoided by scheduling construction and vegetation removal outside of the breeding season for sensitive species. Given the size of the Project and the length of time required for construction, avoidance of breeding season(s) may not be practical. If work were to be scheduled during breeding season(s), noise attenuation measures such as noise walls would minimize potential noise impacts. Measures would be modified depending on what birds are present in a given area, such as the California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, California least tern, cactus wren, tricolored blackbird (*Agelaius tricolor)*, light-footed Ridgway's rail, or western snowy plover. If these avian species (except for the California gnatcatcher) are present, then mitigation would be required if construction or operational noise levels exceed 60 A-weighted decibels (db(A)) or the existing ambient noise level if already above 60 dB(A) during the breeding season. For California gnatcatcher habitat within the MHPA and occupied habitat, construction or operational noise levels exceeding 60 dB(A) (or exceeding the existing ambient

noise level if already above 60 dB(A)) during the breeding season is considered significant. There are no restrictions for the gnatcatcher outside the MHPA anytime of the year. In addition, inside the MHPA, impact avoidance areas are required for Cooper's hawk, northern harrier, golden eagle (*Aquila chrysaetos)*, and burrowing owl (Biology Guidelines, Section II, A. 2 and 4. and Section 9.12 of the Implementing Agreement).

The City of San Diego Land Development Manual Biology Guidelines, and MSCP Subarea Plan include restrictions on disturbance to occupied habitat during the breeding season for the following species:

- western snowy plover: March 1 – September 15
- California least tern: May 1 – August 30
- coastal cactus wren: February 15 – August 15
- least Bell's vireo: March 15 – September 15
- coastal California gnatcatcher: March 1 – August 15
- burrowing owl: February 1 – August 31
- southwestern willow flycatcher: May 1 – August 30

Other breeding season restrictions that would potentially affect construction of Program facilities, but are not enumerated in the MSCP Subarea Plan include:

- light-footed Ridgeway's rail: March 1 – August 31
- western yellow-billed cuckoo: mid-June – late August
- general raptor breeding season: January - August
- general avian breeding season: February 1 – September 15

Light-footed Ridgway's rail and western yellow-billed cuckoo are listed species, raptors and native birds are given general protection by applicable state and federal law. Scheduling construction activities and vegetation removal outside of the breeding seasons listed above would avoid direct and indirect noise impacts to sensitive and other native bird species. Direct impacts to occupied habitat for listed species would require compensatory mitigation to meet federal and/or state endangered species permitting requirements, most of which would be addressed through MSCP Subarea Plan requirements.

Most potential impacts to sensitive non-avian animal species would be avoided by locating proposed facilities in existing developed and disturbed areas. Where proposed facilities would

not be located in existing developed areas, pre-construction protocol surveys are generally sufficient to address impacts to sensitive reptile and mammal species relative to the MSCP Subarea Plan as needed. Inside the MHPA, impact avoidance areas are also required for southwestern pond turtle (*Clemmys marmorata pallida*).

Database occurrence records for Quino checkerspot butterfly overlap most of the Program area; however, the potential for impacts to Quino checkerspot butterfly is low. Most of the occurrence records covering the North City and Central Area components are decades old, are not spatially explicit (very large areas resulting from imprecise observation or accession data), and do not reflect changes to habitat caused by development. Potential for impacts to Quino checkerspot butterfly is highest in the eastern part of the South Bay component, specifically in the Otay Valley, and at San Vicente Reservoir. Occurrence records for Quino checkerspot butterfly in those areas are more recent and spatially explicit than in the rest of the Program study area. Pre-construction habitat evaluations and protocol surveys for Quino checkerspot butterfly prior to siting the proposed Central Area Purified Water Pipeline, and following avoidance measures outlined in the Chula Vista Subarea Plan, would minimize the potential for impacts to the species or its critical habitat. Occurrence records for other listed species with records in the Program area are adequate.

The majority of database occurrence records in the study area for sensitive plant species that overlap the proposed Program are not within the current proposed study area locations. However, database occurrence records for the following listed plant species do occur in the study area, and would potentially result in direct impacts to these six listed plant species.

- San Diego ambrosia
- Orcutt's spineflower
- Otay tarplant
- San Diego button-celery
- San Diego mesa mint
- willowy monardella

For plant species, only impacts that result in direct physical disturbance are generally considered significant. Occurrence records that overlap portions of the proposed facilities do not indicate a potential for impacts to those sensitive plant species. Most potential impacts to sensitive plant species would be avoided by locating proposed facilities in existing developed and disturbed areas, and using appropriate construction methods such as auger boring/pipe jacking, horizontal directional drilling, or microtunneling, or by using existing subterranean pipelines where facilities cannot be located in existing development. Given the existing disturbed and developed

conditions in most of the Program proposed study area footprint, the potential for impact to sensitive plant species is low for most of the proposed facilities. Notable exceptions are sensitive plants associated with vernal pool complexes on NBPL between Gatchall Road and San Gorgonio Street. However, existing subterranean pipelines are available on NBPL that if used could facilitate avoidance.

The potential for impacts to sensitive species from proposed blending of purified water with raw water at San Vicente Reservoir is low (see Appendix C, page 55); a similar conclusion would be expected for the Otay Reservoir. Furthermore, there are no native fish species in either reservoir. Other species potentially occurring in these areas, such as the southwestern pond turtle and open water foragers such as osprey, would not be negatively affected by this activity.

Reducing the discharges from the PLOO and SBOO would not result in adverse effects to sensitive marine species or water quality. Impacts to sensitive marine species from reduced discharges at the PLOO and SBOO would be a positive effect on marine life given that the Program facilities would result in reduced outputs of treated wastewater into the marine environment.

In general, it is accepted that securing comparable habitat at the required ratio would mitigate for any direct impacts to most species. Compliance with the City, County, and Chula Vista MSCP Subarea Plans would provide individual projects with incidental take permits for covered species on lands included in those Plan areas. Compliance with MSCP Subarea Plans and the City's applicable biological guidelines and significance thresholds would provide sufficient avoidance and mitigation for impacts to other non-listed covered species as well.

The specific actions necessary to protect narrow endemics would be determined on a case-by-case basis. Transplantation and/or soil salvage are acceptable mitigation methods for some of the species. Other sensitive plant species are generally protected either by restrictions on the proportion of the population that would be impacted, or by compensatory mitigation requirements. The Mitigation Program would also address project-level mitigation relative to sensitive plants on a case-by-case basis per requirements in the MSCP Subareas Plans and/or other Preserve policies.

Within the MHPA, impacts to burrowing owl must be avoided; outside the MHPA, any impacted individuals must be relocated out of the project area using passive or active methodologies approved by the Wildlife Agencies.

Avoidance of physical and noise disturbance to nests through timing construction and vegetation removal outside of breeding season(s), and/or pre-construction surveys, avoidance buffers, and noise monitoring and attenuation are requirements of all MSCP Subarea Plans for protection of avian species. Protocol surveys and exclusion measures, if necessary, are typically required for protection of reptile and mammal species, and would be included in the project-level analyses as appropriate.

For lands not included in an MSCP Subarea Plan, such as the San Diego Bay NWR and MCAS Miramar INRMP, incidental take permits from the USFWS would be required for unavoidable impacts to federally listed species and equivalent approvals from CDFW for state-listed species as appropriate.

As summarized above, appropriate siting of proposed Program facilities in developed/disturbed areas, in existing streets and in unpaved roads, in existing subterranean pipelines, and on bridge crossings, as well as implementing less invasive construction methods, would avoid and/or minimize direct and indirect impacts to sensitive species. Furthermore, where sensitive avian species occur, timing construction and vegetation removal activities outside of bird breeding season when possible would avoid indirect effects on these species. Should timing construction and vegetation removal outside of bird breeding season not be possible, use of noise monitoring and attenuation measures would avoid/minimize impacts.

Compliance with all provisions of MSCP Subarea Plans and the INRMP, ESA compliance on land not covered by one of the plans, implementation of Mitigation Framework measures~~s~~ MM-BIO-1~~, MM-BIO-2, and MM-BIO-6, and implementation of mitigation proposed below~~ would ensure that potentially significant direct and indirect impacts to sensitive species are reduced to **below a significant level**. Measures proposed address both temporary and permanent impacts during construction and operations.

5.4.12 MITIGATION, MONITORING, AND REPORTING

Implementation of MM-BIO-1 would reduce potential impacts to sensitive species.

Level of Significance after Mitigation

Implementation of MM-BIO-1 would reduce potential impacts to **below a level of significance**.

5.4.13 IMPACTS

Issue 4: Would the proposed Pure Water Program result in interference with the movement of any native resident or migratory wildlife through linkages or wildlife corridors?

The study area for the proposed Program facilities was analyzed for potential impacts to wildlife core and linkage areas identified in the San Diego, County and Chula Vista MSCP Subregional Plan(s), as related to their function in facilitating in wildlife movement. Core areas are identified in the MSCP Subregional Plans as generalized areas supporting a high density of sensitive species and habitats. Linkage areas are identified in the MSCP Subregional Plans as generalized areas where existing open space or habitat patches allow for wildlife movement and dispersal.

Many, but not all, of the cores and linkages are also found within the MHPA. However, core and linkage areas are not all currently included in preserves assembled under MSCP Subregional plans, as not all lands identified in the generalized mapping for cores and linkage areas are suitable for preservation. Potential impacts are being discussed below if the linkage or wildlife movement corridor is located within, and in some cases adjacent to, the study area.

Of the potential permanent or temporary impacts, those considered direct would include but not be limited to, construction of new aboveground facilities that would impede wildlife access to foraging habitat, breeding habitat, water sources, or other areas necessary for their reproduction, interference with otherwise natural movement wildlife corridors/linkages, would further constrain an already narrow corridor, or cause increased traffic on existing or new access roads that would result in significant road-kill,

Construction and operations of the facilities would also indirectly impact wildlife movement by increasing noise and/or nighttime lighting in a wildlife corridor or linkage, by removal of available vegetative cover, or by placing of incompatible uses adjacent to a corridor.

This Program-level analysis is based upon a conceptual design only, and specific locations for each facility relative to wildlife corridors are not known or confirmed to a project-level or design-level of detail. However, the potential for impacts to wildlife corridors at each facility is provided below.

Potential Impacts

North City Component

NCAWPF

The study area for the proposed facility site is within the City's MHPA in Kearny Mesa, except for the extreme southeast corner of the site. The site is currently undeveloped and mapped as non-native grassland. Impacts to the MHPA from construction and operation of the proposed facility would be unavoidable. Based on this Program-level analysis, impacts to wildlife movement would be considered temporary during construction but permanent during operation.

NCWRP Upgrades

The study area for the facility is entirely within the City's MHPA in Kearny Mesa. However, the site is currently developed and the NCWRP upgrades would not impact native habitat or wildlife movement during construction or operation. No avoidance measures are necessary.

Wastewater Force Main Pipeline from NCWRP to Morena Boulevard

The study area for the proposed pipeline alignment is within the City's MHPA in Kearny Mesa between Eastgate Mall and west of I-805 on Governor Drive at Greenwich Drive. It is also within the MHPA core areas in San Clemente Canyon along Genesee Avenue between SR-52 and the top of the canyon near Appleton Street.

Except for Genesee Avenue, lands in this area are undeveloped. Based on this Program-level analysis, construction of the proposed pipeline outside of the existing Genesee Avenue alignment would impact wildlife movement in the MHPA. However, unavoidable impacts to the MHPA and linkage area from construction of the pipeline would be temporary.

Construction of the proposed pipeline in existing streets would avoid impacts to wildlife movement in the core area in San Clemente Canyon. Impacts to the MHPA in Kearny Mesa are likely unavoidable but would be temporary during construction and are briefly described below.

San Vicente Purified Water Pipeline

The study area for the proposed pipeline alignment crosses multiple City and County MSCP core and linkage areas and MHPA that may be considered wildlife movement corridors. Should impacts to wildlife movement occur, they would be temporary during construction-related activities as further described below:

- MHPA in Kearny Mesa from Eastgate Mall to SR-52 except for two locations near the Miramar Landfill. MSCP vegetation mapping does not include MCAS Miramar; however, these areas are presumed to support chamise chaparral, non-native grassland, riparian scrub/forest in Rose Canyon, developed land, and disturbed land. Construction of the pipeline in this area would impact the MHPA in Kearny Mesa.
- MHPA northwest of Tierrasanta in Elanus Canyon. Lands in this area are partly developed, and the study area for the proposed pipeline alignment is located in Clairemont Mesa Boulevard and in disturbed areas alongside existing development at the upper edge of Elanus Canyon. Construction of the pipeline within the alignment study area as shown would avoid impacts to the MHPA. Construction of the pipeline farther downslope in Elanus Canyon would impact undeveloped and undisturbed habitat in the MHPA.
- MHPA along Tierrasanta Boulevard northeast of the Admiral Baker Golf Course. The proposed pipeline alignment is in Tierrasanta Boulevard at this location and would not impact the core area if it were constructed in the existing street. Construction of the pipeline outside of the existing Tierrasanta Boulevard alignment would impact the MHPA.

- MHPA/MSCP linkage area in the San Diego River east of the Admiral Baker Golf Course. Lands in this area are mostly developed except for the San Diego River and the slopes north of it at the terminus of Tierrasanta Boulevard, and the slopes south of it east of the quarry. Construction of the proposed pipeline would impact the MHPA/MSCP linkage area on the slopes north of the San Diego River and in the river itself. The remainder of the proposed pipeline alignment in this area is likely to be sited in Mission Gorge Road and construction would not impact the linkage area. If the pipeline was constructed north of Mission Gorge Road, it would impact the MHPA/MSCP linkage area east of the quarry.
- MHPA/MSCP core area in Mission Trails Regional Park. Siting of the proposed pipeline alignment in Mission Gorge Road would not impact the MHPA/MSCP core area. Construction of the pipeline outside of Mission Gorge Road through Mission Trails Regional Park would impact native habitat. The pipeline alignment study area is within the MHPA/MSCP in Mission Trails Regional Park where West Hills Parkway crosses the San Diego River. The study area is west of West Hills Parkway at this location and depending on the construction methods, may impact undeveloped upland and riparian habitat in the MHPA/MSCP core area.
- MSCP core area in the San Diego River along Carlton Oaks Drive at the Carlton Oaks Country Club. All lands along the alignment are developed in this location. Construction of the proposed pipeline south of existing development on Carlton Oaks Drive would impact MSCP core area in the San Diego River, otherwise, no impact would occur at this location.
- MHPA/MSCP core area in the San Diego River at SR-67. Lands in this area are mostly undeveloped and are mapped as non-native grassland and southern arroyo willow riparian forest. The proposed alignment if located in Lakeside Avenue would not impact undeveloped land in the MHPA/MSCP. Construction of the pipeline outside of Lakeside Avenue in this location would result in impacts to undeveloped land in the MHPA/MSCP core area.
- MHPA/MSCP core area in San Vicente Creek and around San Vicente Reservoir, from Vigilante Road to the ROD at San Vicente Reservoir. Lands in this area are mostly developed along Moreno Avenue to the ROD. Construction of the proposed pipeline in Moreno Avenue would not impact undeveloped land in this area. However, construction of the pipeline closer to the proposed ROD at San Vicente Reservoir would potentially impact undeveloped native habitat, including chamise chaparral with patches of southern coast live oak riparian forest, in the MHPA/MSCP.

Some impacts to the City of San Diego and other agency MSCP core and linkage areas from construction of the proposed pipeline may be avoided by constructing the pipeline in existing

streets, and by using an appropriate construction method such as auger boring/pipe jacking, horizontal directional drilling, or microtunneling, or by using existing subterranean pipe where the alignment crosses the San Diego River separate from an existing roadway. Impacts to the MSCP core and linkage areas during construction of the proposed pipeline would be temporary.

Pump Stations at Mission Montana Drive and Morena Boulevard

The proposed Mission Trails Booster Station at Mission Montana Drive is not within any MSCP core or linkage area, and no avoidance measures are necessary.

Impacts to the core and linkage areas from construction of proposed Morena Boulevard Pump Station would be permanent. The extreme southern portion of this proposed pump station is within the MSCP linkage area in the San Diego River. Avoidance of the extreme southern edge of the site would avoid permanent impacts to the linkage area.

ROD at San Vicente Reservoir

The study area around the proposed ROD is entirely within the MHPA/MSCP core area around San Vicente Reservoir. Lands in this location are mapped as chamise chaparral and southern coast live oak riparian forest. The proposed facility would impact undeveloped lands in this area. Impacts to the MHPA/MSCP core area may be unavoidable; however, the site is at the edge of a large, contiguous area of open space and the proposed facility would not permanently impair wildlife movement or access to the shore of San Vicente Reservoir.

Central Area Component

CAWRP

The proposed CAWRP is not within any MHPA/MSCP core or linkage area, and no avoidance measures are necessary.

Sludge Pipeline from CAWRP to PLWTP

The proposed study area is within the City's MHPA on Point Loma, inside NBPL and the PLWTP site. Lands in this area are a mix of developed and undeveloped. The current study area is mostly within undeveloped land mapped as Diegan coastal sage scrub and southern maritime chaparral. Many of these areas are adjacent to existing development and roads and are likely disturbed; however, based on MSCP mapping, construction of the proposed pipeline would impact undeveloped land in the MHPA.

Impacts to the MHPA and wildlife movement through NBPL are likely unavoidable using open trench construction; however, such impacts would be temporary. Impacts may be avoided by using an appropriate construction method, or by using existing subterranean pipe in the portion of the alignment located in areas of native vegetation northeast of Gatchall Road.

CAAWPF

The study area for the proposed facility is entirely within the MHPA/MSCP linkage area in the San Diego River. Lands in the site are currently undeveloped and mapped as non-native grassland. Construction of the facility would result in impacts to undeveloped land directly adjacent to the MHPA/MSCP linkage area. Impacts would mostly affect non-native habitats and would be just outside the San Diego River, the location of the MSCP-designated wildlife movement corridor mapped in this area. The study area for the proposed facility is peripheral to the movement corridor in the San Diego River and would not permanently impair wildlife movement in the San Diego River.

Central Area Tertiary Effluent Force Main and Brine Conveyance

The study area for the proposed pipeline alignment is within the MHPA/MSCP linkage area in the San Diego River at Morena Boulevard and between Fenton Parkway and Camino del Rio North. Vegetation in these areas is mapped as riparian forest/woodland. If the alignment is sited within Morena Boulevard and Friars Road, it would not impact the linkage area. Construction of the pipeline outside of Morena Boulevard and Friars Road would result in impacts to undeveloped land in the linkage area in the San Diego River and thus would result in impacts to wildlife movement.

The study area for the proposed pipeline alignment between Fenton Parkway and Camino del Rio North is in undeveloped areas; there is no existing bridge or other developed corridor across the San Diego River at this point. Construction of the pipeline would result in impacts to undeveloped land in the MHPA/MSCP linkage area, unless an appropriate construction method is used.

Construction of the proposed pipeline in existing streets and using the existing Morena Boulevard Bridge over the San Diego River, as well as auger boring/pipe jacking or horizontal directional drilling construction methods in the San Diego River between Fenton Parkway and Camino del Rio North, would avoid impacts to wildlife movement within the linkage area in the San Diego River. Unavoidable impacts to the linkage area from construction of the proposed pipeline would be temporary.

Central Area Purified Water Pipeline

The study area for the proposed pipeline is within the City's MHPA/MSCP linkage area in the San Diego River from the CAAWPF to Mission Gorge Road. Most lands in this area are developed or disturbed, and the proposed alignment is in the Camino del Rio North roadway. Construction of the proposed pipeline north of Camino del Rio North between I-805 and Mission Gorge Road would impact southern riparian forest in this linkage area.

The proposed alignment study area is also within the in the San Diego River at SR-67. Lands in this area are developed on both sides of SR-67 south of the San Diego River, and undeveloped in the river. If the proposed pipeline is located east of SR-67 where it crosses the river, it would impact southern arroyo willow riparian forest in the core area, unless it is constructed using auger boring/pipe jacking or horizontal directional drilling. If the proposed pipeline crossed the San Diego River on the existing SR-67 bridge, it would not impact undeveloped land in the MSCP core area. Impacts to the core area in the San Diego River at SR-67 from construction of the proposed pipeline would be temporary.

Construction of the proposed pipeline in Camino del Rio North using auger boring/pipe jacking or horizontal directional drilling, or using the existing SR-67 bridge at the San Diego River in Lakeside, would avoid impacts to the MSCP core and linkage areas in the San Diego River at those locations, and therefore would not permanently impede wildlife movement.

Pump Station at Lake Murray Boulevard

The proposed Alvarado WTP Booster Station study area at Lake Murray Boulevard is not within a core or linkage area that would be used for wildlife movement, and no avoidance measures are necessary.

Improvements to PLWTP and MBC Facilities

Improvements are anticipated to occur within the existing development footprint of each facility. Based on the proposed Program conceptual design and available biological data, there would be no impact to wildlife movement at these facilities, and therefore no avoidance measures are required.

South Bay Component

SBAWPF

The proposed SBAWPF is not within any MSCP core or linkage area. Based on the available biological data and Program-level design information, no avoidance measures are necessary.

SBSPF

The proposed facility would be located on the existing SBWRP site. No impacts to wildlife movement would occur.

Wastewater Force Main from National City to SBAWPF

The study area for the proposed pipeline alignment crosses multiple agency MSCP areas that may be considered wildlife movement corridors. Each is briefly described below:

- MSCP core area in the Sweetwater River estuary, north of SR-54: Lands in this area are mostly developed east of I-5, where the proposed pipeline alignment could be located. Construction of the pipeline in developed lands adjacent to the San Diego Trolley would not impact habitat in the MSCP core area. The current alignment crosses the Sweetwater River on the existing Trolley bridge and would not impact open water habitat or wildlife movement in the MSCP core area.
- MSCP linkage area south of the Sweetwater River: Lands in this area are developed except in Paradise Creek. If the proposed alignment crosses Paradise Creek, it would impact open water and saltbush scrub habitats used for wildlife movement in the MSCP linkage area, unless constructed using an appropriate construction method such as auger boring/pipe jacking or horizontal directional drilling methods.
- Wholly or partially within the MSCP core area in Sweetwater Marsh along Bay Boulevard near Lagoon Drive: Lands in this area are currently a mix of developed, disturbed land, Diegan coastal sage scrub, mudflat, and freshwater marsh. The alignment study area is centered on Bay Boulevard, and if construction were confined to the existing road area, it would not impact habitat in the MSCP core area. Construction of the pipeline outside of Bay Boulevard would potentially impact habitat in the MSCP core areas in Sweetwater Marsh.
- MSCP core area along the southern end of Bay Boulevard: Lands in this area are disturbed and developed as salt ponds and vacant residential lots. The salt ponds are mapped in the MSCP as saltpan. The alignment study area is currently centered on Bay Boulevard, and if construction were confined to the existing road area, it would not impact habitat in the MSCP core area. Construction of the pipeline east of Bay Boulevard would impact only disturbed land, and construction west of Bay Boulevard would potentially impact salt ponds.
- MSCP core and linkage area in the Otay River estuary between Main Street and Canal Street: Lands in this area are undeveloped and mapped as disturbed except in the Otay River where they are mapped as freshwater marsh and mulefat scrub. The study area for

the proposed pipeline alignment is located in undeveloped land in this area, and would impact disturbed land as well as native marsh and riparian scrub in the MSCP core and linkage areas. Impacts to native habitat in the Otay River could be avoided by using an appropriate construction method such as auger boring/pipe jacking, horizontal directional drilling, or microtunneling.

- MHPA/MSCP core area in the Tijuana River at Hollister Street: Lands in this area are undeveloped and mapped as southern riparian woodland, non-native riparian, developed, and agriculture. The alignment study area is centered on Hollister Street and if construction were confined to the existing road area, it would not impact habitat in this area. Construction of the pipeline outside of Hollister Street would impact habitat in the core area.
- MHPA/MSCP core area along Monument Road west of the proposed SBAWPF: Lands in this area are undeveloped and mapped as southern riparian woodland, mulefat scrub, baccharis-dominated Diegan coastal sage scrub, maritime succulent scrub, non-native riparian, and Diegan coastal sage scrub. The alignment is currently centered on Monument Road and if construction were confined to the existing road area, it would not impact habitat in this area. Construction of the pipeline outside of Monument Road in this area would result in impacts to habitat in the core area.

The majority of the proposed alignment could be located within existing streets. Impacts to the MHPA/MSCP core and linkage area in the Sweetwater River, Otay River, Tijuana River, and along San Diego Bay from construction of the proposed pipeline would likely be unavoidable. However, impacts may be minimized by using an appropriate construction method in the Sweetwater, Otay, and Tijuana Rivers. Unavoidable impacts would be temporary and would not result in any impairment of wildlife movement or use of MSCP linkage and core areas.

ROD at Otay Reservoir

The study area for the proposed facility is in an area situated within both the County of San Diego and City of Chula Vista MSCP core areas at Otay Reservoir. Lands in this area are undeveloped and mapped as Diegan coastal sage scrub, freshwater marsh, open water, and eucalyptus woodland. Construction of the proposed facility would impact undeveloped land in the core area. Unavoidable impacts to native and non-native habitat in the core area at Otay Reservoir from construction of the proposed facility would likely be permanent. However, the proposed facility would not impair wildlife movement or access to the lake shore given the large amount of unobstructed lake shore in the vicinity.

South Bay Purified Water Pipeline

The study area for the proposed pipeline alignment is within the City of San Diego's MHPA/MSCP core area in the Tijuana River along Dairy Mart Road from the SBAWPF to I-5. Lands in this area are undeveloped except for streets, and mapped as a mix of native and non-native riparian vegetation types. The proposed alignment is centered on Dairy Mart Road where it crosses the Tijuana River and if construction were confined to the road area, it would not impact MHPA/MSCP core area. The study area crosses riparian woodland between Camino de la Plaza and I-5, outside of any existing street alignment, and would impact habitat in the core area unless an appropriate construction method such as auger boring/pipe jacking or horizontal directional drilling methods is used to construct the pipeline. Unavoidable impacts to the MHPA/MSCP core area and thus wildlife movement in the Tijuana River from construction of the pipeline would be temporary.

The proposed alignment study area also crosses portions of the MHPA and City of Chula Vista MSCP core areas in Otay Mesa and the Otay Valley, and along Otay River Valley from I-805 to the ROD at Otay Reservoir. Lands in this area are mostly undeveloped and support a large variety of native and non-native upland and riparian vegetation types. There are feasible opportunities to site the proposed alignment in existing streets and unpaved roads for most of its length in this area; however, construction of the proposed purified water pipeline would likely impact the MHPA/MSCP core area regardless, given the overall undeveloped nature of the surroundings. However, impacts to these areas in Otay Mesa and the Otay River Valley, and at the Otay Reservoir from construction of the proposed pipeline would be temporary.

Given that impacts to these areas from the proposed pipeline are temporary, there would be no permanent impairment to wildlife movement or use of native habitats in the Tijuana River Valley, Otay Mesa and the Otay River Valley, and at the Otay Reservoir.

Otay Reservoir Booster Station and South Bay Influent Pump Station The study area for the proposed Otay Reservoir Booster Station at Otay Lakes County Park is located primarily within City of San Diego lands but clips small portions of the City of Chula Vista and the County of San Diego. County lands in the site are in Otay Lakes County Park, but designated as Take-Authorized Area in the County MSCP Subarea Plan. City lands in the site are designated Otay Lakes Cornerstone Lands in the MHPA, and water facilities are a compatible use in the City MHPA. Approximately one-third of the study area is developed, and the remainder is mapped as eucalyptus woodland, Diegan coastal sage scrub, and non-native grassland. Construction of the proposed pump station in Diegan coastal sage scrub or non-native grassland could impact habitat; however, these areas are isolated from similar surrounding habitat by development and eucalyptus woodland, and their habitat value is likely compromised by existing development.

Siting the proposed pump station in developed areas and eucalyptus woodland would minimize impacts to native habitat and would not impair wildlife movement around Otay Reservoir.

The study area for the proposed South Bay Influent Pump Station at Sea Vale Street is located entirely within the MSCP linkage area in the Sweetwater River estuary. Lands in this area are partly developed and partly undeveloped. Undeveloped lands include southern coastal salt marsh and saltbush scrub in the northern approximately one-fourth of the proposed pump station site, and disturbed land in the center. Construction of the proposed pump station in the northern portion of the site would impact native habitat in the linkage area. The eastern half and southern edge of the site study area are developed. Construction of the proposed pump station in the disturbed area south of the Sweetwater River would not impact native habitat in the MSCP linkage area and would not interrupt connectivity in the linkage.

5.4.14 SIGNIFICANCE OF IMPACTS

As summarized above, appropriate siting of proposed Program facilities in developed/disturbed areas, in existing streets and in unpaved roads and in existing subterranean pipelines, as well as implementing trenchless construction methods, would generally avoid direct and indirect impacts to wildlife movement. However, impacts to City MHPA, including core and linkage areas, could result in potentially significant impacts.

5.4.15 MITIGATION, MONITORING, AND REPORTING

Mitigation Framework

MM-BIO-3 Mitigation to reduce potentially significant impacts from subsequent project components that would interfere with the nesting, foraging, or movement of wildlife species within the Program area shall be identified in a site-specific biological resources report prepared in accordance with City of San Diego Biology Guidelines, as further detailed in MM-BIO-1 during the discretionary review process. The biology report shall identify the limits of any identified local-scale wildlife corridors or habitat linkages and analyze potential impacts in relation to local fauna, and the effects of conversion of vegetation communities to minimize direct impacts on sensitive wildlife species and to provide for continued wildlife movement through the corridor.

Measures that shall be incorporated into project-level construction documents to minimize direct impacts on wildlife movement, nesting, or foraging activities shall be addressed in the biology report and shall include recommendations for preconstruction protocol surveys to be conducted during established breeding

seasons, construction noise monitoring and implementation of any species-specific mitigation plans in order to comply with the FESA, MBTA, State Fish and Game Code, and/or the ESL Regulations.

Level of Significance after Mitigation

Implementation of MM-BIO-1 and MM-BIO-3 would reduce potential impacts to wildlife movement to **below a level of significance**.

5.4.16 IMPACTS

Issue 5: Would the Pure Water Program conflict with provisions of adopted local habitat conservation plans or policies protecting biological resources?

The study area for the proposed Program facilities was analyzed for potential conflicts with City, of San Diego, County of San Diego, and City of Chula Vista MSCP Subarea Plans, County RPO wetland buffer requirements, the San Diego Bay NWR CCP, the Draft VPHCP, the MCAS Miramar INRMP, and the MOU for PLECA. Program components would be located within the protected areas of applicable plans; potential temporary and permanent impacts related to consistency with applicable local habitat conservation plans or policies protecting biological resources are discussed in more detail in Section 5.1, Land Use.

5.4.17 SIGNIFICANCE OF IMPACTS

The study area for the proposed Program facilities is located entirely within or crosses through portions of the various local adopted local habitat conservation plans or policies that protect biological resources. Compliance with all provisions of these plans and policies, including implementing any mitigation requirements specific to each one, subject to review by the agencies with regulatory oversight, would be required. This compliance, mitigation implementation, and regulatory review would ensure that no conflicts with the plans and policies occur.

MHPA Boundary Line Adjustments

Permanent surface structures are proposed in the City MHPA at the following locations: the ROD at San Vicente Reservoir, the Otay Reservoir Booster Station, and the ROD at Otay Reservoir. The proposed pump station at Otay Lakes County Park would be located in currently developed and disturbed areas and would not have an adverse effect on the MHPA. The proposed ROD at San Vicente and the ROD at Otay Reservoir would be located in currently undeveloped land. Minor water facilities and essential public infrastructure facilities are compatible uses in the MHPA and these proposed Program facilities would qualify as allowable uses in the MHPA; however, if a proposed project component at these two locations would

encroach into the MHPA beyond the allowable development area, a Boundary Line Adjustment would be required. Project level MSCP consistency analysis would be required to determine compatibility of proposed facilities within the City's MHPA. Requirements for subsequent project boundary line adjustments are described in Section 5.1, Land Use.

5.4.18 MITIGATION, MONITORING, AND REPORTING

Implementation of Mitigation Framework measures MM-BIO-1 and MM-LU-3 through MM-LU-~~10~~ 9 would reduce potential conflicts with provisions of adopted local habitat conservation plans or policies protecting biological resources.

Level of Significance after Mitigation

Implementation of Mitigation Framework measures MM-BIO-1 and MM-LU-3 through MM-LU-~~10~~ 9 would reduce potential impacts to **below a level of significance**.

5.4.19 IMPACTS

Issue 6: Would the Pure Water Program introduce land uses within or adjacent to the MHPA that would result in adverse edge effects?

The proposed Program facilities within a definitive study area were analyzed for potential impacts through adverse edge effects to the MHPA based on the presence of MHPA lands adjacent to the proposed feature. The analysis is based on the 1997 MHPA boundaries provided by the City as a shapefile. This Program-level analysis is based upon a conceptual design only, and specific locations for each facility are not known or confirmed to a project-level or design-level of detail.

The following Program components (or portions thereof) are anticipated to be located adjacent to the MHPA: Wastewater Force Main/Brine Pipeline from the NCWRP to the Proposed Morena Boulevard Pump Station; San Vicente Purified Water Pipeline; sludge pipeline from CAWRP to PLWTP; CAAWPF; Central Area Tertiary Effluent Force Main and Brine Conveyance; Central Area Purified Water Pipeline; SBAWPF; SBSPF; Wastewater Force Main from National City to SBWRP; and the South Bay Purified Water Pipeline. The ROD at San Vicente Reservoir, Otay Reservoir Booster Station, and ROD at Otay Reservoir would be located entirely within the MHPA. Construction of pipeline alignments adjacent to the MHPA could potentially result in adverse edge effects to the MHPA from noise, lighting, toxins, invasive species, and increased human incursion. Operation of the pipelines would not cause adverse edge effects as the pipelines would be subterranean. Construction and operation of treatment facilities and pump stations

adjacent to MHPA could result in similar adverse edge effects. See Section 5.1, Land Use, for a more detailed discussion regarding consistency with the MHPA Land Use Adjacency Guidelines.

5.4.20 SIGNIFICANCE OF IMPACTS

Select Program components would be adjacent to the MHPA, which could result in potential adverse edge effects to the MHPA as a result of indirect impacts such as drainage, toxins, lighting, noise, barriers to incursion, invasive species, brush management, and grading/land development. Compliance with the MHPA Land Use Adjacency Guidelines would be required for implementation of all Program components developed in areas adjacent to or within the MHPA (see Mitigation Framework measures MM-LU-3 through MM-LU-~~10~~9).

5.4.21 MITIGATION, MONITORING, AND REPORTING

Implementation of Mitigation Framework measures MM-BIO-1 and MM-LU-3 through MM-LU-~~10~~ 9 would apply to impacts related to MHPA edge effects.

Level of Significance after Mitigation

Implementation of Mitigation Framework measures MM-BIO-1 and MM-LU-3 through MM-LU-~~10~~ 9 would reduce potential impacts to **below a level of significance**.

5.4.22 IMPACTS

Issue 7: Would the Pure Water Program introduce invasive species into natural open space areas?

The proposed Program facilities were analyzed for potential impacts through introduction of invasive species into natural or open space areas based on the presence of designated open space or other undeveloped areas of native vegetation adjacent to the proposed feature. Designated open space includes City, County, and Chula Vista preserved areas, as well as USFWS and CDFW lands. Natural areas were identified using MSCP vegetation mapping and recent aerial imagery. This Program-level analysis is based upon a conceptual design only, and specific locations for each facility are not known or confirmed to a project-level or design-level of detail.

Potential Impacts

North City Component

The study area for the following proposed facilities in the North City component are mostly located in developed areas and few are adjacent to natural or open space areas. The portion(s) of each relative to its location within or adjacent to natural or open space areas is described below

NCWRP Upgrades

The site is currently developed. Adjacent lands are developed, disturbed, and non-native grassland. Upgrades to this facility would have a very low potential to introduce invasive species into natural or open space areas.

Proposed Pump Station at Morena Boulevard

The proposed site for the Morena Boulevard Pump Station is on the opposite side of Friars Road from native habitat in the San Diego River. There is very low potential for construction of this feature to introduce invasive species into natural or open space areas in the San Diego River.

Mission Trails Booster Station

The proposed site for the Mission Trails Booster Station is surrounded by developed land. Diegan coastal sage scrub vegetation in Rancho Mission Canyon is within the 300-foot study area for the proposed pump station, but separated from it by existing residential development and a street. There is very low potential for construction of this feature to introduce invasive species into natural or open space areas.

NCAWPF

The proposed facility is located in undeveloped lands at the northwestern edge of Kearny Mesa, adjacent to open space in Soledad Canyon. Lands immediately surrounding the proposed facility site are disturbed and non-native grassland. Lands in Soledad Canyon include non-native grassland and non-native vegetation, along with native vegetation. All lands surrounding Soledad Canyon are developed. The facility is not adjacent to native or open space areas that support sensitive native habitat, and the potential for this facility to result in impacts to native or open space areas through introduction of invasive species is low, as surrounding open space areas already include non-native species.

Wastewater Force Main Pipeline from NCAWPF to Morena Boulevard

The study area for the proposed pipeline is located in open space areas from its northern end at Eastgate Mall to just west of I-805 along Governor Drive. From there, the proposed alignment study area adjacent to natural areas in San Clemente Canyon (Marian Bear Memorial Park), and Tecolote Canyon. The proposed alignment in these latter places is in existing high-traffic streets adjacent natural areas are already subject to disturbance from road traffic and nearby development. The potential for the proposed pipeline to result in impacts to natural or open space areas in these locations by increasing the likelihood of invasive species introduction over existing levels is low, as there would be no ground disturbance in natural areas. The potential for the pipeline to result in impacts to natural or open space areas through introduction of invasive species in areas east of I-805 is high, as the alignment is in currently undeveloped land that is not subject to existing invasive species pressures from roads and surrounding development.

San Vicente Purified Water Pipeline

The study area for the proposed pipeline is located in open space areas from its western end to where it crosses SR-52. These areas are a mix of non-native grassland and disturbed chamise chaparral. The alignment study area continues and is located in open space areas in Tierrasanta, the San Diego River west of Mission Gorge, Mission Trails Regional Park, central and eastern Santee, the San Diego River at SR-67 in Lakeside, and at San Vicente Creek. These areas are a mix of native upland and riparian habitats; however, the alignment is in existing streets for most its length and the potential for the pipeline to result in impacts to natural or open space areas through introduction of invasive species in these areas is low as long as the proposed pipeline is located in existing streets and thus results in no ground disturbance in natural areas. Near the proposed ROD at San Vicente Reservoir, the alignment is located in open space. The potential for the pipeline to cause impact to natural or open space areas through introduction of invasive species in this area is high, due to the potential for ground disturbance in natural habitat.

Central Area Component

The study areas for the following proposed facilities in the Central Area component are located in developed areas and not adjacent to natural or open space areas. The portion(s) of each relative to its location within or adjacent to natural or open space areas is described below

CAWRP

The site and all adjacent lands are currently developed. Construction of this facility would have no potential to introduce invasive species into natural or open space areas.

Mission Trails Booster Station at Lake Murray Drive

The site and all adjacent lands are currently developed. Construction of this pipeline would have no potential to introduce invasive species into natural or open space areas.

Sludge Pipeline from CAWRP to PLWTP

The proposed study area is located in undeveloped lands at its southern end on Naval Base Point Loma. Lands in this area are a mix of developed, Diegan coastal sage scrub, and southern maritime chaparral. The alignment study area generally follows existing streets, and the potential for impact to native or open space areas through introduction of invasive species is low, as the proposed alignment is in areas disturbed by existing roads. Use of auger boring/pipe jacking or horizontal directional drilling construction methods, or use of existing subterranean pipe in the portion of the alignment northeast of Gatchall Road would reduce the potential for impact to native or open space areas through introduction of invasive species to low, by avoiding surface disturbance in areas of sensitive native habitat.

Central Area Tertiary Effluent Force Main and Brine Conveyance

The study area is located in open space areas in the San Diego River at Morena Boulevard and at its western end between Fenton Parkway and Camino del Rio North. The alignment study area crosses the San Diego River on the existing Morena Boulevard bridge and would not result in impacts to open space areas in that location. The potential for the proposed pipeline between Fenton Parkway and Camino del Rio North to result in impacts to open space areas through the introduction of invasive species is high, as the area currently supports sensitive riparian habitat.

Central Area Purified Water Pipeline

The study area is located adjacent to open space in the San Diego River at the CAAWPF site, in open space in Navajo Canyon and below the Lake Murray Dam, in Fletcher Hills, and in the San Diego River at SR-67 in Lakeside. If the proposed alignment is sited in existing streets at the CAAWPF site and Fletcher Hills, it would not result in impacts to open space at those locations. The alignment study area crosses undeveloped land in Navajo Canyon, below the Lake Murray Dam, and in the San Diego River at SR-67. The potential for the proposed pipeline to result in impacts to open space areas through the introduction of invasive species at these locations is high, as these areas currently support sensitive native habitat.

CAAWPF

The study area for the proposed facility is located in undeveloped land adjacent to the San Diego River. Lands in the proposed study area are non-native grassland, and adjacent open space is

southern riparian woodland. The potential for the proposed facility to result in significant impacts to open space areas through introduction of invasive species at this location is low for areas of non-native grassland and high for southern riparian woodland, given the existing levels of non-native species presence in those habitats, respectively.

South Bay Component

The study areas for the following proposed facilities in the South Bay component are located mostly in developed areas. The portion(s) of each relative to its location within or adjacent to natural or open space area is described.

SBAWPF

The proposed facility site is currently developed or disturbed land, and is adjacent to open space only at the northwest corner. Adjacent open space land is baccharis-dominated Diegan coastal sage scrub. The potential for the proposed facility to result in impacts to open space areas through the introduction of invasive species at this location is low, as no direct impacts are proposed to open space areas and the site is already developed as the SBWRP.

South Bay Influent Pump Station at Sea Vale Street

The proposed South Bay Influent Pump Station at Sea Vale Street is located in undeveloped land adjacent to open space in Paradise Creek. The proposed pump station site is currently a disturbed vacant lot, and borders Paradise Creek on its northern edge. Undeveloped adjacent land in Paradise Creek is saltbush scrub and southern coastal salt marsh. The potential for the proposed pump station to cause impacts to open space areas through the introduction of invasive species at this location is low, as no direct impacts are proposed to open space areas and the site is currently in a disturbed condition.

Wastewater Force Main Pipeline from National City to SBWRP

The proposed alignment study area is located in open space or natural areas in the San Diego Bay NWR, Sweetwater River, Paradise Creek, Otay River, and the Tijuana River Valley. The study area crosses Paradise Creek in undeveloped land that supports southern coastal salt marsh and saltbush scrub. The study area crosses the Otay River in undeveloped lands that are currently disturbed except for freshwater marsh and mulefat scrub in the Otay River itself, and then crosses the Tijuana River between Saturn Boulevard and Sunset Avenue in open space lands that support southern riparian woodland and Diegan coastal sage scrub. The potential for the proposed pipeline to result in impacts to open space areas through the introduction of invasive species at these locations is high, as the proposed alignment passes through existing sensitive

native habitats. The current alignment in the remaining areas where it is in or adjacent to open space is in existing streets, and the construction of the pipeline would not result in impact to adjacent open space in these areas.

The study areas for the following proposed facilities in the South Bay component are located partly within or adjacent to natural or open space areas.

ROD at Otay Reservoir

The proposed facility is located entirely within open space or natural areas that support Diegan coastal sage scrub, freshwater marsh, and eucalyptus woodland. The potential areas where the proposed facilities might result in introduction of invasive species into natural or open space areas is high.

Otay Reservoir Booster Station

The proposed Otay Reservoir Booster Station is partly developed, and partly a mix of Diegan coastal sage scrub, non-native grassland, and eucalyptus woodland. The potential for this facility to result in impacts to natural or open space areas through introduction of invasive species is moderate where current levels of non-native species presence are lower.

South Bay Purified Water Pipeline

The alignment study area is located almost entirely within open space or natural areas for the eastern two-thirds of its length in Mesa, Otay Valley, and the western shore of Otay Reservoir, and also at its eastern end in the Tijuana River Valley. In these areas, the potential for introducing invasive species is higher. The study area then follows existing streets and unpaved access roads for most of its length, with short crossings in undeveloped land at the Tijuana River and the east end of Otay Valley. The majority of open space lands in these areas are non-native upland and non-native riparian vegetation types. The potential for the introduction of invasive species in these latter areas is low to moderate depending on the location of the pipeline relative to existing native vegetation coverage.

5.4.23 SIGNIFICANCE OF IMPACT

Consistency with the City's MHPA Land Use Adjacency Guidelines and similar policies in the County of San Diego and City of Chula Vista would be required at the project level for the Program facilities identified above as having potential to cause adverse edge effects through the introduction of invasive species into natural open areas.

For all facilities discussed above, ensuring that ground-disturbance is implemented in existing developed, disturbed, and non-native areas would minimize new disturbance to natural areas.

Where proposed facilities cross open space in rivers, using auger boring/pipe jacking or horizontal directional drilling construction methods would avoid surface disturbance and minimize the introduction of invasive species into riparian areas. Further, project-level analyses will include requirements for revegetation of areas disturbed during construction, using native species palettes to prevent the disturbed habitat from being colonized with ruderal species that subsequently disperse into natural areas.

5.4.24 MITIGATION, MONITORING, AND REPORTING

Implementation of Mitigation Framework measure MM-LU-3 would prevent invasive species from adversely affecting natural open areas.

Level of Significance after Mitigation

Implementation of Mitigation Framework measure MM-LU-3 would reduce potential impacts to **below a level of significance**.

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North City A

North City B

Central Area C

Central Area D

Central Area E

South Bay F

South Bay G

Potential Facilities
Rivers
Impact Analysis

Potential Pipelines

Purified Water Pipeline
Sludge Pipeline
Tertiary Water Pipeline and Brine Pipeline
Wastewater Forcemain
Wastewater Forcemain and Brine Pipeline

0 5,500 11,000 Feet

SOURCE: ESRI, 2015; SanGIS, 2015; SanBios, 2009; USFWS; CNDDB, 07/01/2015.

FIGURE 5-1

Vegetation, Wetlands, and Special Species Constraints: Overview

DUDEK

Pure Water Program EIR

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- Potential Pipelines
- Impact Analysis
- Rivers
- Vernal Pool Resource Area

SANBIOS Occurrence
- coastal California gnatcatcher

Special Status Species
- coastal California gnatcatcher

Special Status Species Areas
- coastal California gnatcatcher

USFWS Occurrence
- Quino checkerspot butterfly
- San Diego fairy shrimp
- coastal California gnatcatcher
- least Bell's vireo

CNDDB Occurrence
- Orcutt's spineflower
- San Diego button-celery
- San Diego fairy shrimp
- San Diego mesa mint
- coastal California gnatcatcher
- willowy monardella

Miramar Vegetation
- Annual Brome Grassland
- Area under active management for mission/administrative use
- Arroyo Willow Thickets
- Black Sage Scrub
- Black Willow Thickets
- Blackwood Acacia Disturbed
- Broom Baccharis Scrub
- California Buckwheat Scrub
- California Sagebrush Scrub
- California Sagebrush-Black Sage Scrub
- California Sagebrush-California Buckwheat Scrub
- Chamise Chaparral
- Chamise-Black Sage Chaparral
- Coast Live Oak Woodland
- Erodium Disturbed Area
- Festuca myuros is dominant in the herbaceous layer
- Laurel Sumac Scrub
- Mission Manzanita Chaparral
- Mule Fat Thickets
- Perennial Rye Grass Fields
- Purple Needle Grass Grassland
- Ramona-lilac Chaparral
- San Diego Sagewort Patches
- Scrub Oak Chaparral
- Tamarisk Stand
- Thick Leaf Yerba Santa Scrub
- Upland Mustards
- Wart-stemmed Ceanothus Chaparral
- Western Sycamore Woodlands
- Wild Oats Grasslands

SANDAG Vegetation
- Chamise Chaparral
- Coast Live Oak Woodland
- Coastal Scrub
- Diegan Coastal Sage Scrub
- Diegan Coastal Sage Scrub: Coastal form
- Disturbed Habitat
- Eucalyptus Woodland
- Maritime Succulent Scrub
- Non-Native Grassland
- Non-Native Grassland: Broadleaf-Dominated
- Non-Native Riparian
- Non-Native Vegetation
- Scrub Oak Chaparral
- Southern Arroyo Willow Riparian Forest
- Southern Coast Live Oak Riparian Forest
- Southern Cottonwood-Willow Riparian Forest
- Southern Maritime Chaparral
- Southern Riparian Forest
- Southern Riparian Woodland
- Urban/Developed
- Vernal Pool

N 0 2,625 5,250 Feet

SOURCE: ESRI, 2015; SanGIS, 2015; SanBios, 2009; USFWS; CNDDB, 07/01/2015.

FIGURE 5.4-1A

Vegetation, Wetlands, and Special Species Constraints: North City Component

DUDEK

Pure Water Program EIR

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- Potential Facilities
- Potential Pipelines
- Impact Analysis
- Rivers

SANBIOS Occurrence

- coastal California gnatcatcher
- Least Bell's vireo

USFWS Occurrence

- Quino checkerspot butterfly
- coastal California gnatcatcher
- least Bell's vireo

CNDDB Occurrence

- San Diego ambrosia
- coastal California gnatcatcher
- least Bell's vireo

SANDAG Vegetation

- Chamise Chaparral
- Coast Live Oak Woodland
- Coastal Scrub
- Diegan Coastal Sage Scrub
- Diegan Coastal Sage Scrub: Coastal form
- Eucalyptus Woodland
- Mule Fat Scrub
- Non-Native Grassland
- Non-Native Grassland: Broadleaf-Dominated
- Non-Native Riparian
- Non-Vegetated Channel, Floodway, Lakeshore Fringe
- Open Water
- Southern Arroyo Willow Riparian Forest
- Southern Coast Live Oak Riparian Forest
- Southern Mixed Chaparral
- Southern Riparian Woodland
- Unvegetated Habitat
- Urban/Developed

0 2,350 4,700 Feet

SOURCE: ESRI, 2015; SanGIS, 2015; SanBios, 2009; USFWS; CNDDB, 07/01/2015.

FIGURE 5.4-1B

Vegetation, Wetlands, and Special Species Constraints: North City Component

DUDEK

Pure Water Program EIR

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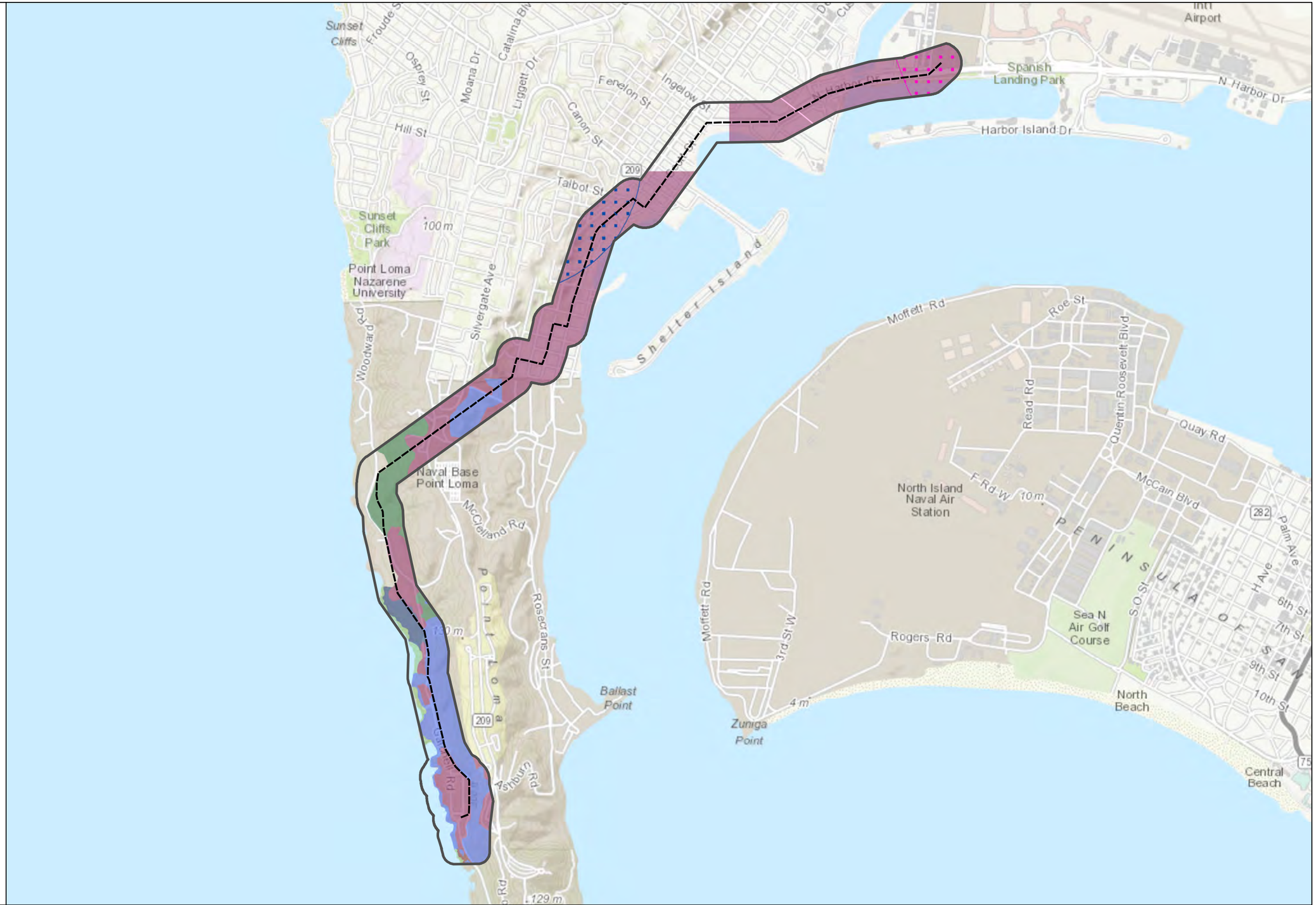
Potential Pipelines
Impact Analysis

USFWS Occurrence
Quino checkerspot butterfly

CNDDB Occurrence
Orcutt's spineflower
western snowy plover

SANDAG Vegetation
Diegan Coastal Sage Scrub
Disturbed Habitat
Maritime Succulent Scrub
Southern Maritime Chaparral
Unvegetated Habitat
Urban/Developed



0 1,150 2,300 Feet

SOURCE: ESRI, 2015; SanGIS, 2015; SanBios, 2009; USFWS; CNDDB, 07/01/2015.

FIGURE 5.4-1C
Vegetation, Wetlands, and Special Species Constraints: Central Area Component

DUDEK

Pure Water Program EIR

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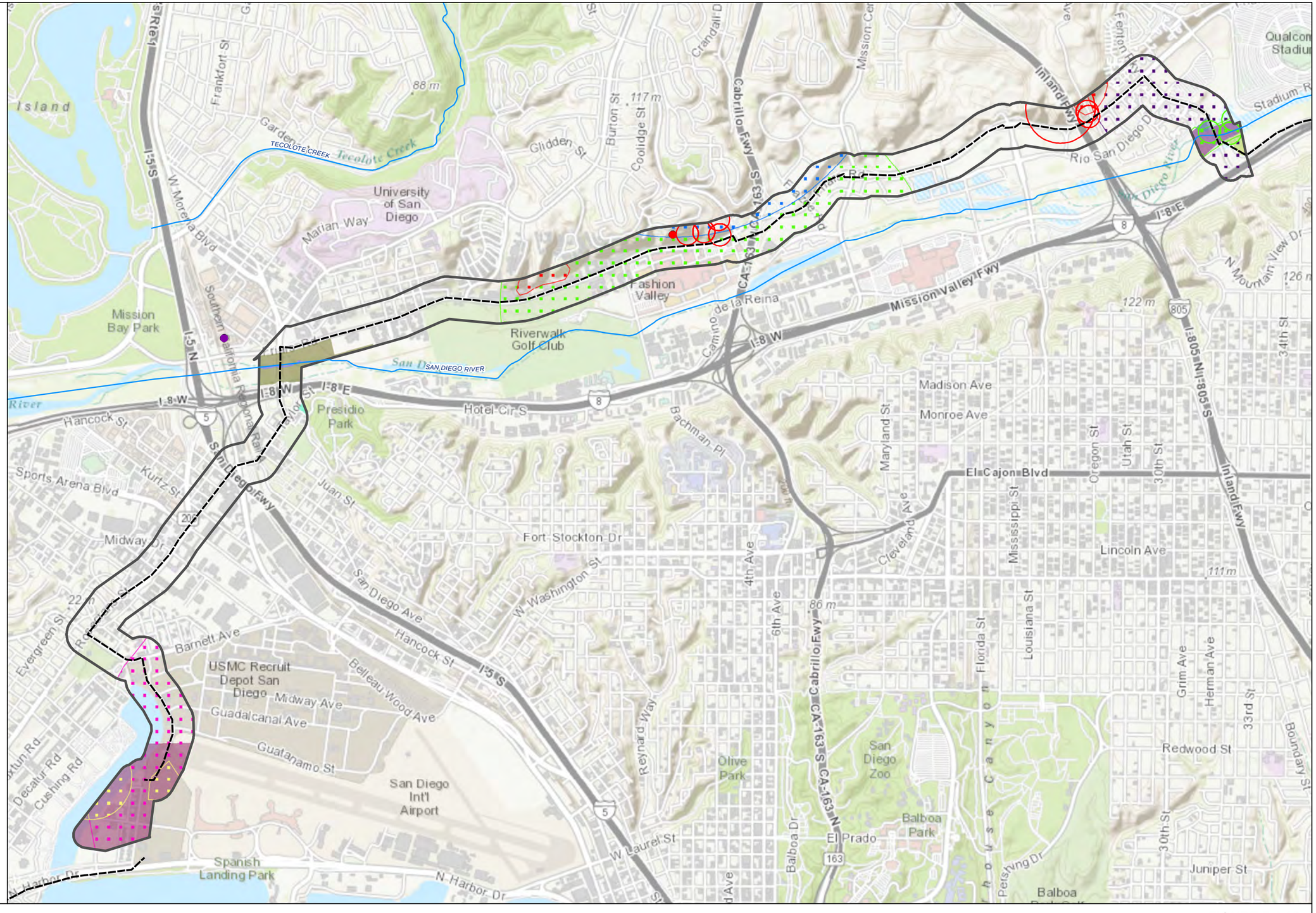
- Potential Facilities
- Potential Pipelines
- Impact Analysis
- Rivers

SANBIOS Occurrence
- coastal California gnatcatcher

USFWS Occurrence
- coastal California gnatcatcher
- least Bell's vireo

CNDDB Occurrence
- California least tern
- San Diego ambrosia
- San Diego fairy shrimp
- coastal California gnatcatcher
- least Bell's vireo
- western snowy plover

SANDAG Vegetation
- Disturbed Habitat
- Eucalyptus Woodland
- Non-Native Grassland
- Non-Native Riparian
- Open Water
- Southern Arroyo Willow Riparian Forest
- Southern Cottonwood-Willow Riparian Forest
- Southern Riparian Woodland
- Urban/Developed



0 1,125 2,250 Feet

SOURCE: ESRI, 2015; SanGIS, 2015; SanBios, 2009; USFWS; CNDDB, 07/01/2015.

FIGURE 5.4-1D

Vegetation, Wetlands, and Special Species Constraints: Central Area Component

DUDEK

Pure Water Program EIR

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- Potential Facilities
- Potential Pipelines
- Impact Analysis
- Rivers

USFWS Occurrence

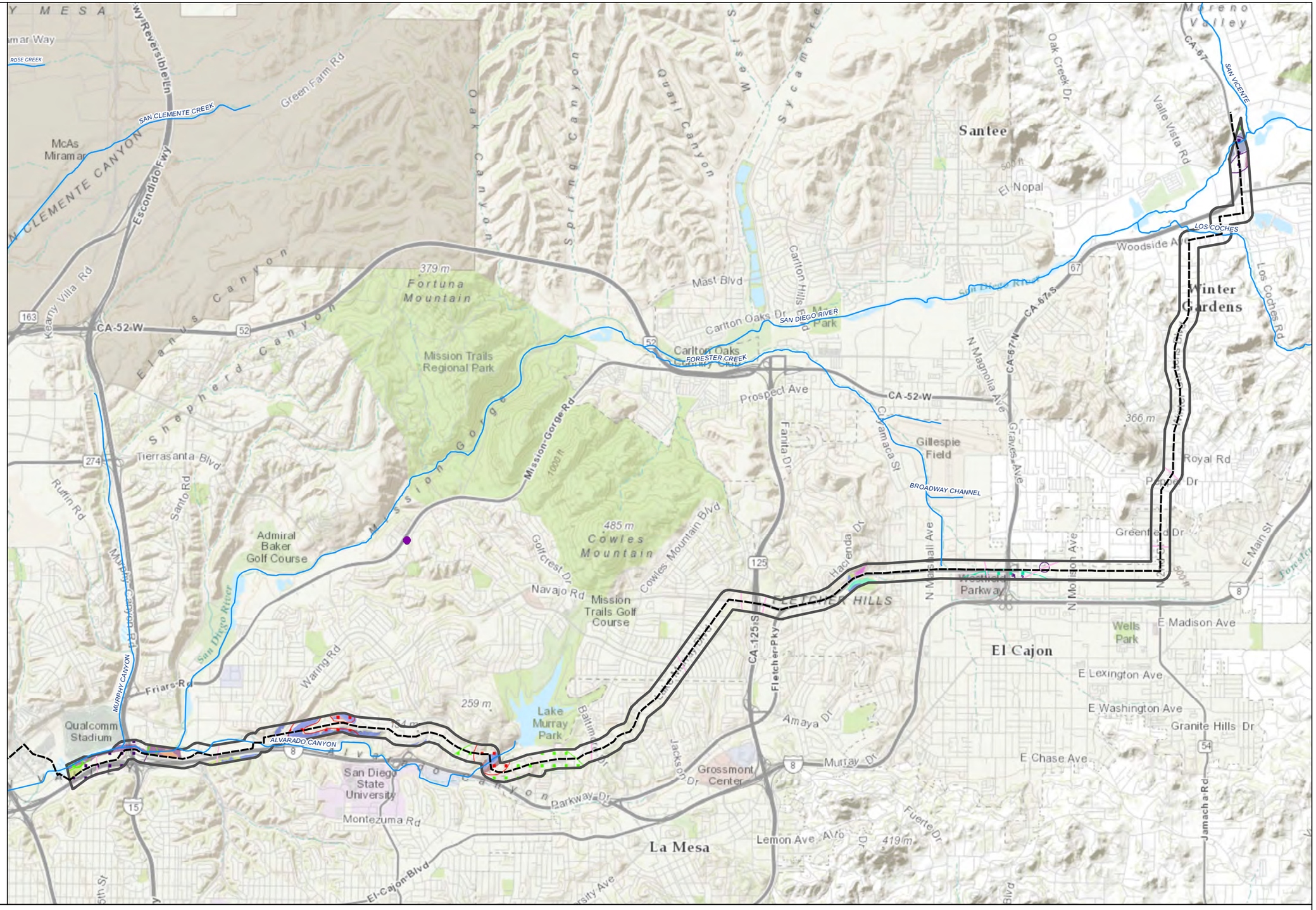
- Quino checkerspot butterfly
- least Bell's vireo

CNDDB Occurrence

- San Diego ambrosia
- Townsend's big-eared bat
- coastal California gnatcatcher
- least Bell's vireo

SANDAG Vegetation

- Coastal Scrub
- Coastal and Valley Freshwater Marsh
- Diegan Coastal Sage Scrub
- Diegan Coastal Sage Scrub: Coastal form
- Disturbed Habitat
- Eucalyptus Woodland
- Maritime Succulent Scrub
- Non-Native Grassland
- Non-Native Riparian
- Non-Native Vegetation
- Open Water
- Southern Arroyo Willow Riparian Forest
- Southern Riparian Woodland
- Urban/Developed



0 2,500 5,000 Feet

SOURCE: ESRI, 2015; SanGIS, 2015; SanBios, 2009; USFWS; CNDDB, 07/01/2015.

FIGURE 5.4-1E

Vegetation, Wetlands, and Special Species Constraints: Central Area Component

DUDEK

Pure Water Program EIR

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- Potential Facilities
- Potential Pipelines
- Impact Analysis
- Rivers

SANBIOS Occurrence

- coastal California gnatcatcher

USFWS Occurrence

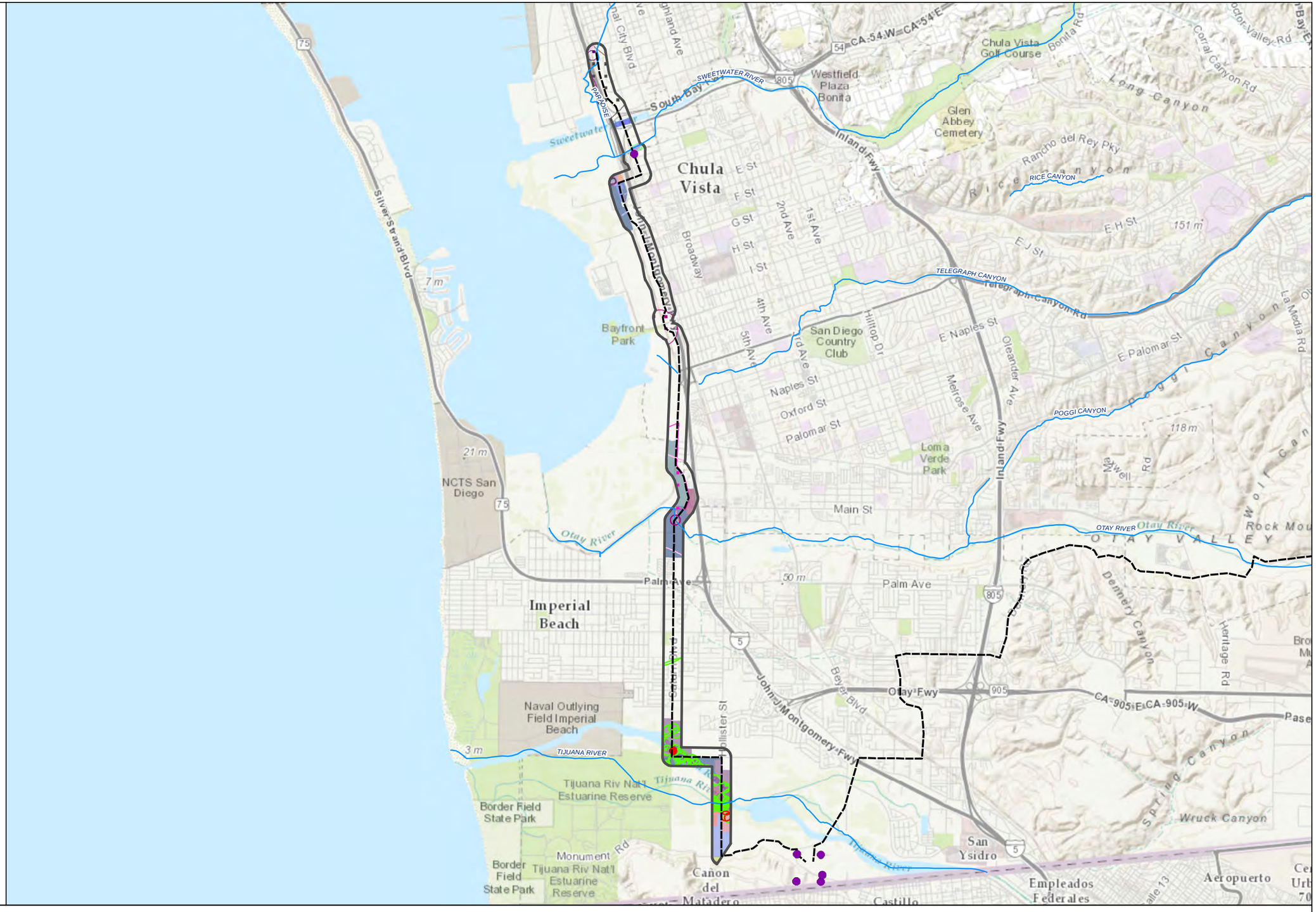
- Quino checkerspot butterfly
- coastal California gnatcatcher
- least Bell's vireo
- light-footed clapper rail

CNDDB Occurrence

- Belding's savannah sparrow
- California black rail
- San Diego ambrosia
- burrowing owl
- least Bell's vireo
- light-footed clapper rail
- western snowy plover

SANDAG Vegetation

- Coastal Scrub
- Coastal and Valley Freshwater Marsh
- Diegan Coastal Sage Scrub
- Disturbed Habitat
- Eucalyptus Woodland
- General Agriculture
- Maritime Succulent Scrub
- Mule Fat Scrub
- Non-Native Grassland
- Non-Native Riparian
- Open Water
- Saltpan/Mudflats
- Southern Arroyo Willow Riparian Forest
- Southern Coastal Salt Marsh
- Southern Riparian Woodland
- TBD
- Unvegetated Habitat
- Urban/Developed



SOURCE: ESRI, 2015; SanGIS, 2015; SanBios, 2009; USFWS; CNDDB, 07/01/2015.

FIGURE 5.4-1F

Vegetation, Wetlands, and Special Species Constraints: South Bay Component

DUDEK

Pure Water Program EIR

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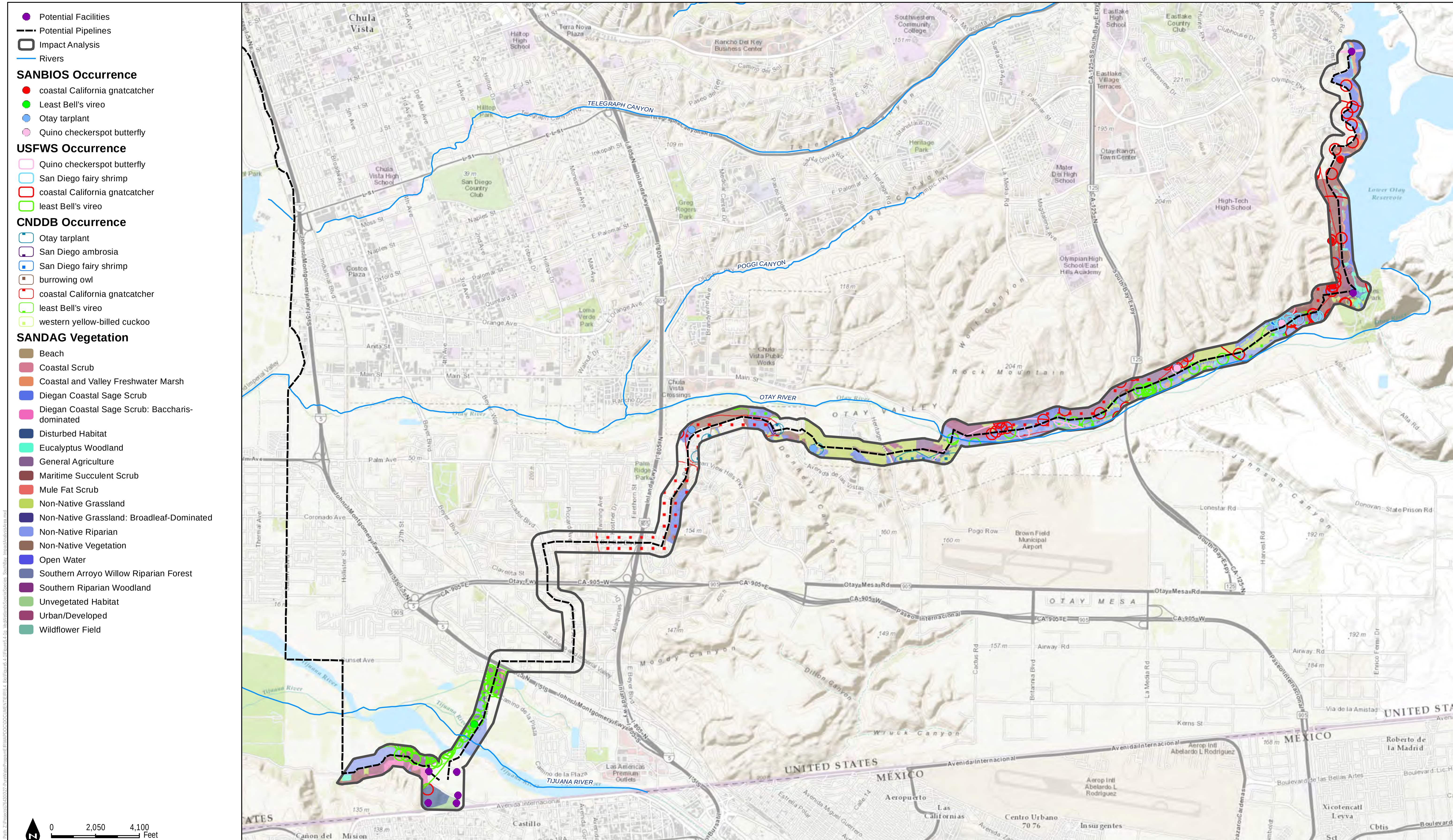

SOURCE: ESRI, 2015; SanGIS, 2015; SanBios, 2009; USFWS; CNDDB, 07/01/2015.

FIGURE 5.4-1G

Vegetation, Wetlands, and Special Species Constraints: South Bay Component

Pure Water Program EIR

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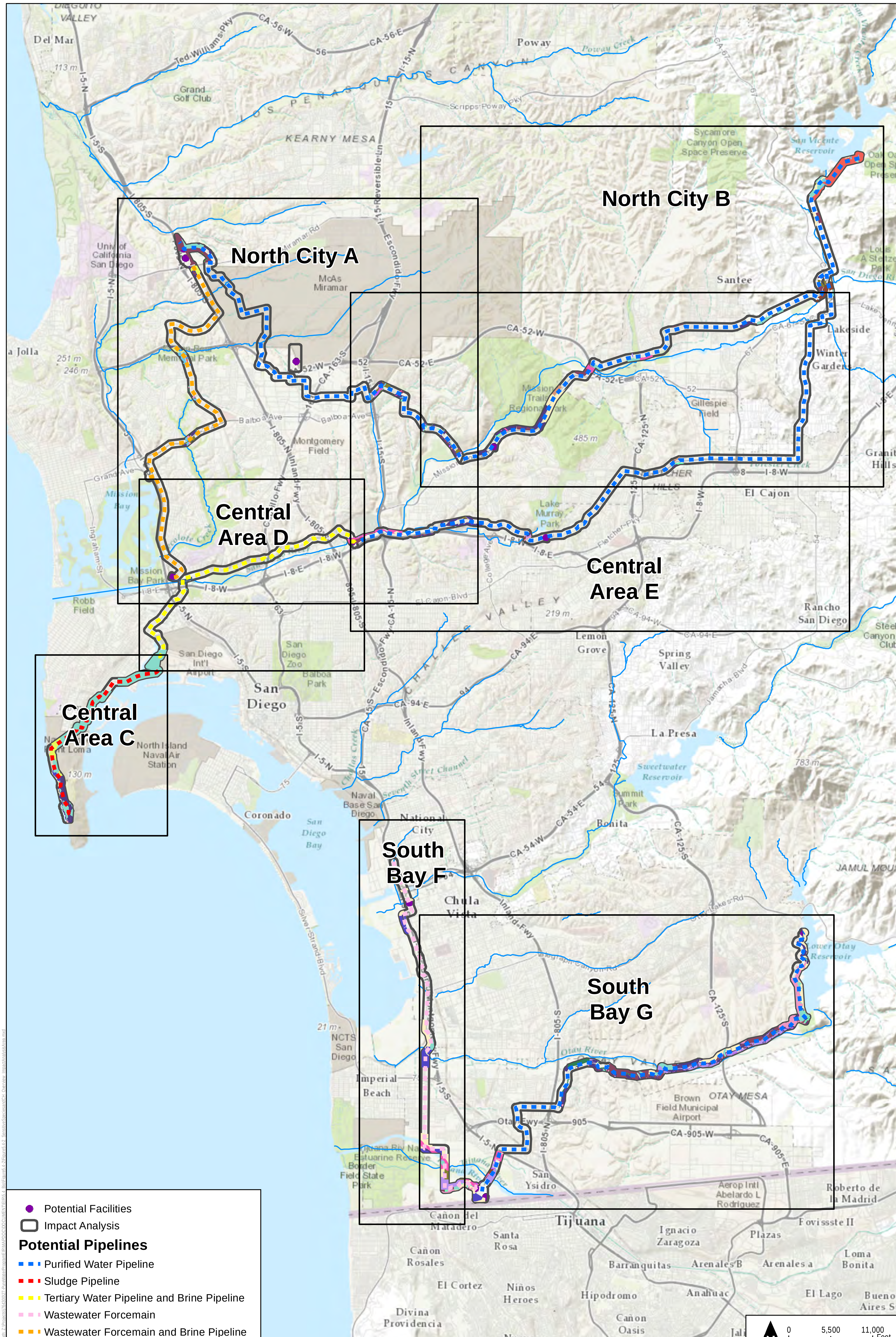
North City A
North City B
Central Area C
Central Area D
Central Area E
South Bay F
South Bay G
Del Mar
Poway
Grand Golf Club
KEARNY MESA
Sycamore Canyon Open Space Preserve
San Vicente Reservoir
Univ of California San Diego
McAs Miramar
Santee
La Jolla
Lakeside
Winter Gardens
Mission Trails Regional Park
Gillespie Field
Montgomery Field
Granite Hills
Mission Bay
El Cajon
Lake Murray Park
Mission Bay Park
Robb Field
San Diego Int'l Airport
San Diego Zoo
Balboa Park
San Diego
Rancho San Diego
Lemon Grove
Spring Valley
North Island Naval Air Station
La Presa
Sweetwater Reservoir
Summit Park
Naval Base San Diego
Coronado
San Diego Bay
National City
Bonita
Chula Vista
Lower Otay Reservoir
NCTS San Diego
Imperial Beach
Brown Field Municipal Airport
OTAY MESA
San Ysidro
Tijuana
Aerop Intl Abelardo L Rodriguez
Roberto de la Madrid
Potential Facilities
Impact Analysis
Potential Pipelines
Purified Water Pipeline
Sludge Pipeline
Tertiary Water Pipeline and Brine Pipeline
Wastewater Forcemain
Wastewater Forcemain and Brine Pipeline
0
5,500
11,000
Feet

SOURCE: ESRI, 2015; NHDCA, 2004; SanGIS, 2015; NOAA, 2012; USFWS.

FIGURE 5.4-2

Sensitive Species and Critical Habitats: Overview

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- Potential Facilities
- Potential Pipelines
- Impact Analysis
- Rivers
- Critical Habitat: San Diego Fairy Shrimp
- Core Resource Areas
- Habitat Linkages
- MHPA
- Public Utilities Habitat Mitigation Sites
- Conserved Lands
- Open Space

0 2,625 5,250 Feet

SOURCE: ESRI, 2015; NHDCA, 2004; SanGIS, 2015; NOAA, 2012; USFWS.

DUDEK

FIGURE 5.4-2A

Sensitive Species and Critical Habitats: North City Component

Pure Water Program EIR

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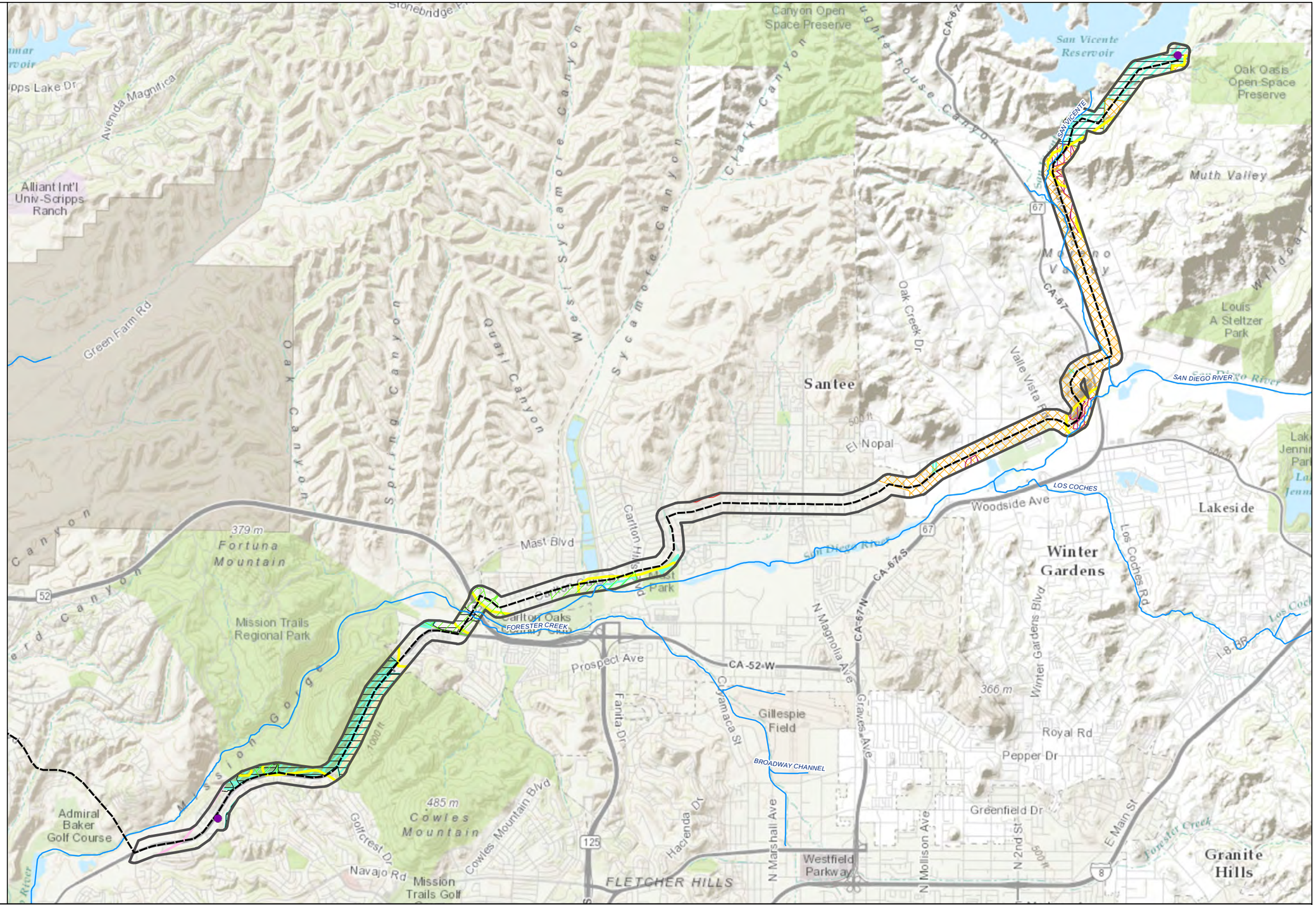
- Potential Facilities
- Potential Pipelines
- Impact Analysis
- Rivers
- Critical Habitat: coastal California Gnatcatcher
- Critical Habitat: Least Bell's Vireo
- Core Resource Areas
- Habitat Linkages
- Preapproved Mitigation Areas
- MSCP
- MHPA
- Conserved Lands
- Open Space
- Parks



SOURCE: ESRI, 2015; NHDCA, 2004; SanGIS, 2015; NOAA, 2012; USFWS.

DUDEK

FIGURE 5.4-2B

Sensitive Species and Critical Habitats: North City Component

Pure Water Program EIR

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Potential Facilities
Potential Pipelines
Impact Analysis
Core Resource Areas
MHPA
Conserved Lands

0 1,150 2,300 Feet

SOURCE: ESRI, 2015; NHDCA, 2004; SanGIS, 2015; NOAA, 2012; USFWS.

FIGURE 5.4-2C
Sensitive Species and Critical Habitats: Central Area Component

DUDEK

Pure Water Program EIR

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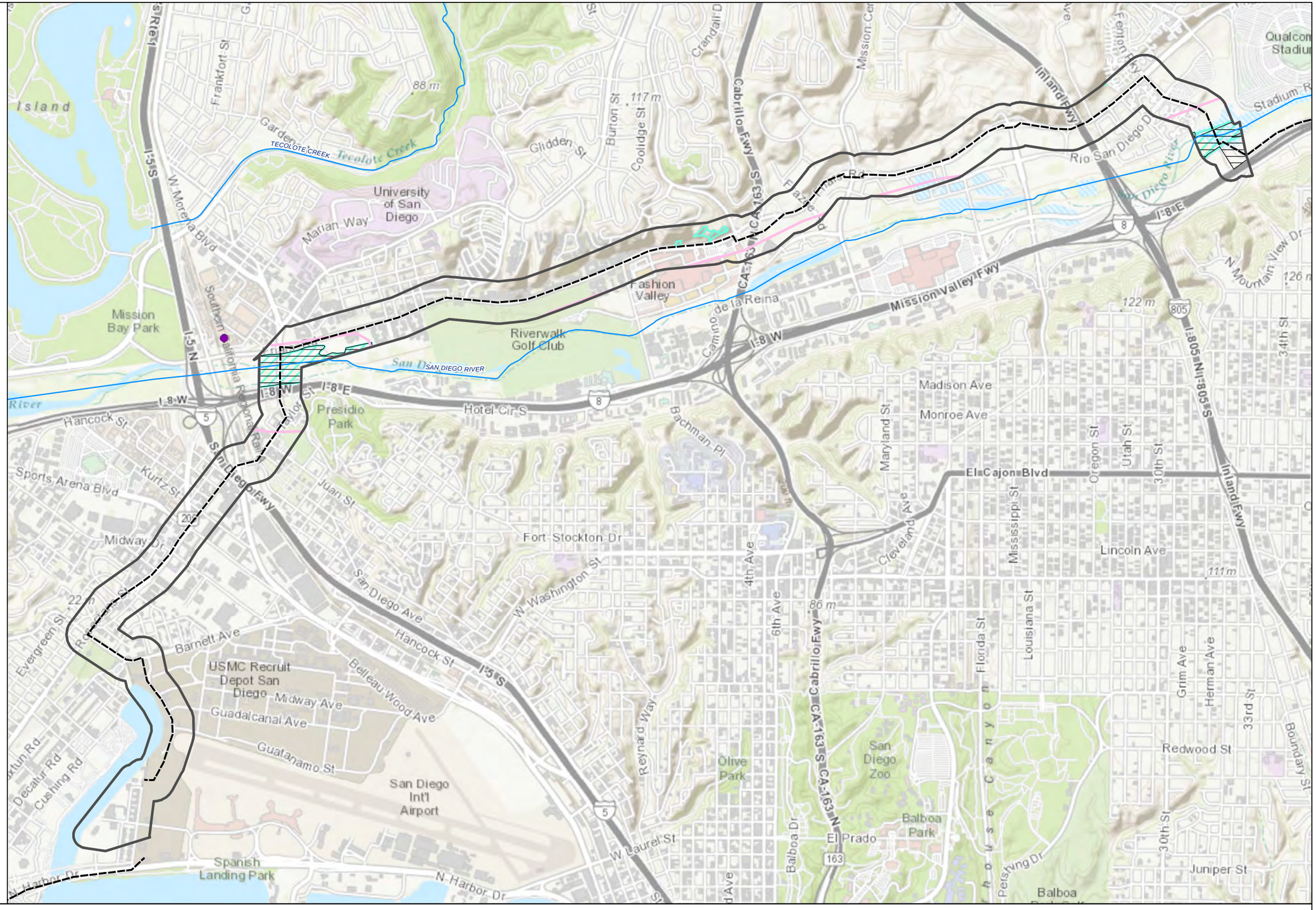
- Potential Facilities
- Potential Pipelines
- Impact Analysis
- Rivers
- Habitat Linkages
- MHPA
- Public Utilities Habitat Mitigation Sites
- Conserved Lands



0 1,125 2,250 Feet

SOURCE: ESRI, 2015; NHDCA, 2004; SanGIS, 2015; NOAA, 2012; USFWS.

FIGURE 5.4-2D

Sensitive Species and Critical Habitats: Overview: Central Area Component

DUDEK

Pure Water Program EIR

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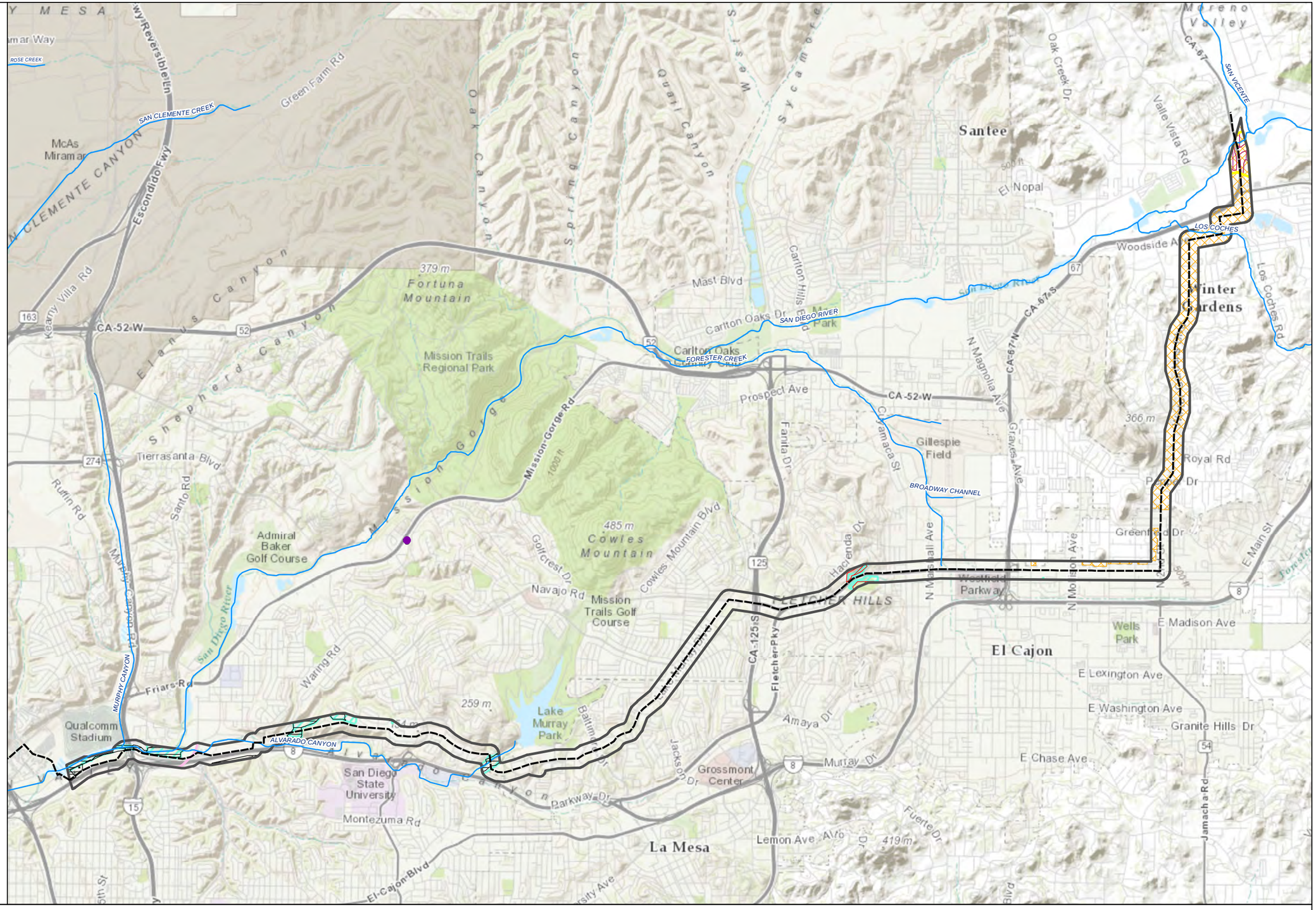
- Potential Facilities
- Potential Pipelines
- Impact Analysis
- Rivers
- Critical Habitat: coastal California Gnatcatcher
- Core Resource Areas
- Habitat Linkages
- Preapproved Mitigation Areas
- MSCP
- MHPA
- Public Utilities Habitat Mitigation Sites
- Conserved Lands
- Parks



SOURCE: ESRI, 2015; NHDCA, 2004; SanGIS, 2015; NOAA, 2012; USFWS.

FIGURE 5.4-2E

Sensitive Species and Critical Habitats: Central Area Component

DUDEK

Pure Water Program EIR

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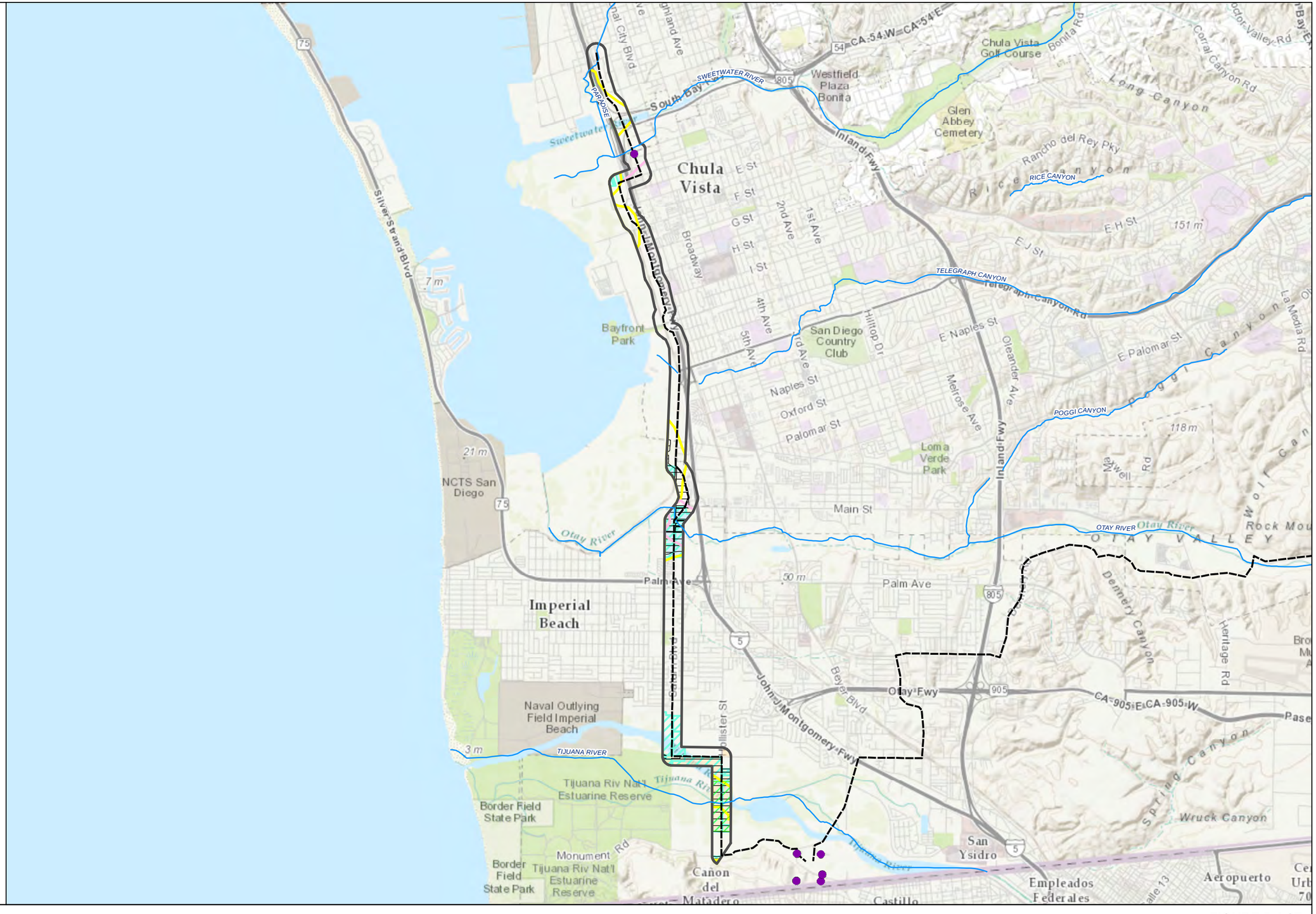
- Potential Facilities
- Potential Pipelines
- Impact Analysis
- Rivers
- Critical Habitat: Least Bell's Vireo
- Core Resource Areas
- Habitat Linkages
- MHPA
- Conserved Lands
- San Diego National Wildlife Refuge
- Parks



SOURCE: ESRI, 2015; NHDCA, 2004; SanGIS, 2015; NOAA, 2012; USFWS.

FIGURE 5.4-2F

Sensitive Species and Critical Habitats: South Bay Component

DUDEK

Pure Water Program EIR

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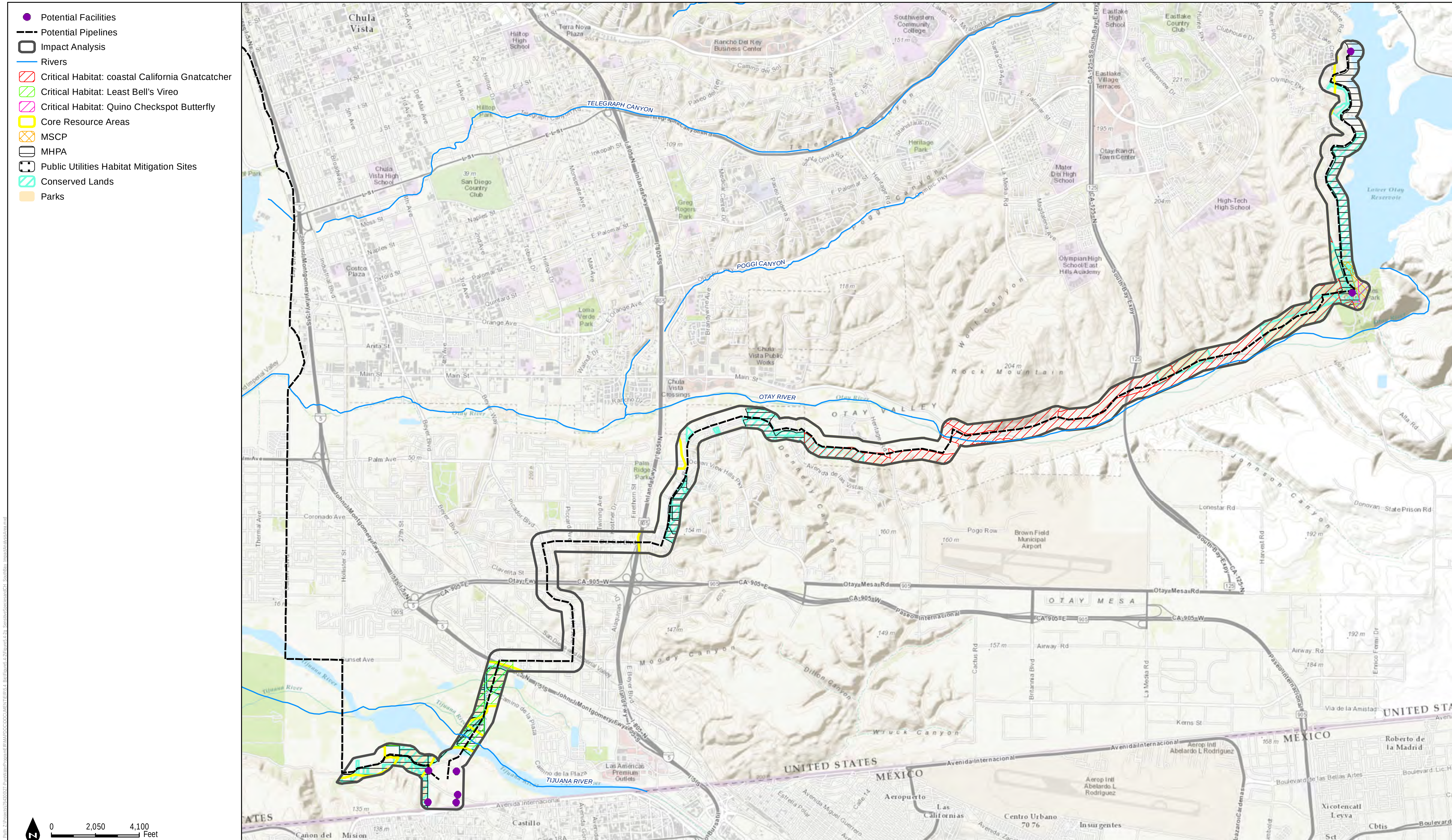

SOURCE: ESRI, 2015; NHDCA, 2004; SanGIS, 2015; NOAA, 2012; USFWS.

DUDEK

FIGURE 5.4-2G

Sensitive Species and Critical Habitats: South Bay Component

Pure Water Program EIR

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5.5 NOISE

5.5.1 INTRODUCTION

This section evaluates the existing noise environment, identifies the potential noise and vibration impacts associated with implementation of the Pure Water Program (Program) relative to the significance thresholds and noise/vibration standards of the City of San Diego and the other local jurisdictions in which it would be constructed, and includes Mitigation Framework measures as necessary.

The information provided in this section is based on the Noise Technical Report for the Pure Water Program prepared by Dudek in April 2015 (see Appendix F).

5.5.2 EXISTING CONDITIONS

Fundamentals of Noise and Vibration

The following is a brief discussion of fundamental noise concepts and terminology.

Sound, Noise, and Acoustics

Sound is a process that consists of three components: the sound source, the sound path, and the sound receiver. All three components must be present for sound to exist. Without a source to produce sound, there is no sound. Similarly, without a medium to transmit sound pressure waves, there is no sound. Finally, sound must be received; a hearing organ, sensor, or object must be present to perceive, register, or be affected by sound or noise. In most situations, there are many different sound sources, paths, and receptors rather than just one of each. Acoustics is the field of science that deals with the production, propagation, reception, effects, and control of sound. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired.

Sound Pressure Levels and Decibels

The amplitude of a sound determines its loudness. Loudness of sound increases with increasing amplitude. Sound pressure amplitude is measured in units of micronewton per square meter, also called micropascal. One micropascal is approximately one-hundred billionth (0.00000000001) of normal atmospheric pressure. The pressure of a very loud sound may be 200 million micropascals, or 10 million times the pressure of the weakest audible sound. Because expressing sound levels in terms of micropascal would be very cumbersome, sound pressure level in logarithmic units is used instead to describe the ratio of actual sound pressure to a reference pressure squared. These units are called Bels. To provide a finer resolution, a Bel is subdivided into 10 decibels (dB).

A-Weighted Sound Level

Sound pressure level alone is not a reliable indicator of loudness. The frequency, or pitch, of a sound also has a substantial effect on how humans will respond. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness, or human response, is determined by the characteristics of the human ear.

Human hearing is limited not only in the range of audible frequencies, but also in the way it perceives the sound in that range. In general, the healthy human ear is most sensitive to sounds between 1,000 and 5,000 hertz, and it perceives a sound within that range as more intense than a sound of higher or lower frequency with the same magnitude. To approximate the frequency response of the human ear, a series of sound level adjustments is usually applied to the sound measured by a sound level meter. The adjustments (referred to as a weighting network) are frequency-dependent.

The A-scale weighting network approximates the frequency response of the average young ear when listening to ordinary sounds. When people make judgments about the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Other weighting networks have been devised to address high noise levels or other special situations (e.g., B-scale, C-scale, D-scale), but these scales are rarely used in conjunction with most environmental noise. Noise levels are typically reported in terms of A-weighted sound levels. All sound levels discussed in this section are A-weighted decibels (dBA). Examples of typical noise levels for common indoor and outdoor activities are depicted in Table 5.5-1.

Table 5.5-1
Typical Sound Levels in the Environment and Industry

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
Jet fly-over at 300 meters (1,000 feet)	110	Rock band
Gas lawn mower at 1 meter (3 feet)	100	Food blender at 1 meter (3 feet)
Diesel truck at 15 meters (50 feet), at 80 kilometers/hour (50 miles per hour)	90	Garbage disposal at 1 meter (3 feet)
Noisy urban area, daytime	80	Vacuum cleaner at 3 meters (10 feet),
Gas lawn mower at 30 meters (100 feet)	70	Normal speech at 1 meter (3 feet)
Commercial area	60	Large business office
Heavy traffic at 90 meters (300 feet)	50	Dishwasher next room
Quiet urban daytime	40	Theater, large conference room (background)
Quiet urban nighttime	30	Library
Quiet suburban nighttime	20	Bedroom at night, concert hall (background)
Quiet rural nighttime	10	Broadcast/recording studio
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Caltrans 2009.

Human Response to Changes in Noise Levels

Under controlled conditions in an acoustics laboratory, the trained, healthy human ear is able to discern changes in sound levels of 1 dBA when exposed to steady, single-frequency signals in the mid-frequency range. Outside such controlled conditions, the trained ear can detect changes of 2 dBA in normal environmental noise. It is widely accepted that the average healthy ear, however, can barely perceive noise level changes of 3 dBA. A change of 5 dBA is readily perceptible, and a change of 10 dBA is perceived as twice or half as loud. A doubling of sound energy results in a 3 dBA increase in sound, which means that a doubling of sound energy (e.g., doubling the volume of traffic on a road) would result in a barely perceptible change in sound level).

Noise Descriptors

Additional units of measure have been developed to evaluate the long-term characteristics of sound. The equivalent sound level (L_{eq}) is also referred to as the time-average sound level. It is the equivalent steady-state sound level that in a stated period of time would contain the same acoustical energy as the time-varying sound level during the same time period. The 1-hour A-weighted equivalent sound level, L_{eq} (h), is the energy average of the A-weighted sound levels occurring during a 1-hour period, and is the basis for the City of San Diego's Noise Ordinance criteria, as well as the basis for the County of San Diego and the other cities in which the Program would be constructed.

People are generally more sensitive and annoyed by noise occurring during the evening and nighttime hours. Thus, another noise descriptor used in community noise assessments—the community noise equivalent level (CNEL)—was introduced. The CNEL scale represents a time-weighted, 24-hour average noise level based on the A-weighted sound level. The CNEL accounts for the increased noise sensitivity during the evening hours (7 p.m. to 10 p.m.) and nighttime hours (10 p.m. to 7 a.m.) by adding 5 dBA and 10 dBA, respectively, to the average sound levels occurring during the evening and nighttime hours.

Sound Propagation

Sound propagation (i.e., the passage of sound from a noise source to a receiver) is influenced by geometric spreading, ground absorption, atmospheric effects, and shielding by natural and/or built features.

Sound levels attenuate (or diminish) at a rate of approximately 6 dBA per doubling of distance from an outdoor point source due to the geometric spreading of the sound waves. Atmospheric conditions such as humidity, temperature, and wind gradients can also temporarily either increase or decrease sound levels. In general, the greater the distance the receiver is from the

source, the greater the potential for variation in sound levels due to atmospheric effects. Additional sound attenuation can result from built features such as intervening walls and buildings, and by natural features such as hills and dense woods.

Groundborne Vibration Fundamentals

Groundborne vibration is a small, rapidly fluctuating motion transmitted through the ground. The strength of groundborne vibration attenuates fairly rapidly over distance. Some soil types transmit vibration quite efficiently; other types (primarily sandy soils) do not. Several basic measurement units are commonly used to describe the intensity of ground vibration. The descriptors used by the Federal Transit Administration are peak particle velocity (PPV), in units of inches per second, and velocity decibel (VdB). Typical background vibration levels are between 50 and 60 VdB, and the level for minor cosmetic damage to fragile buildings or blasting generally begins at 100 VdB.

5.5.3 REGULATORY SETTING

Federal

There are no applicable federal regulations related to noise that would apply to this Program.

State

Government Code Section 65302(g)

California Government Code Section 65302(g) requires the preparation of a Noise Element, which shall identify and appraise the noise problems in the community. The Noise Element shall recognize the guidelines adopted by the Office of Noise Control in the State Department of Health Services and shall quantify, to the extent practicable, current and projected noise levels for the following sources:

- Highways and freeways
- Primary arterials and major local streets
- Passenger and freight on-line railroad operations and ground rapid transit systems
- Aviation and airport-related operations
- Local industrial plants
- Other ground stationary noise sources contributing to the community noise environment

Local

Because the Program components may be located in a number of municipal and unincorporated areas in addition to the City of San Diego, the applicable regulatory provisions of those agencies are described in this section.

City of San Diego

City of San Diego Municipal Code 59.5.0401 (Noise Ordinance)

Section 59.5.0401 of the City of San Diego's Municipal Code sets forth sound level limits. It is unlawful for any person to cause noise by any means to the extent that the 1-hour average sound level exceeds the applicable limit given in Table 5.5-2 at any location in the City of San Diego on or beyond the boundaries of the property on which the noise is produced. The noise subject to these limits is the part of the total noise at the specified location that is due solely to the action of said person/event.

Table 5.5-2
City of San Diego Applicable Limits

Land Use	Time of Day	1-Hour Average Sound Level (dBA)
Single-family residential	7 a.m. to 7 p.m.	50
	7 p.m. to 10 p.m.	45
	10 p.m. to 7 a.m.	40
Multi-family residential (up to a maximum density of 1/2,000)	7 a.m. to 7 p.m.	55
	7 p.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
All other residential	7 a.m. to 7 p.m.	60
	7 p.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
Commercial	7 a.m. to 7 p.m.	65
	7 p.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	60
Industrial or agricultural	Any time	75

Source: City of San Diego 2010.

City of San Diego Municipal Code 59.5.0404 (Noise Ordinance)

Construction Noise

Section 59.5.0404 of the City of San Diego's Municipal Code sets forth limitations related to construction noise (City of San Diego 2010).

A. It shall be unlawful for any person, between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on legal holidays as specified in Section 21.04 of the San

Diego Municipal Code, with exception of Columbus Day and Washington's Birthday, or on Sundays, to erect, construct, demolish, excavate for, alter, or repair any building or structure in such a manner as to create disturbing, excessive, or offensive noise unless a permit has been applied for and granted beforehand by the Noise Abatement and Control Administrator. In granting such permit, the Administrator shall consider whether the construction noise in the vicinity of the proposed work site would be less objectionable at night than during the daytime because of different population densities or different neighboring activities; whether obstruction and interference with traffic, particularly on streets of major importance, would be less objectionable at night than during the daytime; whether the type of work to be performed emits noises at such a low level as to not cause significant disturbances in the vicinity of the work site; the character and nature of the neighborhood of the proposed work site; whether great economic hardship would occur if the work were spread over a longer time; and whether proposed night work is in the general public interest; and he/she shall prescribe such conditions, working times, types of construction equipment to be used, and permissible noise levels as he/she deems to be required in the public interest.

B. Except as provided in Subsection C hereof, it shall be unlawful for any person, including the City of San Diego, to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 decibels during the 12-hour period from 7:00 a.m. to 7:00 p.m.

C. The provisions of Subsection B of this section shall not apply to construction equipment used in connection with emergency work, provided the Administrator is notified within 48 hours after commencement of work.

City of La Mesa Municipal Code 10.80 (Noise Regulation)

Section 10.80.040 – Ambient base noise level

Section 10.80.040 of the City of La Mesa's Municipal Code sets forth standards for ambient base noise levels. Where the ambient noise level is less than designated in this section, the respective noise level in this section shall govern. The noise level to be observed in all measurements shall be that specified for the zone applicable to the property adjoining that on which the noise is generated and closest to the noise source. Table 5.5-3 outlines the sound levels within each zoning designations.

Table 5.5-3
Sound Level A, Decibels - City of La Mesa

Zone	Time	Level
R1 and R2	10:00 p.m. to 7:00 a.m.	50
R1 and R2	7:00 p.m. to 10:00 p.m.	55
R1 and R2	7:00 a.m. to 7:00 p.m.	60
R3 and RB	10:00 p.m. to 7:00 a.m.	55
R3 and RB	7:00 a.m. to 10:00 p.m.	60
C, CN, CD and CM	10:00 p.m. to 7:00 a.m.	60
C, CN, CD and CM	7:00 a.m. to 10:00 p.m.	65
M	Anytime	70

Source: City of La Mesa 1979.

Section 10.80.090 – Machinery, equipment, fans, and air conditioning

Section 10.80.090 of the City of La Mesa's Municipal Code sets forth conditions related to noise generated from machinery, equipment, fans, and air conditioning. It shall be unlawful for any person to install or operate any machinery, equipment, pump, fan, air conditioning apparatus, or similar mechanical device which can be or is operated in any manner so as to create noise which will cause the noise level at the property line of any property to exceed the ambient base noise level by more than five (5) decibels.

A. Certificate of Compliance: Required. The installer of any such mechanical devices shall furnish to the Department of Building Inspection and Housing a certificate that the equipment installed as proposed can, without the addition of any baffling or construction, be operated within the sound limits specified above.

B. Prima facie violation: The installation of any such mechanical device without permit or without furnishing the certificate referred to above shall be deemed to be prima facie evidence of violation of the provisions of this section and such device installed shall not be operated at any time unless the required permits are obtained and the certificate of compliance is furnished to the Department of Building Inspection and Housing (City of La Mesa 1979).

Section 10.80.100 – Construction of buildings and projects

Section 10.80.100 of the City of La Mesa's Municipal Code sets forth conditions related to construction of buildings and projects. It shall be unlawful for any person within a residential zone or neighborhood commercial zone, or within a radius of five hundred feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction-type device between the hours of 10:00 p.m.

of one day and 7:00 a.m. of the next day or on Sundays unless a special permit authorizing the activity has been duly obtained from the chief building official. No permit shall be required to perform emergency work as defined in this chapter. This section shall not apply to any work of improvement performed by a single-family residential occupant which is performed on the occupant's said premises.

City of Santee Municipal Code

Section 8.12.040 Sound level limits

Section 8.12.040 of the City of Santee's Municipal Code sets forth sound level limits, as described below.

A. Unless a variance has been applied for and granted pursuant to Title 8 of the City of Santee's Municipal Code, it shall be unlawful for any person to cause or allow the creation of any noise to the extent that the one-hour average sound level, at any point on or beyond the boundaries of the property on which the sound is produced, exceeds the applicable limits set forth below except that construction noise level limits shall be governed by Section 8.12.290 of [the City of Santee's Municipal Code].

Table 5.5-4 outlines the sound levels within each zoning designations.

Table 5.5-4
City of Santee 1-Hour Average Sound Level

Zone		Applicable Limit One-Hour Average Sound Level (Decibels)
A-70, A-72, R-S, R-V, R-R, R-MH, S-87, S-88, S-90	7 a.m. to 7 p.m.	50
	7 p.m. to 10 p.m.	45
	10 p.m. to 7 a.m.	40
R-U, R-C, and C-31	7 a.m. to 7 p.m.	55
	7 p.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
All other commercial zones	7 a.m. to 7 p.m.	60
	7 p.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
M-50, M-52	Anytime	70
All other industrial zones	Anytime	75
The sound level at the location on a boundary between an industrial zone and a residential zone	7 a.m. to 7 p.m.	60
	7 p.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50

Source: City of Santee 1984.

B. For all other zones the sound level limit on a boundary between two zoning districts is the arithmetic mean of the respective limits for the two districts; provided, however, that the noise level limit applicable to extractive industries, including but not limited to borrow pits and mines, shall be the noise level limit applicable to the M-52 zone, or other standard as required for industrial uses adjacent to a residential zone.

C. Fixed-location public utility distribution or transmission facilities located on or adjacent to a property line shall be subject to the noise level limits of this section, measured at or beyond six feet from the boundary of the easement upon which the equipment is located (City of Santee 1984).

Section 8.12.290 Construction equipment

Section 8.12.290 of the City of Santee's Municipal Code sets forth noise limitations on construction equipment.

A. Except for emergency work, it is unlawful for any person, including the city, to operate any single or combination of powered construction equipment at any construction site, except as outlined as follows:

   1. It shall be unlawful for any person, including the city, to operate any single or combination of powered construction equipment at any construction site on Sundays, January 1st, the last Monday in May, known as "Memorial Day," July 4th, the first Monday in September, December 25th, and every day appointed by the President, Governor, or the city council for a public fast, thanksgiving, or holiday. When January 1st, July 4th, or December 25th falls on a Sunday, it shall be unlawful for any person to operate any single or combination of powered construction equipment at any construction site on the following Monday. Notwithstanding the above, a person may operate powered construction equipment on the above-specified days between the hours of ten a.m. and five p.m. in compliance with the requirements of subdivision 2 of this subsection at his residence for himself, provided such operation of powered construction equipment is not carried on for profit or livelihood. In addition, it shall be unlawful for any person to operate any single or combination of powered construction equipment at any construction site on Mondays through Saturdays except between the hours of seven a.m. and seven p.m.

   2. No such equipment, or combination of equipment regardless of age or date of acquisition, shall be operated so as to cause noise at a level in excess of seventy-five decibels for more than eight hours during any twenty-four-hour period when measured at or within the property lines of any property which is developed and used either in part or in whole for residential purposes. These sound levels shall be corrected for time duration in accordance with the following table [Table 5.5-5].

Table 5.5-5
City of Santee Construction Noise Allowance

Total Duration in 24 Hours	Decibel Level Allowance	Total Decibel Level
Up to 15 minutes	+15	90
Up to 30 minutes	+12	87
Up to 1 hour	+9	84
Up to 2 hours	+6	81
Up to 4 hours	+3	78
Up to 8 hours	0	75

Source: Reproduced from City of Santee 1984.

B. In the event that lower noise limit standards are established for construction equipment pursuant to state or federal law, the lower limits shall be used as a basis for revising and amending the noise level limits specified in subsection A2 of this section (City of Santee 1984).

Section 17.30.030 Performance Standards

The conduct and operation of all uses in all districts shall comply with the minimum standards of performance set forth in Section 17.30.030 of the City of Santee's Municipal Code (City of Santee 1985), the applicable portions of which are listed below:

A. Noise.

2. Commercial/Industrial. All commercial and industrial uses shall be established and operated in compliance with the city noise ordinance, commencing with Section 8.12.010 of the Santee Municipal Code, or as may be hereafter amended.

E. Vibration. No operation or activity is permitted which will create vibration noticeable without instruments at the perimeter of the subject property.

City of El Cajon Municipal Code

Section 17.115.130 Performance standards.

Section 17.115.130 of the City of El Cajon's Municipal Code sets forth minimum noise performance standards; the applicable portions of which are listed below:

C. Noise.

1. The sound level of any individual operation, land use, or activity other than rail, aircraft, street, or highway transportation, shall not exceed the sound levels

indicated in [Table 5.5-6]. For the purpose of determining compliance with these noise limitations, the sound levels shall be measured at the property lines of the property upon which the operation, land use, or activity is conducted.

Table 5.5-6
City of El Cajon One-Hour Average Sound Level

Zones	Time of Day	One-Hour Average Sound Level Decibels
All residentially zoned properties	7 a.m.–7 p.m.	60
	7 p.m. –10 p.m.	55
	10 p.m. –7 a.m.	50
All M-U and commercially zoned properties except the C-M zoned properties	7 a.m. –7 p.m.	65
	7 p.m. –10 p.m.	60
	10 p.m. –7 a.m.	55
All C-M and industrially zoned properties	Any time	75
	Conditionally*	80

Source: Reproduced from City of El Cajon 2011.
* Where outdoor noise levels are higher, additional noise attenuation measures (i.e., earphones for workers, increased insulation, double-pane glass, etc.) may make noise levels acceptable.

3. Equipment noise. It is unlawful for any person within any residential zone, or within a radius of 500 hundred feet from any residential zone, to operate equipment or perform any outside construction, maintenance or repair work on buildings, structures, landscapes or related facilities, or to operate any pile driver, power shovel, pneumatic hammer, power hoist, leaf blower, mower, or any other mechanical device, between the hours of 7 p.m. of one (1) day and 7 a.m. of the next day in such a manner that a reasonable person of normal sensitivities residing in the area is caused discomfort or annoyance. This subsection shall also apply to any property in the Mixed-Use zone having one or more residential units. This restriction does not apply to emergency work made necessary to restore property to a safe condition, restore utility service, or to protect persons or property from an imminent exposure to danger.

D. Vibrations. Every use shall be so operated that the ground vibration generated by such use is not harmful or injurious to the use or development of surrounding properties. No vibration shall be permitted which is perceptible without instruments at any use along the property line on which such use is located. For the purpose of this determination, the boundary of any lease agreement or operating unit or properties operating as a unit shall be considered the same as the property line (City of El Cajon 2011).

City of Chula Vista Municipal Code

Section 19.68.030 Exterior noise limits

Section 19.68.030 of the City of Chula Vista's Municipal Code sets forth exterior noise limits; the applicable portions are described below.

A. Maximum Permissible Sound Levels by Receiving Land Use.

1. The noise standards for the various categories of land use as presented in [Table 5.5-7], and set forth in terms defined in the city land use code set forth in Chapter 19.04 of the City of Chula Vista's Municipal Code, shall, unless otherwise specifically indicated, apply to each property or portion of property substantially used for a particular type of land use reasonably similar to the land use types shown in [Table 5.5-7]. Where two or more dissimilar land uses occur on a single property, the more restrictive noise limits shall apply.

4. No person shall operate, or cause to be operated, any source of sound at any location within the city or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person which causes the noise level to exceed the environmental and/or nuisance interpretation of the applicable limits given in [Table 5.5-7].

   a. Environmental noise shall be measured by the Leq for any hour.

   b. Nuisance noise shall be measured as a sound level not to be exceeded at any time.

   c. Sound levels by receiving land use shall be measured at the boundary or at any point within the boundary of the property affected.

   d. Fixed-location public utility distribution or fixed transmission facilities, located on or adjacent to a property line, shall be subject to noise level limits of this section measured at or beyond six feet from the boundary of the easement upon which the equipment is located.

B. Corrections to Exterior Noise Level Limits.

1. If the noise is continuous, the Leq for any hour will be represented by any lesser time period within that hour. Noise measurements of a few minutes only will thus suffice to define the noise level.

2. If the noise is intermittent, the Leq for any hour may be represented by a time period typical of the operating cycle. Measurement should be made of a representative number of noisy/quiet periods. A measurement period of not less than 15 minutes is, however, strongly recommended when dealing with intermittent noise.

3. In the event the alleged offensive noise, as judged by the enforcement officer, contains a steady, audible sound such as a whine, screech or hum, or contains a repetitive impulsive noise such as hammering or riveting, the standard limits set forth in [Table 5.5-7] shall be reduced by five dB.
4. If the measured ambient level exceeds that permissible in [Table 5.5-7], the allowable noise exposure standard shall be the ambient noise level. The ambient level shall be measured when the alleged noise violations source is not operating.

Table 5.5-7
City of Chula Vista - Exterior Noise Limits[1, 2]

Receiving Land Use Category	Noise Level [dB(A)]	
	10 p.m. to 7 a.m. (Weekdays)	*7 a.m. to 10 p.m. (Weekdays)*
	10 p.m. to 8 a.m. (Weekends)	*8 a.m. to 10 p.m. (Weekends)*
All residential (except multiple dwelling)	45	55
Multiple dwelling residential	50	60
Commercial	60	65
Light industry – I-R and I-L zone	70	70
Heavy industry – I zone	80	80

Source: This table appears as Table III in City of Chula Vista 1985.
1 Environmental Noise – L_{eq} in any hour.
2 Nuisance Noise – Not to be exceeded any time.

Section 17.24.040 Disturbing, excessive, offensive or unreasonable noises – Prohibited – Exceptions

Section 17.24.040 of the City of Chula Vista's Noise Chapter sets forth limitations to prevent disturbing, excessive, offensive, or unreasonable noises, as well as exceptions; the applicable portions are listed below.

A. It is unlawful for any person in any commercial or residential zone in the City of Chula Vista to make, continue or cause to be made or continued any disturbing, excessive, offensive, or unreasonable noise which disturbs the health, safety, general welfare or quiet enjoyment of property of others in any commercial or residential zone within the limits of the City. This section shall not in any way affect, restrict, or prohibit any activities incidental to scientific or industrial activities carried out in a reasonable manner according to the usual customs of scientific or industrial activities, conducted in areas zoned for such purposes, or upon lands which are under the jurisdiction of the board of commissioners of the San Diego Unified Port District.

C. The following activities, among others, are declared to cause disturbing, excessive, offensive, or unreasonable noises in violation of this section and to constitute a public nuisance:

6. Exhausts. The discharge into the open air of the exhaust of any steam engine, stationary internal combustion engine, compressor, motor boat, or motor vehicle except through a muffler or other device which will effectively prevent loud or explosive noises therefrom;

7. Blowers. The operation of any noise-creating blower, power fan, or any internal combustion engine unless the noise from such blower or fan is muffled and the engine is equipped with a muffler device sufficient to deaden the noise;

8. Power Machinery, Tools, and Equipment. The use of any tools, power machinery, or equipment or the conduct of construction and building work in residential zones so as to cause noises disturbing to the peace, comfort, and quiet enjoyment of property of any person residing or working in the vicinity between the hours of 10:00 p.m. and 7:00 a.m., Monday through Friday, and between the hours of 10:00 p.m. and 8:00 a.m., Saturday and Sunday, except when the work is necessary for emergency repairs required for the health and safety of any member of the community.

Section 19.68.050 Prohibited acts

Section 19.68.050 of the City of Chula Vista's Municipal Code establishes prohibited acts related to vibration; the applicable portions are listed below.

C. Vibration. Operating or permitting the operation of any device that creates a vibration which is above the vibration perception threshold of any individual at or beyond the property boundary of the source if on private property or at 150 feet from the source if on a public space or public right-of-way.

County of San Diego

Section 36.404. General Sound Level Limits

Section 36.404 of the County of San Diego's Municipal Code sets forth general sound level limitations.

A. Except as provided in section 36.409 of the County of San Diego's Municipal Code, it shall be unlawful for any person to cause or allow the creation of any noise, which exceeds the one-hour average sound level limits in [Table 5.5-8], when the one-hour average sound level is measured at the property line of the property on which the noise is produced or at any location on a property that is receiving the noise.

Table 5.5-8
Sound Level Limits In Decibels (dBA) – County of San Diego

Zone	Time	One-Hour Average Sound Level Limits (Dba)
(1) RS, RD, RR, RMH, A70, A72, S80, S81, S90, S92, RV, and RU with a General Plan Land Use Designation density of less than 10.9 dwelling units per acre.	7 a.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
(2) RRO, RC, RM, S86, FB-V5, RV and RU with a General Plan Land Use Designation density of 10.9 or more dwelling units per acre.	7 a.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
(3) S94, FB-V4, AL-V2, AL-V1, AL-CD, RM-V5, RM-V4, RM-V3, RM-CD and all commercial zones.	7 a.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	55
(4)FB-V1, FB-V2, RM-V1, RM-V2	7 a.m. to 7 p.m.	60
	7 p.m. to 10 p.m.	55
FB-V1, RM-V2	10 p.m. to 7 a.m.	55
FB-V2, RM-V1	10 p.m. to 7 a.m.	50
FB-V3	7 a.m. to 10 p.m.	70
	10 p.m. to 7 a.m.	65
(5) M50, M52, and M54	Anytime	70 70
(6) S82, M56, and M58.	Anytime	75
(7)S88 (see subsection (c) below)		

Source: This table appears as Table 36.404 in County of San Diego 2015a.

B. Where a noise study has been conducted and the noise Mitigation Framework measures recommended by that study have been made conditions of approval of a Major Use Permit, which authorizes the noise-generating use or activity and the decision making body approving the Major Use Permit determined that those Mitigation Framework measures reduce potential noise impacts to a level below significance, implementation and compliance with those noise mitigation measures shall constitute compliance with subsection (a) above.

C. S88 zones are Specific Planning Areas which allow different uses. The sound level limits in [Table 5.5-8] that apply in an S88 zone depend on the use being made of the property. The limits in [Table 5.5-8], subsection (1) apply to property with a residential, agricultural or civic use. The limits in subsection (3) apply to property with a commercial use. The limits in subsection (5) apply to property with an industrial use that would only be allowed in an M50, M52 or M54 zone. The limits in subsection (6) apply to all property with an extractive use or a use that would only be allowed in an M56 or M58 zone.

D. If the measured ambient noise level exceeds the applicable limit in [Table 5.5-8], the allowable one-hour average sound level shall be the one-hour average ambient noise

level, plus three decibels. The ambient noise level shall be measured when the alleged noise violation source is not operating.

E. The sound level limit at a location on a boundary between two zones is the arithmetic mean of the respective limits for the two zones. The one-hour average sound level limit applicable to extractive industries, however, including but not limited to borrow pits and mines, shall be 75 decibels at the property line regardless of the zone in which the extractive industry is located.

F. A fixed-location public utility distribution or transmission facility located on or adjacent to a property line shall be subject to the sound level limits of this section measured at or beyond six feet from the boundary of the easement upon which the facility is located (County of San Diego 2015a).

Section 36.408. Hours of Operation of Construction Equipment

Section 36.408 of the County of San Diego's Municipal Code sets forth limitations on hours of operation of construction equipment. Except for emergency work, it shall be unlawful for any person to operate or cause to be operated, construction equipment:

A. Between 7 p.m. and 7 a.m.

B. On a Sunday or a holiday. For purposes of this section, a holiday means January 1st, the last Monday in May, July 4th, the first Monday in September, the fourth Thursday in November and December 25th. A person may, however, operate construction equipment on a Sunday or holiday between the hours of 10 a.m. and 5 p.m. at the person's residence or for the purpose of constructing a residence for himself or herself, provided that the operation of construction equipment is not carried out for financial consideration or other consideration of any kind and does not violate the limitations in sections 36.409 and 36.410 of the County of San Diego's Municipal Code (County of San Diego 2015b).

Section 36.409. Sound Level Limitations on Construction Equipment

Section 36. 409 of the County of San Diego's Municipal Code sets forth sound level limitations on construction equipment. Except for emergency work, it shall be unlawful for any person to operate construction equipment or cause construction equipment to be operated, that exceeds an average sound level of 75 decibels for an 8-hour period, between 7 a.m. and 7 p.m., when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received (County of San Diego 2009).

Section 36.410. Sound Level Limitations on Impulsive Noise

Section 36. 410 of the County of San Diego's Municipal Code sets forth sound level limitations on impulsive noise. In addition to the general limitations on sound levels in section 36.404 of the County of San Diego's Municipal Code and the limitations on construction equipment in section 36.409 of the County of San Diego's Municipal Code, the following additional sound level limitations shall apply:

A. Except for emergency work or work on a public road project, no person shall produce or cause to be produced an impulsive noise that exceeds the maximum sound level shown in [Table 5.5-9], when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is received, for 25% of the minutes in the measurement period. The maximum sound level depends on the use being made of the occupied property (County of San Diego 2009).

Table 5.5-9
Maximum Sound Level (Impulsive) Measured at
Occupied Property In Decibels (Dba) - County of San Diego

Occupied Property Use	Decibels (Dba)
Residential, village zoning or civic use	82
Agricultural, commercial or industrial use	85

Source: This table appears as Table 36.410A in County of San Diego 2009.

5.5.4 EXISTING NOISE ENVIRONMENT

Given the wide geographical area encompassed by the Program, the existing noise environments are varied. In general, the northern portions of the Program area are predominantly suburban land uses, and the central and southern portions are predominantly urban land uses (i.e., more heavily developed with commercial and industrial uses, as well as more dense residential uses). The noise environments through most of the Program area are characterized by ambient noise level generated by vehicular traffic. Typical secondary noise sources include truck backup alarms, landscaping maintenance, construction noise, distant aircraft, pedestrians, and barking dogs.

Ambient Noise Monitoring

Noise measurements were made using a SoftdB Piccolo integrating sound-level meter equipped with a 0.5-inch pre-polarized condenser microphone with pre-amplifier. The sound-level meter meets the current American National Standards Institute standard for a Type 2 (General Purpose) sound-level meter. The sound-level meter was calibrated before and after the measurements, and

the measurements were conducted with the microphone positioned 5 feet above the ground and covered with a windscreen.

Short-term noise measurements were conducted at 17 locations in the Program vicinity on April 16, 2015, and April 17, 2015, as depicted in Figure 5.5-1, Location of Ambient Noise Measurements. A brief description of where each noise measurement was conducted as well as the measured time-average sound level and maximum sound level during the measurement interval is summarized in Table 5.5-10. Detailed noise measurement data is included in Appendix F.

Table 5.5-10
Measured Noise Levels

Receptors	Description	L_{eq} (dBA)	L_{max} (dBA)
M1	Vacant parcel adjacent to industrial uses on Eastgate Mall, San Diego; east of San Vicente Purified Water Pipeline and southeast of North City Advanced Water Purification Facility (NCAWPF)	51.2	61.6
M2	Standley Middle School on Radcliffe Drive, San Diego; west of Wastewater Forcemain and Brine Pipeline	44.8	48.9
M3	California Institute of Arts and Technology and office complex on Aero Drive, San Diego; no longer near Program alignment or facilities	60.4	73.1
M4	Elementary school on Baker Street, San Diego; east of Wastewater Forcemain and Brine Pipeline	61.3	67.1
M5	Junipero Serra High School on Santo Road, San Diego; west of San Vicente Purified Water Pipeline	54.8	60.6
M6	Multi-family residential complex on Rancho Mission Road, San Diego; south of San Vicente Purified Water Pipeline and northeast of Mission Trails Booster Station	56.7	74.7
M7	Industrial area on Vigilante Road Lakeside; west of San Vicente Purified Water Pipeline	58.5	76.2
M8	Vons shopping center on Broadway El Cajon; north and west of Purified Water Pipeline	61.2	75.5
M9	Single-family residential home on Royal Gorge Drive San Diego; south of Purified Water Pipeline and northwest of Alvarado WTP Pump Station	53.6	68.4
M10	Single-family residential home on Del Cerro Boulevard San Diego; north of Purified Water Pipeline and northeast of Central Area AWPF	62.4	67.5
M11	Multi-family residential complex on Friars Road San Diego; south of Tertiary Water Pipeline and Brine Pipeline and east of Morena Boulevard Pump Station	68.3	75.0
M12	NTC Park on Chauncy Road San Diego; southwest of Tertiary Water Pipeline and Brine Pipeline, northwest of Central Area Water Reclamation Plant; and north of Sludge Pipeline	59.5	74.2
M13	Bayscene Mobilehome Park on D Street Chula Vista; south of Wastewater Forcemain and southwest of South Bay Influent Pump Station	59.7	65.7
M14	Industrial complex on Bay Boulevard Chula Vista; west of Wastewater Forcemain	52.5	61.4
M15	Kaiser Permanente site on Palm Avenue San Diego; west of Purified Water Pipeline	56.1	63.5

Table 5.5-10
Measured Noise Levels

Receptors	Description	L_{eq} (dBA)	L_{max} (dBA)
M16	Mountain Hawk Park on Lake Crest Drive Chula Vista; north and west of Purified Water Pipeline and southwest of Reservoir Outfall/Discharge Structure	48.9	59.9
M17	Office complex on Dairy Mart Road San Diego; east of Wastewater Forcemain and northwest of South Bay AWPF	56.4	71.6

Source: Appendix F.
L_{eq} = equivalent continuous sound level (time-averaged sound level); L_{max} = maximum sound level during the measurement interval

5.5.5 IMPACTS

Issue 1: Would the Pure Water Program result in or create a significant increase in the existing ambient noise level?

Issue 2: Would construction noise associated with implementation for any component of the Pure Water Program exceed the City's adopted noise ordinance or noise levels as established in the General Plan?

Based on the City's *California Environmental Quality Act Significance Determination Thresholds* (City of San Diego 2011), noise impacts may be significant if any of the following criteria are exceeded (only applicable portions are included):

1. Interior and Exterior Noise Impacts from Traffic Generated Noise (Table K-2 below provides the general thresholds of significance for uses affected by traffic noise.)

Table K-2
Traffic Noise Significance Thresholds
(db(A) CNEL)

Structure or Proposed Use that would be impacted by Traffic Noise	Interior Space	Exterior Useable Space[1]	General Indication of Potential Significance
Single-family detached	45 dB	65 Db	Structure or outdoor useable area[2] is < 50 feet from the center of the closest (outside) lane on a street with existing or future ADTs > 7500[3]
Multi-family, schools, libraries, hospitals, day care, hotels, motels, parks, convalescent homes.	Development Services Department (DSD) ensures 45 dB pursuant to Title 24	65 dB	
Offices, Churches, Business, Professional Uses	n/a	70 dB	Structure or outdoor usable area is < 50 feet from the center of the closest lane on a street with existing or future ADTs > 20,000

Table K-2
Traffic Noise Significance Thresholds
(db(A) CNEL)

Structure or Proposed Use that would be impacted by Traffic Noise	Interior Space	Exterior Useable Space[1]	General Indication of Potential Significance
Commercial, Retail, Industrial, Outdoor Spectator Sports Uses	n/a	75 dB	Structure or outdoor usable area is < 50 feet from the center of the closest lane on a street with existing or future ADTs > 40,000

Source: 1) City of San Diego Acoustical Report Guidelines (December 2003) and 2) City of San Diego Progress Guide and General Plan (Transportation Element)

1 If a project is currently at or exceeds the significance thresholds for traffic noise described above and noise levels would result in less than a 3 dB increase, then the impact is not considered significant.

2 Exterior usable areas do not include residential front yards or balconies, unless the areas such as balconies are part of the required usable open space calculation for multi-family units.

3 Traffic counts are available from:

- San Diego Regional Association of Governments (SANDAG) Regional Economic Development Information System (REDI): http://cart.sandag.cog.ca.us/REDI/
- SANDAG Traffic Forecast Information Center: http://pele.sandag.org/trfic.html

4. Noise from Adjacent Stationary Uses (Noise Generators)

   A project which would generate noise levels at the property line which exceed the City‘s Noise Ordinance Standards is considered potentially significant (such as potentially a carwash or projects operating generators or noisy equipment).

   If a non-residential use, such as a commercial, industrial or school use, is proposed to abut an existing residential use, the decibel level at the property line should be the arithmetic mean of the decibel levels allowed for each use as set forth in Section 59.5.0401 of the Municipal Code. Although the noise level above could be consistent with the City‘s Noise Ordinance Standards, a noise level above 65 dB (A) CNEL at the residential property line could be considered a significant environmental impact.

5. Impacts to Sensitive Wildlife

   Noise mitigation may be required for significant noise impacts to certain avian species during their breeding season, depending upon the location of the project such as in or adjacent to an MHPA, whether or not the project is occupied by the California gnatcatcher, least Bell‘s vireo, southern willow flycatcher, least tern, cactus wren, tricolored blackbird or western snowy plover, and whether or not noise levels from the project, including construction during the breeding season of these species would exceed 60dB(A) or existing ambient noise level if above 60dB(A). In addition, please note that significant noise impacts to the California gnatcatcher are only analyzed if the project is

within an MHPA; there are no restrictions for the gnatcatcher outside the MHPA any time of year. Please see Biological Resources Section, Step 2, Note (f).

6. Temporary Construction Noise

   Temporary construction noise which exceeds 75 dB (A) L_{eq} at a sensitive receptor would be considered significant. Construction noise levels measured at or beyond the property lines of any property zoned residential shall not exceed an average sound level greater than 75-decibles (dB) during the 12-hour period from 7:00 a.m. to 7:00 p.m. In addition, construction activity is prohibited between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on legal holidays as specified in Section 21.04 of the San Diego Municipal Code, with exception of Columbus Day and Washington's Birthday, or on Sundays, that would create disturbing, excessive, or offensive noise unless a permit has been applied for and granted beforehand by the Noise Abatement and Control Administrator, in conformance with San Diego Municipal Code Section 59.5.0404.

   Additionally, where temporary construction noise would substantially interfere with normal business communication, or affect sensitive receptors, such as day care facilities, a significant noise impact may be identified.

7. Noise/Land Use Compatibility

   Noise is one factor to be considered in determining whether a land use is compatible. Land use compatibility noise factors are presented in Table K-4. Compatible land uses are shaded. Incompatible land uses are unshaded. The transition zone between compatible and incompatible should be evaluated by the environmental planner to determine whether the use would be acceptable based on all available information and the extent to which the noise from the proposed project would affect the surrounding uses.

Table K-4
City of San Diego Noise Land Use Compatibility Chart

	Land Use	Annual Community Noise Equivalent Level in Decibels					
		50	55	60	65	70	75
1	Outdoor amphitheaters						
2	Schools, libraries						
3	Nature preserves, wildlife preserves						
4	Residential single-family, multi-family, mobile homes, transient housing						
5	Retirement homes, intermediate care facilities, convalescent homes						
6	Hospitals						
7	Parks, playgrounds						

Table K-4
City of San Diego Noise Land Use Compatibility Chart

Land Use		Annual Community Noise Equivalent Level in Decibels					
		50	55	60	65	70	75
8	Office buildings, business and professional						
9	Auditoriums, concert halls, indoor arenas, churches						
10	Riding stables, water recreation facilities						
11	outdoor spectator sports, golf courses						
12	livestock farming, animal breeding						
13	Commercial-retail, shopping centers, restaurants, movie theaters						
14	Commercial-wholesale, industrial manufacturing, utilities						
15	Agriculture (except livestock), extractive industry, farming						
16	Cemeteries						

In addition to the City of San Diego thresholds for noise impacts, the noise criteria listed in Section 5.5.3 for the Cities of La Mesa, Santee, El Cajon, Chula Vista, and the County of San Diego (see also Tables 5.5-3 through 5.5-9) were used for determining the significance of potential noise impacts for construction and operation of the Program facilities within each respective jurisdiction.

It should be noted that CEQA does not define what constitutes a substantial increase in noise levels. However, the California Department of Transportation defines a substantial noise increase on roadways as being 12 dB above existing noise levels (Caltrans 2015).

Methodology

This noise assessment quantifies construction and operational noise generation and the resulting noise levels at vicinity noise-sensitive receptors that are generally representative of the areas surrounding the Program facilities. Assumptions regarding construction activities, construction equipment, and duration of construction activities are based on information provided by the City and from similar projects. The Federal Highway Administration's Roadway Construction Noise Model (RCNM) (FHWA 2008) was used to estimate construction noise levels at typical distance to the nearest noise-sensitive land uses. Input variables for RCNM consist of the receiver/land use types, the equipment type and number of each (e.g., two excavators, a loader, a dump truck), the duty cycle for each piece of equipment (e.g., percentage of hours the equipment typically works per day), and the distance from the noise-sensitive receiver. The RCNM has default duty cycle values for the various pieces of equipment, which were derived from an extensive study of typical construction activity patterns. Those default duty cycle values were utilized for this analysis.

The operational noise impact assessment is based on review of the Program documents and preliminary facility equipment information. Ambient noise measurements were conducted to quantify the existing daytime noise environment at the sites. The facility equipment noise levels were evaluated based on similar equipment from other projects. The criteria established in the cities' and County's municipal codes are used to determine the significance of the potential noise impacts. Noise calculations are contained in Appendix F.

Analysis

Construction Noise

Construction of the Program facilities would result in temporary localized increases in noise levels from on-site construction equipment, as well as from off-site trucks hauling construction materials. Noise generated by construction equipment would occur with varying intensities and durations during the various phases of construction. The typical maximum noise levels at a distance of 50 feet for various pieces of construction equipment anticipated to be used during construction are depicted in Table 5.5-11. Note that these are maximum noise levels, not an average sound level. Typically, the equipment operates in alternating cycles of full power and low power, thus, producing noise levels less than the maximum level. The average sound level of the construction activity also depends upon the amount of time that the equipment operates and the intensity of the construction during the time period.

Table 5.5-11
Construction Equipment Noise Levels

Equipment Type	Typical Noise Level dB(A) at 50 feet
Backhoe	80
Compactor	82
Concrete mixer	85
Crane	83
Generator	81
Loader	85
Paver	89
Roller	74
Truck	88
Saw	76

Source: FTA 2006.

Table 5.5-12 provides the conceptual construction timeline and potential phasing of Program components. The conceptual construction schedule has been developed based on available information, typical construction practices, and best engineering judgment. Conceptual

construction phasing is provided for informational purposes; however, construction phasing and assumptions may change upon final system programming and design.

Table 5.5-12
Pure Water Program Construction Phasing Assumptions

Facility	Construction Begin	Construction Complete
North City Component		
NCAWPF	May 2019	May 2021
NCAWPF Influent Conveyance	May 2019	November 2020
San Vicente Purified Water Pipeline	May 2019	May 2022
Mission Trails Booster Station	May 2019	May 2020
San Vicente Tunnel	May 2019	May 2022
Morena Boulevard Pump Station	May 2019	May 2020
WW Force Main and Brine Pipeline	May 2019	May 2021
North City Water Reclamation Plant (NCWRP) Expansion	May 2019	November 2020
North City Cogeneration Facilities Expansion	November 2020	February 2022
Central Area Component		
Central Area Water Reclamation Plant (CAWRP)	July 2025	December 2027
Central Area Tertiary Water Pipeline and Brine Pipeline	February 2026	January 2028
Sludge Conveyance	February 2026	January 2028
CAAWPF	April 2026	March 2028
Central Area Purified Water Pipeline	May 2026	April 2028
Alvarado WTP Booster Station	May 2026	May 2027
Point Loma Wastewater Treatment Plant (PLWTP) Improvements	May 2026	April 2028
MBC Improvements	May 2026	August 2027
Central Area SDG&E Power Supply Improvements	April 2026	March 2028
South Bay Component		
South Bay Influent Pump Station	November 2029	October 2031
South Bay Water Reclamation Plant Expansion	November 2029	October 2031
South Bay Advanced Water Purification Facility	August 2029	July 2031
South Bay Purified Water Pipeline	February 2030	February 2032
Otay Reservoir Booster Station	February 2030	February 2031
South Bay Solids Processing Facility	July 2029	January 2032
South Bay SDG&E Power Supply Improvements	July 2029	January 2032

Typical construction equipment that may be employed during Program construction for a water infrastructure project such as the Program is shown in Tables 5.5-13, 5.5-14, and 5.5-15 for construction of pipelines, pump stations, and new AWPFs/water reclamation plants (WRPs), and existing facility improvements, respectively. Equipment mix assumptions for construction activity are based on typical infrastructure construction practices, related projects conducted in the Southern

California area (see Appendix F for a list of related projects), and the South Coast Air Quality Management District's California Emissions Estimator Model (CalEEMod) default equipment where appropriate. The equipment mix is meant to represent a reasonably conservative estimate of construction activity. For the analysis, it is generally assumed that heavy construction equipment would be operating at the site for approximately 8 hours per day, 5 days per week.

Pipelines

Pipeline construction would require both open-trench construction and trenchless tunneling depending on the location of the pipeline to be installed. A description of construction activities and equipment associated with each of these methods is provided.

Open Trench

Open-trench construction would involve an open trench to be dug for the direct installation of pipeline. The sequence of activity for pipeline construction would typically commence with trenching and excavation, followed by pipe installation and covering of the installed pipe, and finishing with paving the linear area of disturbance. For the purposes of quantifying daily construction activity from pipeline construction, it was assumed that each contractor would complete construction of approximately 150 to 200 linear feet of pipeline per day; however, daily activity and linear feet installed would vary depending on field conditions, site/easement access, and other factors associated with continual site location changes. Assuming concurrent construction by two contractors, approximately 300 to 400 linear feet of pipeline installation could occur each day depending on the component under construction and total linear feet of pipeline or conveyance infrastructure to be constructed over a given period. It was assumed that typical pipeline construction phasing would generally occur as follows:

- Trenching and excavation would be ongoing throughout pipeline construction phase
- Pipe installation would occur intermittently as trenching and excavation occur throughout the pipeline construction phase
- Paving, intermittent – approximately 2 weeks every 6 months for duration of pipeline construction
- Final paving – 1 month at the end of the construction phase

For the purposes of estimating daily construction activity and associated noise levels from off-road equipment during pipeline construction, it was assumed the construction equipment listed in Table 5.5-13 would be employed, or similar equipment for pipeline construction. Table 5.5-13 presents the amount of equipment per potential contractor and total equipment, assuming simultaneous construction by two contractors working on several portions of a given Program

alignment. Due to the length of the pipeline alignment, it was assumed two contractors would potentially be required for construction of the San Vicente Purified Water Pipeline alignment, and one contractor for all other pipeline alignments, as they would require fewer linear feet of total pipeline construction.

Table 5.5-13
Construction Equipment – ~~Pipelines~~Open Trench

Construction Phase	Equipment	Quantity per Contractor	Total Equipment*
Trenching	Dozers	1	2
	Excavators	1	2
	Tractors/loaders/backhoes	2	4
Installation	Crane	1	2
	Forklift	1	2
	Tractors/loaders/backhoes	1	2
Paving (continual)	Pavers	1	2
	Rollers	1	2
	Paving equipment	1	2

Source: Appendix F
* Assuming simultaneous construction by two contractors for worst-case day construction scenario.

Trenchless Tunneling

Trenchless tunneling would involve the excavation of a portal at either end of the pipeline segment to be installed, where the pipeline would be fed through and connected. The sequence of activities for trenchless tunneling construction would typically commence with site preparation of the first portal location followed by excavation of the portal. Excavation of the tunnel would occur following portal excavation. It is assumed all excavated material would be hauled off site. The second portal location would then be prepped and excavated. Installation of pipeline would occur once the tunnel has been fully excavated and portals are clear. The pipeline would then be connected, and the portal sites would be restored to their pre-construction condition. Trenchless tunneling practices would be employed for the 1-mile San Vicente Tunnel as well as specific segments of other pipeline alignments such as freeway or waterway crossings or within avoidance areas where ground disturbance (i.e., an open trench) is not permitted such as wetlands or other environmentally sensitive locations.

For the purposes of estimating emissions, it was assumed that typical construction phasing would occur as follows during tunneling:

- Site preparation at first portal site
- Excavation of first portal site
- Tunnel excavation

- Site preparation at second portal site
- Excavation of second portal site
- Pipeline installation
- Pipeline connection
- Site restoration

Phase durations would depend on the location of the site to be tunneled. For the purposes of estimating daily construction activity and associated emissions from off-road equipment during tunneling activities, it was assumed that the equipment mix shown in Table ~~5.2-8~~5.5-14, or similar equipment, would be employed.

Table 5.~~2-8~~5-14
Construction Equipment – Tunneling

Construction Phase	Equipment	Total Equipment
Site Preparation at Portal Sites	Scraper	1
	Grader	1
	Tractors/Loaders/Backhoes	1
Portal Excavation	Dozer	1
	Excavator	1
	Tractors/Loaders/Backhoes	1
	Trencher	1
	Crushing/Processing Equipment	1
Tunnel Excavation	Dozer	1
	Excavator	1
	Tractors/Loaders/Backhoes	1
	Trencher	1
	Crushing/Processing Equipment	1
Pipe Installation	Tractors/Loaders/Backhoes	1
	Crane	1
	Welders	2
Pipe Connections	Other General Industrial Equipment	4
Site Restoration	Tractors/Loaders/Backhoes	1

Pump Stations

It was assumed pump stations would take an average of 12 months to construct, and typical construction phasing would occur as follows:

- Site preparation and grading – 4 weeks

- Pump station construction – 10 months
- Paving – 4 weeks

For the purposes of estimating daily construction activity and associated noise levels from off-road equipment, it was assumed equipment shown in Table 5.5-14 would be employed, or similar equipment for the construction of a single pump station. For components that would involve the construction of more than one pump station, it was assumed that multiple pump stations would be constructed simultaneously.

Table 5.5-~~14~~15
Construction Equipment – Pump Stations

Construction Phase	Equipment	Total Equipment*
Site preparation/grading	Dozers	1
	Tractors/loaders/backhoes	1
Facility construction	Excavator	1
	Tractors/loaders/backhoes	1
	Forklifts	1
	Pumps	1
	Welders	2
Paving	Pavers	1
	Rollers	1
	Paving equipment	1

Source: Appendix F.
* It is assumed that equipment shown would be employed or similar equipment would be used for the construction of a single pump station.

Treatment Facilities

It was assumed new facilities such as AWPFs and the CAWRP would take approximately 24 to 36 months to construct, and typical construction phasing would occur as follows during facility construction:

- Site preparation – 4 weeks
- Grading – 8 weeks
- Facility construction – 28 to 44 months
- Paving – 4 weeks

Improvements to existing facilities would take approximately 15 to 30 months depending on the type of facility and scope of facility improvements.

For the purposes of estimating daily construction activity and associated noise levels from off-road equipment, it was assumed equipment shown in Table 5.5-15 would be employed during construction of AWPFs, the CAWRP, WWTP upgrades, MBC Improvements, SB Solids Processing Facility, O&M building construction, and SDG&E Power Supply Improvements. It was assumed improvements to existing facilities would only require equipment listed for "facility construction" as shown in Table 5.5-15 because it is anticipated site preparation, grading, and paving would not be required.

Table 5.5-~~15~~16
Construction Equipment – Treatment Facilities

Construction Phase	Equipment	Total Equipment*
Site preparation	Dozers	1
	Tractors/loaders/backhoes	1
Grading	Excavators	1
	Tractors/loaders/backhoes	2
	Dozers	1
	Compactors	1
Facility construction	Cranes	1
	Forklifts	1
	Generator sets	1
	Tractors/loaders/backhoes	2
	Welders	2
Paving	Pavers	1
	Paving equipment	1

Source: Appendix F
* It is assumed that equipment shown would be employed or similar equipment would be used for the construction of a single pump station.

Summary of Construction Noise Impacts

Table 5.5-16, Construction Noise Levels by Program Component and Phase, shows the estimated construction noise levels associated with the conceptual construction phases of the Program. Complete details of the noise modeling calculations are provided in Appendix F.

Table 5.5-~~16~~17
Construction Noise Levels by Program Component and Phase (dBA L_{eq})

Program Component	Distance to Receiver (feet)						
	50	*100*	*250*	*500*	*1,000*	*1,500*	*2,000*
North City Component							
North City pipelines – trenching	87	81	73	67	61	57	55
North City pipelines – paving	83	77	69	63	57	53	51

Table 5.5-~~16~~17
Construction Noise Levels by Program Component and Phase (dBA L_{eq})

Program Component	Distance to Receiver (feet)						
	50	*100*	*250*	*500*	*1,000*	*1,500*	*2,000*
North City pipelines - Trenchless Construction - Site Preparation	85	79	71	65	59	56	53
North City pipelines - Trenchless Construction - Portal Excavation	85	79	71	65	59	56	53
North City pipelines - Trenchless Construction - Tunnel Excavation	85	79	71	65	59	56	53
North City pipelines - Trenchless Construction - Pipe Installation	81	75	67	61	55	52	49
North City pipelines - Trenchless Construction - Pipe Connections	85	79	71	65	59	56	53
North City pipelines - Trenchless Construction - Site Restoration	74	68	60	54	48	44	42
North City pump stations– site preparation/grading	82	76	68	62	56	53	50
North City pump stations– facility construction	84	78	70	64	58	54	52
North City pump stations – paving	83	77	69	63	57	53	51
North City treatment facilities – site preparation	82	76	68	62	56	53	50
North City treatment facilities – grading	84	78	70	64	58	55	52
North City treatment facilities – facility construction	83	77	69	63	57	54	51
North City treatment facilities – paving	80	74	66	60	54	50	48
Central Area Component							
Central Area pipelines – trenching	87	81	73	67	61	57	55
Central Area pipelines – paving	83	77	69	63	57	53	51
Central Area pipelines - Trenchless Construction - Site Preparation	85	79	71	65	59	56	53
Central Area pipelines - Trenchless Construction - Portal Excavation	85	79	71	65	59	56	53
Central Area pipelines - Trenchless Construction - Tunnel Excavation	85	79	71	65	59	56	53
Central Area pipelines - Trenchless Construction - Pipe Installation	81	75	67	61	55	52	49
Central Area pipelines - Trenchless Construction - Pipe Connections	85	79	71	65	59	56	53
Central Area pipelines - Trenchless Construction - Site Restoration	74	68	60	54	48	44	42
Central Area pump stations – site preparation/grading	82	76	68	62	56	53	50
Central Area pump stations – facility construction	84	78	70	64	58	54	52
Central Area pump stations – paving	83	77	69	63	57	53	51
Central Area treatment facilities – site preparation	82	76	68	62	56	53	50
Central Area treatment facilities – grading	84	78	70	64	58	55	52

Table 5.5-~~16~~17
Construction Noise Levels by Program Component and Phase (dBA L_{eq})

Program Component	Distance to Receiver (feet)						
	50	*100*	*250*	*500*	*1,000*	*1,500*	*2,000*
Central Area treatment facilities –facility construction	83	77	69	63	57	54	51
Central Area treatment facilities – paving	80	74	66	60	54	50	48
South Bay Component							
South Bay pipelines – trenching	87	81	73	67	61	57	55
South Bay pipelines – paving	83	77	69	63	57	53	51
South Bay pipelines - Trenchless Construction - Site Preparation	85	79	71	65	59	56	53
South Bay pipelines - Trenchless Construction - Portal Excavation	85	79	71	65	59	56	53
South Bay pipelines - Trenchless Construction - Tunnel Excavation	85	79	71	65	59	56	53
South Bay pipelines - Trenchless Construction - Pipe Installation	81	75	67	61	55	52	49
South Bay pipelines - Trenchless Construction - Pipe Connections	85	79	71	65	59	56	53
South Bay pipelines - Trenchless Construction - Site Restoration	74	68	60	54	48	44	42
South Bay pump stations – site preparation/grading	82	76	68	62	56	53	50
South Bay pump stations) – facility construction	84	78	70	64	58	54	52
South Bay pump stations – paving	83	77	69	63	57	53	51
South Bay treatment facilities – site preparation	82	76	68	62	56	53	50
South Bay treatment facilities – grading	84	78	70	64	58	55	52
South Bay treatment facilities – facility construction	83	77	69	63	57	54	51
South Bay treatment facilities – paving	80	74	66	60	54	50	48

Source: Appendix F

As shown in Table 5.5-16, construction noise levels at a reference distance of 50 feet are estimated to range from approximately 87 dBA L_{eq} during pipeline trenching to 80 dBA L_{eq} during paving of the treatment facilities. The highest construction noise levels would occur during pipeline trenching. In locations where trenchless tunneling methods would be utilized (i.e., San Vicente Tunnel as well as at freeway crossings, river crossings, or to avoid sensitive species or other constraints throughout the proposed pipeline alignments), estimated noise levels at a distance of 50 feet would range from 85 dBA L_{eq} to 74 dBA L_{eq}. During pump station work, the highest predicted noise levels (84 dBA L_{eq}) would occur during the facility construction phase. During construction of the treatment facilities, the highest predicted noise levels (84 dBA L_{eq}) would occur during grading. Construction noise levels would be similar for each of the North City, South Bay, and Central Area components.

Noise-sensitive receptors, such as residential development, schools, churches, and hospitals, may also be affected by Program-related noise, as further described in the discussion of individual components below. Noise impacts from construction activities would be minimal within industrial and manufacturing districts, as these areas do not contain sensitive receptors and their associated ambient noise levels are generally high. Similarly, Program-related construction noise would have no impact within open space areas, as these areas are located in remote locations and devoid of sensitive receptors. However, the associated noise could potentially affect sensitive wildlife species which utilize the affected open space areas for habitat or migration. Construction-related noise impacts to wildlife are discussed in Section 5.1, Land Use.

Pipelines

As noted previously, pipeline work typically proceeds at a fairly rapid pace (approximately 150 to 200 feet per day). Thus, no one noise-sensitive receptor would be exposed to long-term high noise levels from pipeline construction. Based on the current conceptual planned facility locations, existing noise-sensitive land uses (e.g., residences, churches, schools) exist within 50 to 100 feet of portions of the pipelines associated with each of the North City, South Bay, and Central Area components. The associated noise levels from pipeline construction at these distances could exceed the City of San Diego's noise standard for construction of 75 dBA L_{eq} (12-hour) between 7:00 a.m. and 7:00 p.m. as well as other jurisdictions through which the pipeline would pass with similar standards (i.e., the City of Santee's and the County of San Diego's 75 dBA L_{eq}(8-hour) between 7 a.m. and 7 p.m.). Additionally, although most of the work would be conducted during permitted daytime hours, some work may be conducted during nighttime hours under special permit in order to minimize traffic congestion or for other logistical reasons. Noise levels during pipeline construction could therefore create temporary substantial noise increases and result in short-term exceedance of construction noise standards. Nighttime work, where necessary to avoid daytime traffic jams or service outages, would be planned to the extent practicable to minimize the number and type of operating equipment, restrict the movement of equipment adjacent to the noise-sensitive receptors, and to minimize noise from backup alarms.

Pump Stations

Based upon the current conceptual planned facility locations, noise-sensitive land uses (residences, churches, schools) exist within 50 to 100 feet of portions of the several pump stations associated with each of the North City, South Bay and Central Area components. The associated noise levels from construction of the pump stations at these distances could exceed the City of San Diego's numerical noise standard for construction of 75 dBA L_{eq} (12-hour) between 7:00 a.m. and 7:00 p.m., as well as with standards of other jurisdictions within which the pump

stations may be constructed. Noise levels could therefore create temporary substantial noise increases and result in short-term exceedance of construction noise standards.

Treatment Facilities

Based upon the current conceptual planned facility locations, existing noise-sensitive land uses (e.g., residences, churches, schools, recreational land uses) are located 500 feet or more from treatment facility construction and upgrades. Treatment facilities, similar to pump stations, involve the use of large pumps and motors with similarly high noise levels. However, treatment facilities are commonly located within or near residential communities and other noise-sensitive land uses and are designed and constructed to achieve compatible noise levels. Although, at a 500-foot distance, construction noise from these facilities is likely to be relatively low; however, subsequent changes in the Program design such as alternate placement of facilities, may result in higher construction noise levels at existing noise-sensitive land uses. Noise levels, therefore, could result in temporary substantial noise increases and short-term exceedance of construction noise standards.

Construction Vibration

Groundborne vibration from heavy equipment operations during Program construction were evaluated and compared with relevant vibration impact criteria. Groundborne vibration is a small, rapidly fluctuating motion transmitted through the ground. Groundborne vibration diminishes (or "attenuates") fairly rapidly over distance. Some soil types transmit vibration quite efficiently; other types (primarily sandy soils) do not.

Vibration resulting from activities during Program construction was analyzed using the methodology contained in Section 12.2 of the FTA Manual (FTA 2006; see Appendix F).

At a distance of approximately 50 feet, the typical distance to the nearest residences, the vibration levels from heavy construction machinery (such as a large bulldozer which could be used during construction of all components of the Program) would be 0.031 inches per second, or 0.074 inch per second from a vibratory roller. Vibration levels of this magnitude would be below the threshold of perception (0.10 inch per second) or the damage threshold for fragile structures (0.20 inch per second). Therefore, vibration levels resulting from heavy construction equipment would not result in substantial adverse effects.

Operational Noise

Traffic Noise

Following the completion of construction activities, the Program would result in potential increases in noise levels from mobile sources (vehicular traffic), as a result of approximately 12 new employees per AWPF, and associated operation and maintenance activities. It was assumed 12 additional staff per new manned facility (36 new employees) would result in approximately 72 daily one-way trips during Program operation. Additionally, operational trips would be generated as a result of regular maintenance, periodic inspections, and repairs of system facilities, monitoring, maintenance, and other operational procedures similar to those under the current water and wastewater treatment and distribution system. It was assumed only a minor increase in operations and maintenance trips (in addition to the 36 new employees) would be required; therefore, it was assumed that approximately 10 additional trips per day per facility would occur for a total average of 30 operations and maintenance trips per day. Therefore, a total of 102 (72 + 30) trips are assumed for operation. Because of the relatively small number of trips associated with Program operations compared to the number of non-Program vehicle trips (generally in the thousands to tens of thousands per day) on the same City and County roadways in the existing and future years, the noise increase from Program-related vehicular traffic would be well below 1 dB, and would not result in a measurable or audible increase. Therefore, the long-term increase in noise levels resulting from Program-related traffic would not result in a substantial increase of ambient noise levels.

Pipelines

Once constructed, the pipeline segments would not generate noise as the flow of water or wastewater within the underground pipelines would not be audible. Noise levels would not exceed the limits expressed in the respective Cities and County of San Diego municipal codes. Occasional maintenance and emergency repair activities would generate some additional noise; however, these activities are sporadic in nature and do not occur at the same location for long periods of time. Therefore, noise associated with the operations and maintenance of pipelines would not result in a substantial increase in noise levels that would exceed established noise standards.

Pump Stations

The primary noise sources from pump station facilities are the motors and the pumps. In normal operation, the pumps are powered by electric motors; however, the pumps and motors can generate relatively high noise levels. Diesel generators would be used for backup power at the six pump stations in case of electrical power outage. Typical reference noise levels from large water pumps and motors are 88 to 90 dBA at 3 feet. Unmitigated, the noise levels from such pump station equipment would be a nuisance and/or would exceed local noise standards. However, pump

stations are commonly located within or near residential communities and other noise-sensitive land uses and are designed and constructed to achieve compatible noise levels (through the use of engineered enclosures with noise-attenuating louvers, etc.). Although pump stations typically would not generate substantial noise levels, details regarding exact locations and facility/equipment specifications are not available at this time. Therefore, there is potential for the operation of the pump stations to result in an increase in noise levels that would exceed the noise standards of a jurisdiction where it would be located within.

Treatment Facilities

Based upon the current conceptual planned facility locations, noise-sensitive land uses (residences, churches, schools, recreational land uses) would be 500 feet or more from planned treatment facility construction and upgrades. Treatment facilities, similar to pump stations, involve the use of large pumps and motors with similarly high noise levels. However, treatment facilities are commonly located within or near residential communities and other noise-sensitive land uses and are designed and constructed to achieve compatible noise levels. Although noise from these facilities is likely to be relatively low, the lack of information on project-specific design precludes the ability to fully analyze and determine the potential for noise impacts at this program-level analysis. Therefore, the operation of treatment facilities may result in a substantial increase in noise levels such that adverse effects on noise-sensitive land uses would occur.

Operational Vibration

Similar to operational noise, the Program's potential to result in excessive groundborne vibration to sensitive receptors would need to be assessed at the individual project-level review. Groundborne vibration can occur in areas adjacent to pump stations or other facilities with heavy rotating or reciprocating machinery and may result in substantial adverse effects on sensitive receptors.

5.5.6 SIGNIFICANCE OF IMPACTS

Construction Noise

Noise levels could create temporary substantial noise increases and result in short-term exceedance of construction noise standards during construction of all portions of the North City, South Bay, and Central Area components, resulting in a **potentially significant** impact.

Construction Vibration

Due to distance to the nearest residences and typical vibration levels of expected heavy construction equipment, construction vibration levels would be below the threshold of

perception and damage for fragile structures. Therefore, construction vibration impacts would be **less than significant**.

Operational Noise

Operations of the Program would result in a minimal increase in daily traffic on existing and future roadways within the cities and County, such that the resulting increase in traffic noise would not be a measurable or audible increase. Therefore, operational traffic noise impacts would be **less than significant**.

Operation of pipelines and the occasional maintenance would not result in a long-term increase in noise levels such that noise standards would be exceeded. Maintenance of pipelines would be short-term and temporary in nature. Therefore, noise impacts related to operation of pipelines would be **less than significant**.

As final design locations and specifications are not yet available for the pump stations, AWPFs, WRPs, and PLWTP, it cannot be determined if operation of these facilities would result in adverse noise effects on nearby noise-sensitive land uses at a program-level analysis. Therefore, operational noise impacts resulting from the pump stations and treatment facilities would be **potentially significant**.

Operational Vibration

As final design locations and specifications are not yet available for the pump stations or treatment facilities, it cannot be determined if operation of these facilities would generate substantial vibration at nearby sensitive receptors at a program-level analysis and, therefore, impacts would be considered **potentially significant**.

5.5.7 MITIGATION, MONITORING, AND REPORTING

Construction Noise

MM-NOI-1 Project-level environmental analyses shall evaluate noise impacts of subsequent project-specific features. The City of San Diego shall incorporate and/or modify and augment facility design as appropriate to address project-specific noise effects:

1. Pumps and associated equipment (e.g., portable generators etc.) used during nighttime hours (10 p.m. to 7 a.m.) and during construction activities shall be shielded from sensitive uses using local temporary noise barriers or enclosures, or shall otherwise be designed or configured so as to comply with applicable municipal code nighttime noise standards. The specific location and design of such barriers shall be determined in conjunction with construction plans for individual projects.

2. Construction activities shall not occur during nighttime restrictive time periods according to applicable requirements. The hours of construction, including noisy maintenance activities and all spoils and material transport, shall be restricted to the periods and days permitted by the local noise or other applicable ordinance.
3. Nighttime work, where necessary to avoid daytime traffic jams or service outages, shall be planned to the extent practical to minimize the number and type of operating equipment, restrict the movement of equipment adjacent to the noise-sensitive receivers, and minimize noise from backup alarms.
4. All noise-producing equipment and vehicles using internal combustion engines shall be equipped with mufflers; air-inlet silencers where appropriate; and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specification. Mobile or fixed "package" equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment.
5. All mobile or fixed noise-producing equipment used on the Program facilities that are regulated for noise output by a local, state, or federal agency shall comply with such regulation while in the course of Program activity.
6. Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where feasible.
7. Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.
8. Construction site and access road speed limits shall be established and enforced during the construction period.
9. The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.
10. No project-related public address or music system shall be audible at any adjacent receptor.

Construction Vibration

Construction vibration impacts would be less than significant. Therefore, no mitigation is required.

Operational Noise

MM-NOI-2 Subsequent Program components shall be evaluated by the City of San Diego at the project-specific environmental/design phase to determine if potential noise or groundborne vibration impacts in excess of applicable noise or vibration standards would result. If such a potential exists, a noise and vibration study shall be conducted including recommendations for mitigation. Mitigation shall be specific to the Program feature, and designed to assure that noise and vibration produced by operation of the facility shall not cause the limits in the municipal code to be exceeded, and any such mitigation shall be required as part of the subsequent Program component.

A site-specific acoustical analysis shall be required for any project located within 500 feet of any residential dwellings, which would ensure compliance with construction noise and outdoor noise standards. It is reasonable to assume that feasible mitigation is available through project-specific design features that would provide appropriate sound and vibration attenuation for operational impacts from Program components, such as pump stations and treatment facilities. Such design features, including construction of attenuation walls or structures, and location/placement of noise/vibration generating equipment shall be applied to reduce potentially significant impacts to less than significant levels at the project-level of analysis, to the satisfaction of the City of San Diego.

Operational Vibration

Mitigation Framework measure MM-NOI-2 would reduce potentially significant operational vibration impacts to a less-than-significant level.

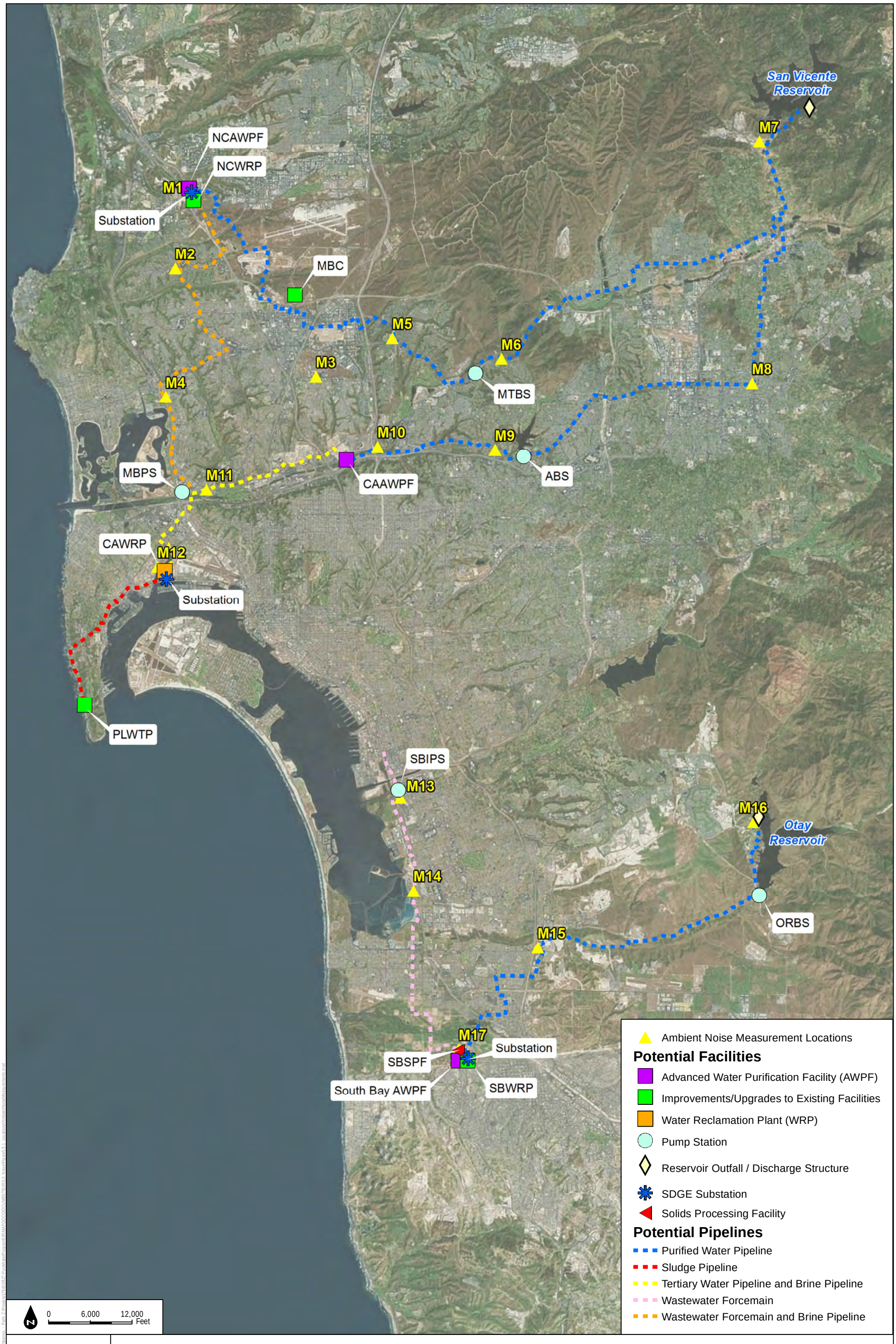
Level of Significance After Mitigation

Implementation of Mitigation Framework measure MM-NOI-1 would be required to ensure noise impacts related to Program construction would be reduced to **below a level of significance**.

Construction vibration impacts would be **less than significant** without implementation of mitigation.

Implementation of Mitigation Framework measure MM-NOI-2 would be required to ensure that potential noise impacts associated with the operation of treatment facilities would be reduced to **below a level of significance**.

Implementation of Mitigation Framework measure MM-NOI-2 would be required to ensure that operational vibration impacts resulting from the pump stations and treatment facilities would be reduced to **below a level of significance**.



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SOURCE: Bing Imagery, 2015, SANGIS, 2015.

FIGURE 5.5-1

Location of Ambient Noise Measurements

Pure Water Program EIR

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5.6 HISTORICAL RESOURCES

5.6.1 INTRODUCTION

The purpose of this section is to evaluate general historical resources conditions at the program level and identify components which have the potential to impact sensitive historical resources. Potential impacts that may result from implementation of the Program have been evaluated in accordance with the City of San Diego's *California Environmental Quality Act Significance Determination Thresholds* (City of San Diego 2011), the City of San Diego *Land Development Code, Historical Resources Regulations (Chapter 14, Article 3, Division 2), and the Historical Resources Guidelines* (City of San Diego 2001).

Historical resources are the physical features that reflect past human existence and are of historical, archaeological, scientific, educational, cultural, architectural, aesthetic, or traditional significance. These resources may be natural or constructed and can include archaeological sites and artifacts, buildings, groups of buildings, structures, districts, street furniture, signs, and landscapes. Traditional cultural properties, tribal cultural resources, and distinguishing architectural characteristics are also considered historical resources. The Pure Water Program (Program) involves the construction of new water and sewer facilities and upgrades to existing facilities which, depending on their location and related construction methods, could potentially result in impacts to historical resources.

The information provided in this section is based on the Archaeological Constraints Study and the Built-Environmental Constraints Study for the Program prepared by Dudek in 2015 (see Giacinto and Hale 2015: Appendix D1 and D2, respectively). The Archaeological and Built-Environmental Constraints Studies were based on records search information provided by the South Coastal Information Center (SCIC). Relative resource sensitivity of areas that may be disturbed by facilities proposed by the Program has been inferred from the information presented on California Department of Parks and Recreation (DPR) 523 forms (for recording archaeological and built-environment resources) and other site record forms, as well the first-hand experience of Dudek archaeologists. Significance assessments (i.e., Phase I Inventory and Phase II Evaluation technical studies) of individual resources would be completed, /as needed, during future project-level analysis once the design of Program components have been further defined. Completion of a Sacred Land File check would also be undertaken at the time significance assessments are completed when the Area of Potential Effect (APE) is more clearly defined to provide for more effective and efficient communication with Native Americans.

5.6.2 EXISTING CONDITIONS

Background – Archaeological Resources

Evidence for continuous human occupation in the San Diego region spans the last 10,000 years. Various attempts to parse out variability in archaeological assemblages over this broad time frame have led to the development of several cultural chronologies; some of these are based on geologic time, most are based on temporal trends in archaeological assemblages, and others are interpretive reconstructions. Each of these reconstructions describes essentially similar trends in assemblage composition in more or less detail. This research employs a common set of generalized terms used to describe chronological trends in assemblage composition: Paleoindian (pre-5500 BC), Archaic (8000 BC–AD 500), Late Prehistoric (AD 500–1750), and Ethnohistoric (post-AD 1750).

Paleonindian (pre-5500 BC)

Evidence for Paleoindian occupation in coastal Southern California is tenuous, especially considering the fact that the oldest dated archaeological assemblages look nothing like the Paleoindian artifacts from the Great Basin. One of the earliest dated archaeological assemblages in coastal Southern California (excluding the Channel Islands) derives from SDI-4669/W-12, in La Jolla. A human burial from SDI-4669 was radiocarbon dated to 9,590–9,920 years before present (95.4% probability) (Hector 2007, as cited in Appendix D1). The burial is part of a larger site complex that contained more than 29 human burials associated with an assemblage that fits the Archaic profile (i.e., large amounts of groundstone, battered cobbles, and expedient flake tools). In contrast, typical Paleoindian assemblages include large stemmed projectile points, high proportions of formal lithic tools, bifacial lithic reduction strategies, and relatively small proportions of groundstone tools. Prime examples of this pattern are sites that were studied by Emma Lou Davis (Davis 1978, as cited in Appendix D1) on China Lake Naval Air Weapons Station near Ridgecrest, California. These sites contained fluted and unfluted stemmed points and large numbers of formal flake tools (e.g., shaped scrapers, blades). Other typical Paleoindian sites include the Komodo site (MNO-679)—a multi-component fluted point site, and MNO-680—a single component Great Basined Stemmed point site (Basgall et al. 2002, as cited in Appendix D1). At MNO-679 and MNO-680, groundstone tools were rare while finely made projectile points were common.

Turning back to coastal Southern California, the fact that some of the earliest dated assemblages are dominated by processing tools runs counter to traditional notions of mobile hunter–gatherers traversing the landscape for highly valued prey. Evidence for the latter—that is, typical Paleoindian assemblages—may have been located along the coastal margin at one time, prior to glacial desiccation and a rapid rise in sea level during the early Holocene (pre-7500 BP) that

submerged as much as 1.8 kilometer of the San Diego coastline. If this were true, however, it would also be expected that such sites would be located on older landforms near the current coastline. Some sites, such as SDI-210 along Agua Hedionda Lagoon, contained stemmed points similar in form to Silver Lake and Lake Mojave projectile points (pre-8000 BP) that are commonly found at sites in California's high desert (Basgall and Hall 1990, as cited in Appendix D1). SDI-210 yielded one corrected radiocarbon date of 8520–9520 BP (Warren et al. 2004, as cited in Appendix D1). However, sites of this nature are extremely rare and cannot be separated from large numbers of milling tools that intermingle with old projectile point forms.

Warren et al. (2004) claimed that a biface manufacturing tradition present at the Harris site complex (SDI-149) is representative of typical Paleoindian occupation in the San Diego region that possibly dates between 10,365 and 8200 BC (Warren et al. 2004, as cited in Appendix D1). Termed San Dieguito (Rogers 1945, as cited in Appendix D1), assemblages at the Harris site are qualitatively distinct from most others in the San Diego region because the site has large numbers of finely made bifaces (including projectile points), formal flake tools, a biface reduction trajectory, and relatively small amounts of processing tools (Warren 1964, 1968, as cited in Appendix D1). Despite the unique assemblage composition, the definition of San Dieguito as a separate cultural tradition is hotly debated. Gallegos (1987) suggested that the San Dieguito pattern is simply an inland manifestation of a broader economic pattern. Gallegos' interpretation of San Dieguito has been widely accepted in recent years, in part because of the difficulty in distinguishing San Dieguito components from other assemblage constituents (Gallegos 1987, as cited in Appendix D1). In other words, it is easier to ignore San Dieguito as a distinct socioeconomic pattern than it is to draw it out of mixed assemblages.

The large number of finished bifaces (i.e., projectile points and non-projectile blades), along with large numbers of formal flake tools at the Harris site complex, is very different than nearly all other assemblages throughout the San Diego region, regardless of age. Warren et al. made this point, tabulating basic assemblage constituents for key early Holocene sites. Producing finely made bifaces and formal flake tools implies that relatively large amounts of time were spent for tool manufacture (Warren et al. 2004, as cited in Appendix D1). Such a strategy contrasts with the expedient flake-based tools and cobble-core reduction strategy that typifies non-San Dieguito Archaic sites. It can be inferred from the uniquely high degree of San Dieguito assemblage formality that the Harris site complex represents a distinct economic strategy from non-San Dieguito assemblages.

If San Dieguito truly represents a distinct socioeconomic strategy from the non-San Dieguito Archaic processing regime, its rarity implies that it was not only short-lived, but also that it was not as economically successful as the Archaic strategy. Such a conclusion would fit with other

trends in Southern California deserts, wherein hunting-related tools are replaced by processing tools during the early Holocene (Basgall and Hall 1990, as cited in Appendix D1).

Archaic (8000 BC–AD 500)

The more than 1,500-year overlap between the presumed age of Paleoindian occupations and the Archaic period highlights the difficulty in defining a cultural chronology in the San Diego region. If San Dieguito is the only recognized Paleoindian component in the San Diego region, then the dominance of hunting tools implies that it derives from Great Basin adaptive strategies and is not necessarily a local adaptation. Warren et al. admitted as much, citing strong desert connections with San Dieguito (Warren et al. 2004, as cited in Appendix D1). Thus, the Archaic pattern is the earliest local socioeconomic adaptation in the San Diego region (Hale 2001, 2009, as cited in Appendix D1).

The Archaic pattern is relatively easy to define with assemblages that consist primarily of processing tools: millingstones, handstones, battered cobbles, heavy crude scrapers, incipient flake-based tools, and cobble-core reduction. These assemblages occur in all environments across the San Diego region, with little variability in tool composition. Low assemblage variability over time and space among Archaic sites has been equated with cultural conservatism (Byrd and Reddy 2002; Warren 1968; Warren et al. 2004; all as cited in Appendix D1). Despite enormous amounts of archaeological work at Archaic sites, little change in assemblage composition occurs until the bow and arrow is adopted at around AD 500, as well as ceramics at approximately the same time (Griset 1996; Hale 2009; both as cited in Appendix D1). Even then, assemblage formality remains low. After the bow is adopted, small arrow points appear in large quantities and already low amounts of formal flake tools are replaced by increasing amounts of expedient flake tools. Similarly, shaped millingstones and handstones decrease in proportion relative to expedient, unshaped groundstone tools (Hale 2009, as cited in Appendix D1). Thus, the terminus of the Archaic period is equally as hard to define as its beginning because basic assemblage constituents and patterns of manufacturing investment remain stable, complimented only by the addition of the bow and ceramics.

Late Prehistoric (AD 500–1750)

The period of time following the Archaic and prior to Ethnohistoric times (AD 1750) is commonly referred to as the Late Prehistoric (Rogers 1945; Wallace 1955; Warren et al. 2004; all as cited in Appendix D1). However, several other subdivisions continue to be used to describe various shifts in assemblage composition, including the addition of ceramics and cremation practices. In northern San Diego County, the post-AD 1450 period is called the San Luis Rey Complex (Meighan and True 1977, as cited in Appendix D1), while the same period in southern San Diego County is called the Cuyamaca Complex and is thought to extend from

AD 500 until Ethnohistoric times (Meighan 1959, as cited in Appendix D1). Rogers also subdivided the last 1,000 years into the Yuman II and III cultures, based on the distribution of ceramics (1929, as cited in Appendix D1). Despite these regional complexes, each is defined by the addition of arrow points and ceramics, and the widespread use of bedrock mortars. Vagaries in the appearance of the bow and arrow and ceramics make the temporal resolution of the San Luis Rey and Cuyamaca complexes difficult. For this reason, the term Late Prehistoric is well-suited to describe the last 1,500 years of prehistory in the San Diego region.

Temporal trends in socioeconomic adaptations during the Late Prehistoric period are poorly understood. This is partly due to the fact that the fundamental Late Prehistoric assemblage is very similar to the Archaic pattern, but includes arrow points and large quantities of fine debitage from producing arrow points, ceramics, and cremations. The appearance of mortars and pestles is difficult to place in time because most mortars are on bedrock surfaces; bowl mortars are actually rare in the San Diego region. Some argue that the Ethnohistoric intensive acorn economy extends as far back as AD 500 (Bean and Shipek 1978, as cited in Appendix D1). However, there is no substantial evidence that reliance on acorns, and the accompanying use of mortars and pestles, occurred prior to AD 1400. True argued that acorn processing and ceramic use in the northern San Diego region did not occur until the San Luis Rey pattern emerged after approximately AD 1450 (True 1980, as cited in Appendix D1). For southern San Diego County, the picture is less clear. The Cuyamaca Complex is the southern counterpart to the San Luis Rey pattern, however, and is most recognizable after AD 1450 (Hector 1984, as cited in Appendix D1). Similar to True (1980), Hale (2009, as cited in Appendix D1) argued that an acorn economy did not appear in the southern San Diego region until just prior to Ethnohistoric times, and that when it did occur, a major shift in social organization followed.

Ethnohistoric (post-AD 1750)

The history of the Native American communities prior to the mid-1700s has largely been reconstructed through later mission-period and early ethnographic accounts. The first records of the Native American inhabitants of the San Diego region come predominantly from European merchants, missionaries, military personnel, and explorers. These brief, and generally peripheral, accounts were prepared with the intent of furthering respective colonial and economic aims and were combined with observations of the landscape. They were not intended to be unbiased accounts regarding the cultural structures and community practices of the newly encountered cultural groups. The establishment of the missions in the San Diego region brought more extensive documentation of Native American communities, though these groups did not become the focus of formal and in-depth ethnographic study until the early twentieth century (Boscana 1846; Fages 1937; Geiger and Meighan 1976; Harrington 1934; Laylander 2000; all as cited in Appendix D1). The principal intent of these researchers was to record the precontact, culturally

specific practices, ideologies, and languages that had survived the destabilizing effects of missionization and colonialism. This research, often understood as "salvage ethnography," was driven by the understanding that traditional knowledge was being lost due to the impacts of modernization and cultural assimilation. Alfred Kroeber applied his "memory culture" approach (Lightfoot 2005, as cited in Appendix D1) by recording languages and oral histories within the San Diego region.

Kroeber's 1925 assessment of the impacts of Spanish missionization on local Native American populations supported Kumeyaay traditional cultural continuity (Kroeber 1925, as cited in Appendix D1):

> San Diego was the first mission founded in upper California; but the geographical limits of its influence were the narrowest of any, and its effects on the natives comparatively light. There seem to be two reasons for this: first, the stubbornly resisting temper of the natives; and second, a failure of the rigorous concentration policy enforced elsewhere.

In some ways this interpretation led to the belief that many California Native American groups simply escaped the harmful effects of contact and colonization all together. This, of course, is untrue. Ethnographic research by Dubois, Kroeber, Harrington, Spier, and others during the early twentieth century seemed to indicate that traditional cultural practices and beliefs survived among local Native American communities. These accounts supported, and were supported by, previous governmental decisions which made San Diego County the location of more federally recognized tribes than anywhere else in the United States: 18 tribes on 18 reservations that cover more than 116,000 acres (CSP 2009, as cited in Appendix D1).

The traditional cultural boundaries between the Luiseño and Kumeyaay Native American tribal groups have been well defined by anthropologist Florence C. Shipek:

> In 1769, the Kumeyaay national territory started at the coast about 100 miles south of the Mexican border (below Santo Tomas), thence north to the coast at the drainage divide south of the San Luis Rey River including its tributaries. Using the U.S. Geological Survey topographic maps, the boundary with the Luiseño then follows that divide inland. The boundary continues on the divide separating Valley Center from Escondido and then up along Bear Ridge to the 2240 contour line and then north across the divide between Valley Center and Woods Valley up to the 1880-foot peak, then curving around east along the divide above Woods Valley. [1993, as summarized by the San Diego County Board of Supervisors 2007:6; as cited in Appendix D1]

Based on ethnographic information, it is believed that at least 88 different languages were spoken from Baja California Sur to the southern Oregon state border at the time of Spanish contact (Johnson and Lorenz 2006, as cited in Appendix D1). The distribution of recorded Native American languages has been dispersed as a geographic mosaic across California through six primary language families (Golla 2007, as cited in Appendix D1). Based on the project location, the Native American inhabitants of the region would have likely spoken both the Ipai or Tipai language subgroup of the Yuman language group. Ipai and Tipai, spoken respectively by the northern and southern Kumeyaay communities, are mutually intelligible. For this reason, these two are often treated as dialects of a larger Kumeyaay tribal group rather than as distinctive languages, though this has been debated (Luomala 1978; Laylander 2010; both as cited in Appendix D1).

Victor Golla has contended that one can interpret the amount of variability within specific language groups as being associated with the relative "time depth" of the speaking populations (Golla 2007, as cited in Appendix D1). A large amount of variation within the language of a group represents a greater time depth then a group's language with less internal diversity. One method that he has employed is by drawing comparisons with historically documented changes in Germanic and Romantic language groups. Golla has observed that the "absolute chronology of the internal diversification within a language family" can be correlated with archaeological dates (2007, as cited in Appendix D1). This type of interpretation is modeled on concepts of genetic drift and gene flows that are associated with migration and population isolation in the biological sciences.

Golla suggested that there are two language families associated with Native American groups who traditionally lived throughout the San Diego County region. The northern San Diego tribes have traditionally spoken Takic languages that may be assigned to the larger Uto–Aztecan family (Golla 2007, as cited in Appendix D1). These groups include the Luiseño, Cupeño, and Cahuilla. Golla has interpreted the amount of internal diversity within these language-speaking communities to reflect a time depth of approximately 2,000 years. Other researchers have contended that Takic may have diverged from Uto–Aztecan ca. 2600 BC–AD 1, which was later followed by the diversification within the Takic speaking San Diego tribes, occurring approximately 1500 BC–AD 1000 (Laylander 2010, as cited in Appendix D1). The majority of Native American tribal groups in southern San Diego region have traditionally spoken Yuman languages, a subgroup of the Hokan Phylum. Golla has suggested that the time depth of Hokan is approximately 8,000 years (Golla 2007, as cited in Appendix D1). The Kumeyaay tribal communities share a common language group with the Cocopa, Quechan, Maricopa, Mojave, and others to the east, and the Kiliwa to the south. The time depth for both the Ipai (north of the San Diego River, from Escondido to Lake Henshaw) and the Tipai (south of the San Diego River, the Laguna Mountains through

Ensenada) is approximated to be 2,000 years at the most. Laylander has contended that previous research indicates a divergence between Ipai and Tipai to have occurred approximately AD 600–1200 (Laylander 1985, as cited in Appendix D1). Despite the distinct linguistic differences between the Takic-speaking tribes to the north, the Ipai-speaking communities in central San Diego, and the Tipai southern Kumeyaay, attempts to illustrate the distinctions between these groups based solely on cultural material alone have had only limited success (Pigniolo 2004; True 1966; both as cited in Appendix D1).

The Kumeyaay generally lived in smaller family subgroups that would inhabit two or more locations over the course of the year. While less common, there is sufficient evidence that there were also permanently occupied villages, and that some members may have remained at these locations throughout the year (Owen 1965; Shipek 1982; Shipek 1985; Spier 1923; all as cited in Appendix D1). Each autonomous triblet was internally socially stratified, commonly including higher status individuals such as a tribal head (Kwaaypay), shaman (Kumeyaay), and general members with various responsibilities and skills (Shipek 1982, as cited in Appendix D1). Higher-status individuals tended to have greater rights to land resources, and owned more goods, such as shell money and beads, decorative items, and clothing. To some degree, titles were passed along family lines; however, tangible goods were generally ceremonially burned or destroyed following the deaths of their owners (Luomala 1978). Remains were cremated over a pyre and then relocated to a cremation ceramic vessel that was placed in a removed or hidden location. A broken metate was commonly placed at the location of the cremated remains, with the intent of providing aid and further use after death. At maturity, tribal members often left to join other bands in order to find a partner. The families formed networks of communication and exchange around such partnerships.

Areas or regions, identified by known physical landmarks, could be recognized as band-specific territories that might be violently defended against use by other members of the Kumeyaay. Other areas or resources, such as water sources and other locations that were rich in natural resources, were generally understood as communal land to be shared amongst all the Kumeyaay (Loumala 1978, as cited in Appendix D1). The coastal Kumeyaay exchanged a number of local goods, such as seafood, coastal plants, and various types of shell for items including acorns, agave, mesquite beans, gourds, and other more interior plants of use (Luomala 1978, as cited in Appendix D1). Shellfish would have been procured from three primary environments, including the sandy open coast, bay and lagoon, and rocky open coast. The availability of these marine resources changed with the rising sea levels, siltation of lagoon and bay environments, changing climatic conditions, and intensity of use by humans and animals (Gallegos and Kyle 1988; Pigniolo 2005; Warren 1964; all as cited in Appendix D1). Shellfish from sandy environments included *Donax*, *Saxidomas*, *Tivela*, and others. Rocky coast shellfish dietary contributions consisted of *Pseudochama*, *Megastraea*, *Saxidomus*, *Protothaca*, *Megathura*, *Mytolis,* and

others. Lastly, the bay environment would have provided *Argopecten*, *Chione*, *Ostrea*, *Neverita*, *Macoma*, *Tagelus*, and others. While marine resources were obviously consumed, terrestrial animals and other resources likely provided a large portion of sustenance. Game animals consisted of rabbits, hares (*Leporidae*), birds, ground squirrels, woodrats (*Neotoma*), deer, bears, mountain lions (*Puma concolor*), bobcats (*Lynx rufus)*, coyotes (*Canus latrans*), and others. In lesser numbers, reptiles and amphibians may have been consumed.

A number of local plants were used for food and medicine. These were exploited seasonally and were both traded between regional groups and gathered as a single triblet moved between habitation areas. Some of the more common of these that might have been procured locally or as higher elevation varieties would have included buckwheat (*Eriogonum fasciculatum*), *Agave*, *Yucca*, lemonade berry (*Rhus integrifolia*), sugar brush (*Rhus ovata*), sage scrub (*Artemisia californica*), yerba santa (*Eriodictyon* spp.), sage (*Salvia* spp.), *Ephedra*, prickly pear (*Opuntia* spp.), mulefat (*Baccharis salicifolia*), chamise (*Adenostoma fasciculatum*), elderberry (*Sambucus nigra*), oak (*Quercus* spp.), willow (*Salix* spp.), and *Juncus* grass among many others (Wilken 2012, as cited in Appendix D1).

The Historic Period (post-AD 1542)

European activity in the region began as early as AD 1542, when Juan Rodríguez Cabrillo landed in San Diego Bay. Sebastián Vizcaíno returned in 1602, and it is possible that there were subsequent contacts that went unrecorded. These brief encounters made the local native people aware of the existence of other cultures that were technologically more complex than their own. Epidemic diseases may also have been introduced into the region at an early date, either by direct contacts with the infrequent European visitors or through waves of diffusion emanating from native peoples farther to the east or south (Preston 2002, as cited in Appendix D1). It is possible, but as yet unproven, that the precipitous demographic decline of native peoples had already begun prior to the arrival of Gaspar de Portolá and Junípero Serra in 1769.

Spanish colonial settlement was initiated in 1769, when multiple expeditions arrived in San Diego by land and sea, and then continued northward through the coastal plain toward Monterey. A military presidio and a mission were soon firmly established at San Diego, despite violent resistance to them from a coalition of native communities in 1776. Private ranchos subsequently established by Spanish and Mexican soldiers, as well as other non-natives, appropriated much of the remaining coastal or near-coastal locations (Pourade 1960–1967, as cited in Appendix D1).

Mexico's separation from the Spanish empire in 1821 and the secularization of the California missions in the 1830s caused further disruptions to native populations in western San Diego County. Some former mission neophytes were absorbed into the work forces on the ranchos, while others drifted toward the urban centers at San Diego and Los Angeles or moved to the

eastern portions of the county where they were able to join still largely autonomous native communities. United States conquest and annexation, together with the gold rush in Northern California, brought many additional outsiders into the region. Development during the following decades was fitful, undergoing cycles of boom and bust that followed military funding, economic patterns, and a number of other regional and local trends.

Background – Built-Environment Resources

In the years preceding European contact, Southern California was home to an estimated 10,000 Native Americans, many of whom were settled throughout the San Diego vicinity. European activity in the region began as early as AD 1542, when Juan Rodríguez Cabrillo landed in San Diego Bay. Sebastián Vizcaíno returned in 1602, and it is possible that there were subsequent contacts that went unrecorded. These brief encounters made the local native people aware of the existence of other cultures that were technologically more complex than their own. Epidemic diseases may also have been introduced into the region at an early date, either by direct contacts with the infrequent European visitors or through waves of diffusion emanating from native peoples farther to the east or south (Preston 2002, as cited in Appendix D1). It is possible, but as yet unproven, that the precipitous demographic decline of native peoples had already begun prior to the arrival of Gaspar de Portolá and Junípero Serra in 1769.

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Following the Mexican American War and the ratification of the Treaty of Guadalupe Hidalgo in 1848, California was admitted to the United States and the expansive ranchos lost their prominence. This also marked the beginning of the American Development period (1846-present) and earlier years included the establishment of the "New Town" San Diego development near the San Diego bay by William Heath Davis in 1850 and Alonzo Horton's arrive to the area in 1867. The late nineteenth century an early twentieth century experienced an expansion of trade which increased the availability of building materials that, in combination with industrial capitalism, land speculation, and early private infrastructure investment, contributed to an increased population and urban growth. Designate historical resources from the early years of the American Development period include the Davis-Horton house near the Gaslamp Quarter, Villa Montezuma in southeastern San Diego, and Rosario Hall in the Downtown area of San Diego (City of San Diego 2014). Significant elements of San Diego's historic built environment include the area's railroad and maritime history, the rise of the automobile and the post-war period of suburbanization, the role of recreation in the development of specific industries, the design and implementation of major regional planning and landscaping projects. Furthermore, both the role of international fairs on architecture, landscape architecture, and City buildings and the development of industrial and military technologies between World War I and II are other significant elements that have contributed to San Diego's historic built environment.

While examples of every major period and architectural style remain in San Diego, some areas have faced difficulties retaining older and substantial neighborhood-level architectural integrity due to major building booms which occurred prior to historical preservation movements and the adoption of stricter historic structure regulations. The recognized architectural styles in San Diego neighborhoods include Spanish Colonial, Pre-Railroad New England, National Vernacular, Victorian Italianate, Stick, Queen Anne, Colonial Revival, Neoclassical, Shingle, Folk Victorian, Mission Revival, Craftsman, Prairie, French Eclectic, Italian Renaissance, Spanish Eclectic, Egyptian Revival, Tudor Revival, Modernistic and International (City of San Diego 2008).

5.6.3 IMPACTS

Issue 1: Would the Pure Water Program result in the alteration or destruction of a prehistoric or historic archaeological site, or any adverse physical or aesthetic effects to a prehistoric or historic building, structure, object, or site?

South Coastal Information Center staff conducted a records search for the study area in April 2015. In total, 1,236 archaeological resources (including isolated finds, archaeological sites, and historical-era resources) and 1,257 historic built-environment resources (including identified historical-era addresses, buildings, districts, and features) have been previously recorded within this study area (Appendix D1 and Appendix D2, respectively). For purposes of this analysis, the study area was defined as a 1-mile buffer from proposed facilities including advanced water purification facilities (AWPFs), the Central Area Water Reclamation Plant (CAWRP), a new sludge processing facility and pump stations (9 total) and existing facilities including the North City Water Reclamation Plant (NCWRP), South Bay Water Reclamation Plant (SBWRP), Metropolitan Biosolids Center (MBC), and Point Loma Wastewater Treatment Plant (PLWTP) at which improvements are proposed. Pipeline study areas ("corridors") were identified by approximating pipeline alignments between proposed facilities and buffering these alignments by a 1-mile width. Furthermore, for purposes of this analysis, historical resources are discussed (and organized) in terms of archaeological and tribal cultural resources and historic built-environment resources.

An overview of the Program is provided on Figure 3-1.

Archaeological and Tribal Cultural Resources

A records search conducted at the SCIC by Dudek staff indicates that 1,028 archaeological resources and 208 isolated finds have been previously identified within the Program study area (Table 5.6-1, Site Type, Frequency, and Inferred Sensitivity within the 1-Mile Study Area). Isolated finds are primarily of prehistoric age, with the remaining 10 isolates relating to the historical era. A total of 318 historical-era sites, 3 Ethnohistoric Kumeyaay village sites, 57 multi-component sites with both historical-era and prehistoric material, and 846 prehistoric sites were identified. It is estimated that at least two-thirds of the historical-era archaeological sites reflected in Table 5.6-1 are buildings and districts. Two resources are of unknown age and type due to lack of detail provided in their archaeological site records. At least 200 of these resources intersect, or fall within 200 feet, of the centerline of proposed pipeline corridors.

Table 5.6-1
Site Type, Frequency, and Inferred Sensitivity within the 1-Mile Study Area

Resource Age and Sensitivity	Isolate	Site	Grand Total
Historical-Era	*10*	*318*	*328*
High sensitivity	1	191	192
Moderate sensitivity	—	66	66
Low sensitivity	—	40	40
Very low sensitivity	9	21	30
Ethnohistoric		*3*	*3*
High sensitivity	—	3	3
Multi-component		*57*	*57*
High sensitivity	—	34	34
Moderate sensitivity	—	8	8
Low sensitivity	—	6	6
Very low sensitivity	—	9	9
Prehistoric	*198*	*648*	*846*
High sensitivity	3	193	196
Moderate sensitivity	—	265	265
Low sensitivity	1	151	152
Very low sensitivity	194	39	233
Age Unknown		*2*	*2*
Unknown sensitivity	—	2	2
Grand Total	**208**	**1028**	**1,236**

In order to inform pre-Phase I archaeological constraints analyses, Dudek compiled a database of all archaeological resources on file at the SCIC within the study area. Archaeological site attributes and significance recommendations were thematically summarized from site record forms and used to inform early-stage regional resource sensitivity recommendations. From this information, a map was generated using generalized 1-kilometer grid units (1,094 x 1,094 yards in size) to provide a visual model of relative archaeological resource sensitivity while maintaining the appropriate level of confidentiality for public dissemination (Figure 5.6-1).

Built-Environment Resources

In total, 1,257 historic built-environment resources have been previously recorded within the study area (see Figure 5.6-2). Of this total, 267 historic built-environment resources have been recommended for, or are currently listed in the local register, California Register of Historical Resources, or National Register of Historic Places. An additional 52 historic built-environment resources have been determined not eligible for listing. The remaining 904 historic built-

environment resources have not been formally evaluated, require additional evaluation, or have not been updated with their current status codes at the SCIC (Table 5.6-2).

Table 5.6-2
Historic Built-Environment Resource Frequency and Evaluation Status

Historic Built-Environment Resource Evaluation Status	Total
Pending or current register listing	301
Determined not eligible	52
Requires additional evaluation	16
No record of evaluation	888
Total Addresses Within Study Area on File at SCIC	**1,257**

It is likely that at least 150 of the "sites" noted in Table 5.6-1 are also included in the total represented in Table 5.6-2. These are comprised of single- and multi-family properties, engineering structures, commercial buildings, historical districts (primarily military properties) and other standing structures or features. Of these, approximately 31 have been recommended for, or are currently listed on, the local register, California Register of Historical Resources, or National Register of Historic Places. At least 15 sites have been determined not eligible for listing, and the remaining resources either have no mention of evaluation status or are unevaluated (presumed eligible under City's Historical Resources Guidelines).

Pure Water Program

To the extent feasible, proposed pipelines would run beneath existing roads or within roadway right-of-way. Proposed facilities including AWPFs, the CAWRP, and pump stations are also principally located at existing facilities or in previously developed areas. It is unlikely that intact cultural resources are present in many of these disturbed/developed areas. As many roads and areas of San Diego were constructed prior to the initiation of local, state, and federal regulations managing the treatment of cultural resources, it is likely that impacted resources went undocumented during construction. This observed, the relative level of previous impacts is highly variable throughout the Program area, and does not preclude the potential for significant archaeological or built-environment resources to be present.

Additional detail regarding the various components of the Program and potential impacts to archaeological resources and historic built-environment resources is provided below.

North City Component

The North City component includes expansion of the existing NCWRP, construction of a new full-scale North City AWPF (NCAWPF) adjacent to the NCWRP, pipelines, and support facilities such as pump stations. The purified water produced at the NCAWPF would be piped to San Vicente Reservoir where it would blend with raw water in the reservoir.

NCAWPF and Influent Conveyance

The approximate footprint of the NCAWPF, NCWRP, and proposed influent conveyance between the two facilities appear to be of relatively low cultural sensitivity (i.e., they display no cultural constraints). It should be noted that many of the City facilities were built more than 45 years ago, making them of sufficient age to require historical evaluation under City and California Environmental Quality Act (CEQA) guidelines. There are a number of resources in the surrounding vicinity, principally consisting of moderate to large prehistoric scatters of lithic material. Some prehistoric habitation debris were noted, indicating the potential for more intensive use. This observed, a number of sites have been determined not eligible for local, state, or federal listing through evaluation.

San Vicente Purified Water Pipeline and Pump Stations

As proposed, the corridor for the purified water pipeline alignment would proceed southeast from the NCAWPF for approximately 28 miles to the San Vicente Reservoir through a relatively dense distribution of recorded historical-era archaeological features and sites, as well as prehistoric archaeological sites. The majority of the purified water pipeline would be new pipe, except for one segment which would repurpose an existing 21,000-foot-long segment of 36-inch recycled water pipeline. In addition, approximately 1 mile of pipeline near the San Vicente Reservoir would be placed in hard rock, and therefore, would need to be tunneled using one or more tunnel boring machines. In addition, a pump station at the NCWRP and the Mission Trails Booster Station would be constructed along the pipeline alignment. While sparsely distributed along the pipeline corridor, recorded historic built-environment resources (i.e., standing buildings, structures, or features) could be directly intersected by the proposed pipeline at two locations (see Figure 5.6-2). Additionally, the alignment could intersect prehistoric archaeological sites with recorded lithic material and shell. These appear to be of moderate to low sensitivity based on previous level of impact and size.

From Mission Trails Regional Park to the San Vicente Reservoir Outfall/Discharge Structure, the proposed corridor passes through a highly sensitive archaeological area. While many areas are likely to have been highly disturbed, a number of significant archaeological resources and prehistoric sites (including habitation and rock art sites) are likely present

within the corridor. The areas along this segment within the San Diego River floodplain have potential to contain unidentified subsurface cultural deposits. Historic built-environment resources are sparsely distributed between Mission Trails Regional Park and the San Vicente Reservoir Outfall/Discharge Structure (see Figure 5.6-2).

Morena Boulevard Pump Station, Wastewater Force Main, and Brine Conveyance

This proposed forcemain and brine pipeline corridor extends generally south from the NCAWPF for approximately 11 miles, intersecting the Morena Boulevard Pump Station, and appears to be low to moderate in cultural sensitivity. The optimal route would follow existing roads through this entire length. Based on the presence of a large prehistoric habitation site recorded in the general vicinity of the pump station located at the intersection of Morena Boulevard and Friars Road, there is a moderate sensitivity for cultural resources in this area. The southernmost portion of the corridor includes a concentration of historic built-environment resources (see Figure 5.6-2). A number of these buildings, dating to the early 1950s, have been previously evaluated for significance.

NCWRP Expansion and North City Cogeneration Facilities Expansion

The proposed North City Cogeneration Facilities Expansion would occur at the NCWRP. As stated previously, the approximate footprint of the existing NCWRP appears to be of relatively low cultural sensitivity (i.e., they display no cultural constraints). However, if expansion were to occur to the east beyond the existing transmission corridor to an undeveloped parcel bound by Eastgate Mall to the north and east and Miramar Road to the south, the project would disturb lands with moderate sensitivity for archaeological resources (see Figure 5.6-1). Undeveloped lands to the east of the existing NCWRP do not support historic built-environment resources (see Figure 5.6-2).

Please refer to the NCAWPF and Influent Conveyance discussion above for resources in the surrounding vicinity of the NCAWPF and NCWRP.

Central Area Component

The Central Area component includes construction of two interrelated facilities; a new water reclamation facility (Central Area Water Reclamation Plant (CAWRP)) and AWPF (Central Area Advanced Water Purification Facility (CAAWPF)) in addition to pipelines and support facilities such as pump stations. The purified water produced at the CAAWPF would be piped to San Vicente Reservoir where it would blend with raw water in the reservoir.

CAWRP

The approximate footprint of the CAWRP appears to be of relatively low archaeological sensitivity (see Figure 5.6-1). The CAWRP directly intersects one historic built-environment resource with unknown evaluation status, and several others are located near the site in the Liberty Station (formerly the historic Naval Training Center) area (see Figure 5.6-2).

Central Area Tertiary Water Pipeline and Brine Pipeline

The approximate 7.5-mile-long corridor between the CAAWPF and CAWRP includes a number of highly sensitive archaeological resource areas and historic built-environment resources. Moderate to high archaeological sensitivity is assumed for lands located within the corridor, and a total of 63 historic built-environment resources have been previously recorded within 500 feet of the center line of the corridor. The Old Town historic district, which is a known location of both historic and prehistoric archaeological deposits, is included in the corridor, and the area is considered important to the local Native American community and the Descendants of Early San Diego Families (Robbins-Wade 2014, as cited in Appendix D1). Future construction activities that may occur within the San Diego River and immediately north of the river have the potential for encountering buried archaeological resources due to the presence of alluvial soils.

Central Area Sludge Conveyance: CAWRP to PLWTP

The approximate 6.3-mile-long proposed sludge conveyance corridor between the CAWRP and the PLWTP runs through areas of high archaeological sensitivity. A total of 29 archaeological sites and 82 historic built-environment resources have been previously recorded within 500 feet of the centerline of the conveyance corridor.

CAAWPF

Based on available information regarding the likely location for the CAAWPF and recorded archaeological resources in the vicinity, the CAAWPF footprint appears to be of very low sensitivity for archaeological resources (see Figure 5.6-1). The area also appears to exhibit low potential for historic built-environment resources (see Figure 5.6-2).

CAAWPF Purified Water Pipeline and Pump Stations

Based on available information from the SCIC, the approximate 17.5-mile proposed pipeline corridor between the CAAWPF and Willow Road is of low to moderate sensitivity for archaeological resources (see Figure 5.6-1). While none have been mapped at the CAAWPF site, historic built-environment resources are recorded near the CAAWPF south of Interstate 8 and north of Interstate 8 in El Cajon (see Figure 5.6-2). The majority of the pipeline corridor has not

been subject to previous investigation, which may partially account for the reduced density of recorded archaeological resources. However, there is an increased potential for encountering unanticipated archaeological deposits along the corridor in alluvial areas such as the Mission and Moreno Valleys during subsurface excavation.

PLWTP Improvements

Facilities to be constructed at the PLWTP include two raw sludge storage tanks, a thickener facility, and a thickened sludge pump station. The PLWTP and immediate surrounding area are identified as highly sensitive for encountering archaeological resources and several historic built-environment resources are mapped at the WWTP and nearby (see Figures 5.6-1 and 5.6-2). However, previous impacts associated with construction of the WWTP suggest that the potential for encountering archaeological resources within the WWTP boundary would be low.

MBC Improvements

As proposed, improvements at the MBC would include the addition of one sludge degritter and one thickening centrifuge within an existing building. Given that the MBC is an existing facility and improvements would occur within an existing building/developed area, the MBC improvements area is of low sensitivity for encountering archaeological resources and historic built-environment resources were not identified at the MBC.

Harbor Drive SDG&E Power Supply Improvements

A new transmission level substation (69-kilovolt power feed) would be required to provide 23 megawatts (MW) of primary power and an additional 23 MW of alternate power to supply the CAWRP, CAAWPF, and associated pump stations. An approximately 2.5 acre site located between the CAWRP and CAAWPF would be required for the substation, and at this time, the location of the substation site is unknown. In general, the area between the CAWRP and CAAWPF is of moderate to high sensitivity for archaeological resources (see Figure 5.6-1), and historic built-environment resources are concentrated along the San Diego River corridor, within the Old Town San Diego Community Plan Area, and near the Liberty Station area (see Figure 5.6-2).

South Bay Component

The South Bay component of the Program includes expansion of the existing SBWRP, construction of the new SBAWPF on the SBWRP site, a new sludge processing facility, pipelines, and support facilities such as pump stations. The purified water produced at the SBAWPF would be piped to Otay Reservoir where it would blend with raw water in the reservoir.

South Bay Influent Pump Station and Force Main

The proposed wastewater forcemain corridor running north from the SBAWPF is highly sensitive for archaeological resources (see Figure 5.6-1). During construction, there is a high likelihood for encountering subsurface cultural deposits within the corridor, most notably within the Tijuana River Valley. The corridor is relatively limited in recorded historic built-environment resources; however, several historic built-environment resources appear to be clustered to the south and southeast of the South Bay Influent Pump Station and south of the Sweetwater River in the City of Chula Vista (see Figure 5.6-2).

SBWRP Expansion, South Bay Solids Processing Facility, and SBAWPF

The South Bay Solids Processing Facility (SBSPF) is proposed to be located on the SBWRP site. As shown on Figure 5.6-1 and Figure 5.6-2, the SBWRP and surrounding area (including the SBAWP site) display high sensitivity for encountering archaeological resources but no historic built-environment resources were identified in the immediate surrounding area.

South Bay Purified Water Pipeline and Pump Stations

The approximate 14.5-mile proposed pipeline corridor between the pump station at the SBAWPF and the Otay Reservoir Booster Station runs through an area of high archaeological sensitivity. This section of the study area contains the highest number and density of prehistoric sites in the Program area. There is high potential for encountering subsurface deposits in the area, notably within the Tijuana River and Otay Valley alluvial areas and as such, work at the pump station, the Otay Reservoir Booster Station, and the Otay Reservoir outfall/discharge structure is likely to encounter archaeological resources. Recorded historic built-environment resources are sparsely distributed in this portion of the study area (see Figure 5.6-2) and do not appear to present constraints to construction of the proposed purified water pipeline.

South Bay SDG&E Power Supply Improvements

A total of 13 MW of additional primary power (for a total of 16 MW) and 13 MW of alternate power (for a total of 16 MW) would be required to supply all of the South Bay facilities. A new power feed from one of the nearby distribution stations would be required to provide the additional power to the facilities and the alternate power source would come from diesel generators on site at each facility. Please refer to the previous discussions for the SBWRP Expansion and SBAWPF, the South Bay Purified Water Pipeline and Pump Stations, and the South Bay Solids Processing Facility for the general archaeological and historic built-environment resource sensitivity of these facilities and the surrounding areas.

5.6.4 SIGNIFICANCE OF IMPACTS

In total, 1,236 archaeological and 1,257 historic built-environment resources (e.g., addresses) have been previously recorded within the Program study area. SCIC records indicate that approximately 19% (30.92 square miles) of the study area has been included as part of one or more previous archaeological or built-environment technical studies and the remaining 81% (131.63 square miles) appear to have not been subject to previous investigation. Due to the presence of archaeological and historic built-environment resources in the study area and because construction of Program components would entail ground-disturbing activities, impacts to archaeological and tribal cultural resources, and historic built-environment resources are considered **potentially significant**.

5.6.5 MITIGATION, MONITORING, AND REPORTING

The City of San Diego's General Plan, combined with federal, state, and local regulations, provide a regulatory framework for project-level historical resources evaluation/analysis criteria, and when applicable, mitigation measures for future discretionary projects. All development projects with the potential to affect historical resources - such as designated historical resources; historical buildings, districts, landscapes, objects, and structures; important archaeological sites; and traditional cultural properties - are subject to site-specific review in accordance with the City's Historical Resources Regulations and Historical Resources Guidelines, through the subsequent project review process. The following mitigation measures (MM-HIST-1 and MM-HIST-2) provide a framework that would be required of future development projects with the potential to impact significant historical resources.

MM-HIST-1 Archaeological and Tribal Cultural Resources

Prior to issuance of any permit for a future development project implemented in accordance with the Program area that could directly affect an archaeological or tribal cultural resource, the City shall require the following steps be taken to determine: (1) the presence of archaeological or tribal cultural resources and (2) the appropriate mitigation for any significant resources which may be impacted by a development activity. Sites may include, but are not limited to, residential and commercial properties, privies, trash pits, building foundations, and industrial features representing the contributions of people from diverse socio-economic and ethnic backgrounds. Sites may also include resources associated with prehistoric Native American activities.

Initial Determination

The environmental analyst will determine the likelihood for the project site to contain historical resources by reviewing site photographs and existing historic information (e.g., Archaeological Sensitivity Maps, the Archaeological Map Book, and the City's "Historical Inventory of Important Architects, Structures, and People in San Diego") and may conduct~~ing~~ a site visit. If there is any evidence that the site contains archaeological or tribal cultural resources, then an ~~historic~~ archaeological evaluation consistent with the City's Historical Resources Guidelines would be required. All individuals conducting any phase of the archaeological evaluation program must meet professional qualifications in accordance with the City's Historical Resources Guidelines.

Step 1:

Based on the results of the Initial Determination, if there is evidence that the site contains historical resources, preparation of a historic evaluation is required. The evaluation report would generally include background research, field survey, archeological testing and analysis. Before actual field reconnaissance would occur, background research is required which includes a record search at the South Coastal Information Center (SCIC) at San Diego State University and the San Diego Museum of Man. A review of the Sacred Lands File maintained by the Native American Heritage Commission (NAHC) must also be conducted at this time. Information about existing archaeological collections should also be obtained from the San Diego ~~Archaeology~~ Archaeological Center and any tribal repositories or museums.

In addition to the record searches mentioned above, background information may include, but is not limited to: examining primary sources of historical information (e.g., deeds and wills), secondary sources (e.g., local histories and genealogies), Sanborn Fire Maps, and historic cartographic and aerial photograph sources; reviewing previous archeological research in similar areas, models that predict site distribution, and archeological, architectural, and historical site inventory files; and conducting informant interviews. The results of the background information would be included in the evaluation report.

Once the background research is complete, a field reconnaissance must be conducted by individuals whose qualifications meet the standards outlined in the City's Historical Resources Guidelines. Consultants are encouraged to employ innovative survey techniques when conducting enhanced reconnaissance, including, but not limited to, remote sensing, ground penetrating radar, and other

soil resistivity techniques as determined on a case-by-case basis. Native American participation is required for field surveys when there is likelihood that the project site contains prehistoric archaeological resources or traditional cultural properties. If through background research and field surveys historical resources are identified, then an evaluation of significance, based on the City's Guidelines must be performed by a qualified archaeologist.

Step 2:

Where a recorded archaeological site or Tribal Cultural Resource (as defined in the Public Resources Code) is identified, the City would be required to initiate consultation with identified California Indian tribes pursuant to the provisions in Public Resources Code Section 21080.3.1 and 21080.3.2., in accordance with Assembly Bill 52. ~~Once a historical resource has been identified, a significance determination must be made.~~ It should be noted that during the consultation process, tribal representative(s) ~~and/or Native American monitors~~ will be involved in making recommendations regarding the significance of a tribal cultural resource which also could be a prehistoric archaeological site~~s during this phase of the process~~. ~~The~~ A testing program may be recommended which requires reevaluation of the proposed project in consultation with the Native American representative which could result in a combination of project redesign to avoid and/or preserve significant resources as well as mitigation in the form of data recovery and monitoring (as recommended by the qualified archaeologist and Native American representative). ~~An~~ The archaeological testing program, if ~~will be~~ required ~~which~~ shall include~~s~~ evaluating the horizontal and vertical dimensions of a site, the chronological placement, site function, artifact/ecofact density and variability, presence/absence of subsurface features, and research potential. A thorough discussion of testing methodologies, including surface and subsurface investigations, can be found in the City's Historical Resources Guidelines. Results of the consultation process will determine the nature and extent of any additional archaeological evaluation or changes to the proposed project.

The results from the testing program shall be evaluated against the Significance Thresholds found in the Guidelines. If significant historical resources are identified within the Area of Potential Effect, the site may be eligible for local designation. However, this process would not proceed until such time that the tribal consultation has been concluded and an agreement is reached (or not reached) regarding significance of the resource and appropriate mitigation measures are identified. ~~At this time,~~ When the final testing report must be

submitted to Historical Resources Board staff for eligibility determination and possible designation. An agreement on the appropriate form of mitigation is required prior to distribution of a draft environmental document. If no significant resources are found, and site conditions are such that there is no potential for further discoveries, then no further action is required. Resources found to be non-significant as a result of a survey and/or assessment will require no further work beyond documentation of the resources on the appropriate Department of Parks and Recreation (DPR) site forms and inclusion of results in the survey and/or assessment report. If no significant resources are found, but results of the initial evaluation and testing phase indicates there is still a potential for resources to be present in portions of the property that could not be tested, then mitigation monitoring is required.

Step 3:

Preferred mitigation for historical resources is to avoid the resource through project redesign. If the resource cannot be entirely avoided, all prudent and feasible measures to minimize harm shall be taken. For archaeological resources where preservation is not an option, a Research Design and Data Recovery Program is required, which includes a Collections Management Plan for review and approval. When tribal cultural resources are present and also cannot be avoided, appropriate and feasible mitigation will be determined through the tribal consultation process and incorporated into the overall data recovery program, where applicable or project specific mitigation measures incorporated into the project. The data recovery program shall be based on a written research design and is subject to the provisions as outlined in CEQA, Section 21083.2. The data recovery program shall be based on a written research design and is subject to the provisions as outlined in CEQA, Section 21083.2. The data recovery program must be reviewed and approved by the City's Environmental Analyst prior to distribution of a draft CEQA document ~~distribution~~ and shall include the results of the tribal consultation process. Archaeological monitoring may be required during building demolition and/or construction grading when significant resources are known or suspected to be present on a site, but cannot be recovered prior to grading due to obstructions such as, but not limited to, existing development or dense vegetation.

A Native American observer must be retained for all subsurface investigations, including geotechnical testing and other ground-disturbing activities, whenever a Native American ~~Traditional Cultural Property~~ tribal cultural resource or any

archaeological site located on City property or within the Area of Potential Effect of a City project would be impacted. In the event that human remains are encountered during data recovery and/or a monitoring program, the provisions of California Public Resources Code Section 5097 must be followed. In the event that human remains are discovered during project grading, work shall halt in that area and the procedures set forth in the California Public Resources Code (Section 50987.98) and State Health and Safety Code (Section 7050.5), and in the federal, state, and local regulations described above shall be undertaken. These provisions ~~are~~ will be outlined in the Mitigation Monitoring and Reporting Program (MMRP) included in ~~the~~ a subsequent project-specific environmental document. The Native American monitor shall be consulted during the preparation of the written report, at which time they may express concerns about the treatment of sensitive resources. If the Native American community requests participation of an observer for subsurface investigations on private property, the request shall be honored.

Step 4:

Archaeological Resource Management reports shall be prepared by qualified professionals as determined by the criteria set forth in Appendix B of the Guidelines. The discipline shall be tailored to the resource under evaluation. In cases involving complex resources, such as traditional cultural properties, rural landscape districts, sites involving a combination of prehistoric and historic archaeology, or historic districts, a team of experts will be necessary for a complete evaluation.

Specific types of historical resource reports are required to document the methods (see Section III of the Guidelines) used to determine the presence or absence of historical resources; to identify the potential impacts from proposed development and evaluate the significance of any identified historical resources; to document the appropriate curation of archaeological collections (e.g., collected materials and the associated records); in the case of potentially significant impacts to historical resources, to recommend appropriate mitigation measures that would reduce the impacts to below a level of significance; and to document the results of mitigation and monitoring programs, if required.

Archaeological Resource Management reports shall be prepared in conformance with the California Office of Historic Preservation "Archaeological Resource Management Reports: Recommended Contents and Format" (see Appendix C of the Guidelines), which will be used by Environmental ~~Analysis Section~~ staff in

the review of archaeological resource reports. Consultants must ensure that archaeological resource reports are prepared consistent with this checklist. This requirement will standardize the content and format of all archaeological technical reports submitted to the City. A confidential appendix must be submitted (under separate cover) along with historical resources reports for archaeological sites and ~~traditional~~ tribal cultural ~~properties~~ resources containing the confidential resource maps and records search information gathered during the background study. In addition, a Collections Management Plan shall be prepared for projects which result in a substantial collection of artifacts and must address the management and research goals of the project and the types of materials to be collected and curated based on a sampling strategy that is acceptable to the City. Appendix D (Historical Resources Report Form) may be used when no archaeological resources were identified within the project boundaries.

Step 5:

For Archaeological Resources: All cultural materials, including original maps, field notes, non-burial related artifacts, catalog information, and final reports recovered during public and/or private development projects must be permanently curated with an appropriate institution, one which has the proper facilities and staffing for insuring research access to the collections consistent with state and federal standards unless otherwise determined during the tribal consultation process. In the event that a prehistoric and/or historic deposit is encountered during construction monitoring, a Collections Management Plan would be required in accordance with the project MMRP. The disposition of human remains and burial related artifacts that cannot be avoided or are inadvertently discovered is governed by state (i.e., Assembly Bill 2641 [Coto] and California Native American Graves Protection and Repatriation Act of 2001 [Health and Safety Code 8010-8011]) and federal (i.e., Native American Graves Protection and Repatriation Act [U.S.C. 3001-3013]) law, and must be treated in a dignified and culturally appropriate manner with respect for the deceased individual(s) and their descendants. Any human bones and associated grave goods of Native American origin shall be turned over to the appropriate Native American group for repatriation.

Arrangements for long-term curation of all recovered artifacts must be established between the applicant/property owner and the consultant prior to the initiation of the field reconnaissance~~, and~~. When tribal cultural resources are present, or non-burial-related artifacts associated with tribal cultural resources area suspected to be recovered, the treatment and disposition of such resources will be determined

during the tribal consultation process. This information must then be included in the archaeological survey, testing, and/or data recovery report submitted to the City for review and approval. Curation must be accomplished in accordance with the California State Historic Resources Commission's Guidelines for the Curation of Archaeological Collection (dated May 7, 1993) and, if federal funding is involved, Title 36 of the Code of Federal Regulations, Part 79 ~~of the Federal Register~~. Additional information regarding curation is provided in Section II of the Guidelines.

MM-HIST-2 Historic Buildings, Structures, and Objects

Prior to issuance of any permit for a future development project implemented in accordance with the Program that would directly or indirectly affect a building/structure in excess of 45 years of age, the City shall determine whether the affected building/structure is historically significant. The evaluation of historic architectural resources shall be based on criteria such as: age, location, context, association with an important person or event, uniqueness, or structural integrity, as indicated in the Guidelines.

Preferred mitigation for historic buildings or structures shall be to avoid the resource through project redesign. If the resource cannot be entirely avoided, all prudent and feasible measures to minimize harm to the resource shall be taken. Depending upon project impacts, measures shall include, but are not limited to:

- Preparing a historic resource management plan;
- Adding new construction which is compatible in size, scale, materials, color and workmanship to the historic resource (such additions, whether portions of existing buildings or additions to historic districts, shall be clearly distinguishable from historic fabric);
- Repairing damage according to the Secretary of the Interior's Standards for Rehabilitation;
- Screening incompatible new construction from view through the use of berms, walls and landscaping in keeping with the historic period and character of the resource;
- Shielding historic properties from noise generators through the use of sound walls, double glazing and air conditioning; and
- ~~Removing industrial pollution at the source of production.~~

Specific types of historical resource reports, outlined in Section III of the HRG, are required to document the methods to be used to determine the presence or absence of historical resources, to identify potential impacts from a proposed project, and to evaluate the significance of any historical resources identified. If potentially significant impacts to an identified historical resource are identified these reports will also recommend appropriate mitigation to reduce the impacts to below a level of significance, where possible. If required, mitigation programs can also be included in the report.

Level of Significance after Mitigation

Although ~~I~~implementation of the Program would have the potential to result in significant direct and indirect impacts to historical, archaeological and tribal cultural resources, subsequent Program components would be required to implement the Mitigation Framework ~~measures~~ identified in the MMRP (MM-LU-2, MM-HIST-1 and MM-HIST-2) which requires site-specific environmental review, analysis of potential impacts, tribal consultation, and recommendations for mitigation ~~would~~ to reduce potentially significant impacts to ~~unknown subsurface archaeological resources and historic built environment resources to~~ below a level of significance.

5.6.6 IMPACTS

Issue 2: Would the Pure Water Program result in any impact to existing religious or sacred uses or result in the disturbance of any human remains within the potential impact area?

Based on review of records search information, at least five archaeological sites within the 1-mile study area, outside of the preferred Program components design, are documented to contain human remains. As such, subsequent Program components would be required to conduct a project-level analysis as further provided in MM-HIST-1.

5.6.7 SIGNIFICANCE OF IMPACTS

Avoiding impacts on religious or sacred ~~places~~ uses or human remains may be unavoidable in certain circumstances when resources are discovered during construction. Although there are no known religious or sacred uses within the Program area, there is potential for these to be encountered during future construction activities associated with implementation of the Program, particularly given the high cultural sensitivity of areas within the study area, such as areas along waterways, where prehistoric resources are most likely to be found. There are areas reported within the 1-mile SCIC records search buffer where known human remains are reported to be

interred outside of formal cemeteries. Additionally, previously unknown prehistoric human remains and prehistoric sites have been uncovered within the City during both archaeological investigations and grading activities. Therefore, the potential for encountering human remains during construction activities is also possible. Thus, significant impacts on known tribal cultural resources associated with religious or sacred uses or human remains may occur as a result of future projects implemented in accordance with the Program.

5.6.8 MITIGATION, MONITORING, AND REPORTING

While it is not expected that religious or sacred ~~places~~ uses or human remains would be disturbed as a result of projects implemented in accordance with the Program, there is potential for these resources to be present. As such, Mitigation Framework measure MM-HIST-1 outlined under Issue 1 ~~shall~~ would apply for this issue (religious or sacred uses) which includes the requirement for initiating tribal consultation in accordance with AB 52.

In addition, in the event that human remains are discovered during project grading, work shall halt in that area and the procedures set forth in the California Public Resources Code (Section 50987.98) and State Health and Safety Code (Section 7050.5), and in the federal, state, and local regulations described above shall be undertaken.

~~Mitigation Framework measure MM-HIST-1 shall apply.~~

Level of Significance after Mitigation

Future projects implemented in accordance with the Program that would potentially result in impacts to religious or scared uses, or the discovery of human remains would be required to implement MM-HIST-1. This mitigation measure in conjunction with the City's regulatory requirements of the SDMC, along with federal and state regulations, combined with the policies of the General Plan, as well as consultation with Native American groups early in the development review process will ensure that potentially significant impacts to religious or scared uses, or human remains at the program-level have been reduced to below a level of significance. Implementation of Mitigation Framework measure MM-HIST-1 would reduce potential impacts related to the disturbance of human remains to below a level of significance.

NCAWPF
Substation
NCWRP
MBC
MTBS
MBPS
CAAWPF
ABS
CAWRP
Substation
PLWTP
SBIPS
ORBS
SBSPF
Substation
SBAWPF
SBWRP

One-Mile Pipeline Buffer

Archaeologicial Sensitivity

- High Sensitivity
- Moderate Sensitivity
- Low Sensitivity
- Very Low Sensitivity
- Unknown Sensitivity

Potential Facilities

- Advanced Water Purification Facility (AWPF)
- Improvements/Upgrades to Existing Facilities
- Water Reclamation Plant (WRP)
- Pump Station
- Reservoir Outfall / Discharge Structure
- SDGE Substation
- Solids Processing Facility

Potential Pipelines

- Purified Water Pipeline
- Sludge Pipeline
- Tertiary Water Pipeline and Brine Pipeline
- Wastewater Forcemain
- Wastewater Forcemain and Brine Pipeline

0 5,500 11,000 Feet

SOURCE: USGS, 2015; SanGIS, 2015; SCIC, 2015.

FIGURE 5.6-1

Archaeological Sensitivity Map

DUDEK

Pure Water Program EIR

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NCAWPF
Substation
NCWRP
MBC
MTBS
MBPS
CAAWPF
ABS
CAWRP
Substation
PLWTP
SBIPS
ORBS
SBSPF
Substation
SBAWPF
SBWRP

Historic Addresses
One-Mile Pipeline Buffer

Potential Facilities

Advanced Water Purification Facility (AWPF)
Improvements/Upgrades to Existing Facilities
Water Reclamation Plant (WRP)
Pump Station
Reservoir Outfall / Discharge Structure
SDGE Substation
Solids Processing Facility

Potential Pipelines

Purified Water Pipeline
Sludge Pipeline
Tertiary Water Pipeline and Brine Pipeline
Wastewater Forcemain
Wastewater Forcemain and Brine Pipeline

0 5,500 11,000 Feet

SOURCE: USGS, 2015; SanGIS, 2015; SCIC, 2015.

DUDEK

FIGURE 5.6-2
Historic Addresses Sensitivity Map

Pure Water Program EIR

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5.7 HYDROLOGY AND WATER QUALITY

5.7.1 INTRODUCTION

The purpose of this section is to assess general surface water hydrology and water quality conditions and identify potential hydrology and water quality impacts in the Pure Water Program (Program) area. The information used in this analysis is general in nature and is derived from the most readily available information found in applicable resource and planning documents. The City of *San Diego's California Environmental Quality Act Significance Determination Thresholds* are used as a basis for analyzing potential program impacts (City of San Diego 2011a).

The general surface water hydrology and water quality conditions of the Program area are based on review of the Water Quality Control Plan for the San Diego Basin (San Diego RWQCB 2011), Project Clean Water (2015), and the City and County of San Diego online geographical database (www.SanGIS.org) for floodplains and water quality sensitive areas. A complete listing of these references is included in Chapter 13.

5.7.2 EXISTING CONDITIONS

The Program components are located within the San Diego Hydrologic Region, which is defined by all areas in the region that drain west into the Pacific Ocean. The San Diego Hydrologic Region encompasses approximately 3,900 square miles and is further subdivided into 11 major watersheds.

Watersheds

The Program components intersect 6 of the 11 major watersheds within the San Diego Hydrologic Region: the Los Peñasquitos Watershed, the San Diego River Watershed, the Pueblo San Diego Watershed, the Sweetwater River Watershed, the Otay Watershed, and the Tijuana River Watershed (Figure 5.7-1). Project Clean Water (2015), which provides a centralized point of access to water quality information and resources for San Diego region, describes each of these watersheds as follows:

- ***The Los Peñasquitos Watershed*** comprises the Los Peñasquitos Creek watershed, several coastal tributaries, and the Mission Bay watershed. These watersheds drain a highly urbanized region located almost entirely west of Interstate 15 (I-15) in coastal San Diego County. Collectively and individually, they support a variety of water supply, economic, recreational, and habitat-related beneficial uses. The major receiving waters, Los Peñasquitos Lagoon and Mission Bay, are both fragile systems that support diverse

native fauna and flora. Both water bodies are especially sensitive to the effects of pollutants due to restricted or intermittent tidal flushing. Combined, the Los Peñasquitos Hydrologic Unit and the Mission Bay Hydrologic Unit drain 180 square miles.

- ***The San Diego River Watershed*** is the second largest hydrologic unit in San Diego County with a land area of 440 square miles. It has the highest population of the County's watersheds and contains portions of the Cities of San Diego, El Cajon, La Mesa, Poway, and Santee, and several unincorporated communities. Important hydrologic resources in the watershed include five water storage reservoirs, a large groundwater aquifer, extensive riparian habitat, coastal wetlands, and tide pools.
- ***The Pueblo San Diego Watershed*** is the smallest hydrologic unit in San Diego County, encompassing approximately 60 square miles of predominantly urban landscape in the cities of San Diego, La Mesa, Lemon Grove, and National City. The watershed contains the smallest proportion of unincorporated area (0.3%) of the hydrologic units within the County. The Pueblo San Diego watershed is the County's most densely populated watershed. Approximately 75% of the watershed is developed. Residential, retail/office, and industrial land uses account for 45%, 11%, and 10% of the total, respectively. In addition, there are relatively large percentages of land used for transportation corridors and highways. Due to the high level of existing urbanization in the watershed, only small amounts of additional land is projected for development over the next 15 years.
- ***The Sweetwater River Watershed*** encompasses 415 square miles total. Over 86% of the watershed is within unincorporated jurisdictions. The dominant land uses in the Sweetwater River watershed are urban (29%), open space/agriculture (22%), and undeveloped (49%). Approximately two-thirds of the land area categorized as urban is composed of residential communities. The most important watershed issues are related to the protection of municipal water supplies, and the protection and restoration of sensitive wetland and wildlife habitats.
- ***The Otay River Watershed*** encompasses approximately 160 square miles in southwest San Diego County. The watershed consists largely of unincorporated area, but also includes portions of the Cities of Chula Vista, Imperial Beach, Coronado, National City, and San Diego. The predominant land uses in the watershed are open space (67%) and urban/residential (20%). The major inland hydrologic features, Upper and Lower Otay Lakes, are two water supply reservoirs that also provide important habitat and recreational opportunities. Approximately 36 square miles of the watershed is part of the Multiple Species Conservation Plan effort that provides habitat for a wide range of endangered plant and animal species. The current population in the Otay River watershed is approximately 150,000 people. At the present time, serious water quality problems are

limited to the presence of elevated coliform bacteria in the Pacific Ocean receiving waters near Coronado.

- ***The Tijuana River Watershed*** encompasses a region of approximately 1,750 square miles on either side of the California – Baja California border, and in terms of water quality degradation is probably the most severely impacted watershed in San Diego County. Although only 27% of the watershed area is within California, the river discharges to the Tijuana Estuary and Pacific Ocean on the U.S. side of the international border with Mexico. On the U.S. side of the border, the Cities of Imperial Beach and San Diego, and San Diego County have portions of their jurisdictions within the watershed. The Cities of Tijuana and Tecate are the most important urban centers on the Mexican side. The current population of the entire watershed is approximately one million people. The Tijuana River watershed is classified as a Category I (impaired) watershed by the State Water Resources Control Board (SWRCB) due to a wide variety of water quality problems. These problems are largely a result of non-point agricultural sources on the U.S. side of the border and a large variety of point and non-point sources on the Mexican side.

Most of these watersheds are named for the main stem rivers that flow through them. Figure 5.7-1 shows the main rivers in the region. Rivers crossed or closely paralleled by Program components include the San Diego River (the North City Advanced Water Purification Facility (NCAWPF) and Central Area Advanced Water Purification Facility (CAAWPF) purified water pipelines, and the Central Area tertiary effluent force main and brine conveyance), the Sweetwater River (the South Bay wastewater force main), the Otay River (South Bay purified water pipeline and wastewater force main), and the Tijuana River (South Bay purified water pipeline and wastewater force main).

In addition, the proposed purified water pipeline and outfall/discharge structures are located adjacent to two reservoirs: the San Vicente Reservoir, and the Lower Otay Reservoir. The purified water pipeline would also occur in proximity, but not directly adjacent to, two other lakes: Lake Murray and the Santee Recreational Lakes.

Floodplains

A 100-year flood event is a flood that has a 1% chance of being equaled or exceeded in any given year. The 100-year flood is the standard used by most federal and state agencies and the National Flood Insurance Program as the standard for floodplain management. Several Program components would cross areas located within a 100-year floodplain or a 100-year floodway (Figure 5.7-1). Flood hazard areas are generally coincident with the courses of rivers and streams, and also include some coastal areas.

Tsunami and Seiches

A tsunami is a sea wave generated by submarine earthquakes, landslides, or volcanic activity that displaces a relatively large volume of water in a very short period of time. Seiches are defined as oscillations in a semi-confined body of water due to seismic shaking. Several Program components extend west of I-5 near the Pacific Ocean, and other Program components are in proximity to large lakes and reservoirs; these areas are at risk for such hazards.

Water Quality

The San Diego region has 13 stream systems that flow to the Pacific Ocean. Most of the streams of the San Diego region are interrupted and have both perennial[1] and ephemeral[2] components due to the rainfall pattern and the development of surface water impoundments.

The proposed Program area falls within the San Diego Basin Plan. A major purpose of the Basin Plan is to define beneficial uses of surface water and groundwater. Beneficial uses are defined as "the uses of water necessary for the survival or well being of man, plants, and wildlife. These uses of water serve to promote the tangible and intangible economic, social and environmental goals of mankind. Examples include drinking, swimming, industrial and agricultural water supply and the support of fresh and saline aquatic habitats" (San Diego RWQCB 2011). Water quality objectives seek to protect the most sensitive of the beneficial uses designated for a specific water body. Beneficial uses have been identified for water bodies the Program could potentially impact and are listed in Table 5.7-1.

Table 5.7-1
Beneficial Uses

Beneficial Use	San Vicente Reservoir	Lower Otay Reservoir	San Diego River		Sweetwater River	Otay River	Tijuana River	Los Peñasquitos Creek
Hydrologic Basin Number	*7.21*	*10.31*	*7.11*	*7.12*	*9.12*	*10.20*	*11.11*	*6.10*
Municipal and domestic supply (MUN)	X	X	P	+	+	+	+	+
Agricultural Supply (AGR)	X	X		X		X	X	X
Industrial Service Supply (IND)	X	X	X	X	X	P	P	X

[1] A stream or river (channel) that has continuous flow in parts of its stream bed all year round during years of normal rainfall.

[2] A stream or river that flows only for hours or days following rainfall.

Table 5.7-1
Beneficial Uses

Beneficial Use	San Vicente Reservoir	Lower Otay Reservoir	San Diego River		Sweetwater River	Otay River	Tijuana River	Los Peñasquitos Creek
Hydrologic Basin Number	*7.21*	*10.31*	*7.11*	*7.12*	*9.12*	*10.20*	*11.11*	*6.10*
Industrial Process Supply (PROC)	X	X						
Water contact recreation (REC 1)	X[1]	X[1]	X	X	P	P	P	P
Non-contact water recreation (REC 2)	X	X	X	X	X	X	X	X
Preservation of Biological Habitats of Special Significance (BIOL)				X				X
Warm Freshwater Habitat (WARM)	X	X	X	X	X	X	X	X
Cold Freshwater Habitat (COLD)	X	X						
Wildlife habitat (WILD)	X	X	X	X	X	X	X	
Rare, threatened or endangered species (RARE)			X	X		X	X	
Municipal and domestic supply (MUN)	X	X	P	+	+	+	+	+
Agricultural Supply (AGR)	X	X		X		X	X	X
Industrial Service Supply (IND)	X	X	X	X	X	P	P	X
Industrial Process Supply (PROC)	X	X						

Table 5.7-1
Beneficial Uses

Beneficial Use	San Vicente Reservoir	Lower Otay Reservoir	San Diego River		Sweetwater River	Otay River	Tijuana River	Los Peñasquitos Creek
Hydrologic Basin Number	*7.21*	*10.31*	*7.11*	*7.12*	*9.12*	*10.20*	*11.11*	*6.10*
Water contact recreation (REC 1)	X[1]	X[1]	X	X	P	P	P	P
Non-contact water recreation (REC 2)	X	X	X	X	X	X	X	X
Preservation of Biological Habitats of Special Significance (BIOL)				X				X
Warm Freshwater Habitat (WARM)	X	X	X	X	X	X	X	X
Cold Freshwater Habitat (COLD)	X	X						
Wildlife habitat (WILD)	X	X	X	X	X	X	X	
Rare, threatened or endangered species (RARE)			X	X		X	X	

X = Existing Beneficial Use; P = Potential Beneficial Use; + = Excepted from MUN; X[1] = Fishing from boats allowed but no swimming.
Source: San Diego RWQCB 2011

Water quality in receiving waters adjacent to urbanized areas can be impacted by pollutants in stormwater runoff. Pollutants generated from human activities settle on impervious surfaces until precipitation events wash them into the municipal separate storm sewer system (MS4). Common pollutants found in urban runoff include metals, pesticides, fertilizers, bacteria, litter, and sediment. Stormwater runoff picks up and transports these pollutants, non-native vegetation, and other components and then discharges them to waterways via the MS4. MS4 discharges are regulated under a suite of National Pollution Discharge Elimination System (NPDES) permits. Water quality in non-urban areas and downstream can be adversely affected by current and historical agricultural and resource extraction activities.

Under Section 303(d) of the Clean Water Act (CWA), the SWRCB is required to develop a list of water quality limited segments for jurisdictional waters of the United States. The waters on the list do not meet water quality standards, and therefore the Regional Water Quality Control Board (RWQCB) is required to establish priority rankings and develop total maximum daily loads to improve water quality. The U.S. Environmental Protection Agency (EPA) approved the San Diego RWQCB's 2008–2010 303(d) list of water quality limited segments in November 2010. The list includes pollutants causing impairment to receiving waters or, in some cases, the condition leading to impairment. Examples of CWA Section 303(d) impairments are listed below by water body (SWRCB 2010):

- ***Peñasquitos Creek:*** Enterococcus, fecal coliform, selenium, total dissolved solids, total nitrogen as N, toxicity.
- ***Rose Creek:*** Selenium, toxicity.
- ***Tecolote Creek:*** Cadmium, copper, indicator bacteria, nitrogen, phosphorus, selenium, turbidity, zinc.
- ***San Vicente Reservoir:*** Chloride, color, pH (high), sulfates, total nitrogen as N.
- ***Lower San Diego River:*** Enterococcus, fecal coliform, low dissolved oxygen, manganese, nitrogen, phosphorus, toxicity.
- ***Mission Bay:*** Enterococcus, fecal coliform, total coliform.
- ***Los Peñasquitos Lagoon:*** Sedimentation/Siltation.
- ***San Diego Bay:*** Polychlorinated biphenyls (PCBs).
- ***Lower Sweetwater River:*** Enterococcus, fecal coliform, phosphorus, selenium, total dissolved solids, total nitrogen as N, toxicity.
- ***Lower Otay Reservoir:*** Ammonia, color, iron, manganese, nitrogen, pH (high).
- ***Telegraph Canyon Creek:*** Selenium.
- ***Tijuana River:*** Eutrophic, indicator bacteria, pesticides, phosphorus, sedimentation/ siltation, selenium, solids, surfactants (e.g., detergents), total nitrogen as N, toxicity, trace elements, and trash.
- ***Tijuana River Estuary:*** Eutrophic, indicator bacteria, lead, low dissolved oxygen, nickel, pesticides, thallium, trash, turbidity.

Figure 5.7-1 shows locations where proposed conveyance facilities cross streams identified as impaired under CWA Section 303(d), as well as those waters identified as having the beneficial use of RARE (i.e., uses of waters that support habitats necessary for the survival and successful

maintenance of plant or animal species established under state and/or federal law as rare, threatened, or endangered). In addition, multiple habitat planning areas are shown as well. Collectively, these areas indicate areas that are particularly sensitive from a water quality perspective.

Groundwater

Groundwater is subsurface water that occurs beneath the water table in soils and geologic formations that are fully saturated. Aquifers are groundwater-bearing formations sufficiently permeable to transmit and yield significant quantities of water. Areas of high groundwater may result in excavation problems. All major drainage basins in the San Diego Region contain groundwater basins. The basins are relatively small in area and usually shallow. Although these groundwater basins are limited in size, the groundwater yield from the basins has been historically important to the development of the region.

5.7.3 REGULATORY SETTING

Federal

Clean Water Act

Increasing public awareness and concern for controlling water pollution led to enactment of the Federal Water Pollution Control Act Amendments of 1972. As amended in 1977, this law became commonly known as the Clean Water Act (CWA). The CWA established basic guidelines for regulating discharges of pollutants into the waters of the United States. The CWA requires that states adopt water quality standards to protect public health, enhance the quality of water resources, and ensure implementation of the CWA.

- **Section 401**. Section 401 of the CWA requires an applicant for a federal permit, such as the construction or operation of a facility that may result in the discharge of a pollutant, to obtain certification of those activities from the state in which the discharge originates. This process is known as the Water Quality Certification for the project. For projects in San Diego County, the San Diego RWQCB issues Section 401 permits.
- **Section 402**. Section 402 of the CWA established the NPDES to control water pollution by regulating point sources that discharge pollutants into waters of the United States. In California, the EPA has authorized the SWRCB permitting authority to implement the NPDES program. In general, the SWRCB issues two baseline general permits: one for industrial discharges and one for construction activities. The Phase II Rule that became final on December 8, 1999, expanded the existing NPDES program to address stormwater discharges from construction sites that disturb land equal to or greater than 1 acre, and to address "small municipal separate storm sewer systems."

- **Section 404**. Section 404 of the CWA established a permitting program to regulate the discharge of dredged or filled material into waters of the United States. The definition of waters of the United States includes wetlands adjacent to national waters. This permitting program is administered by the U.S. Army Corps of Engineers and is enforced by the EPA.
- **Section 303(d).** Under Section 303(d) of the CWA, the SWRQB is required to develop a list of water quality limited segments for jurisdictional waters of the United States. The RWQCBs are responsible for establishing priority rankings and developing action plans, referred to as total maximum daily loads, to improve water quality of water bodies included in the 303(d) list. The most recent 303(d) List of Water Quality Limited Segments approved by the EPA is from 2010. The list includes pollutants causing impairment to receiving waters or, in some cases, the condition leading to impairment. Alternative pathways to traditional Total Maximum Daily Loads (TMDLs) may be considered by the Regional Board for pollutants listed on the 303(d) list. A pollutant may be addressed in ways other than creating a TMDL, such as incorporating into NPDES permits.

State

Porter–Cologne Water Quality Control Act

The Porter–Cologne Act, Division 7 of the California Water Code, is the basic water quality control law for California. The goal of the Porter–Cologne Act was to create a regulatory program to protect water quality and beneficial uses of the state's waters. As such, the state and regional boards were established to implement and enforce the CWA and state-adopted water quality control plans. Most of San Diego County falls within the jurisdiction of the San Diego RWQCB (Region 9). Each RWQCB is responsible for water quality control planning within its region, including a basin plan.

Water Quality Control Plan for the San Diego Basin (Region 9)

The federal CWA, NPDES program, California Water Code, and Porter–Cologne Water Quality Control Act require that the RWQCB adopt a water quality control plan to guide and coordinate the management of water quality in the region. The San Diego Basin Plan's purpose is to (1) designate beneficial uses of the region's surface water and groundwater, (2) designate water quality objectives for the reasonable protection of those uses, and (3) establish an implementation plan to achieve the objectives. This basin plan was adopted in 1994 and has been subject to several amendments, such as incorporating the Los Peñasquitos Lagoon Sediment Total Maximum Daily Load (TMDL) and other amendments that are

pending. This plan outlines water quality planning guidelines for the San Diego region watersheds (San Diego RWQCB 2011).

Ocean Plan and Thermal Plan

The SWRCB has established objectives for the protection of marine water quality in the California Ocean Plan and the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan; SWRCB 1975). The objectives and standards represent levels that allow beneficial uses of the water to continue unimpaired. Some of the objectives and standards from the Ocean Plan and Thermal Plan include the following:

- ***Thermal Plan:*** Water quality objectives for existing discharge into coastal waters require that elevated temperature wastes shall comply with limitations necessary to assure protection of the beneficial uses and areas of special biological significance. Water quality objectives for new discharges to coastal waters require that: (1) elevated temperature wastes shall be discharged to the open ocean away from the shoreline to achieve dispersion through the vertical water column; (2) elevated temperature wastes shall be discharged a sufficient distance from areas of special biological significance to assure the maintenance of natural temperature in these areas; (3) the maximum temperature of thermal waste discharges shall not exceed the natural temperature of receiving waters by more than 20° Fahrenheit (°F); (4) the discharge of elevated temperature wastes shall not result in increases in the natural water temperature exceeding 4°F at (a) the shoreline, (b) the surface of any ocean substrate, or (c) the ocean surface beyond 1,000 feet from the discharge system. The surface temperature limitation shall be maintained at least 50% of the duration of any complete tidal cycle; and (5) additional limitations shall be imposed when necessary to assure protection of beneficial uses.
- ***Bacterial Characteristics:*** Samples of water from each sampling station shall have a density of total coliform less than 1,000 per 100 milliliter (10 per ml), provided that not more than 20% of the samples at any sampling station, in any 30-day period, may exceed 1,000 per 100 ml (10 per ml), and provided further that no single sample when verified by a repeat sample taken within 48 hours shall exceed 10,000 per 100 ml (100 per ml). In addition, the fecal coliform density based on a minimum of not less than five samples for any 30-day period, shall not exceed a geometric mean of 200 per 100 ml nor shall more than 10% of the total samples during any 60-day period exceed 400 per 100 ml. For all areas where shellfish may be harvested for human consumption, as determined by the RWQCB, the median total coliform density shall not exceed 70 per 100 ml, and not more than 10% of the samples shall exceed 230 per 100 ml.

- ***Physical Characteristics:*** Ocean waters shall be free of visible floating particulates, grease, oil, and discoloration. Natural light shall not be significantly reduced at any point outside the initial dilution zone as the result of the discharge of waste. In addition, the rate of deposition of inert solids and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded.
- ***Chemical Characteristics:*** The dissolved oxygen concentration shall not at any time be depressed more than 10% from that which occurs naturally as a result of the discharge of oxygen demanding waste materials, while the pH shall not be changed at any time more than 0.2 units from that which occurs naturally. In addition, the amounts of dissolved sulfide, nutrient materials, and harmful substances in marine sediments shall be limited so as not to negatively impact marine life.
- ***Biological Characteristics:*** Marine communities, including vertebrate, invertebrate, and plant species shall not be degraded (i.e., significant differences in major biotic groups). In addition, the natural taste, odor, and color of marine resources used for human consumption shall not be altered, nor shall the concentration of organic materials bioaccumulate to levels that are harmful to human health.
- ***Radioactivity:*** Discharge of radioactive waste shall not degrade marine life.
- ***General Requirements:*** Waste management systems that discharge to the ocean must be designed and operated in a manner that will maintain the indigenous marine life and a healthy and diverse marine community. Waste discharged to the ocean must be essentially free of substances which will accumulate to toxic levels in marine waters, sediments or biota.

Wastewater treatment plants (WWTPs) and water reclamation plants (WRPs) involving discharge to the ocean must meet these objectives, which are enforced through requirements to apply for and maintain valid NPDES permits and Waste Discharge Requirements.

Statewide Recycled Water Policy

On February 3, 2009, the SWRCB adopted the statewide Recycled Water Policy. The new policy is intended to support the SWRCB's strategic plan to increase sustainable local water supplies. The purpose of the new policy is to increase the beneficial use of recycled water from municipal wastewater sources in a manner that fully implements state and federal water quality laws. The document is particularly instrumental in addressing salt management, emerging constituents, anti-degradation, and incidental runoff issues. In addition, the new policy establishes consistency on how individual regional water quality control boards should interpret recycled water policy.

Waste Discharge Requirements

Actions that involve, or are expected to involve, discharge of waste are subject to water quality certification under Section 401 of the CWA (e.g., if a federal permit is being sought or granted) and/or waste discharge requirements under the Porter–Cologne Act. Chapter 4, Article 4 of the Porter–Cologne Act (California Water Code, Sections 13260–13274) states that persons discharging or proposing to discharge waste that could affect the quality of waters of the state (other than into a community sewer system) shall file a Report of Waste Discharge with the applicable RWQCB. For discharges directly to surface water (i.e., waters of the United States), an NPDES permit is required, which is issued under both state and federal law. For other types of discharges, such as waste discharges to land (e.g., spoils disposal and storage), erosion from soil disturbance, or discharges to waters of the state (such as isolated wetlands), waste discharge requirements come into force and are issued exclusively under state law. Waste discharge requirements typically include many of the same best management practices (BMPs) and pollution control technologies as those required by NPDES-derived permits. Further, the waste discharge requirement application process is generally the same as for CWA Section 401 water quality certification, although in the case of waste discharge requirements, it does not matter whether the particular project is subject to federal regulation.

Due to the broad scope of state and federal water quality regulations, the SWRCB and RWQCBs have developed general waste discharge requirements specific to activities that involve similar types of discharges and thus also require similar types of pollution control. This is the focus of the various stormwater programs administered by the SWRCB and RWQCB, such as the construction stormwater program, the industrial stormwater program, and the municipal stormwater program. RWQCBs, including the San Diego RWQCB, also have the authority to implement general permits to multiple permittees, and to provide for waivers of waste discharge requirements. These are listed in the following section.

Statewide General NPDES/Waste Discharge Requirements

- ***Construction General Permit (SWRCB Order No. 2009-0009-DWQ, as amended):*** For stormwater discharges associated with construction activity in the State of California, the SWRCB has adopted the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) in order to avoid and minimize water quality impacts attributable to such activities. The Construction General Permit applies to all projects in which construction activity disturbs 1 acre or more of soil. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling and excavation. The Construction General Permit requires the development and implementation of a

stormwater pollution prevention plan (SWPPP), which would include and specify BMPs designed to prevent pollutants from contacting stormwater and keep all products of erosion from moving off site into receiving waters. Routine inspection of all BMPs is required under the provisions of the Construction General Permit. In addition, the SWPPP must contain a visual monitoring program, a chemical monitoring program for non-visible pollutants, and a sediment monitoring plan if the site discharges directly to a water body listed on the Section 303(d) list for sediment. SWPPPs must be developed and implemented by qualified individuals with appropriate credentials and training, as defined by the SWRCB.

- ***Industrial General Permit for Storm Water (SWRCB Order No. 2014-0057-DWQ)***: The SWRCB adopted the Industrial General Permit (IGP) applicable to certain categories of industrial activity, which includes facilities that store, treat, recycle, and reclaim sewage. The IGP is not applicable to AWPFs and pump stations. The IGP requires stormwater dischargers to eliminate unauthorized non-stormwater discharges, develop and implement SWPPPs, implement BMPs, conduct monitoring, compare monitoring results to numeric action levels, perform appropriate exceedance response actions when numeric action levels are exceeded, and certify and submit all permit registration documents. Changes under the new IGP (in effect as of June 30, 2015) compared to the IGP issued in 1997 are that stormwater dischargers are required to implement minimum BMPs; electronically file all permit registration documents via the SWRCB's Storm Water Multiple Application and Report Tracking System; comply with new training expectations and roles for qualified industrial stormwater practitioners; sample to detect exceedance of annual and instantaneous numeric action levels; develop and implement exceedance response actions if annual or instantaneous numeric action levels are exceeded; monitor for parameters listed under CWA Section 303(d); design treatment control BMPs for flow- and volume-based criteria; and understand new criteria, sampling protocols, and sampling frequency for qualifying storm events. The new general order also defines design storm standards for treatment control BMPs, qualifying storm events, and sampling protocols to follow during a design storm event.
- ***General Waste Discharge Requirements for Recycled Water Use (SWRCB Order No. 2014-0090-DWQ):*** The SWRCB adopted general waste discharge requirements for *non-potable* uses of recycled water. The general waste discharge requirements were developed in response to the governor's proclamations of a Drought State of Emergency on January 17, 2014, and April 25, 2014, and are intended to conserve availability of local potable water supplies by streamlining permitting for recycled water use that typically presents a relatively low threat to water quality. It relieves new recycled water end users from the requirements to apply for individual waste discharge requirements and provides coverage for recycled water uses not otherwise covered by general orders or existing permits. Uses that may be covered under this general permit include irrigation, impoundments,

cooling/industrial uses, and construction uses such as dust control and soil hydration. Recycled water purveyors must submit a water recycling program for review and approval by the RWQCB, a Title 22 engineering report to Division of Drinking Water, and other submittals as specified in the order to have coverage under the permit.

- ***General Waste Discharge Requirements for Discharges from Drinking Water Systems to Surface Waters (SWRCB Order No. 2014-0194-DWQ, NPDES No. CAG140001):*** This order 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 Safe Drinking Water Act, the California Health and Safety Code, and the SWRCB's Division of Drinking Water permitting requirements for providing reliable delivery of safe drinking water. To obtain coverage under this permit, a water purveyor must submit to the RWQCB a Notice of Intent, including information on the locations, frequency, and duration of planned discharges; must comply with standard provisions (which includes BMPs to address dechlorination and copper and zinc management); must implement a monitoring and reporting program; and must agree to notify the RWQCB and MS4 operator immediately of unplanned/emergency discharges and describe the corrective measures taken.

Regional NPDES/Waste Discharge Requirements and Conditional Waivers

- ***Municipal Storm Water Permit (San Diego RWQCB Order No. R9-2013-0001, as amended by Order No. R9-2015-0001 and Order No. R9-2015-0100):*** Municipalities in San Diego County, including all municipalities in the program area, collect and discharge stormwater and urban runoff containing pollutants through their stormwater conveyance systems. The San Diego RWQCB adopted a NPDES Municipal Storm Water Permit on May 8, 2013 (Order No. R9-2013-0001 and amended by Order No. R9-2015-0001 and Order No. R9-2015-0100. The permit requires the development and implementation of BMPs in planning and construction of private and public development projects. Development projects are also required to include BMPs to reduce pollutant discharges from the project site in the permanent design. BMPs associated with the final design are described in the Regional Best Management Practices (BMP) Design Manual . Regional BMP design practices and associated standards are incorporated into the City of San Diego Storm Water Standards manual, which is periodically updated to reflect the currently adopted MS4 permit. The RWQCB's Municipal Permit also requires each co-permittee in the region to develop a Jurisdictional Runoff Management Plan. In addition, new multi-jurisdictional Water Quality Improvement Plans (WQIPs) are required by watershed management area (note that watershed management areas differ in some cases from the hydrologic units and "watersheds" described earlier in this section). WQIPs that include parts of the City of San Diego within their respective watershed management

areas, and highest priority water quality conditions, include the San Dieguito River WQIP (bacteria); Los Peñasquitos WQIP (sediment, bacteria, and freshwater discharges during dry weather); Mission Bay and La Jolla WQIP, covering the southern part of the Los Peñasquitos Watershed as described earlier in this section, (bacteria and erosion and transport of soil and sediment); San Diego River WQIP (bacteria); San Diego Bay WQIP, covering Pueblo San Diego (bacteria, dissolved copper, lead, and zinc); Sweetwater River, and Otay River watersheds; and Tijuana River WQIP (sediment and siltation and turbidity). The WQIPs, among other things, assess watershed management areas to prioritize water quality conditions of concern and develop and implement strategies through jurisdictional runoff management programs to protect, preserve, enhance and restore water quality and beneficial uses. An adaptive planning and management process is emphasized.

- ***Conditional Waivers of Waste Discharge Requirements for Low-Threat Discharges in the San Diego Region (San Diego RWQCB Order No. R9-2014-0041).*** This order authorizes several categories of discharges within the San Diego region that have a low threat to water quality, provided certain conditions are met to ensure compliance with water quality standards and Basin Plan objectives. Included among waiver categories is short-term construction dewatering operations (Waiver No. 3). Construction dewatering is generally authorized so long as the discharge is made to land and not directly (or indirectly) to a receiving water body, including an MS4, and it does not adversely affect the quality or the beneficial uses of the waters of the state. If the construction dewatering discharge would exceed 5,000 gallons/day for any continuous 180-day period, or if it is in or near an area with a soil and/or groundwater contamination, investigation or corrective action in effect, the discharger must submit to the San Diego RWQCB a Notice of Intent, applicable fees, monitoring data, and BMPs, as required, to demonstrate that adequate measures will be taken to prevent adverse effects on water quality.

Individual (Discharger-Specific) NPDES/Waste Discharge Requirements

Treated wastewater discharges to the Pacific Ocean through wastewater outfalls require compliance with waste discharge requirements (under the Porter–Cologne Water Quality Control Act) and NPDES permits (under the CWA). The North City WRP (NCWRP) does not have an ocean outfall. The two ocean outfalls utilized by the City of San Diego are the Point Loma Ocean Outfall (PLOO) and the South Bay Ocean Outfall (SBOO).

- ***Waste Discharge Requirements for the Point Loma Wastewater Treatment Plant (PLWTP; San Diego RWQCB Order No. R9-2009-0001, EPA NPDES CA0107409) for:*** The discharge of treated wastewater from the PLWTP to the Pacific Ocean via the PLOO is currently regulated by a joint permit issued by the San Diego RWQCB.

RWQCB Order No. R9-2009-0001 establishes effluent limitations, discharge specifications, receiving water limitations, and monitoring and reporting program requirements, among other elements, to allow the discharge up to 240 million gallons per day (MGD) of secondary treated wastewater from the PLWTP to the Pacific Ocean through the PLOO. In addition, the permit establishes variance from secondary requirements for the discharge of total suspended solids (TSS) and biochemical oxygen demand (BOD) in accordance with Sections 301(h) and 301(j)(5) of the CWA. The City of San Diego's comprehensive effluent and receiving water monitoring program has documented that the combination of enhanced source control, flow diversion to recycled water use, chemically enhanced primary treatment at the Point Loma WWTP, and a deep and efficient ocean outfall ensures that the PLOO discharge complies with all NPDES permit limits and all applicable state and federal water quality-based standards.

- ***Waste Discharge Requirements for the South Bay WRP (RWQCB Order No. R9-2013-0006, EPA NPDES CA0109045):*** The discharge of secondary treated wastewater from the South Bay WRP (SBWRP) to the Pacific Ocean via the SBOO is currently regulated by a joint permit issued by the San Diego RWQCB and the EPA. Regional Board Order No. R9-2013-0006 establishes effluent limitations, discharge specifications, receiving water limitations, monitoring and reporting program requirements, among other elements, to allow the discharge up to 15 MGD of secondary treated wastewater from the SBWRP to the Pacific Ocean through the SBOO. The SBOO is shared with the International Wastewater Treatment Plant operated by the U.S. Section of the International Boundary and Water Commission. Discharges of secondary treated wastewater from the SBOO is only required during periods when the demand for non-potable recycled water is low.

5.7.4 IMPACTS

Issue 1: Would the Pure Water Program increase impervious surfaces and associated increased runoff?

Issue 2: Would the Pure Water Program result in a substantial alteration to on- and off-site drainage patterns due to changes runoff flow rates or volumes?

Based on the City's *California Environmental Quality Act Significance Determination Thresholds* (City of San Diego 2011), hydrology impacts may be significant if any of the following criteria are met:

1. If a project would result in increased flooding on- or off-site there may be significant impacts on upstream or downstream properties and to environmental resources.

Significant impacts may result if the project would impose flood hazards on other properties or if the project proposes to develop wholly or partially within the 100-year floodplain identified in the Federal Emergency Management Agency (FEMA) maps. Compliance with Council Policy 600-14 may provide evidence that an impact is not significant or is mitigated. Policy 600-14 prohibits development within areas of special flood hazard except under certain circumstances. The policy requires approval by the floodplain administrator before construction, development or alteration begins within any area of special flood hazard.

2. If a project would result in decreased aquifer recharge there may be significant impacts on hydrologic conditions and well-water supplies because the area available for aquifer recharge is reduced. When a subsurface water source fails to be recharged by rainfall, its volume will be reduced. Reduced groundwater elevation can affect landholders who are dependent on well water, vegetation, and surface water replenishment. In addition, if a project would result in extraction of water from an aquifer, impacts on hydrologic conditions would be significant if there would be a net deficit in the aquifer volume or a reduction in the local groundwater table.

   Projects which would create over 1.0 acres of impermeable hardscape in areas utilizing well-water and projects which would install groundwater extraction wells may result in significant impacts. Analysts should contact the RWQCB for guidance in evaluating this type of impact, as the threshold amount of new impermeable surface may vary from case to case.

   For commercial or multi-residential projects (a single-family residence is excluded) using groundwater as a source of water supply, the project applicant must address potential impacts to the neighboring wetlands or other developments(as applicable) in the area that rely on groundwater to assure that there is a sustainable groundwater supply for the proposed project. Otherwise, a significant and unmitigated impact could occur and an EIR could be required. Alternatively, the project would need to provide for municipal water.

3. If a project would grade, clear, or grub more than 1.0 acre of land, especially into slopes over a 25% grade, and would drain into a sensitive water body or stream there may be significant impacts on stream hydrology if uncontrolled runoff results in erosion and subsequent sedimentation of downstream water bodies.

4. If a project would result in modifications to existing drainage patterns there may be significant impacts on environmental resources such as biological communities and archaeological resources.

   Projects where drainage patterns are influenced such that existing vegetation would decline because long- or short-term, soil-plant-water relationships would no longer meet

habitat requirements. A project would generally have a significant hydrologic impact on biological resources if the project would result in a degradation in the function and value of the existing habitat or if the project would alter the habitat type.

Projects which would result in substantial changes to stream-flow velocities or quantities may result in a significant impact (to be determined on a case by case basis; streambed characteristics will affect determination). Refer to the project's hydrology study, if any, for the analysis of this issue.

There may be significant impacts on downstream properties and/or environmental resources if drainage patterns are changed. Projects which, when identified in a drainage study would cause adverse impacts on downstream properties or environmental resources as a result of a change in the drainage pattern would result in a significant impact. Refer to the project's hydrology study for the analysis of this issue.

Pipelines

Pipelines would be located belowground and would generally involve restoration of the proposed alignments to pre-construction conditions. Where pipelines cross stream corridors and/or other linear impediments (e.g., storm drain channels, highways, and other utilities), trenchless technology would be used to install the conveyance facilities. Trenchless methods would include auger boring/pipe jacking, horizontal directional drilling or microtunneling, depending on local conditions, pipeline size, and engineering details that are not yet available. Although both cut-and-cover and trenchless methods of installation would require digging of a trench or entry/exit pit, these features would be re-covered with soil (if within open space) or re-paved (if in an urban area). Pipeline installations are narrow, though due to the length of pipeline corridors, could amount to a significant affected area. However, it is standard practice to match the surface grade and cover type when completing an installation. Therefore, substantial increases in impervious surfaces and/or alterations to on- and off-site drainage patterns associated with proposed conveyance facilities would not occur.

Treatment and Pumping Facilities

Proposed new treatment and pumping facilities would potentially result in an increase in impervious surfaces and/or alteration of drainage patterns. The amount of increase would ultimately depend on final design details, but would be mostly localized and incremental in nature (i.e., facilities would be within already paved areas or would be adjacent to existing paved facilities). The proposed advanced water purification facility (AWPF) would develop an area of roughly 13 acres in size of disturbed habitat adjacent to the existing NCWRP. Based on conceptual plans, impervious surface areas associated with the NCAWPF would constitute 70% to 90% of the NCAWPF site (City of San Diego 2013). The proposed WRP and the other proposed AWPFs would have a similar or lesser

degree of new impervious surfaces. All three AWPFs would be located on undeveloped, disturbed land and would be approximately 15 acres in size. The Central Area WRP (CAWRP) would be located on a parcel that is already paved, and improvements at the NCWRP and SBWRP would be within previously developed lots. The six proposed pump stations would be 4,000 to 5,000 square feet and would be scattered along the program area and would also involve an increase in impervious surfaces, though due to their relatively limited size would not alter topography in a manner that would substantially change drainage patterns.

Impervious surfaces and even localized and minor alterations in drainage patterns or alterations to drainage facilities could nevertheless have minor but cumulatively significant effects on runoff flow rates and volumes, especially where located in a water quality sensitive area. Water quality sensitive areas, shown in Figure 5.7-1, support rare, threatened, or endangered species (either directly or indirectly); are listed as impaired under CWA Section 303(d); or are within a multiple habitat planning area. These areas have an elevated sensitivity to water quality impacts, or have existing water quality problems that generally reflect cumulatively considerable adverse effects from past and current urban, agricultural, or industrial land uses in the watershed. Even minor impacts in these areas would rise to a significant level if proposed facilities are not adequately designed to avoid or substantially minimize any increases in the rate or volume of stormwater runoff.

However, the City has stormwater standards in place to ensure Proposed Program facilities would be designed satisfactory to the City Engineer. This means reducing discharges of pollutants to the stormwater system to the maximum extent practicable through implementation of low-impact development (LID) designs and water quality BMPs (City of San Diego 2011b, 2012). The City's standards are outlined in the Storm Water Standards manual, approved February 2, 2016, and have been developed to be consistent with the regional MS4 permit (See Section 5.7.3), the related Regional BMP Design Manual, and City Storm Water Management and Discharge Control Ordinance (San Diego Municipal Code 43.0301 et seq.).

The City's Storm Water Standards manual is applicable to both private and public development projects (including municipal capital improvement projects). Applicability of the City's Storm Water Standards is further discussed in Section 1.2, titled "Purpose and Use of the Manual" and Section 1.3, titled "Defining a Project". ~~of the City's Storm Water Standards manual titled "When to Apply These Standards" states that the standards contained therein are applicable to any of the following:~~

~~A private project processed through the Development Services Department~~

~~A public capital improvement project processed through the Public Works Department, Engineering Branch~~

~~Ongoing maintenance efforts coordinated by the Transportation and Storm Water Department, Operation and Maintenance Division (City of San Diego 2012, p. 1-3)~~

Compliance with the Storm Water Standards is ensured through permit conditions for private projects, and for public projects (such as the proposed Program), is the responsibility of the particular department implementing the project. In the case of the proposed Program, this would be the City's Public Utilities Department.

Specific requirements for implementation of BMPs or LID designs vary based on the type of project and the amount of impervious surfaces proposed. The City's "Storm Water Requirements Applicability Checklist" is used to determine whether a project is a "priority development project" (PDP), a standard development project, or exempt from permanent stormwater BMP requirements. Proposed Program facilities and improvements fall into all three of these categories of projects. PDPs would include each of the proposed AWPFs, the new CAWRP, and possibly pump stations. Some of the smaller ancillary facilities, as well as improvements to existing facilities, may be categorized as standard projects or exempt. Recent amendments to the MS4 permit, for example, lower PDP applicability thresholds, increase standards for stormwater capture volume and treatment, and include a new alternative compliance program for off-site water quality mitigation. Notably, under the pending requirements, projects within the San Diego region will be required to match pre-development conditions rather than the pre-project conditions. A final determination as to the applicability of various stormwater design standards for each program component will be made as each individual facility is developed at a project level of detail, and in accordance with the most recent adopted amendment or revision to the regional MS4 permit.

PDPs must prepare a water quality technical report, a drainage study, and in some cases a hydromodification management plan. These are used to design and locate source control BMPs, treatment control BMPs, and LID features that are appropriate for site conditions and adequately sized to meet quantitative metrics such as the site's design capture volume for stormwater. Hydrologic modeling must demonstrate that the BMPs and LID designs would together be effective at (1) matching or reducing the pre-project peak flow rates and volumes, and (2) eliminating or substantially reducing pollutant loads from stormwater runoff. Standard development projects are required to implement more generic source control BMPs and LID design practices which have been shown to be effective at reducing pollutant loads in stormwater. The Storm Water Standards manual also prescribes additional measures to be taken for development projects likely to discharge to impaired or sensitive water bodies, including use

of high performance methods of erosion control, installation of two lines of defense for sediment control, and establishment of adequate vegetative buffers, among others.

The stormwater standards described above constitute the City's implementation of the Municipal Stormwater Permit for the San Diego Region issued by the RWQCB, and are specific to pump stations, AWPFs and associated facilities. As facilities that store, treat, recycle, and reclaim sewage, the City's WWTPs and WRPs are subject to the IGP in addition to the Municipal Stormwater Permit, as described in Section 5.7.3. The NCWRP Expansion, North City Cogeneration Facilities Expansion, the CAWRP, PLWTP Improvements, MBC Improvements, SBWRP Expansion, and the South Bay Solids Processing Facility will be required to carry out activities in accordance with the IGP, which is designed to ensure pollutant loads within stormwater runoff are minimized to the maximum extent practicable, with provisions similar to the MS4 permit, but tailored to industrial activities as defined in the IGP. In addition, compliance with these standards will ensure that Program components comply with goals of the WQIPs for watershed management areas within the Program area, including avoiding Program contribution to high priority water quality conditions such as sedimentation, bacteria, dissolved copper, lead and zinc.

Together, these standards ensure the quality of receiving waters are not degraded, and that impervious surfaces and alterations of drainage patterns (if required) are done in a manner that maintains pre-project runoff rates and volumes.

Proposed Facilities within Special Flood Hazard Areas

None of the proposed facilities are located in a Special Flood Hazard Area identified in the Federal Emergency Management Agency maps (Figure 5.7-1). However, three of the pump stations in the Central Area and South Bay, as well as the CAAWPF are located within 300 feet of a 100-year floodplain. As the exact location, size and layout of these facilities are known only at a programmatic level of detail, these facilities may also extend into a mapped floodplain depending on final size and layout. A final determination as to the location of these proposed facilities relative to floodplains would be made as each individual facility is analyzed at a project level of detail under the California Environmental Quality Act. Nearly all of the proposed pipelines cross a flood plain at one or more places along their alignments. Although these would be located underground, there is a risk that future floods could expose the pipelines through scour if buried at too shallow a depth.

The location of proposed Program components within a floodplain would not necessarily expose adjacent properties or the public to greater flood hazards than currently exist; however, exposure of proposed facilities to flooding could result in facility malfunction or failure and/or interruption in service.

5.7.5 SIGNIFICANCE OF IMPACTS

Proposed Program components that would create additional impervious surfaces or are located within a water quality sensitive area would be designed to comply with the City's Storm Water Standards manual and the Municipal Stormwater Permit (San Diego RWQCB Order No. R9-2015-0001), including implementation of source control BMPs, treatment control BMPs, and LID features that are appropriate for site conditions and adequately sized to meet site's design capture volume for stormwater (Mitigation Framework measures MM-HYD-1 and MM-HYD-2).

Proposed Program components located within or immediately adjacent to a 100-year special flood hazard area could result in a significant impact related to facility flooding. However, implementation of MM-HYD-3 would ensure that proposed program proponents, as they are further developed, are adequately flood-proofed or located outside of flood hazard zones.

5.7.6 MITIGATION, MONITORING, AND REPORTING

MM-HYD-1 During construction of all Program components, the City shall comply with the current State Water Resources Control Board (SWRCB) construction general permit (Order Number 2009-009-DWQ, as amended) and the City's Storm Water Management and Discharge Control Ordinance (San Diego Municipal Code 43.0301 et seq.). In compliance with these requirements, a water pollution control plan (for land disturbances of less than 1 acre) or a stormwater pollution prevention plan (SWPPP) (for land disturbances of greater than 1 acre) shall be prepared identifying stormwater best management practices (BMP) to be implemented as appropriate for site conditions and receiving water risk. Minimum BMPs shall include erosion controls, sediment controls, tracking controls, wind erosion control, non-storm water management (i.e., dewatering BMPs), and proper materials and water waste management.

MM-HYD-2 Program components shall be designed to comply with the City's Storm Water Standards manual and the Municipal Stormwater Permit (San Diego RWQCB Order No. R9-2013-0001, as amended by Order No. R9-2015-0001 and Order No. R9-2015-0100, and other future amendments), including implementation of source control BMPs, treatment control BMPs, and LID features that are appropriate for site conditions and adequately sized to meet site's design capture volume for stormwater. Per the City's Storm Water Standards manual, program components classified as priority development projects shall prepare a water quality technical report, a drainage study, and where appropriate, a hydromodification management plan. Site BMPs and LID designs shall together be adequate to (1) match or reduce the pre-development peak flow rates and volumes, and (2) eliminate or substantially reduce pollutant loads from stormwater runoff.

MM-HYD-3 Proposed Program facilities located within a 100-year flood hazard area shall be located and designed in a manner that protects proposed facilities from flooding (e.g., elevated above the 100-year flood or flood-proofed) and does not alter the boundaries or depth of the existing floodplain for off-site properties as mapped by the Federal Emergency Management Agency and the County. Below ground components of the proposed Program crossing 100-year flood zones shall be installed below the anticipated depth of scour, as determined by a scour analysis/report to be conducted by a qualified individual (e.g., professional engineer, professional geologist, or certified engineering geologist) experienced in scour analysis. Design and construction specifications of pipeline components crossing floodplains shall incorporate recommendations from the report to ensure that potential impacts from scouring do not comprise the integrity of the pipeline. Proposed Program construction, development or alterations located within or across a 100-year flood hazard area shall be reviewed and approved by the County's floodplain administrator or designee prior to notice to proceed.

Level of Significance after Mitigation

With implementation of Mitigation Framework measures MM-HYD-1 and MM-HYD-2, potential impacts associated with increases in impervious surfaces and alteration of drainage patterns would be reduced to **below a level of significance**.

Implementation of Mitigation Framework measure MM-HYD-3 would ensure that potential impacts related to flood hazards would be reduced to **below a level of significance**.

5.7.7 IMPACTS

Issue 3: Would the Pure Water Program create discharges into surface or groundwater, or result in any alteration of surface or ground water quality, including, but not limited to, temperature, dissolved oxygen or turbidity? Would there be increases in pollutant discharges including downstream sedimentation?

Based on the City's *California Environmental Quality Act Significance Determination Thresholds* (City of San Diego 2011), the following water quality significance thresholds may apply:

> Compliance with the City's Storm Water Standards is assured through permit conditions provided by the Engineering Section of the Development Services Department for private projects; public projects compliance is the responsibility

of the particular department implementing the project. Adherence to the City's Stormwater Standards is the Water Quality threshold.

If it is determined that BMPs are to be used to protect another specific environmental resource (biological resources, etc.) and these BMPs are beyond what is required for the project to achieve compliance with the City's Storm Water Quality Standards, the BMPs would be regarded as mitigation measures. The BMPs would be discussed and included as mitigation in the environmental document under the heading of the resource they are meant to protect. For example, a silt fence around oak trees to avoid siltation of the roots is a biological mitigation measure which would be addressed in the biological resources discussion area of the environmental document.

Stormwater discharges associated with permanent changes in impervious surfaces and alteration of drainage patterns are addressed under the preceding issues discussion. This analysis addresses stormwater and non-stormwater discharges during construction, as well as planned and unplanned (emergency) treated water discharges during facility operations.

Construction

Stormwater Discharges

There are two typical ways that construction activities associated with the proposed Program could adversely affect stormwater quality:

- ***Land disturbances*:** Land disturbances such as vegetation removal, compaction, grading, and excavation can potentially increase sediment levels in stormwater runoff by eroding soils that have been loosened or newly exposed by construction activity. Land disturbances can also decrease the infiltration capacity of soils in the work area through compaction of native soils from foot traffic, heavy machinery, and equipment laydown. Depending on the pattern, magnitude, and extent of construction activities, stormwater flows that would otherwise not be erosive, can become both channelized and accelerated, leading to soil loss, rilling and/or gullying on site or down-gradient. Land disturbances would be required to construct treatment and pumping facilities and install pipelines.
- ***Spill and/or leaks*:** Materials that could contaminate the construction area or spill or leak include diesel fuel, gasoline, lubrication oil, cement slurry, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and construction-related trash and debris. The amount used would be the minimum necessary to fuel vehicles, power equipment, and complete installation activities. Improper management of hazardous materials could

result in accidental spills or leaks, which could locally contaminate either shallow groundwater or the closest surface water body.

However, these types of impacts are adequately addressed through the standard requirements to obtain coverage under the SWRCB Construction General Permit, as described in Section 5.7.3.

Compliance with the Construction General Permit requires that a SWPPP be developed and implemented by qualified individuals with appropriate credentials and training (i.e., qualified SWPPP developer/qualified SWPPP practitioner), as defined by the SWRCB. The SWPPP typically contains a site map which shows the construction site perimeter, proposed structures, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP lists BMPs used to protect stormwater runoff and the placement of BMPs. General BMPs include erosion controls, sediment controls, tracking controls, wind erosion control, non-stormwater management, and proper materials and waste management. Additionally, the City SWPPP contains a visual monitoring program, a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Implementation of these BMPs and SWPPP (see Mitigation Framework measures MM-HYD-1 and MM-HYD-2) would protect water quality in the Program area due to construction-induced erosion and sedimentation. (See also Section 5.3, Health and Safety, for additional hazardous materials BMPs necessary to prevent or contain spills or leaks associated with construction equipment and materials regulatory requirements related to hazardous materials).

The City's Storm Water Standards manual also contains minimum construction-related BMPs which all public and private development projects must implement, regardless of whether they require coverage under the State's Construction General Permit (i.e., result in land disturbance of greater than 1 acre). For projects disturbing less than 1 acre of land, the City would prepare a Water Pollution Control Plan which outlines the pollution prevention measures that will be taken. These are similar to the general water quality BMPs required under the Construction General Permit (e.g., perimeter controls, erosion blankets, inlet protection, proper site management and housekeeping, etc.).

Therefore, although construction activities have the potential to adversely affect water quality, required coverage under the Statewide General Construction Permit and compliance with the City's Storm Water Standards would be adequate to ensure potential construction related impacts on water quality are avoided or substantially minimized.

Groundwater Discharges

Construction and operation of a number of Program components would require dewatering of pipeline trenches, as well as treatment and pumping facility foundation excavations to keep the work area free of water. The need for groundwater dewatering would depend on location, depth of excavation, and seasonal climate. Typically, excavation activities adjacent to the coast or stream corridors and those conducted during the winter and spring have the greatest potential to encounter shallow groundwater. In other areas, non-porous sand and clay materials would be mixed among the strata and create groundwater "lenses," or isolated pockets of groundwater that could seep into excavations. Construction-related dewatering discharges are typically minor in magnitude and temporary in duration. Groundwater that is of similar quality to adjacent surface waters can typically be discharged to land under the San Diego RWQCBs "Conditional Waivers of Waste Discharge Requirements for Low-Threat Discharges in the San Diego Region" (see Section 5.7.3) provided certain conditions are met. This includes notification to the RWQCB and implementation of certain BMPs. In these cases, the dewatering discharges would not result in substantial adverse effects on receiving water quality.

Certain areas may have poor quality groundwater associated with nearby cleanup cases (e.g., a past release from underground storage tanks) or undocumented contaminant releases. Areas commonly associated with subsurface contaminant releases include gas and service stations, dry cleaners, disposal sites, power generation sites, and industrial or manufacturing uses, among other uses. As discussed in Section 5.3, Health and Safety, details on the known hazardous materials locations would need to be investigated at the project-level of analysis for individual Program components to determine the specifics on location, type, and status of hazardous materials sites that may have had contaminant releases to groundwater in the vicinity of the excavation. MM-HAZ-6 requires a review of whether Program components would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Should poor-quality groundwater dewatering discharges be made to the stormwater drainage system and/or nearby surface waters, such discharges would require notification to the RWQCB and a permit to authorize the discharge (see Mitigation Framework measure MM-HYD-4). The RWQCB and applicable waste discharge requirements require compliance with a number of physical, chemical, and thermal parameters (as applicable), along with pertinent site-specific conditions, pursuant to direction from the RWQCB.

Dust Control

Non-stormwater discharges during construction would also include periodic application of water for dust control purposes. Because dust control is necessary during windy and dry periods to prevent wind erosion and dust plumes, water would be applied in sufficient

quantities to wet the soil, but not so excessively as to produce runoff from the construction site. Water applied for dust control would either quickly evaporate or locally infiltrate into shallow surface soils. These stipulations are routine in SWPPPs and other construction contract documents, which normally state that water would only be applied in a manner that does not generate runoff. Use of recycled water for dust control is authorized under the General Waste Discharge Requirements for Recycled Water Use (SWRCB Order No. 2014-0090-DWQ). Therefore, water applied for dust control would not result in appreciable effects on groundwater or surface water features and thus has little to no potential to cause or contribute to exceedances of water quality objectives contained in the relevant Basin Plan.

Operations

Treated Wastewater Discharges

Although the proposed treatment, pumping and conveyance facilities do not involve physical modification to the City's ocean outfalls, the Program would involve modifications to the NCWRP, SBWRP, and PLWTP. Implementation of the Program would ultimately decrease the volume of water needing to be discharged through the PLOO and the SBOO by diverting some of the treated wastewater to the AWPFs. With a decrease in volume needed to be discharged through the ocean outfalls, the Program would not result in substantial adverse effects on ocean water quality.

These facilities are both covered under individual NPDES permits (RWQCB Order No. R9-2009-0001 and R9-2013-0006), as discussed in Section 5.7.3. The PLWTP has had an ongoing authorization from the SWRCB and EPA for variance from secondary treatment requirements for the discharge of total suspended solids (TSS) and biochemical oxygen demand (BOD). The permit renewal process is underway and is separate from the components of the Program. However, diversions of treated wastewater away from the ocean outfalls to the proposed AWPFs and reservoirs may reduce the rate and volume of discharge through the ocean outfalls, which is beneficial with regard to conditions requiring a variance from secondary treatment requirements. The proposed Program would therefore have a beneficial impact with respect to this issue.

Off-Specification Product Water Discharges

Water wholesalers and purveyors are responsible for developing water supplies and providing drinking water to their communities and customers in accordance with statutory requirements of the federal Safe Drinking Water Act and the California Health and Safety Code. Mandatory system-development and system-maintenance activities often result in surface water discharges, either via storm drain systems or other conveyance systems, or directly to a surface water body.

Both planned and unplanned (i.e., emergency) discharges necessary for water purveyors to comply with the federal Safe Drinking Water Act, the California Health and Safety Code, and the SWQCB's Division of Drinking Water permitting requirements are covered under the General Waste Discharge Requirements for Discharges from Drinking Water Systems to Surface Waters (SWRCB Order No. 2014-0194-DWQ). To be covered under the permit, a water purveyor must submit a Notice of Intent, and comply with a Monitoring and Reporting Program. The purpose of the monitoring and reporting requirements is to provide information demonstrating that management practices are properly implemented to protect surface water quality. The objective is to validate that the management practices are performing properly to maintain compliance with permit provisions and protect receiving waters from adverse impacts to beneficial uses. For planned discharges, the water purveyor must comply with applicable effluent limitations, BMP implementation requirements, receiving water limitations, monitoring, notification, and reporting requirements as specified in the order. For unplanned emergency discharges, the water purveyor is required to notify the RWQCB and, if applicable, the MS4 operator within 24 hours of the discharge, and must describe the location and extent; the cause; the date, time, and duration; the volume; and the receiving water body of the emergency discharge. The discharger must also describe the corrective actions taken (or being taken) to prevent future non-compliance or repair the system failure.

The Program would be required to have a mechanism to either store or divert water not meeting federal and state water quality requirements. This backup mechanism is referred to as fail safe disposal, and it is one of the many requirements in place to protect the health and safety of residents. When a treatment plant does not produce water meeting federal or state water quality requirements (a condition known as off-specification water), the water must be stored or diverted. Facilities would be equipped with a fully automated control system, equipment redundancy, and integrity monitoring, with backup power systems for certain critical components. These would ensure the City could quickly respond to process interruptions or equipment malfunction. These are described in detail in Chapter 3, Project Description, Section 3.5.3. Fail safe disposal adds an extra layer of protection in case these system fail and off-specification water is detected in the system.

Off-specification water, if detected, is proposed to be discharged into the sewer system or to the nearest waterway along the proposed pipeline alignment. Travel time in the conveyance pipeline provides up to 10 hours (approximate as it varies by AWPF) to identify a malfunction, validate the malfunction, and stop flows in the conveyance pipeline before the off-specification water is released into the reservoir. Off-specification water in the purified water conveyance pipeline could be diverted to the sanitary sewer system, used in the non-potable recycled water system, or discharged into a nearby waterway.

Potential impacts on water quality would be minor and temporary, as fail safe disposal would be for effluent that has undergone at least tertiary treatment. While such water would be treated to levels compliant with the waste discharge requirements associated with ocean outfalls, short-term emergency discharges would nevertheless briefly exceed the water quality objectives associated with inland waters. This is because waste discharge requirements for the ocean outfalls are based on the substantial dilution factor provided by mixing with ocean waters. This level of dilution would not occur for discharge of off-specification waters to local creeks and storm drains.

The City would be required to develop a fail safe discharge plan, as outlined in Mitigation Framework measure MM-HYD-2, to ensure emergency discharges result in minimal effects on the beneficial uses of receiving water bodies.

5.7.8 SIGNIFICANCE OF IMPACTS

Impacts associated with stormwater and non-stormwater discharges during construction of Program components would be adequately addressed through compliance with the SWRCB Construction General Permit (Order Number 98-672009-009-DWQ, as amended), the City's Storm Water Runoff and Drainage Regulations (Code of Ordinances Chapter 14, Article 2, Division 2), and required notification procedures and waste discharge requirements (MM-HYD-4).

With a decrease in volume needed to be discharged through the ocean outfalls, the Program would have a beneficial impact with respect to treated wastewater disposal through the PLOO and the SWOO.

Impacts associated with fail safe disposal would only occur in emergency situations and would be temporary in nature. As such, implementation of Mitigation Framework measure MM-HYD-5 would be implemented to ensure such actions would have minimum impact with respect to the water quality of receiving waterways.

5.7.9 MITIGATION, MONITORING, AND REPORTING

MM-HYD-4 Construction Groundwater Dewatering. Prior to issuance of any permit that would allow excavation which requires dewatering, a plan for disposal of the dewatering effluent shall be prepared. If groundwater is to be discharged to the sanitary sewer system, such discharges shall be made by permit/approval from the Industrial Waste Division of the City of San Diego Public Utilities Department. If groundwater is to be discharged to land, the stormwater drainage system, or a surface water body, such discharge shall be made in coordination with the San Diego Regional Water Quality Control Board (RWQCB) and the appropriate flood control district, and in accordance with applicable waste discharge requirements.

Discharges to land and surface waters shall require submittal of a notice of intent to the RWQCB and compliance with a number of physical, chemical, and thermal parameters (as applicable), along with pertinent site-specific conditions, pursuant to direction from the RWQCB.

MM-HYD-5 **Failsafe Disposal Plan** During project-level review for the proposed treatment and conveyance facilities, the City shall prepare and submit a Failsafe Disposal Plan and submit it to the SWRCB Division of Drinking Water and San Diego RWQCB for review and approval. At a minimum, the plan shall specify the locations where off-specification water could be discharged, the anticipated flow rate and duration, and the minimum level of treatment the water would have at the discharge point. The objectives of the plan shall be to ensure that (1) adequate storm drain hydraulic capacity is available to convey the off-spec water from the diversion point to downstream surface waters during periods of peak storm flows, and (2) no adverse hydrodynamic effects on downstream surface waters would occur.

The plan shall identify the beneficial uses and water quality objectives for the waterways affected by fail safe disposal and shall develop a Monitoring and Reporting Program to be put in place. The plan shall identify a shutdown coordinator responsible for managing fail safe disposal, establish switching/valving procedures, outline neutralization methods for chlorinated or chloraminated water, establish roles and responsibilities, and identify action triggers and notification requirements to relevant agencies (e.g., RWQCB, local flood control agency). The plan shall be consistent with and demonstrate compliance with State Water Resources Control Board (SWRCB) Order No. 2014-0194-DWQ (General Waste Discharge Requirements for Discharges from Drinking Water Systems to Surface Waters).

If existing storm drain facilities are not available (or are undersized) at the selected diversion points, the construction (or upgrade) of diversion channels and/or energy dissipation facilities may be required to ensure that off-spec water diversions do not create adverse scour or erosion effects in downstream surface waters.

Level of Significance after Mitigation

With implementation of Mitigation Framework measure MM-HYD-4, impacts related to stormwater and non-stormwater discharges during construction would be reduced to **below a level of significance**.

With implementation of Mitigation Framework measure MM-HYD-5, impacts to water quality associated with fail safe disposal would be reduced to **below a level of significance**.

5.7.10 IMPACTS

Issue 4: Would the Pure Water Program, when considered in combination with past, current, and future projects in the affected watersheds, result in cumulatively significant impacts on hydrology and water quality?

The cumulative effects of past and current projects in the cumulative scenario have resulted in substantial water quality problems in the region's major waterways, and because water quality problems are generally cumulative in nature, all efforts must be made to reduce pollutant concentrations within stormwater discharges to the maximum extent practicable, even if the impact of an individual project appears inconsequential. Cumulatively considerable water quality issues are identified as "water quality limited" segments (or impaired water bodies) under CWA Section 303(d). These segments are identified in Section 5.7.2 and Figure 5.7-1. Most of the major water bodies adjacent to or crossed by proposed program components, including the Tijuana River, San Diego River, Lower Otay Reservoir, San Vicente Reservoir, and the bays and estuaries into which they discharge, are listed under CWA Section 303(d) as impaired for one or more pollutants.

For short-term effects, the proposed Program, along with other projects occurring in the area, would be required to comply with applicable federal, state, and local water quality regulations. The Program, along with other projects over 1 acre in size (which includes most of the projects in the cumulative scenario), would be required to obtain coverage under the NPDES Construction General Permit, which requires project proponents to identify and implement stormwater BMPs that effectively control erosion and sedimentation and other construction-related pollutants. The City's Storm Water Standards manual also requires smaller projects (less than 1 acre) to implement a minimum set of water quality BMPs.

The typical long-term effect of substantial increases in impervious surfaces is that peak flows within the watershed's drainages are greater in magnitude, shorter in duration, and more responsive to storm events, since a greater portion of precipitation is carried by surface runoff rather than percolated into the soil. These effects are undesirable with respect to flood hazards, water quality, and habitat quality. To the extent program components exacerbate this issue, especially in proximity to water quality sensitive areas such as impaired waters; it could result in a cumulatively significant impact.

5.7.11 SIGNIFICANCE OF IMPACTS

The NPDES permits required for the Program are aimed at maintaining the beneficial uses of the water bodies in the RWQCB Basin Plan and meeting water quality objectives associated with specific pollutants of concern. Because adverse water quality and major hydrologic alterations

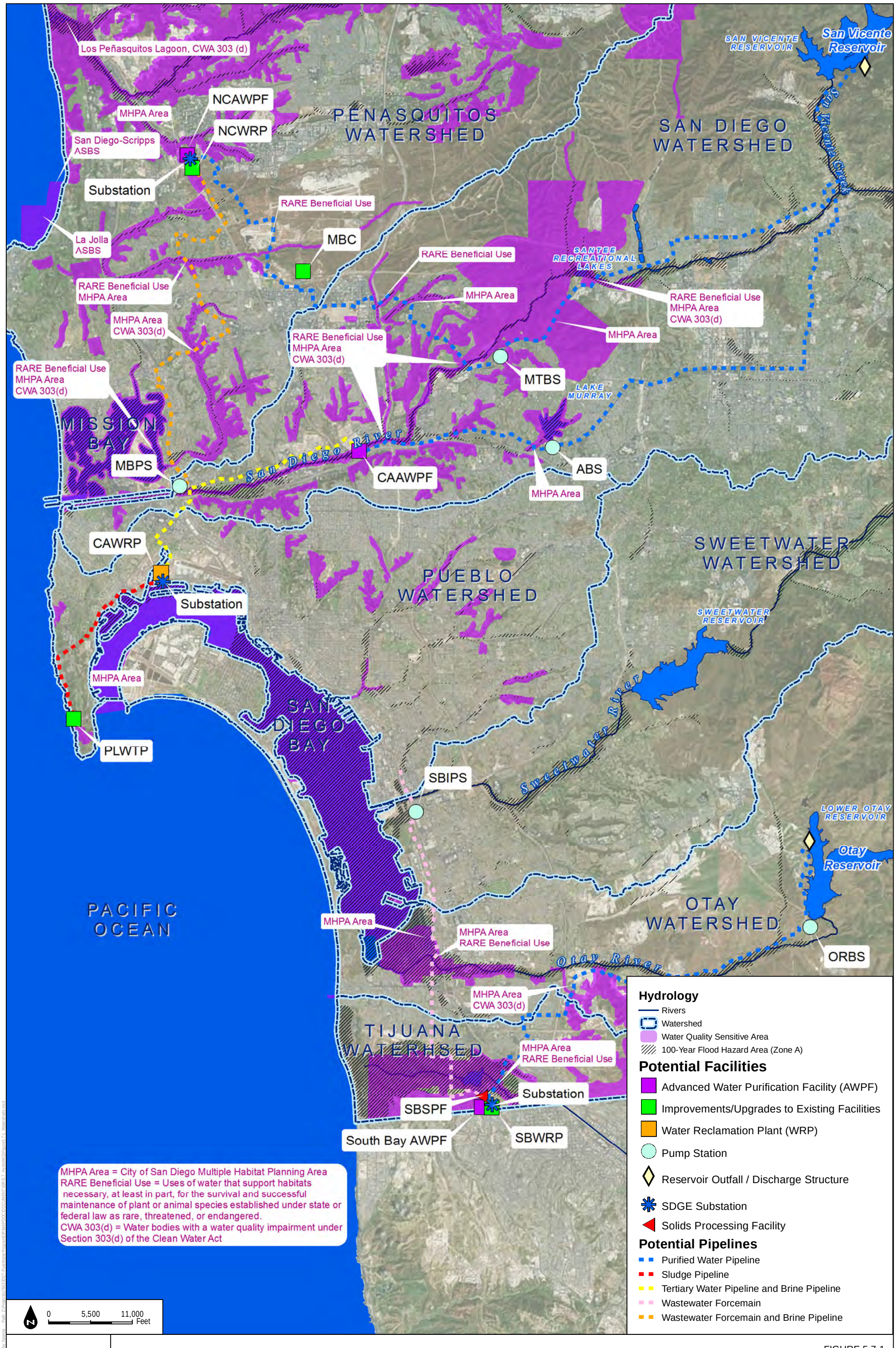
are linked to the large-scale, cumulative effects of development projects, as well as industrial and/or agricultural land uses, the provisions within the NPDES permits, by their nature, seek to address cumulative conditions. Therefore, required Program compliance with the Construction General Permit, the Municipal Stormwater Permit, and implementation of Mitigation Framework measures MM-HYD-1 through MM-HYD-5 ensure that program contributions to cumulatively significant water quality impacts are **reduced to below a level of significance**. The Mitigation Framework measures are designed to address cumulative water quality issues by reducing to the maximum extent practicable the levels of pollutants entering the storm drain system. Among other things, compliance with the City's Storm Water Standards manual requires identification of impaired water bodies and implementation of strict controls to ensure construction and operation does not contribute pollutants for which the water body is impaired.

5.7.12 MITIGATION, MONITORING, AND REPORTING

Implementation of Mitigation Framework measures MM-HYD-1 through MM-HYD-5 identified above would reduce Program contributions to cumulative impacts on water quality.

Level of Significance after Mitigation

Implementation of Mitigation Framework measures MM-HYD-1 through MM-HYD-5 would reduce potential impacts to **below a level of significance**.



SOURCE: Bing Imagery, 2015, SANGIS, 2015.

FIGURE 5.7-1

Watersheds

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5.8 PALEONTOLOGICAL RESOURCES

5.8.1 INTRODUCTION

This section discusses the existing paleontological conditions, identifies potential impacts to paleontological resources as a result of implementation of the Pure Water Program (Program), and discusses mitigation measures as necessary.

Paleontological resources (i.e., fossils) are the remains and/or traces of prehistoric plant and animal life. Fossil remains, such as bones, teeth, shells, and leaves, are found in the geologic deposits within which they were originally buried. For the purposes of this discussion, paleontological resources can be thought of as including not only the actual fossil remains, but also the areas and geologic formations likely to contain those fossils.

5.8.2 EXISTING CONDITIONS

The City of San Diego, where the majority of excavation work would occur, is in the Coastal Plain Province and contains several rock formations. This province is underlain by a sequence of marine and non-marine sedimentary rock units that record portions of the last 140 million years of earth history. Over this period of time, the relationship of land and sea has fluctuated drastically, such that today we have ancient marine rocks preserved up to elevations about 900 feet above sea level (City of San Diego 2008).

The geologic formations that underlie the conceptual alignments and sites for the Program are shown on Figures 5.12-1 through 5.12-4, in Section 5.12, Geology and Soils. The City of San Diego's *California Environmental Quality Act Significance Determination Thresholds* (City of San Diego 2011) provides a Paleontological Monitoring Determination Matrix with a list of more specific geologic formations and their resource sensitivity. These formations are shown on Figures 5.8-1, 5.8-2, and 5.8-3 for the North City, Central Area, and South Bay Components, respectively. As shown on the figures, the Program would potentially require excavation within the following formations: Friars Formation (Tf), Mission Valley Formation (Tmv), Otay Formation (To), Stadium Conglomerate (Tst), Point Loma Formation (Kp), Cabrillo Formation (Kcs), San Diego Formation (Tsd), Ardath Shale (Ta), and Alluvium (Qls). The sensitivity of these geological formations is summarized in Table 5.8-1.

Table 5.8-1
Paleontological Sensitivity of Geological Formations

Geological Formation/Rock Unit	Potential Fossil Localities	Sensitivity Rating
Alluvium (Qsw, Qal, or Qls)	All communities where this unit occurs	Low
Ardath Shale (Ta)	All communities where this unit occurs	High
Cabrillo Formation (Kcs)	All communities where this unit occurs	Moderate
Friars Formation (Tf)	All communities where this unit occurs	High
Mission Valley Formation (Tmv)	All communities where this unit occurs	High
Otay Formation (To)	All communities where this unit occurs	High
Point Loma Formation (Kp)	All communities where this unit occurs	High
River/Stream Terrace Deposits (Qt)	A. South Eastern/Chollas Valley/Fairbanks Ranch/Skyline/Paradise Hills/Otay Mesa/Nestor/San Ysidro B. All communities where this unit occurs	A. Moderate B. Low
San Diego Formation (Tsd)	All communities where this unit occurs	High
Stadium Conglomerate (Tst)	All communities where this unit occurs	High

Source: City of San Diego 2011.

5.8.3 IMPACT

Issue 1: Would the Pure Water Program result in the loss of significant paleontological resources?

According to the City's *California Environmental Quality Act Significance Determination Thresholds* (City of San Diego 2011), impacts to paleontological resources would be significant if the project would:

- Require the excavation of over 1,000 cubic yards and over 10 feet in depth in an area of high resource potential for geologic deposit or formation.
- Require the excavation of over 2,000 cubic yards and over 10 feet in depth in an area of moderate resource potential for geologic deposit or formation.

According to the conceptual siting and alignments of the Program components, the following moderate or high resource potential areas may be affected: Friars Formation (Tf), Mission Valley Formation (Tmv), Otay Formation (To), Stadium Conglomerate (Tst), Point Loma Formation (Kp), Cabrillo Formation (Kcs), San Diego Formation (Tsd), and Ardath Shale (Ta).

While these areas may be affected according to the current conceptual alignments, site-specific locations and design are not yet known and subject to change. As such, the geologic formations that underlie Program components would not be known until the time of future project-level analysis. At the time that final design and location have been determined, the amount and depth

of excavation required for the construction of Program components would be used to determine whether potentially sensitive fossil resources would be impacted. However, for the purposes of this program-level analysis, the development of the Program would potentially require excavation of over 1,000 cubic yards and over 10 feet in depth, or over 2,000 cubic yards and over 10 feet in depth in an area of high or moderate resource potential, respectively, within potentially sensitive fossil-bearing formations. Therefore, subsequent Program components would be required to follow the mitigation framework described below.

5.8.4 SIGNIFICANCE OF IMPACT

As final design, location, and excavation quantities are not yet known and are subject to change prior to future project-level analysis, for the purposes of this program-level analysis, impacts to paleontological resources would be potentially significant.

5.8.5 MITIGATION, MONITORING, AND REPORTING

MM-PALEO-1: Prior to the approval of subsequent development projects implemented in accordance with the Program areas, the City shall determine the potential for impacts to paleontological resources based on review of the project application submitted, and recommendations of a project-level analysis completed in accordance with the steps presented below. Future projects shall be sited and designed to minimize impacts on paleontological resources in accordance with the City's Paleontological Resources Guidelines and CEQA Significance Thresholds. Monitoring for paleontological resources required during construction activities shall be implemented at the project-level and shall provide mitigation for the loss of important fossil remains with future subsequent development projects that are subject to environmental review.

I. Prior to Project Approval

A. The environmental analyst shall complete a project-level analysis of potential impacts on paleontological resources. The analysis shall include a review of the applicable USGS Quad maps to identify the underlying geologic formations, and shall determine if construction of a project would:

- Require over 1,000 cubic yards of excavation and/or a 10-foot, or greater, depth in a high resource potential geologic deposit/ formation/rock unit.
- Require over 2,000 cubic yards of excavation and/or a 10-foot, or greater, depth in a moderate resource potential geologic deposit/ formation/rock unit.

- Require construction within a known fossil location or fossil recovery site. Resource potential within a formation is based on the Paleontological Monitoring Determination Matrix.

B. If construction of a project would occur within a formation with a moderate to high resource potential, monitoring during construction would be required.

- Monitoring is always required when grading on a fossil recovery site or a known fossil location.
- Monitoring may also be needed at shallower depths if fossil resources are present or likely to be present after review of source materials or consultation with an expert in fossil resources (e.g., the San Diego Natural History Museum).
- Monitoring may be required for shallow grading (<10 feet) when a site has previously been graded and/or unweathered geologic deposits/ formations/rock units are present at the surface.

Monitoring is not required when grading documented artificial fill. When it has been determined that a future project has the potential to impact a geologic formation with a high or moderate fossil sensitivity rating a Paleontological MMRP shall be implemented during construction grading activities.

Level of Significance after Mitigation

Adherence to the Mitigation Framework outlined in MM-PALEO-1, which requires paleontological monitoring, would reduce potential impacts to **below a level of significance**.

NCAWPF
NCWRP
Substation
MBC
MTBS
ABS
MBPS
CAAWPF
CAWRP
Substation
PLWTP
SBIPS
ORBS
SBSPF
Substation
South Bay AWPF
SBWRP

One-Mile Pipeline Buffer

Paleontological Sensitivity

- High
- Low
- Moderate

Potential Facilities

- Advanced Water Purification Facility (AWPF)
- Improvements/Upgrades to Existing Facilities
- Water Reclamation Plant (WRP)
- Pump Station
- Reservoir Outfall / Discharge Structure
- Solids Processing Facility
- SDGE Substation

Potential Pipelines

- Purified Water Pipeline
- Sludge Pipeline
- Tertiary Water Pipeline and Brine Pipeline
- Wastewater Forcemain
- Wastewater Forcemain and Brine Pipeline

SOURCE: ESRI, 2015; SANGIS, 2015; Department of Conservation.

FIGURE 5.8-1

Paleontological Resources: Overview

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Paleontological Sensitivity

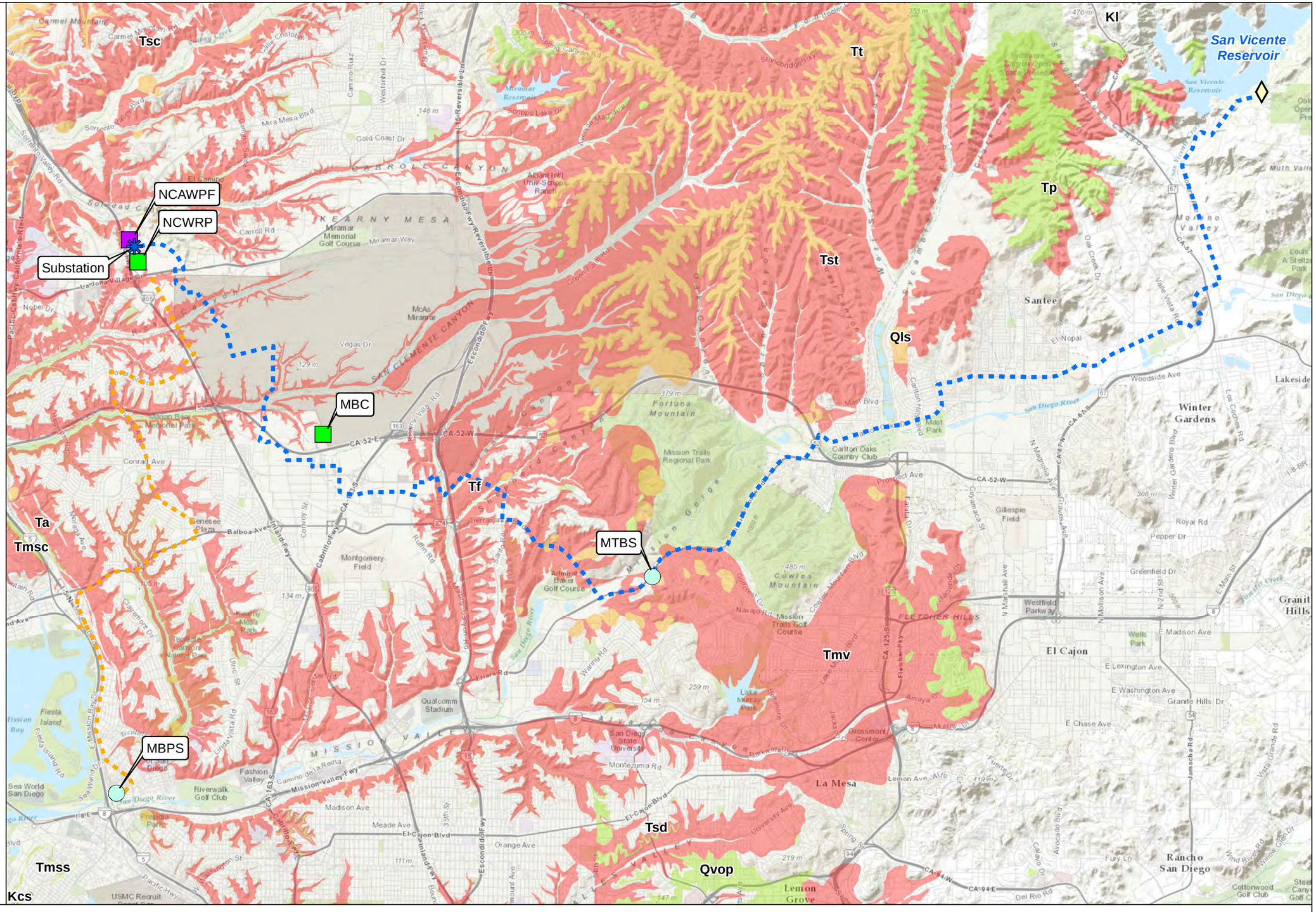
- High
- Low
- Moderate

Potential Facilities

- Advanced Water Purification Facility (AWPF)
- Improvements/Upgrades to Existing Facilities
- Pump Station
- Reservoir Outfall / Discharge Structure
- SDGE Substation

Potential Pipelines

- Purified Water Pipeline
- Wastewater Forcemain and Brine Pipeline



SOURCE: ESRI, 2015; SANGIS, 2015; California Department of Conservation.

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FIGURE 5.8-2

Paleontological Resources: North City Component

Pure Water Program EIR

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Paleontological Sensitivity

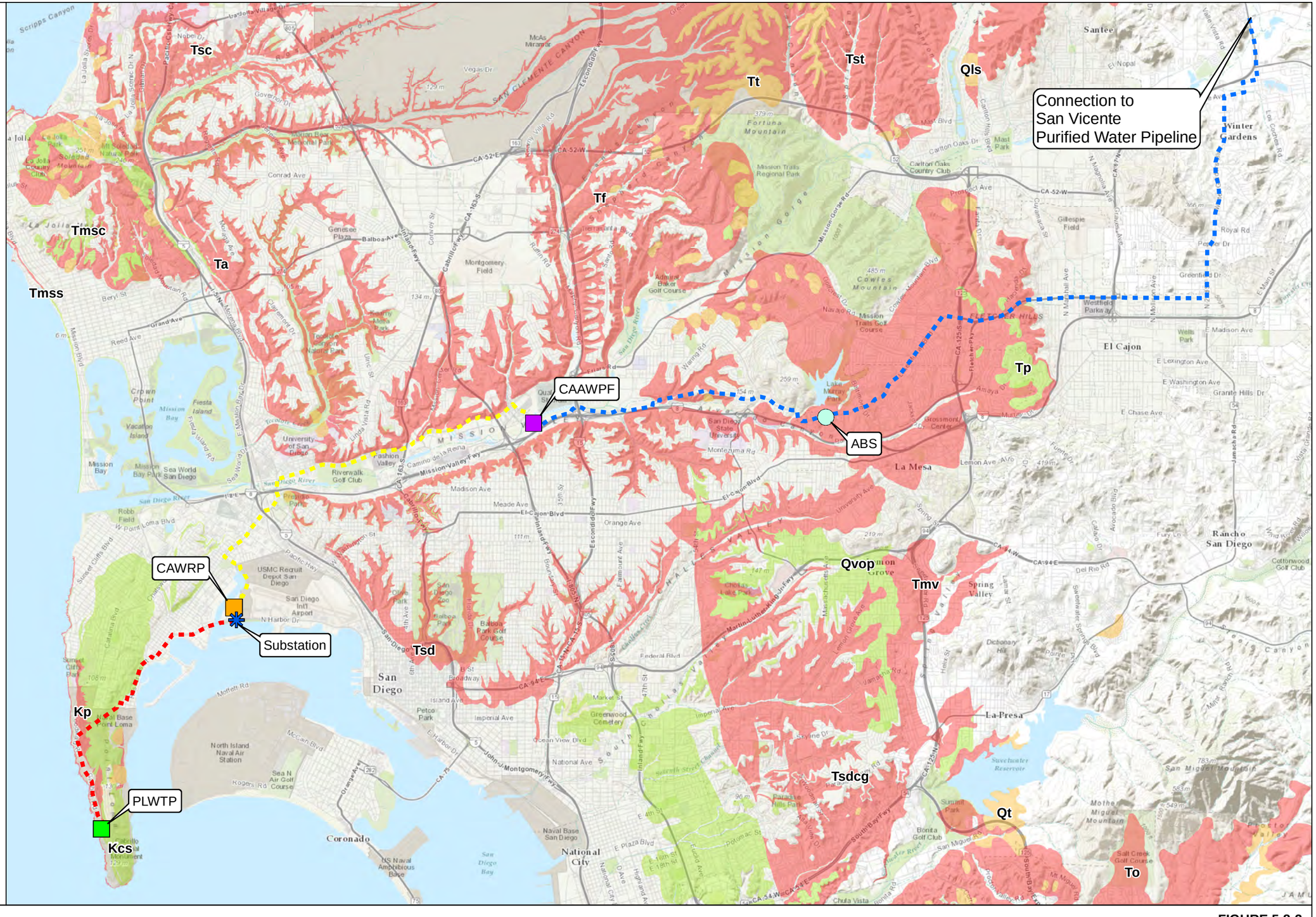
- High
- Low
- Moderate

Potential Facilities

- Advanced Water Purification Facility (AWPF)
- Improvements/Upgrades to Existing Facilities
- Water Reclamation Plant (WRP)
- Pump Station
- SDGE Substation

Potential Pipelines

- Purified Water Pipeline
- Sludge Pipeline
- Tertiary Water Pipeline and Brine Pipeline



0 4,100 8,200 Feet

SOURCE: ESRI, 2015; SANGIS, 2015; California Department of Conservation.

FIGURE 5.8-3

Paleontological Resources: Central Area Component

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Paleontological Sensitivity

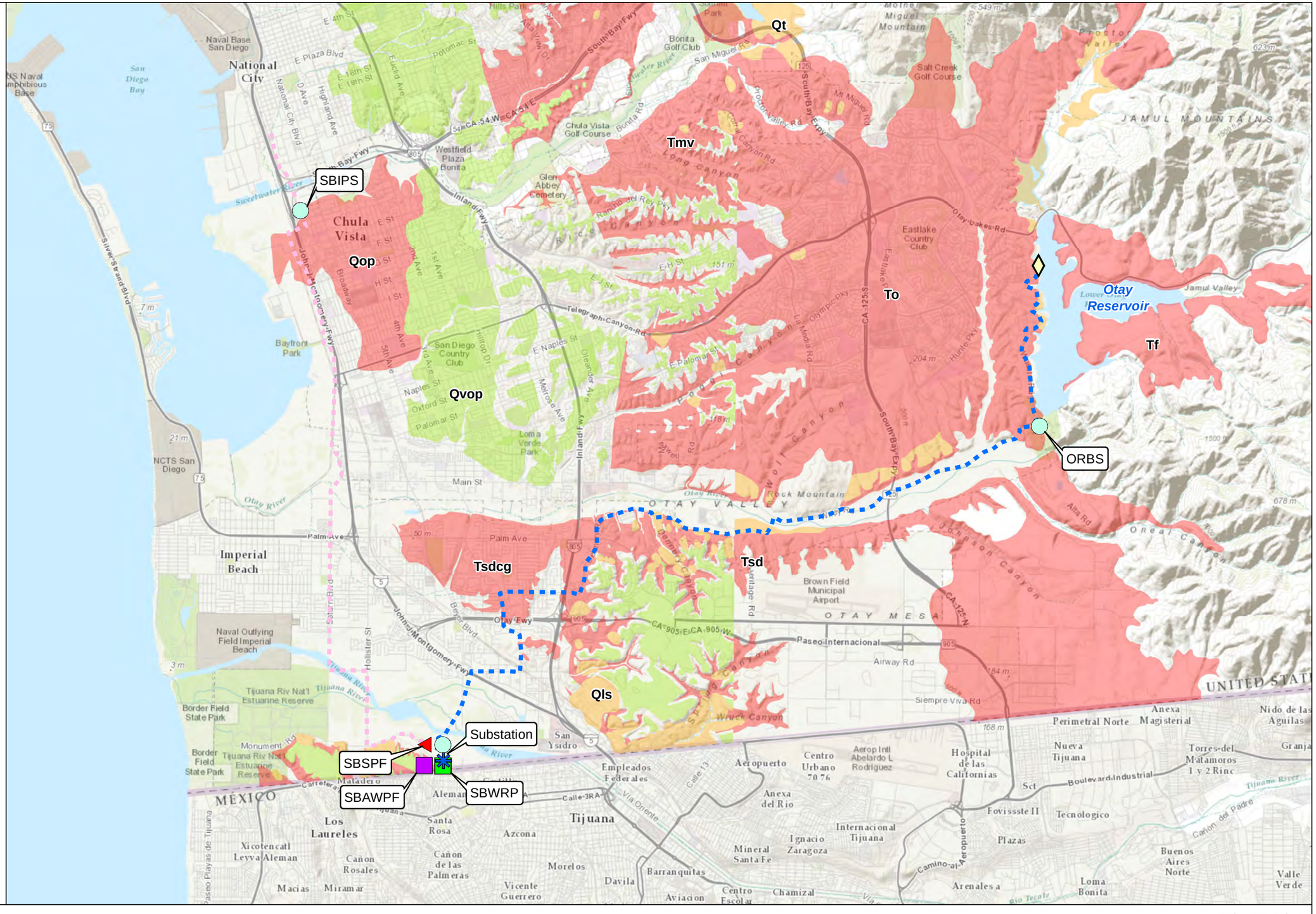
- High
- Low
- Moderate

Potential Facilities

- Advanced Water Purification Facility (AWPF)
- Improvements/Upgrades to Existing Facilities
- Pump Station
- Reservoir Outfall / Discharge Structure
- SDGE Substation
- Solids Processing Facility

Potential Pipelines

- Purified Water Pipeline
- Wastewater Forcemain



SOURCE: ESRI, 2015; SANGIS, 2015; California Department of Conservation.

FIGURE 5.8-4

Paleontological Resources: South Bay Component

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5.9 PUBLIC UTILITIES

5.9.1 INTRODUCTION

Public utilities are public or private facilities that provide the public with necessary services, such as water, wastewater, electricity, communication systems, solid waste disposal, and storm drains. The Pure Water Program (Program) involves the construction of new water and sewer facilities and upgrades to existing facilities. This section addresses impacts related to communication systems, solid waste disposal, and stormwater drainage. Impacts related to stormwater drainage are also discussed in Section 5.7, Hydrology and Water Quality. Impacts related to energy (natural gas and electrical power) are discussed in Section 5.11, Energy. Impacts related to water supply are discussed in Section 5.16, Water Supply.

5.9.2 REGULATORY SETTING

Federal

Standards for the Use and Disposal of Sewage Sludge, 1993

The Standards for the Use and Disposal of Sewage Sludge establishes standards for the final use or disposal of sewage sludge when the sewage sludge is applied to agricultural and nonagricultural land, placed in or on surface disposal sites, or incinerated (40 CFR 257, 403, and 503). The rule does not apply to the processing of sewage sludge before its ultimate use or disposal, does not specify process operating methods or requirements for sludge entering or leaving a particular treatment process, and does not establish standards for sewage sludge that is disposed with municipal solid waste. Under the Standards for the Use and Disposal of Sewage Sludge, the U.S. Environmental Protection Agency has established ceiling concentrations for metals and pathogen and vector attraction reduction standards (Table 5.9-1); management criteria for the protection of water quality and public health; and annual and cumulative discharge limitations of persistent pollutants to land for the protection of livestock, crop, and human health and water quality protection (40 CFR 503).

Table 5.9-1
Pollutant Limits for Land-Applied Biosolids

Constituent	Ceiling Concentration[a] (mg/kg dry weight)	Pollution Concentration[b] (mg/kg dry weight)
Arsenic	75	41
Cadmium	85	39
Copper	4,300	1,500
Lead	840	300
Mercury	57	17

Table 5.9-1
Pollutant Limits for Land-Applied Biosolids

Constituent	Ceiling Concentration[a] (mg/kg dry weight)	Pollution Concentration[b] (mg/kg dry weight)
Molybdenum	75	—[c]
Nickel	420	420
Selenium	100	100
Zinc	7,500	2,800

Source: 40 CFR 503.
Notes:
mg/kg = milligram/kilogram
[a] Land-applied biosolids cannot exceed the listed concentrations.
[b] Biosolids below the listed concentrations do not need a permit if other regulatory requirements are met.
[c] The February 25, 1994, Part 503 Rule Amendment deleted the molybdenum limits but retained the molybdenum ceiling concentration limits.

State

California Integrated Waste Management Act (Assembly Bill 939)

The California Integrated Waste Management Act was enacted by the California Legislature in 1989 with the goal of reducing dependence on landfills for the disposal of solid waste and to ensure an effective and coordinated system for the safe management of all solid waste generated within the state. Assembly Bill (AB) 939 mandated a reduction in the amount of solid waste disposed of by jurisdictions and required diversion goals of 25% by 1995 and 50% by the year 2000. The Integrated Waste Management Act established a hierarchy of preferred waste management practices, which include (1) source reduction, (2) recycling and composting, and (3) environmentally safe disposal by transformation or landfilling. It addresses all aspects related to solid waste regulation, including the details regarding the lead enforcement agency's requirements and responsibilities; the permit process, including inspections and denials of permits; enforcement; and site clean-up and maintenance. It requires that each county prepare a countywide integrated waste management plan that is reviewed at least once every 5 years to assure that waste management practices remain consistent with the practices defined in the California Public Resources Code. In 2013, AB 341 increased the waste diversion target to 75%.

Waste Management (AB 1594)

Alternative daily cover means cover material other than earthen material placed on the surface of the active face of a municipal solid waste landfill at the end of each operating day to control vectors, fires, odors, blowing litter, and scavenging. CalRecycle has approved 11 alternative daily cover material types that can currently be reported as diversion: ash and cement kiln dust, treated auto shredder waste, construction and demolition waste, compost, green material,

contaminated sediment, sludge, and shredded tires. Generally, these materials must be processed so that they do not allow gaps in the exposed landfill face (CalRecycle 2015a).

Pursuant to PRC Section 41781.3 and AB 1594, beginning January 1, 2020, the use of green material as alternative daily cover will not constitute diversion through recycling and will be considered disposal. Commencing August 1, 2018, local jurisdictions would be required to include information in an annual report on how the local jurisdiction intends to address the diversion requirements and divert green material that is being used as alternative daily cover. A jurisdiction that does not meet certain diversion requirements as a result of not being able to claim diversion for the use of green material as alternative daily cover would be required to identify and address, in an annual report, barriers to recycling green material and, if sufficient capacity at facilities that recycle green material is not expected to be operational before a certain date, to include a plan to address those barriers.

Mandatory Commercial Organics Recycling (AB 1826)

In October 2014, AB 1826 was signed into law requiring businesses to recycle their organic waste (i.e. food waste, green waste, landscape and pruning waste, food-soiled paper) on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that consist of five or more units (CalRecycle 2015b).

Mandatory recycling of organic waste is the next step toward achieving California's aggressive recycling and greenhouse gas emission goals. California disposes approximately 30 million tons of waste in landfills each year, of which more than 30% could be used for compost or mulch. Organic waste such as green materials and food materials are recyclable through composting and mulching, and through anaerobic digestion, which can produce renewable energy and fuel. Greenhouse gas emissions resulting from the decomposition of organic wastes in landfills have been identified as a significant source of emissions contributing to global climate change. Reducing the amount of organic materials sent to landfills and increasing the production of compost and mulch are part of the AB 32 (California Global Warming Solutions Act of 2006) Scoping Plan (CalRecycle 2015b).

Local

State of California regulations for solid waste (California Public Resources Code Section 41700 et seq.) require that each region have a plan with adequate capacity to manage or dispose of solid waste for at least 15 years into the future. The City of San Diego's Zero Waste Plan (2015a) outlines potential diversion strategies to help the City achieve a minimum of 75% diversion.

5.9.3 EXISTING CONDITIONS

Communication Systems

AT&T is the nation's largest telecommunications company providing local residents with integrated communications and entertainment services including Internet Protocol (IP)-based network capabilities which integrate voice, data, and video. The dominant providers of communications networks and cable television programs throughout the County are Cox Communications and Time Warner Cable, providing cable, high-speed internet, and digital telephone services (City of San Diego 2008).

Solid Waste

The City of San Diego implements integrated solid waste management strategies that emphasize waste reduction and recycling, composting, and environmentally sound landfill management to meet the City's long-term disposal needs. The primary focus of the City's solid waste management planning is preventing materials from entering the waste stream through citywide source reduction, recycling, and composting programs (City of San Diego 2008). This emphasis is consistent with federal law under the Resource Conservation and Recovery Act, subtitle D, and the California's Integrated Waste Management Act. These waste reduction programs are detailed in the City's Source Reduction and Recycling Element planning document, which is updated annually.

The City of San Diego operates the Miramar Landfill, located on Marine Corp Air Station Miramar. More than 900,000 tons of waste is disposed at the Miramar Landfill every year (City of San Diego 2015b). Operation of the facility requires a Solid Waste Facility Permit, issued by the City's Local Enforcement Agency, which reports to the California Integrated Waste Management Board. The Miramar Landfill has a current permitted site capacity of 87,760,000 cubic yards.. The landfill is permitted for a daily throughput of 8,000 tons (CalRecycle 2014). Our estimated life for the Miramar landfill is 2030 (pers comm Lisa Wood 2016). Currently, only two other landfills provide disposal capacity within the urbanized region: Sycamore and Otay Landfills. The Sycamore Landfill is located to the east of Miramar, within the City's jurisdictional boundaries; an expansion was approved in 2012. The Otay Landfill is located within an unincorporated island within the City of Chula Vista.

Storm Drainage

The City's stormwater pollution prevention efforts and conveyance system is designed to protect the quality of recreational waters and potable water resources as mandated by the Federal Clean Water Act of 1972 and the San Diego Regional Water Quality Control Board. The City also maintains compliance with the Water Quality Control Plan for the San Diego Region, also

referred to as the Basin Plan, and with stormwater permits. These functions require a multifaceted approach that couples infrastructure improvements and maintenance, water quality monitoring, source identification of pollutants, land use planning policies and regulations, and pollution prevention activities such as education, code enforcement, outreach, public advocacy, and training. The City's stormwater infrastructure includes more than 39,000 storm drain structures and over 900 miles of storm drain pipes and channels serving approximately 237 square miles of urbanized development (City of San Diego 2008).

5.9.4 IMPACTS

Issue 1: Would the Pure Water Program result in new systems or require substantial alterations to existing utilities including solid waste management, the construction of which would create a physical effect on the environment? These systems include communications systems, storm water drainage and solid waste disposal.

Significance Guidelines

Based on the City's *California Environmental Quality Act Significance Determination Thresholds* (City of San Diego 2011), solid waste impacts may result if the project would:

- Generate approximately 1,500 tons of waste or more or include the construction, demolition, or renovation of 1,000,000 square feet or more of building space. This would be considered to have direct impacts on solid waste facilities.
    - Direct impacts result from the generation of large amounts of waste which stresses existing facilities.
- Generate approximately 60 tons of waste or more or include the construction, demolition, and/or renovation of 40,000 square feet or more of building space . This would be considered to have cumulative impacts on solid waste facilities.

Communication Systems

The Program would not result in long-term impacts to telephone or cable facilities as a result of Program implementation. However, short-term impacts to telephone and cable facilities may occur if underground utility lines within a roadway right-of-way are interrupted or relocated during construction. Proper planning during construction including coordination with applicable service providers would reduce the likelihood of impacts to these facilities.

It should also be noted that the installation of the Program pipelines within an existing street right-of-way would consume underground space for utilities along the streets the pipeline

would occupy. However, it is anticipated that the Program's pipelines would be installed either below existing cable and telephone conduit or deep enough to allow for the installation of utilities (telephone, cable television, electricity, small diameter pipes) crossing above.

Solid Waste

Construction

Construction of the various Program components, including advanced water purification facilities (AWPFs), pump stations, pipelines, and upgrades at existing facilities would generate a limited amount of solid waste, such as material packaging. In addition, construction of the facilities may involve the export of soil. However, soils would be removed from the site and clean fill exported to local sites for reuse. The Central Area WRP is proposed to be located on a site that is currently developed. Existing structures would be demolished and debris would require management to ensure a minimum 90% waste diversion for demolition debris and 75% waste diversion for construction debris.

Operation

The primary sources of solid waste from Program facilities would consist of sludge generated as a result of the advanced water purification process and disposal of other wastes such as filter cartridges and reverse osmosis (RO) membrane elements. Sludge waste is composed of primary sludge, secondary sludge, and scum. Its concentration would average approximately 4,000 milligrams per liter of total solids. It is estimated that the North City AWPF would produce approximately 1.4 million gallons per day of sludge which would be pumped to MBC which provides thickening and digestion of raw solids (raw sludge); the Central Area AWPF would also produce sludge as part of the advanced water purification process that would be pumped to the PLWTP for thickening and digestion before conveyance to MBC for dewatering. Improvements would be required at the PLWTP and MBC, including additional digesters, thickener, and secondary treatment facilities, to accommodate the inflow of sludge. Sludge generated by the expanded South Bay WRP and South Bay AWPF would be processed at a new South Bay Sludge Processing Facility. The improvements at PLWTP and MBC and the new South Bay Sludge Processing Facility are considered as components of the Program, and impacts are assessed throughout this PEIR.

Filter cartridges, RO membrane elements, ultraviolet (UV) reactor lamps and ballasts, and other equipment comprising portions of the treatment processes at the AWPFs, and other new/expanded facilities would be replaced when they reach the end of their expected lifespan and would require management to ensure a minimum 75% waste diversion through source reduction, recycling, composting, or transformation.

Stormwater Drainage

Construction of the AWPFs and Central Area WRP, and upgrades to other facilities such as the PLWTP and MBC, would place buildings and facilities on undeveloped sites resulting in an increase in impervious surfaces. As such, new and/or improved storm drainage facilities would be required to direct flows and prevent off-site runoff. Site-specific design for the various Program components is unknown at this time; however, storm drainage facilities would be included and assessed during future project-level review.

The construction of pipeline alignments would be short term and would not result in any increase in impervious surface or other long-term physical alteration requiring the construction of new storm drain facilities.

5.9.5 SIGNIFICANCE OF IMPACTS

Communication Systems

Impacts to communication system facilities would be short term, and proper planning including coordination with applicable service providers would avoid interference with facilities; therefore, impacts would be **less than significant**.

Solid Waste

Construction

Per the City's Significance Determination Thresholds projects that generate more than 1,500 tons of waste may result in a direct impact The construction of Program components would generate demolition and construction debris which could exceed the threshold, and therefore, impacts would be **potentially significant**.

Operation

Sludge facilities would be improved, or new facilities constructed, as part of the Program and would provide sufficient capacity to process sludge generated by the WRPs and AWPFs. The impacts associated with improvements at PLWTP and MBC and the construction of the South Bay Sludge Processing Facility are addressed throughout this PEIR. Nonetheless, additional sludge would be produced by the Program, resulting in a **potentially significant** impact.

Per the City's Significance Determination Thresholds projects that generate more than 1,500 tons of waste may result in a direct impact. The ongoing generation of solid waste such

as filter cartridges, RO membrane elements, UV reactor lamps, and ballasts associated with operation of the proposed facilities would result in a **potentially significant** impact.

Stormwater Drainage

Physical impacts resulting from construction of new storm drain facilities would be similar to physical impacts resulting from construction of other facilities associated with the Program, the potential impacts of which are discussed throughout this PEIR.

5.9.6 MITIGATION, MONITORING, AND REPORTING

MM-PU-1 During construction, the construction contractor shall comply with the Standard Specifications for Public Work Construction (aka "The WHITEBOOK"), Section 702, which sets forth the requirements for construction and demolition waste management, and 90% waste reduction during demolition and 75% waste reduction during construction . Requirements include preparation of the Waste Management Form, discussions of waste management and recycling at worker orientations and all construction meetings, and implementation of a waste diversion strategy such as source separation.

MM-PU-2 During operation, the City shall manage solid waste to ensure a minimum 75% waste diversion through source reduction, recycling, composting, or transformation.

Level of Significance after Mitigation

With incorporation of Mitigation Framework measure MM-PU-1, which requires adherence to the requirements of Section 702 of the City's WHITEBOOK (City of San Diego Department of Public Works 2012) during construction, and MM-PU-2, which requires diversion of a minimum of 75% of solid waste generated by the Program during operation, impacts would be reduced to **below a level of significance.**

5.10 VISUAL EFFECTS AND NEIGHBORHOOD CHARACTER

5.10.1 INTRODUCTION

This section discusses the existing visual conditions, identifies any potential impacts to visual resources resulting from the implementation of the Pure Water Program (Program), and includes Mitigation Framework measures as necessary. As all of the pipelines would be located underground where feasible, for the purposes of this program-level analysis, discussion of existing conditions and potential impacts focuses on proposed treatment facilities and pump stations, which would be located above ground.

5.10.2 EXISTING CONDITIONS

The following discussion describes the general existing conditions from a visual resources perspective. Refer to Section 5.1, Land Use, for detailed on- and off-site land uses along the entire conceptual alignments of Program components.

North City Component

North City Advanced Water Purification Facility

The North City Advanced Water Purification Facility (NCAWPF) site is an undeveloped and disturbed triangular-shaped parcel located north of the existing North City Water Reclamation Plant (NCWRP). The Advanced Water Purification Facility (AWPF) site is located within the boundaries of University Community Plan Area. The southern portion of the site is designated for (1) Institutional and (2) Public and Semi-Public Facilities use, and the northern portion of the site is designated for Industrial Employment use by the City of San Diego (City) General Plan.

The NCAWPF site is located within the Miramar Subarea of the University Community Plan. This area is dominated by mixes of industrial uses, distribution centers, and strip commercial. The University Community Plan describes the visual character of the area surrounding the NCAWPF site as “a chaotic conglomeration of structures and signs” (City of San Diego 2014). The visual impact of industrial development is a key issue in this area.

The area surrounding Eastgate Mall east of Interstate 805 (I-805) is heavily disjointed visual environment. Heading east of Eastgate Mall from I-805, the NCAWPF site lies to the north and appears as highly disturbed land with dirt roads and likely was subject to previous clearing and grading. The area south of Eastgate Mall (the land occupied by the Water Reclamation Plant (WRP)) as viewed from the roadway, however, is substantially more aesthetically pleasing due to the large amount of tall, mature landscaping and other green land cover. Due to the

combination of extensive landscape screening and substantial setbacks from the roadway, the NCWRP is minimally visible from Eastgate Mall.

Continuing east along Eastgate Mall, the current warehouse and industrial land uses create a distinctive boxy architectural style along the roadway with similar bulk, scale, and massing of buildings. The buildings have similar light earth-toned exterior finishes. For the majority of this segment of Eastgate Mall, the shoulder is unimproved; pedestrian sidewalks appear along the southern frontages of the existing warehouses. To the south of the existing warehouses and east of the NCWRP is a large area of open space between Eastgate Mall and Miramar Road. This area of open space is characterized by rolling hills with typical chaparral vegetation. Standard size utility poles, along with very large transmission lines, travel in a north to south direction, perpendicular to Eastgate Mall. These utility lines contribute to the disjointed existing visual environment surrounding the NCAWPF site.

When looking north towards the NCAWPF site from Eastgate Mall, distant views are afforded due to the relatively flat topography. However, distant views do not provide for views of substantial visual resources (such as mountain ranges or the ocean); instead distant views are of scattered office buildings and other industrial land uses that fade into the distance.

The vast majority of potential viewers of the NCAWPF site would be motorists traveling along Eastgate Mall, with the remainder of viewers being workers in the surrounding industrial and office centers. When a viewer is located on Eastgate Mall, west of I-805, views of the NCAWPF site are direct and unobstructed. Views of the NCAWPF site from the warehouses to the east are likely direct and unobstructed, depending on the location of the viewer. As the NCAWPF site is located at a higher elevation than I-805 to the west, only views of the very western edge of the site are afforded to motorists travelling on the freeway.

Pump Stations

Pump stations would be located at both the NCWRP and NCAWPF. Additional pump stations are located along the North City component pipeline alignments. The Morena Boulevard Pump Station would be located in area east of Sherman Street, west of Morena Boulevard, and north of the railroad tracks and Friars Road. This area is characterized by light industrial and large commercial/warehouse land uses. Visually, the area is highly urbanized with no consistent urban design. Several large public storage warehouses and distribution centers typically dominate in terms of building size and massing as they appear as large one- or two-story blocks of buildings. In between these larger spans of building facades, smaller buildings at varying setbacks and architectural styles provide for some visual relief. The area generally lacks vegetation except for areas along of the perimeter (near Friars Road and the railroad tracks) and small pockets of shrubs along the frontages of the public storage buildings.

The Mission Trails Booster Station would be located along Mission Gorge Road, just north of a small commercial center. The area is characterized by a mix of single-family and multi-family residential land uses. The roadway and surrounding land uses are lined with mature landscaping that provide for visual relief and screening.

Central Area Component

Central Area Water Reclamation Plant

The Central Area WRP (CAWRP) site is located north of North Harbor Drive, west of San Diego International Airport, and east of a northern inlet of San Diego Bay. More specifically, the site is located north of the Spruance Road/Kincaid Road intersection on developed lands associated with the U.S. Marine Corps (USMC) Recruit Depot San Diego. The CAWRP site is located within the City of San Diego Peninsula Community Plan Area. The site and surrounding lands associated with USMC Recruit Depot San Diego are designated by the City for (1) Institutional and (2) Public and Semi-Public Facilities. Views of San Diego Bay are identified as important within the Peninsula Community Plan (City of San Diego 2011a).

The area surrounding the CAWRP is defined by a variety of dominant land uses that characterize the visual environment. First, the surrounding military facilities all tend to appear of similar style, bulk, scale, and massing. Large amounts of open hardscape associated parking and airport facilities. Generally, the area north of Harbor Drive and west of the San Diego Bay inlet is characterized by large buildings associated with the airport. Harbor Drive itself is lined with substantial amounts of mature landscaped vegetation, and views of the Bay and marina are afforded to the south. Views towards the CAWRP from Harbor Drive would likely be interrupted by existing mature vegetation and existing structures. On the approximate 15-acre site to the south, a 650-room business hotel development is currently under construction.

The other dominant land use, Liberty Station, lies across the San Diego Bay inlet from the CAWRP. Liberty Station is a visually cohesive and aesthetically pleasing development consisting of repurposed military buildings and large areas of green space that encompass NTC Park that fronts the Bay inlet. As these buildings were developed for military use, the repurposing for Liberty Station has retained the cohesive bulk, scale, size, and exterior finishes between different buildings on site. Several hotels also front the Bay inlet, just south of NTC Park. All three hotels are multi-story and of similar architectural style. Direct and unobstructed views of the CAWRP site would likely be afforded from many locations within NTC Park, Liberty Station, and the hotels to the west.

Central Area Advanced Water Purification Facility

The Central Area AWPF (CAAWPF) site is located on undeveloped, triangular-shaped land bounded by Camino del Rio North to the south and west and by the San Diego River to the north. The site is relatively flat and is located atop elevated lands situated approximately 20 feet higher in elevation than the river and adjacent floodplain. The CAAWPF site is located within the boundaries of the City of San Diego Mission Valley Community Plan Area. The site is designated for (1) Institutional and (2) Public and Semi-Public Facilities use.

Mission Valley has a diverse mix of land uses which include Qualcomm Stadium, high-rise offices, multi-family residential development, hotel uses, and large commercial centers. These existing land uses may starkly differ from each other in style and scale. For example, to the west of the CAAWPF site are several high-rise office towers with glass reflective exterior finishes one may typically associate with a downtown style building. To the north across the San Diego River, however, lie existing big box commercial centers (such as IKEA) along Fenton Parkway that have brighter exterior finishes, several multi-family apartment complexes of similar size and earth-toned finishes, an athletic field, and the large expanse of Qualcomm Stadium. When combined with the natural vegetative features of the San Diego River and surrounding hillsides to the north and south, Mission Valley garners a somewhat disjointed visual environment.

Given the low-lying elevation of Mission Valley and the CAAWPF location near the San Diego River, the site would be visible from numerous locations including I-8, the land uses to the south across I-8, and, although at a much greater distance, the hillsides to the north and south of Mission Valley.

Pump Stations

Pump stations associated with the Central Area component include pump stations that would be co-sited with the CAWRP and the CAAWPF in addition to the Alvarado Water Treatment Plant Booster Station, located along Lake Murray Road, adjacent to the existing Alvarado Water Treatment Plant.

South Bay Component

South Bay Advanced Water Purification Facility

The South Bay AWPF (SBAWPF) site is located within the Tijuana River Valley, approximately 800 feet north of the U.S.–Mexico international border and south of Dairy Mart Road. The site is bounded by Monument Road to the west and south and is composed of undeveloped, disturbed, and fenced land situated immediately west and south of the existing South Bay WRP (SBWRP). Lands located to the south and west of Monument Road are densely stippled with shrubs and are

traversed by a series of dirt trails. The SBAWPF site and adjacent SBWRP are located on land designated for (1) Institutional and (2) Public and Semi-Public Facilities use by the City of San Diego General Plan (City of San Diego 2008).

The land immediately surrounding the SBAWPF to the west and south is characterized by heavily disturbed, small hillsides, with evidence of previous clearing and small amounts of grading for dirt roads. The trails and dirt roads exhibit a much lighter tan color than the surrounding darker brown and green brush.

The existing SBWRP is set back from Dairy Mart Road by an existing landscaping buffer with grasses and a perimeter of trees, which provides for visual screening and blending with the land to the north. The buildings closest to the Dairy Mart Road frontage are the operations and maintenance buildings of similar style, size, and exterior finish. The actual water treatment equipment, such as the percolation ponds and digester tanks, which can typically appear much large than operations buildings, are located further south, away from the direct views from the roadway.

While the primary land uses surrounding the SBAWPF site are similar industrial uses, the area is not highly urbanized. The area to the north of Dairy Mart Road is densely vegetated and generally undisturbed land associated with the Tijuana River County Open Space Preserve.

The only likely potential viewers of the SBAWPF site would be workers at the SBWRP and the occasional motorist using Dairy Mart Road for traveling to the agricultural uses in the vicinity of the site. Given the site location is surrounded by the existing SBWRP to the north and east and hillsides to the west, unobstructed and direct views of the SBAWPF site would have low potential to occur.

Pump Stations

Pump stations would be jointly sited with the SBWRP and SBAWPF. The South Bay Influent Pump Station would be located on a sparsely vegetated parcel of land surrounded by multi-family residential to the east and south, wetlands and industrial to the north, and railroad tracks and Interstate 5 (I-5) to the west. There is potential for direct views of this pump station from the surrounding multi-family residences and from motorists on I-5. The area surrounding this pump station is characterized by medium density multi-family residential of varying architectural styles, bulk, scale, and massing, as viewed from Woodlawn Avenue and Sea Gate Street in the City of Chula Vista. Given the location relative from these residential streets, views of the site would be interrupted by existing buildings and tall vegetation.

The Otay Reservoir Booster Station would be sited near the existing Otay WRP. Otay Reservoir and surrounding hillsides dominate the surrounding visual environment beyond the existing industrial land uses.

5.10.3 IMPACTS

Issue 1: Would the Pure Water Program result in a substantial change to natural topography or other ground surface relief features through landform alteration?

According to the City's *California Environmental Quality Act (CEQA) Significance Determination Thresholds* (City of San Diego 2011b), landform alteration impacts may be significant if a project would alter more than 2,000 cubic yards of earth per graded acre by either excavation or fill, and one or more of the following conditions also is met:

a. The project would disturb steep hillsides in excess of the encroachment allowances of the Environmentally Sensitive Lands regulations (LDC [Land Development Code] Chapter 14, Article 3, Division 1).

b. The project would create manufactured slopes higher than 10 feet or steeper than 2:1 (50%).

c. The project would result in a change in elevation of steep hillsides as defined by City Municipal Code Section 113.0103 from existing grade to proposed grade of more than 5 feet by either excavation or fill, unless the area over which excavation or fill would exceed 5 feet is only at isolated points on the site.

d. The project design includes mass terracing of natural slopes with cut or fill slopes in order to construct flat-pad structures.

Where these conditions apply, impacts may not be significant if:

a. The grading plans clearly demonstrate, with both spot elevations and contours, that the proposed landforms would very closely imitate the existing on-site landform and/or the undisturbed, pre-existing surrounding neighborhood landforms (this may be achieved through naturalized variable slopes).

b. The grading plans clearly demonstrate, with both spot elevations and contours, that the proposed slopes follow the natural existing landform and at no point vary substantially from the natural landform elevations.

c. The proposed excavation or fill is necessary to permit installation of alternative design features, such as step-down or detached buildings, non-typical roadway or parking lot designs, and alternative retaining wall designs that reduce the project's overall grading requirements.

Existing Facilities and Proposed Pipelines

Implementation of the Program would include expansion, alterations, and improvements to existing facilities, as described in Section 3.5.1, Project Components. In summary, the NCWRP would be expanded for increased capacity and related processing areas. For the Central Area, Point Loma Wastewater Treatment Plant, MBC, and the Harbor Drive SDG&E power supply would also be improved. The SBWRP would be expanded for increased capacity as well as additional required processing areas. Additionally, the SWRP would be expanded to include the new South Bay Solids Processing Facility on site. The South Bay component also includes SDG&E power supply improvements.

For all existing facilities that would be upgraded or expanded as a result of Program implementation, as described in Section 3.5.1, it is assumed that construction would not require substantial alteration from existing topography because it would be limited to an already disturbed and developed site associated with the existing facility. As such, expansion of facilities would not result in substantial adverse effects to existing landforms.

All pipelines associated with the Program would be located within existing roadway rights-of-way and underground where feasible. Construction of pipelines would require excavating small areas of land through either trenching, or through the use of trenchless drilling technologies. It is expected that upon completion of each segment of pipeline, the areas disturbed would be returned to existing conditions. For example, the trenched roadway would be repaved, or, where natural areas may be disturbed, recovered to mimic existing topography and replanted as necessary. Therefore, in combination with the limited area of disturbance, pipeline construction would not substantially alter existing landforms and topography.

Treatment Facilities and Pump Stations

The proposed locations for treatment facilities and pump stations described previously in Section 5.10.2, Existing Conditions, are relatively flat, previously disturbed (clearing and partial grading), or previously developed. None of these preliminary site locations are located on steep slopes or other major landforms (with the exception of the proposed Mission Trails Booster Station site). Given the typical development of existing water infrastructure and facilities, it is also not expected that development of these sites would require manufacturing of steep slopes or mass terracing of natural slopes. The currently proposed sites are conceptual and preliminary, and are still subject to engineering design and analysis in conjunction with more detailed facility planning and design. It is possible that the more detailed planning and design would require shifting of the site layout such that it extends into steeper terrain and alterations to existing landform alterations are needed. As such, it is not possible to conclude at this point that

development of the treatment facilities and pump stations would not result in substantial alterations to existing landforms and topography.

5.10.4 SIGNIFICANCE OF IMPACTS

The expansion of existing facilities and construction of pipelines is not expected to require or result in substantial changes to existing topography. Therefore, impacts associated with this portion of Program implementation would be **less than significant**.

While the preliminary sites chosen for the new treatment facilities and pump stations are relatively flat, disturbed, and/or developed, these sites are subject to change prior to final design. Additionally, grading plans for each site are not yet developed and would not be known until future project-level analysis. Therefore, impacts associated with the development of treatment facilities and pump stations would be **potentially significant**.

5.10.5 MITIGATION, MONITORING, AND REPORTING

MM-AES-1 The City shall minimize and limit the potential for substantial landform alteration by implementing the following during project-level design:

- In selection of sites for treatment facilities and pump stations, the City shall avoid steep slopes where feasible.
- In the event that a chosen site contains steep slopes as defined by the City of San Diego Municipal Code, the treatment facility or pump station shall be designed to avoid or disturb steep hillsides or design development within the allowable encroachment in accordance with the City of San Diego Land Development Code, Environmentally Sensitive Land Regulations.
- Final grading plans for each treatment facility and pump station shall minimize alterations to existing topography and mimic existing topography to the extent feasible.

Level of Significance After Mitigation

Implementation of Mitigation Framework measure MM-AES-1 would reduce potentially significant impacts to landform alteration to **below a level of significance**.

5.10.6 IMPACTS

Issue 2: Would implementation of the Pure Water Program result in the blockage of public views from designated open space areas, roads, or to any significant visual landmarks or scenic vistas?

According to the City's CEQA Significance Determination Thresholds (City of San Diego 2011b), impacts to vistas, scenic views, or public viewing areas may be significant if the project would:

a. Substantially block a view through a designated public view corridor as shown in an adopted community plan, the General Plan, or the Local Coastal Program. Minor view blockages would not be considered to meet this condition. In order to determine whether this condition has been met, consider the level of effort required by the viewer to retain the view.

b. Cause substantial view blockage from a public viewing area of a public resource (such as the ocean) that is considered significant by the applicable community plan. Unless the project is moderate to large in scale, condition "c" would typically have to be met for view blockage to be considered substantial.

c. Exceed the allowed height or bulk regulations, and this excess results in a substantial view blockage from a public viewing area.

The analysis within this subsection focuses on new aboveground structures resulting from implementation of the Program. It is assumed that the expansion and alteration of existing facilities would be limited to the current facility sites and land uses, as described in Section 3.5.1. Such alterations and expansions when compared to existing structures, as opposed to vacant land, would likely not be substantial. Additionally, construction of pipelines may result in temporary blockage of a scenic vista due to the staging and storage of construction equipment. However, as all pipelines would be located underground to the extent feasible, and all pipeline-related construction equipment and materials would be removed upon completion of each segment, no public views would be permanently blocked.

North City Component

North City Advanced Water Purification Facility

The University Community Plan identifies the importance of view corridors, views from the Torrey Pines area towards Sorrento Valley, and views of the small canyons. The west portion of the University Community Plan Area, specifically the Torrey Pines area, is afforded coastal views. It does not, however, identify any designated public viewpoints or corridors. The

NCAWPF site is not located within the Torrey Pines area and therefore would not block any view from Torrey Pines to Sorrento Valley. The Miramar area of the University Community Plan Area, within which the site is located, does not contain identified visual resources such as small canyons or view corridors. The University Community Plan also identifies a pedestrian network which may afford pedestrians scenic views of important visual resources. However, no trail networks are identified in proximity to the site. Given the site's elevated location, the location near existing warehouses and the existing NCWRP, and the lack of important visual resources visible from public areas surrounding the site (i.e., Eastgate Mall), it is highly unlikely that the NCAWPF would result in the blockage of substantial scenic vistas or views of important visual resources. However, given that the currently proposed sites are conceptual and preliminary, and are still subject to engineering design and analysis in conjunction with more detailed facility planning and design, it is possible that the more detailed planning and design would require shifting of the site layout such that that development of the NCAWPF would result in substantial blockage of public views and important visual resources.

North City Pump Stations

As initially proposed, North City pump stations would be located within areas of existing development and surrounded by existing structures. Given their locations, described previously, it is unlikely that the pump stations would result in view blockage from public areas. While the Mission Trails Booster Station would be located adjacent to existing residential uses, it should be noted that only impacts to public views would be considered significant. Similar to the NCAWPF, however, the currently proposed sites are conceptual and preliminary, and are still subject to engineering design and analysis in conjunction with more detailed facility planning and design. Therefore, it is possible that the more detailed planning and design would require shifting of the site layout such that development of any given pump station would result in substantial blockage of public views and important visual resources.

Central Area Component

Central Area Advanced Water Purification Facility

The Mission Valley Community Plan identifies nine important landmarks on Figure 29 of the plan. The nearest landmark is Qualcomm Stadium to the north. The plan also identifies the San Diego River Corridor, which is just north of the CAAWPF site, as an important visual resource that should remain visible from public roads. Given that the facility would be located between the San Diego River Corridor and public roadways such as I-8 and Camino del Rio South, there is potential for views of the San Diego River to be obstructed by the CAAWPF. The majority of these viewers would be motorists; those travelling at higher speeds along I-8 would likely be less affected than motorists (and pedestrians) traveling at slower speeds along nearby side streets.

The slower speeds would afford these viewers longer and better views of the San Diego River Corridor. At this program level of analysis, however, it is not possible to determine the extent of potential view blockage. Similar to the North City and South Bay treatment facilities, the currently proposed sites are conceptual and preliminary, and are still subject to engineering design and analysis in conjunction with more detailed facility planning and design. Therefore, it is possible that the more detailed planning and design would require shifting of the site layout such that development of the CAAWPF would result in substantial blockage of public views and important visual resources.

Central Area Water Reclamation Plant

The Peninsula Community Plan identifies coastal views as important and provides several locations on Figures 27 and 27a of the Community Plan. Specifically, views from the public areas of Liberty Station and NTC Park to the San Diego Bay inlet are identified on Figure 27a of the Community Plan. While not explicitly identified, the area fronting the bayside of the hotels south of Liberty Station appears to be a publically accessible pedestrian trail that is connected to NTC Park. As such, coastal views on the inlet from this location are also considered important. The site for the CAWRP is located across the Bay inlet from Liberty Station, NTC Park, and the recreational uses fronting the hotels. As such, development on the CAWRP site would not interrupt or obstruct any of these views of the Bay. Additionally, this site is currently developed with military uses. From the western side of the CAWRP site, there are no publically accessible coastal views as the area is developed for military uses and the San Diego International Airport. Therefore, it would be unlikely that development of the CAWRP at this site would result in the obstruction of views to the coast. However, similar to the North City and South Bay treatment facilities, the currently proposed sites are conceptual and preliminary, and are still subject to engineering design and analysis in conjunction with more detailed facility planning and design. Therefore, it is possible that the more detailed planning and design would require shifting of the site layout such that development of the CAWRP would result in substantial blockage of public views and important visual resources.

Central Area Pump Stations

Please refer to the previous North City pump stations discussions. While each pump station would be located in areas surrounded by existing development and is unlikely to result in substantial view blockage, given that the currently proposed sites are conceptual and preliminary, and are still subject to engineering design and analysis in conjunction with more detailed facility planning and design, it is possible that the more detailed planning and design would require shifting of the site layout such that development of any given pump station would result in substantial blockage of public views and important visual resources.

South Bay Component

South Bay Advanced Water Purification Facility

The Tijuana River Valley Community Plan does not identify any designated scenic viewpoints or corridors (City of San Diego 2007). The preserved open space areas are considered important for visual relief from development. As identified in the Tijuana River Valley Community Plan, the Tijuana River County Open Space Preserve to the north and the small disturbed hillsides to the west are open space areas. The SBAWPF would be located behind the existing SBWRP relative to Dairy Mart Road. Development of the SBAWPF is expected to result in similar aboveground structures as currently exist within the SBWRP. As the SBWRP is already visible from the public roadway, the addition of the SBAWPF would not be expected to result in substantial view blockage of the open space areas to the west. Additionally, given the existing disturbed nature of this open space area, views may not be considered as important as those of the densely vegetated Tijuana River County Open Space Preserve to the north of Dairy Mart Road. The SBAWPF would not obstruct views of the preserve from the public roadway. As such, it is unlikely that development of the SBAWPF would result in substantial blockage of scenic views or important visual resources. However, similar to the North City components, given that the currently proposed sites are conceptual and preliminary, and are still subject to engineering design and analysis in conjunction with more detailed facility planning and design, it is possible that the more detailed planning and design would require shifting of the site layout such that development of the SBAWPF would result in substantial blockage of public views and important visual resources.

South Bay Pump Stations

Please refer to the discussion of the North City pump stations. While each pump station would be located in areas surrounded by existing development and is unlikely to result in substantial view blockage, given that the currently proposed sites are conceptual and preliminary, and are still subject to engineering design and analysis in conjunction with more detailed facility planning and design, it is possible that the more detailed planning and design would require shifting of the site layout such that development of any given pump station would result in substantial blockage of public views and important visual resources.

5.10.7 SIGNIFICANCE OF IMPACTS

The expansion of existing facilities and construction of pipelines is not expected to require or result in substantial blockage of public views or views of important visual resources. Therefore, impacts associated with this portion of Program implementation would be **less than significant**.

While the majority of the chosen sites would likely not result in substantial view blockage, at this program level of analysis, it is not possible to fully analyze the potential for effects on scenic vistas. More importantly, the currently proposed sites are conceptual and preliminary, and are still subject to engineering design and analysis in conjunction with more detailed facility planning and design. It is possible that the more detailed planning and design would require shifting of the site layout such that development of any given treatment facility or pump station would result in substantial blockage of public views and important visual resources. Therefore, impacts would be **potentially significant**.

5.10.8 MITIGATION, MONITORING, AND REPORTING

MM-AES-2 During future project-level analysis, the City shall analyze and determine the potential for Program components to block public scenic views or views of important visual resources. The City shall make necessary alterations to site design to minimize such impacts as necessary, prior to final design, and to the satisfaction of the City's Planning Department.

Level of Significance After Mitigation

Implementation of Mitigation Framework measure MM-AES-2 would reduce potentially significant impacts to scenic vistas to **below a level of significance**.

5.10.9 IMPACTS

Issue 3: Would the Pure Water Program result in substantial alteration to the existing character of the area?

Issue 4: Would the Pure Water Program be compatible with surrounding development in terms of bulk; scale, materials, or style?

According to the City's CEQA Significance Determination Thresholds (City of San Diego 2011b), visual quality and neighborhood character impacts may be significant if the project would:

a. Exceed the allowed height or bulk regulations and existing patterns of development in the surrounding area by a significant margin.

b. Have an architectural style or use building materials in stark contrast to adjacent development where the adjacent development follows a single or common architectural theme (e.g., Gaslamp Quarter, Old Town).

c. Result in the physical loss, isolation or degradation of a community identification symbol or landmark (e.g., a stand of trees, coastal bluff, historic landmark) which is identified in the General Plan, applicable community plan or local coastal program.

d. Be located in a highly visible area and contrast with the surrounding development or overall character of the area.

e. Open up a new area for development or change the overall character of the area.

Additionally, according to the City's CEQA Significance Determination Thresholds (City of San Diego 2011b), light, glare, and shading impacts may be significant if the project would:

- Be moderate to large in scale, more than 50% of any single elevation of a building's exterior is built with a material with a light reflectivity greater than 30% (see LDC Section 142.07330(a)), and the project is adjacent to a major public roadway or public area.
- Shed substantial light onto adjacent light-sensitive property or land use, or would emit a substantial amount of ambient light into the nighttime sky. Uses considered sensitive to nighttime light include, but are not limited to, residential, some commercial and industrial uses, and natural areas.

The analysis within this subsection focuses on new aboveground structures resulting from implementation of the Program. It is assumed that the expansion and alteration of existing facilities, as described in Section 3.5.1, would result in similar aboveground wastewater structures as currently exist. Additionally, all visual effects from the construction of pipelines would be temporary as all pipelines would be located underground to the extent feasible. All construction-related equipment and material would be removed upon the completion of each segment. As such, this portion of the Program would not have a substantial effect on visual character or introduce a substantial source of light and glare.

North City Component

North City Advanced Water Purification Facility

As discussed in Section 5.10.2, the preliminary NCAWPF site is located in the Miramar area of the University Community Plan area of the City of San Diego. This site and area is generally designated and contains existing land uses for industrial uses and open space, including the existing NCWRP. It is expected that the NCAWPF would introduce structures associated with and similar to typical wastewater treatment facilities such as include an operations building(s), pump station(s), electrical building(s), various process areas, aboveground pipelines, and process tanks. The NCAWPF would also include a new cogeneration facility. These uses would be similar to those of the existing NCWRP south of the NCAWPF site across Eastgate Mall. The

NCAWPF would likely employ similar visual design measures as existing water treatment facilities, such as extensive landscape buffering for visual screening and relief, substantial setbacks from public roadways, and use of exterior finishes that do not substantially contrast with the surrounding area. It can be expected that design of the NCAWPF would be of similar bulk, mass, and scale as the nearby NCWRP. As such, it is likely that the NCAWPF would not substantially alter the visual character of the area. However, at this stage of program-level analysis, it is not possible to fully determine the extent of potential effects to visual character of the area until final site design and engineering for future project-level analysis. Additionally, the currently proposed sites are conceptual and preliminary, and are still subject to engineering design and analysis in conjunction with more detailed facility planning and design. It is possible that the more detailed planning and design would require shifting of the site layout, which may result in facilities being located in a different visual environment than described in this section. Therefore, the NCAWPF may potentially result in a substantial alteration to the existing visual character of the surrounding area.

The NCAWPF would also introduce new sources of lighting and glare to the area. Typically, wastewater treatment facilities would not utilize highly reflective exterior finishes, and all exterior lighting would be limited to nighttime security lighting that would be directed downward and away from neighboring properties. However, at this stage of program-level analysis, it is not possible to fully determine the extent of potential lighting and glare effects until final site design and engineering for future project-level analysis. Therefore, the NCAWPF may introduce a substantial new source of lighting and glare to the area such that it would conflict with the existing character.

North City Pump Stations

The North City pump stations are located in areas of various visual character and style, as described previously in Section 5.10.2. Each pump station would be developed with aboveground structures similar to those of other existing pump stations; the pumps and ancillary facilities (instrumentation, control, and power supply systems) would be placed within a masonry enclosure. This enclosure would likely employ exterior finishes such that it would not substantially contrast with the surrounding environment. Each pump station would also likely employ visual screening via perimeter walls and/or landscaping to provide an aesthetically pleasing visual buffer from the surrounding areas. The size and final design of these facilities, however, is not known at this time. Therefore, similar to the NCAWPF, at this stage of program-level analysis, it is not possible to fully determine the extent of potential effects to visual character of the area until final site design and engineering for future project-level analysis. Additionally, the currently proposed sites are conceptual and preliminary, and are still subject to engineering design and analysis in conjunction with more detailed facility planning and design. It

is possible that the more detailed planning and design would require shifting of the site layout, which may result in facilities being located in a different visual environment than described in this section. Therefore, the North City pump stations may potentially result in a substantial alteration to the existing visual character of the surrounding area.

The North City pump stations would potentially introduce new sources of lighting and glare to their respective areas. As these pump stations would not be staffed, exterior lighting would be limited to nighttime security lighting. The exterior of the pump station enclosure would likely be a nonreflective material, with potential for glare limited to windows, if any. However, similar to the NCAWPF, at this stage of program-level analysis, it is not possible to fully determine the extent of potential lighting and glare effects until final site design and engineering for future project-level analysis. Therefore, the North City pump stations may introduce a substantial new source of lighting and glare to their respective areas such that it would conflict with the existing character.

Central Area Component

Central Area Advanced Water Purification Facility

As previously described in Section 5.10.2, the Mission Valley Community Plan area has a highly disjointed visual environment resulting from starkly contrasting types of development and natural resource, such as the San Diego River floodplain. Unlike the North City and South Bay AWPFs, the CAAWPF is located in a highly visible area from the surrounding hillsides due to its low lying location near the San Diego River Floodplain. It is expected that the CAAWPF would introduce structures associated with and similar to typical wastewater treatment facilities such as include an operations building(s), pump station(s), electrical building(s), various process areas, above-ground pipelines, and process tanks. The CAAWPF would likely employ similar visual design measures as existing water treatment facilities such as: extensive landscape buffering for visual screening and relief, substantial setbacks from public roadways, and use of exterior finishes that do not substantially contrast with the surrounding area. However, given its highly visible location in proximity to the San Diego River, lack of similar land uses in the immediate vicinity, and change from vacant land to wastewater treatment land uses, the CAAWPF may result in the substantial alteration from existing visual character despite the lack of a cohesive visual environment in the surrounding area. Viewers from elevated locations, specifically those to the south (along the hillsides and roadways) would likely have direct views of the CAAWPF. Similar to the North City and South Bay components, at this stage of program-level analysis, it is not possible to fully determine the extent of potential effects to visual character of the area until final site design and engineering for future project-level analysis. Additionally, the currently proposed sites are conceptual and preliminary, and are still subject to engineering design and analysis in conjunction with more detailed facility planning and design. It is possible that the

more detailed planning and design would require shifting of the site layout, which may result in facilities being located in a different visual environment than described in this section. Therefore, the CAAWPF may potentially result in a substantial alteration to the existing visual character of the surrounding area.

The CAAWPF would introduce new sources of lighting and glare to the area similar to those of the previously described North City and SBAWPFs. The CAAWPF would employ similar security lighting and nonreflective exterior finishes of a typical treatment facility. However, at this stage of program-level analysis, it is not possible to fully determine the extent of potential lighting and glare effects until final site design and engineering for future project-level analysis. Therefore, the CAAWPF may introduce a substantial new source of lighting and glare to the area such that it would conflict with the existing character.

Central Area Water Reclamation Plant

As described previously in Section 5.10.2, the area surrounding the CAWRP location is defined by the public facility uses east of the San Diego Bay inlet (i.e., USMC Recruit Depot San Diego and the San Diego International Airport) and Liberty Station, NTC Park, and the hotel uses west of the San Diego Bay inlet. It is expected that the CAWRP would introduce structures associated with and similar to typical wastewater treatment facilities such as an operations building(s), pump station(s), electrical building(s), various process areas, aboveground pipelines, and process tanks. The CAWRP would likely employ similar visual design measures as those employed by existing water treatment facilities, such as extensive landscape buffering for visual screening and relief, substantial setbacks from public roadways, and use of exterior finishes that do not substantially contrast with the surrounding area. These visual relief measures would especially be important along the side of the CAWRP facing the San Diego Bay inlet as patrons to Liberty Station and NTC Park would have direct and unobstructed views of the site. It can be expected that design of the CAWRP would be of similar bulk, mass, and scale as the surrounding military structures. However, similar to the North City and South Bay components, at this stage of program-level analysis, it is not possible to fully determine the extent of potential effects to visual character of the area until final site design and engineering for future project-level analysis. Additionally, the currently proposed sites are conceptual and preliminary, and are still subject to engineering design and analysis in conjunction with more detailed facility planning and design. It is possible that the more detailed planning and design would require shifting of the site layout, which may result in facilities being located in a different visual environment than described in this section. Therefore, the CAWRP may potentially result in a substantial alteration to the existing visual character of the surrounding area.

The CAWRP would introduce new sources of lighting and glare to the area similar to those of the previously described NCAWPF and SBAWPF. The CAWRP would employ similar security lighting and nonreflective exterior finishes of a typical treatment facility. However, at this stage of program-level analysis, it is not possible to fully determine the extent of potential lighting and glare effects until final site design and engineering for future project-level analysis. Therefore, the CAWRP may introduce a substantial new source of lighting and glare to the area such that it would conflict with the existing character.

Central Area Pump Stations

Please refer to the previous discussion of the North City pump stations regarding the potential effects to visual character. Despite the likely use of visual screening and co-siting of one pump station with the existing Alvarado Water Treatment Plant, at this stage of program-level analysis, it is not possible to fully determine the extent of potential visual character, lighting and glare effects until final site design and engineering for future project-level analysis. Additionally, the sites chosen are preliminary and conceptual and are subject to change prior to project-level review, which may result in a different specific existing visual environment than described in this section. Therefore, the Central Area pump stations may introduce a substantial new source of lighting and glare to their respective areas such that it would conflict with the existing character.

South Bay Component

South Bay Advanced Water Purification Facility

The SBAWPF would be located immediately adjacent to the existing SBWRP. In addition, the SBAWPF would be separated from the Dairy Mart Road and the Tijuana River County Open Space Preserve by the SBWRP. It is expected that the SBAWPF would introduce structures associated with and similar to typical wastewater treatment facilities such as an operations building(s), pump station(s), electrical building(s), various process areas, aboveground pipelines, and process tanks. These uses would be similar to those of the existing SBWRP. The SBAWPF would likely employ similar visual design measures as existing water treatment facilities, such as extensive landscape buffering for visual screening and relief, substantial setbacks from public roadways, and use of exterior finishes that do not substantially contrast with the surrounding area. It can be expected that design of the SBAWPF would be of similar bulk, mass, and scale as the SBWRP. Overall, given its immediate location adjacent to the existing SBWRP, development of the SBAWPF would likely appear as an expansion of existing facilities rather than a completely new treatment facility on vacant land. As the SBAWPF would appear very similar to the existing SBWRP, it is unlikely that development of the SBAWPF would result in a substantial alteration to the existing visual character of the area. However, similar the North City components, at this stage of program-level analysis, it is

not possible to fully determine the extent of potential effects to visual character of the area until final site design and engineering for future project-level analysis. Additionally, the currently proposed sites are conceptual and preliminary, and are still subject to engineering design and analysis in conjunction with more detailed facility planning and design. It is possible that the more detailed planning and design would require shifting of the site layout, which may result in facilities being located in a different visual environment than described in this section. Therefore, the SBAWPF may potentially result in a substantial alteration to the existing visual character of the surrounding area.

The SBAWPF would introduce new sources of lighting and glare to the area similar to the previously described NCAWPF. The SBAWPF would employ similar security lighting and nonreflective exterior finishes of a typical treatment facility. However, at this stage of program-level analysis, it is not possible to fully determine the extent of potential lighting and glare effects until final site design and engineering for future project-level analysis. Therefore, the SBAWPF may introduce a substantial new source of lighting and glare to the area such that it would conflict with the existing character.

South Bay Pump Stations

Please refer to the previous discussion of the North City pump stations regarding the potential effects to visual character. Despite the likely use of visual screening and co-siting of one pump station with the existing Otay Water Treatment Plant, at this stage of program-level analysis, it is not possible to fully determine the extent of potential visual character, lighting, and glare effects until final site design and engineering for future project-level analysis. Additionally, the currently proposed sites are conceptual and preliminary, and are still subject to engineering design and analysis in conjunction with more detailed facility planning and design. It is possible that the more detailed planning and design would require shifting of the site layout, which may result in facilities being located in a different visual environment than described in this section. Therefore, the South Bay pump stations may introduce a substantial new source of lighting and glare to their respective areas such that it would conflict with the existing character.

5.10.10 SIGNIFICANCE OF IMPACTS

The expansion of existing facilities and pipelines would not have a substantial effect on visual character and impacts would be **less than significant**.

It is not possible to fully determine the extent of potential visual character, lighting and glare effects until final site design and engineering for future project-level analysis. Additionally, the sites chosen are preliminary and conceptual and are subject to change prior to project-level review, which may result in a different specific existing visual environment than

described in this section. Therefore, any given treatment facility and pump station may result in the substantial alteration of visual character and a **potentially significant** impact.

5.10.11 MITIGATION, MONITORING, AND REPORTING

MM-AES-3 Prior to final design, subsequent projects implemented in accordance with the Program shall incorporate the following visual design measures into the design of each treatment facility and pump station in order to minimize the contrast with the existing visual character of the chosen site:

- Setbacks from the property line to minimize apparent bulk, scale, and mass of structures
- Nonreflective exterior finishes that do not substantially contrast with the existing surrounding natural and built environment (in accordance with San Diego Municipal Code Chapter 14, Article 2, Division 7 Section 142.0730)
- Landscaping consistent with the existing surroundings to provide for visual screening and softening of views of structures (in accordance with San Diego Municipal Code Chapter 14, Article 2, Division 4)
- Use of lighting only as necessary for nighttime security purposes (in accordance with San Diego Municipal Code Chapter 14, Article 2, Division 7, Section 142.0740)
- Use of lighting that is shielded and directed downward and away from neighboring property lines (in accordance with San Diego Municipal Code Chapter 14, Article 2, Division 7, Section 142.0740)

Level of Significance after Mitigation

Implementation of Mitigation Framework measure MM-AES-3 would reduce potentially significant impacts to visual character to **below a level of significance**.

5.11 ENERGY

5.11.1 INTRODUCTION

The following discussion and analysis is based on Appendix F of the California Environmental Quality Act (CEQA) Guidelines, which requires that an environmental impact report include a discussion of the potential energy impacts, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. The section is also related to the Pure Water Program's (Program's) potential impacts on energy consumption, including electricity, natural gas, and gasoline consumption, from implementation of the Program.

5.11.2 REGULATORY SETTING

Federal, state, and local agencies regulate energy use and consumption through various means and programs. On the federal level, the U.S. Department of Transportation, the U.S. Department of Energy, and the U.S. Environmental Protection Agency (EPA) are three federal agencies with substantial influence over energy policies and programs. On the state level, the California Public Utilities Commission (CPUC) and the California Energy Commission (CEC) are two agencies with authority over different aspects of energy. Relevant federal, state, and local energy-related regulations are summarized below.

Federal

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 (NHTSA) is responsible for establishing additional vehicle standards. In 2012, new fuel economy standards were approved for model year 2017 passenger cars and light trucks at 54.5 miles per gallon (77 FR 62623–63200). Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

Intermodal Surface Transportation Efficiency Act of 1991

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) promoted the development of intermodal transportation systems to maximize mobility, as well as address national and local interests in air quality and energy. ISTEA contained factors that metropolitan planning organizations were to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, metropolitan planning organizations adopted explicit policies defining the social, economic, energy, and environmental values guiding transportation decisions.

The Transportation Equity Act for the 21st Century

The Transportation Equity Act for the 21st Century (TEA-21) was signed into law in 1998 and builds upon the initiatives established in the ISTEA legislation, discussed earlier. TEA-21 authorizes highway, highway safety, transit, and other efficient surface transportation programs. TEA-21 continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of good transportation decisions. TEA-21 also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of Intelligent Transportation Systems, to help improve operations and management of transportation systems and vehicle safety.

Energy Independence and Security Act of 2007

On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA) was signed into law. In addition to setting increased Corporate Average Fuel Economy standards for motor vehicles, the EISA includes other provisions related to energy efficiency:

- Renewable Fuel Standard (RFS) (Section 202)
- Appliance and Lighting Efficiency Standards (Sections 301–325)
- Building Energy Efficiency (Sections 411–441).

This federal legislation requires ever-increasing levels of renewable fuels—the RFS—to replace petroleum. The EPA is responsible for developing and implementing regulations to ensure that transportation fuel sold in the United States contains a minimum volume of renewable fuel. The RFS program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders.

The RFS program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. As required under the act, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the EISA, the RFS program was expanded in several key ways that lay the foundation for achieving significant reductions of greenhouse gas (GHG) emissions from the use of renewable fuels, for reducing imported petroleum, and encouraging the development and expansion of our nation's renewable fuels sector. The updated program is referred to as RFS2 and includes the following:

- EISA expanded the RFS program to include diesel, in addition to gasoline.
- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.

- EISA established new categories of renewable fuel and set separate volume requirements for each one.
- EISA required the EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

Additional provisions of the EISA address energy savings in government and public institutions, promoting research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."

State

California Code Title 24, Part 6, Energy Efficiency Standards

Title 24 of the California Code of Regulations was established in 1978, and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically establishes energy efficiency standards for residential and nonresidential buildings constructed in the State of California in order to reduce energy demand and consumption. Part 6 is updated periodically to incorporate and consider new energy efficiency technologies and methodologies. The most recent amendments, referred to as the 2013 standards, became effective on July 1, 2014. Buildings constructed in accordance with the 2013 standards are required to use 25% less energy for lighting, heating, cooling, ventilation, and water heating than the 2008 standards. Additionally, the standards would save 200 million gallons of water per year and avoid 170,500 tons of GHG emissions per year (CEC 2012).

Title 24 also includes Part 11, known as California's Green Building Standards (CALGreen). The CALGreen standards took effect in January 2011, and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential and state-owned buildings, as well as schools and hospitals. The mandatory standards require:

- 20% mandatory reduction in indoor water use.
- 50% of construction and demolition waste must be diverted from landfills.
- Mandatory inspections of energy systems to ensure optimal working efficiency.
- Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards.

The CALGreen standards also include voluntary efficiency measures that are provided at two separate tiers and implemented per the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15% improvement in energy requirements, more strict water

conservation, 65% diversion of construction and demolition waste, 10% recycled content in building materials, 20% permeable paving, 20% cement reduction, and cool/solar reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30% improvement in energy requirements; more strict water conservation, 75% diversion of construction and demolition waste, 15% recycled content in building materials, 30% permeable paving, 30% cement reduction, and cool/solar reflective roofs.

State of California Energy Action Plan

The CEC is responsible for preparing the State of California Energy Action Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The Energy Action 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 least environmental and energy costs. To further this policy, the Plan identifies a number of strategies, including assistance to public agencies and fleet operators and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

Senate Bill 1368

In September 2006, former Governor Schwarzenegger signed Senate Bill (SB) 1368 (Perata), which requires the CEC to develop and adopt regulations for GHG emissions performance standards for the long-term procurement of electricity by local publicly owned utilities. These standards must be consistent with the standards adopted by the CPUC. This effort was intended to help protect energy customers from financial risks associated with investments in carbon-intensive generation by allowing new capital investments in power plants whose GHG emissions are as low or lower than new combined-cycle natural gas plants, by requiring imported electricity to meet GHG performance standards in California, and by requiring that the standards be developed and adopted in a public process.

Senate Bill 1389

SB 1389 (Bowen and Sher) requires that every 2 years, the CEC adopt and transmit to the governor and legislature a report of findings called the Integrated Energy Policy Report. The Integrated Energy Policy Report Committee provides oversight and policy direction related to collecting and analyzing data needed to complete the Integrated Energy Policy Report on trends and issues concerning electricity and natural gas, transportation, energy efficiency, renewables, and public interest energy research.

Assembly Bill 1493

In a response to the transportation sector accounting for more than half of California's CO_2 emissions, Assembly Bill (AB) 1493 (Pavley) was enacted on July 22, 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles whose primary use is noncommercial personal transportation in the state. The bill required that the California Air Resources Board (CARB) set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards would result in a reduction of about 22% in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards would result in a reduction of about 30%.

Before these regulations could go into effect, the EPA had to grant California a waiver under the federal Clean Air Act (CAA), which ordinarily preempts state regulation of motor vehicle emission standards. The waiver was granted by Lisa Jackson, the EPA Administrator, on June 30, 2009. On March 29, 2010, the CARB Executive Officer approved revisions to the motor vehicle GHG standards to harmonize the state program with the national program for 2012–2016 model years (see the earlier discussion under Federal Energy Policy and Conservation Act). The revised regulations became effective on April 1, 2010.

In 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards called Advanced Clean Cars. By 2025, when the rules would be fully implemented, new automobiles would emit 34% fewer global warming gases and 75% fewer smog-forming emissions (CARB 2015).

Local

City of San Diego General Plan

The Conservation Element of the City of San Diego's General Plan (City of San Diego 2008) includes the following energy-related policies that are applicable to the Program.

Policy CE-A.5: Employ sustainable or "green" building techniques for the construction and operation of buildings.

a. Develop and implement sustainable building standards for new and significant remodels of residential and commercial buildings to maximize energy efficiency, and to achieve overall net zero energy consumption by 2020 for new residential buildings and 2030 for

new commercial buildings. This can be accomplished through factors including, but not limited to:

- Designing mechanical and electrical systems that achieve greater energy efficiency with currently available technology
- Minimizing energy use through innovative site design and building orientation that addresses factors such as sun-shade patterns, prevailing winds, landscape, and sun-screens
- Employing self-generation of energy using renewable technologies
- Combining energy efficient measures that have longer payback periods with measures that have shorter payback periods
- Reducing levels of non-essential lighting, heating and cooling
- Using energy efficient appliances and lighting.

b. Provide technical services for "green" buildings in partnership with other agencies and organizations.

Policy CE-I.3: Pursue state and federal funding opportunities for research and development of alternative and renewable energy sources.

Policy CE-I.4: Maintain and promote water conservation and waste diversion programs to conserve energy.

Policy CE-I.5: Support the installation of photovoltaic panels, and other forms of renewable energy production.

a. Seek funding to incorporate renewable energy alternatives in public buildings.
b. Promote the use and installation of renewable energy alternatives in new and existing development.

Policy CE-I.7: Pursue investments in energy efficiency and direct sustained efforts towards eliminating inefficient energy use.

Policy CE-I.10: Use renewable energy sources to generate energy to the extent feasible.

Policy CE-I.12: Use small, decentralized, aesthetically-designed, and appropriately-sited energy efficient power generation facilities to the extent feasible.

City of San Diego Energy Strategy for a Sustainable Future

The City of San Diego Environmental Services Department has taken a leadership role to advance policies and practices that support a more sustainable future. In June 2009, the Department published its Energy Strategy for a Sustainable Future, which outlines six objectives to achieve more sustainable generation and use of energy, as follows (City of San Diego 2009):

1. Energy Conservation – All City employees will be aware of and implement energy conservation measures by 2010.
2. Energy Efficiency – Reduce energy use 10% by 2012, using 2000 as a baseline.
3. Renewable Energy – Increase megawatts of renewable energy used at City facilities to 17 by 2012, and to 25 by 2020.
4. Management of SDG&E Energy Bills – Continue the use of the Electronic Data Interchange.
5. Policy Development and Implementation – Guide City efforts by institutionalizing policies and programs that increase energy conservation, efficiency, and the use of renewable energy.
6. Leverage Resources – Ensure that state and federal funds are leveraged to the extent possible with existing programs such as CEC loans and the CPUC Partnership funds.

5.11.3 EXISTING CONDITIONS

As of 2013, California's estimated annual energy use included:

- Approximately 280,561 gigawatt hours of electricity (CEC 2014);
- Approximately 12,767 million therms natural gas (approximately 3.5 billion cubic feet of natural gas per day); and
- Approximately 18 billion gallons of gasoline (CEC 2013).

As of 2012, energy use in California by demand sector was:

- Approximately 38.5% transportation;
- Approximately 22.8% industrial;
- Approximately 19.3% residential; and
- Approximately 19.4% commercial (US EIA 2014).

A summary of and context for energy consumption and energy demands within the State is presented in U.S. Energy Information Administration, California State Profile and Energy Estimates, Quick Facts excerpted below:

- Excluding federal offshore areas, California ranked third in the nation in crude oil production in 2013, despite an overall decline in production rates since the mid-1980s.
- California also ranked third in the nation in refining capacity as of January 2013, with a combined capacity of almost 2 million barrels per calendar day from its 18 operable refineries.
- In 2011, California's per-capita energy consumption ranked 47th in the nation; the state's low use of energy was due in part to its mild climate and its energy efficiency programs.
- In 2013, California ranked fourth in the nation in conventional hydroelectric generation, second in net electricity generation from other renewable energy resources, and first as a producer of electricity from geothermal energy.
- In 2013, California ranked 15th in net electricity generation from nuclear power after one of its two nuclear plants was taken out of service in January 2012; as of June 2013, operations permanently ceased at that plant, the San Onofre Nuclear Generating Station.
- Average site electricity consumption in California homes is among the lowest in the nation (6.9 megawatt hours per year), according to U.S. Energy Information Administration's Residential Energy Consumption Survey (US EIA 2014).

California is one of the nation's leading energy-producing states, and its per-capita energy use is among the nation's most efficient. Given the nature of the Program, the remainder of this discussion will focus on the electricity and natural gas needed to operate any future improvements and petroleum use for vehicle trips associated with operation and maintenance of the Program.

Electricity

California's electricity industry is an organization of traditional utilities, private generating companies, and state agencies, each with a variety of roles and responsibilities to ensure that electrical power is provided to consumers. The California Independent Service Operator (ISO) is a nonprofit, public benefit corporation. It is the impartial operator of the state's wholesale power grid and is charged with maintaining grid reliability and directing uninterrupted electrical energy supplies to California residential and commercial users. While utilities, such as San Diego Gas & Electric (SDG&E), still own transmission assets, ISO routes electrical power along these assets, maximizing the use of the transmission system and its power generation resources. ISO matches buyers and sellers of electricity to ensure that sufficient power is available to meet demand. To

these ends, every 5 minutes, ISO forecasts electrical demands, accounts for operating reserves, and assigns the lowest cost power plant unit to meet demands while ensuring adequate system transmission capacities and capabilities (California ISO 2015).

Part of ISO's charge is to plan and coordinate grid enhancements to ensure that electrical power is provided to California consumers. To this end, transmission owners (investor-owned utilities such as SDG&E) file annual transmission expansion/modification plans to accommodate the state's growing electrical needs. ISO reviews and either approves or denies the proposed additions. In addition, and perhaps most importantly, ISO works with other areas in the western United States electrical grid to ensure that adequate power supplies are available to the state. In this manner, continuing reliable and affordable electrical power is assured for existing and new consumers throughout the state.

Natural Gas

The CPUC regulates natural gas utility service for approximately 10.8 million customers that receive natural gas from Pacific Gas and Electric (PG&E), Southern California Gas (SoCalGas), SDG&E, Southwest Gas, and several smaller natural gas utilities. The CPUC also regulates independent storage operators Lodi Gas Storage, Wild Goose Storage, Central Valley Storage and Gill Ranch Storage.

The vast majority of California's natural gas customers are residential and small commercial customers, referred to as "core" customers, who accounted for approximately 32% of the natural gas delivered by California utilities in 2012. Large consumers, such as electric generators and industrial customers, referred to as "noncore" customers, accounted for approximately 68% of the natural gas delivered by California utilities in 2012.

The CPUC regulates the California utilities' natural gas rates and natural gas services, including in-state transportation over the utilities' transmission and distribution pipeline systems, storage, procurement, metering, and billing. Most of the natural gas used in California comes from out-of-state natural gas basins. In 2012, California customers received 35% of their natural gas supply from basins located in the Southwest, 16% from Canada, 40% from the Rocky Mountains, and 9% from basins located within California.

California gas utilities may soon also begin receiving biogas into their pipeline systems. Natural gas from out-of-state production basins is delivered into California via the interstate natural gas pipeline system. The major interstate pipelines that deliver out-of-state natural gas to California consumers are the Gas Transmission Northwest Pipeline, Kern River Pipeline, Transwestern Pipeline, El Paso Pipeline, the Ruby Pipeline, Questar Southern Trails, and Mojave Pipeline. Another pipeline, the North Baja–Baja Norte Pipeline, takes gas off the El Paso Pipeline at the

California/Arizona border, and delivers that gas through California into Mexico. While the Federal Energy Regulatory Commission (FERC) regulates the transportation of natural gas on the interstate pipelines, the CPUC often participates in FERC regulatory proceedings to represent the interests of California natural gas consumers.

Most of the natural gas transported via the interstate pipelines, as well as some of the California-produced natural gas, is delivered into the PG&E and SoCalGas intrastate natural gas transmission pipeline systems (commonly referred to as California's "backbone" natural gas pipeline system). Natural gas on the utilities' backbone pipeline systems is then delivered into the local transmission and distribution pipeline systems, or to natural gas storage fields. Some large noncore customers take natural gas directly off the high pressure backbone pipeline systems, while core customers and other noncore customers take natural gas off the utilities' distribution pipeline systems. The CPUC has regulatory jurisdiction over 150,000 miles of utility-owned natural gas pipelines, which transported 82% of the total amount of natural gas delivered to California's gas consumers in 2012.

SDG&E and Southwest Gas' southern division are wholesale customers of SoCalGas and currently receive all of their natural gas from the SoCalGas system (Southwest Gas also provides natural gas distribution service in the Lake Tahoe area). Some other municipal wholesale customers are the Cities of Palo Alto, Long Beach, and Vernon, which are not regulated by the CPUC.

Some of the natural gas delivered to California customers may be delivered directly to them without being transported over the regulated utility systems. For example, the Kern River/Mojave pipeline system can deliver natural gas directly to some large customers, "bypassing" the utilities' systems. Much of California-produced natural gas is also delivered directly to large consumers.

PG&E and SoCalGas own and operate several natural gas storage fields that are located in northern and southern California. These storage fields, and four independently owned storage utilities – Lodi Gas Storage, Wild Goose Storage, Central Valley Storage, and Gill Ranch Storage – help meet peak seasonal natural gas demand and allow California natural gas customers to secure natural gas supplies more efficiently. (A portion of the Gill Ranch facility is owned by PG&E.)

California's regulated utilities do not own any natural gas production facilities. All of the natural gas sold by these utilities must be purchased from suppliers and/or marketers. The price of natural gas sold by suppliers and marketers was deregulated by the FERC in the mid-1980's and is determined by "market forces." However, the CPUC decides whether California's utilities have taken reasonable steps in order to minimize the cost of natural gas purchased on behalf of their core customers (CPUC 2013).

As indicated in the preceding discussions, natural gas is available from a variety of in-state and out-of-state sources and is provided throughout the state in response to market supply and demand. Complementing available natural gas resources, biogas may soon be available via existing delivery systems, thereby increasing the availability and reliability of resources in total. The CPUC oversees utility purchases and transmission of natural gas to ensure reliable and affordable natural gas deliveries to existing and new consumers throughout the State.

Petroleum

There are more than 27 million registered vehicles in California, and those vehicles consume an estimated 18 billion gallons of fuel each year (CEC 2013). Gasoline (and other vehicle fuels) are commercially provided commodities, and would be available to the Program via commercial outlets.

Petroleum accounts for approximately 92% of California's transportation energy sources. Technology advances, market trends, consumer behavior, and government policies could result in significant changes in fuel consumption by type and in total by 2020. At the federal and state levels, various policies, rules, and regulations have been enacted to improve vehicle fuel efficiency, promote the development and use of alternative fuels, reduce transportation-source air pollutants and GHG emissions, and reduce vehicle miles traveled (VMT). Market forces have driven the price of petroleum products steadily upward, and technological advances have made use of other energy resources or alternative transportation modes increasingly feasible.

Largely as a result of, and in response to these multiple factors, gasoline consumption within the state has declined in recent years, while availability of other alternative fuels/energy sources has increased. In total, the quantity and availability and reliability of transportation energy resources have increased in recent years, and this trend may likely continue and accelerate (CEC 2013). Increasingly available and diversified transportation energy resources acts to promote continuing reliable and affordable means to support vehicular transportation within the state.

5.11.4 IMPACTS

Issue 1: Would the construction and operation of the Pure Water Program facilities result in the use of excessive amounts of electrical power or use excess amounts of fuel?

The CEQA Guidelines provide no specific thresholds for impacts associated with energy consumption. However, Appendix F of the CEQA Guidelines (14 CCR 15000 et seq.) presents guidance for evaluating whether a development project may result in significant impacts with

regard to energy. Based on this guidance, a project could have a significant impact related to energy consumption if the project would:

- Result in wasteful, inefficient, or unnecessary consumption of energy;
- Conflict with existing energy standards and regulations; or
- Place a significant demand on local and regional energy supplies or require a substantial amount of additional capacity.

Electricity

The Program's operational phase will require electricity for multiple purposes including, but not limited to, powering the various components such as treatment plants, pump stations, and conveyance infrastructure related to the Program.

Electricity would be required to operate various components of the Program including the proposed Central Area Water Reclamation Plant (CAWRP), pump stations, and advanced water purification facilities (AWPFs). At the North City Water Reclamation Plant (NCWRP), approximately 75% of power generated by the existing cogeneration facility is utilized for plant-specific electrical consumption, and the excess power credited using the SDG&E RES BCT (Renewable Energy – Bill Credit Transfer) to other City facilities (City of San Diego 2015). The Program would include construction of a new cogeneration facility to serve the NCAWPF. The Central Area components, including the CAWRP, CAAWPF, and pump stations, would be powered by SDG&E through a new transmission-level substation to be constructed by SDG&E. The South Bay component facilities and pump stations would be powered by additional feed supplies from SDG&E.

Annual electricity required for typical urban water sources was estimated using data and factors derived from the National Water Resource Institute's study *Direct Potable Reuse: Benefits for Public Water Supplies, Agriculture, the Environment, and Energy Conservation* (NWRI 2012) in support of the *Recycled Water Study* prepared by Brown and Caldwell for the City of San Diego (City of San Diego 2012). The NWRI study assessed electrical consumption required for typical urban water supply, treatment and conveyance in Southern California, as well as electrical consumption rates and approximate electrical consumption offsets associated with purified water production as an alternative to imported water from the State Water Project, the Colorado River and the Owens Valley. Annual electricity for the Program was provided by the City of San Diego (Pearce 2015). As shown in Table 5.11-1, electricity consumption was analyzed for the following sources: Supply and Conveyance, Treatment, Distribution, and Wastewater Treatment.

Table 5.11-1
Electricity Consumption for Typical Urban Water Systems versus Pure Water

Water Use Process	Current Water Purchase - Electricity Consumption (kW-hr/MG)[1]	Pure Water Program- Electricity Consumption (kW-hr/MG)[2]
Supply and Conveyance	10,000	0
Pure Water Treatment Beyond Secondary	NA	3,600
Conveyance	NA	3,700
Water Treatment	100	100
Distribution	1,200	1,200
Collection System and Wastewater Treatment	2,500	2,500
Total	**13,800**	**11,100**

Sources:
[1] NWRI 2012; City of San Diego 2012; [2] Pearce 2015.

As shown in Table 5.11-1, typical urban water consumption would require approximately 13,800 kilowatt hours (kW-hr) per million gallons (MG) for supply, conveyance, water treatment, distribution and wastewater collection system and treatment. City of San Diego data on purified water operations reports that energy required for the production of purified water would be approximately 11,100 kW-hr/MG. The Program would replace the Supply and Conveyance component associated with typical urban water systems. The net electrical savings would equate to a savings of approximately 2,700 kW-hr/MG. These estimates were used to calculate the approximate energy reduction from implementation of the Program by applying the rates shown in Table 5.11-1 for each water system to the proposed 83 MGD[1].

Natural Gas

Natural gas would be indirectly consumed throughout operations of the Program, primarily through the off-site generation of electricity. Approximately 67% of SDG&E's power comes from natural gas via natural gas-fired peaker plants. There are 12 peaker locations in the SDG&E service territory, from Escondido to El Cajon to Miramar, for a total of 749 megawatts (MW). In addition, the proposed 300 MW natural gas fired peaker power plant at Pio Pico in Otay Mesa was recently approved by the CPUC (SDG&E 2014).

As part of calculations conducted for the Program's Greenhouse Gas Emissions Technical Report (see Appendix E), it was estimated that the GHG emissions associated with purified water electrical consumption was estimated to be 56,631 metric tons of carbon dioxide equivalent (MT CO_2E) per year. Based on a generation rate of 118.36 pound of CO_2E per

[1] The Program proposes to provide at least 83 MGD of purified water for reservoir augmentation; however, calculations are based on 84.4. MGD since an extra 1.4 MGD would be produced at the NCAWPF to supply nonpotable reuse for existing customers.

million British thermal units (MMBtu), the Program was estimated to require approximately 0.00209 MMBtu per year.

Petroleum

Petroleum would be consumed throughout construction and operation of the Program. Fuel consumed by construction equipment would be the primary energy resource expended over the course of Program construction, while VMT associated with the transportation of construction materials and construction worker commutes would also account for petroleum consumption. Fuel consumption during Program operations would be a function of the VMT as a result of the Program.

The equipment used for Program construction would be required to conform to CARB regulations and state emissions standards and would provide evidence of related fuel efficiencies. There are no unusual Program characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities, or equipment that would not conform to current emissions standards (and related fuel efficiencies).

The construction-related trips were determined as part of the Program's Air Quality Technical Report (Appendix B). Construction of the North City component is expected to generate approximately 130 daily construction-related trips across the entire pipeline alignment, pump stations, and treatment facilities. The North City component of the Program is anticipated to result in the maximum number of expected daily construction trips when compared to the Central Area and South Bay components. As such, it can be expected that the Central Area and South Bay components would have similar or slightly fewer construction-related daily trips.

Operational trips were determined as part of the Air Quality Technical Report (Appendix B). As described in Chapter 3, Project Description, the Program would result in 65-76 additional staff per new manned facility, yielding 271 total new employees. It is expected that during normal operations, these workers would generate 542 one-way trips (i.e., 1 one-way trip from home to work and 1 one-way trip from work to home). Additionally, operational trips would be generated as a result of routine maintenance, periodic inspections and repairs of system facilities, monitoring, brush maintenance, and other operational procedures similar to those under the City's current water and wastewater treatment and distribution system. It was assumed that only a minor increase in operations and maintenance trips (in addition to the 271 new employees) would be required; therefore, it was assumed approximately 10 additional trips per day per facility would occur for a total of 30 operations and maintenance trips per

day. In total, Program operations would be expected to generate approximately 572 average daily trips across the entire Program area.

Statewide emission reduction measures proposed in the CARB-adopted amendments to the Pavley regulations include measures aimed at reducing GHG emissions associated with transportation. These amendments are part of California's commitment to a nationwide program to reduce new passenger vehicle GHGs from 2012 through 2016. It is expected that the Pavley regulations will reduce GHG emissions from California passenger vehicles by about 30% in 2016, all while improving fuel efficiency and reducing motorists' costs. In response to SB 375, CARB has adopted the goal of reducing per-capita GHG emissions. This reduction would occur by reducing VMT through the integration of land use planning and transportation. As such, vehicle trips associated with the project are expected to use less petroleum due to advances in fuel economy over time.

5.11.5 SIGNIFICANCE OF IMPACTS

Although electricity, natural gas, and petroleum consumption would increase due to the implementation of the Program, the Program would be required to comply with all applicable federal, state, and local regulations pertaining to energy efficiency. These provisions include the mandatory energy requirements set forth by Title 24, Part 6, of the California Code of Regulations. Additionally, the Program would replace the Supply and Conveyance component associated with typical urban water systems. The net electrical savings would equate to a savings of approximately 2,700 kW-hr/MG. Therefore, electricity and natural gas consumption would not be inefficient or wasteful, and impacts would be **less than significant**.

5.11.6 MITIGATION, MONITORING, AND REPORTING

Energy-related impacts associated with implementation of the Program would be less than significant; therefore, no mitigation is required.

Level of Significance after Mitigation

Energy-related impacts would be **less than significant**.

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5.12 GEOLOGY AND SOILS

5.12.1 INTRODUCTION

The purpose of this section is to assess general geologic conditions, identify potential geologic and geotechnical hazards within the Pure Water Program (Program) area, and disclose potential geologic impacts resulting from Program implementation. The information used in this analysis is general in nature and is derived from readily available information found in applicable resource and planning documents.

At this program level of analysis, the actual level of impact cannot be determined. That is, project components would require site-specific geotechnical studies for engineering and design, which would determine the actual level of environmental impact. These future geotechnical investigations would describe site-specific conditions and suggest Mitigation Framework measures for the issues outlined in this program environmental impact report (PEIR) section. For the purposes of this program-level analysis, broad discussion of potential geologic impacts is provided.

5.12.2 EXISTING CONDITIONS

Geologic Conditions

Geologic Formations

Due to the large and diverse geographic area of the Program, geologic conditions vary greatly between the three main Program components as well as between individual sites and alignments. As part of this program-level analysis, the following presents a broad overview of the geologic formations identified by the California Geological Survey that are located within the conceptual pipeline alignments and facility locations., These formations are shown on Figure 5.12-1, Geologic Formations: Overview.

North City Component

Geologic formations that underlie the North City component are shown on Figure 5.12-2, Geologic Formations: North City Component. As shown on Figure 5.12-2, geologic formations that are known to underlie the conceptual alignments and siting of the North City component include the following: Very Old Paralic Deposits (Qvol), Young Alluvial Valley Deposits (Qya), Coarse-grained Tertiary Age Formations (Tss), Granitic and other intrusive crystalline rocks (gr), Alluvial Valley Deposits (Qa), and Old Alluvial Valley Deposits (Qoa).

Central Area Component

Geologic formations that underlie the Central Area component are shown on Figure 5.12-3, Geologic Formations: Central Area component. As shown on Figure 5.12-3, geologic formations that are known to underlie the conceptual alignments and siting of the Central Area component include the following: Artificial Fill (af), Young Alluvial Valley Deposits (Qya), Coarse-grained Tertiary Age Formations (Tss), Alluvial Valley Deposits (Qa), and Granitic and other intrusive crystalline rocks (gr).

South Bay Component

Geologic formations that underlie the South Bay component are shown on Figure 5.12-4, Geologic Formations: South Bay Component. As shown on Figure 5.12-4, geologic formations that are known to underlie the conceptual alignments and siting of the South Bay component include the following: Old Paralic Deposits (Qol), Young Alluvial Valley Deposits (Qya), Coarse-grained Tertiary Age Formations (Tss), Alluvial Valley Deposits (Qa), and Landslide Deposits (Qla).

Faulting and Seismicity

The Program would be located in the San Diego Region of seismically active Southern California (see Figure 5.12-5). Known active faults in the area tend to travel in a northwest–southwest direction. Major faults within the Program area include the Rose Canyon Fault Zone, the La Nacion Fault Zone, and the Point Loma Fault (Department of Conservation 2010). Major offshore faults include the San Diego Trough Fault and the Coronado Bank Fault Zone (Department of Conservation 2010). Regional fault zones include the Lake Elsinore Fault Zone and the San Jacinto Fault Zone, located to the north and northeast of the Program area (Department of Conservation 2010).

5.12.3 REGULATORY SETTING

Federal

International Building Code

The International Code Council developed the International Building Code (IBC), a model building code that provides the basis for the California Building Code. The IBC provides minimum standards for building construction to ensure public safety, health, and welfare. Prior to the creation of the IBC, several different building codes were used; by 2000, the IBC had replaced these previous codes. The IBC is updated every 3 years.

State

California Building Code

The 2010 California Building Code (CBC) is based on the 2009 IBC, which is a model building code that sets rules specifying the minimum acceptable level of safety for constructed objects in the United States. The CBC contains amendments based on the American Society of Civil Engineers Minimum Design Standards 7-05, which establish requirements for general structural design and a means for determining earthquake and other types of loads (flood, snow, wind, etc.) for inclusion in building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures in California.

Alquist–Priolo Earthquake Fault Zoning Act

The Alquist–Priolo Earthquake Fault Zoning Act (California Public Resources Code Section 2621 et seq.) was passed into law following the destructive February 9, 1970, San Fernando Earthquake which measured 6.6 on the Richter Scale. The act provides a mechanism for reducing losses from surface fault rupture. The intent of the act is to ensure public safety by prohibiting the siting of most structures for human occupancy across traces of active faults that constitute a potential hazard to structures from surface faulting or fault creep. The law requires the state geologist to establish regulatory earthquake fault zones and distribute maps to all affected cities, counties, and state agencies. Local agencies must regulate most development projects within the zones. Before a project can be permitted, cities and counties must require a geologic investigation to demonstrate that the proposed buildings will not be constructed on an active fault.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (California Public Resources Code Section 2690 et seq.) addresses earthquake hazards from non-surface-fault rupture, including liquefaction, landslides, strong ground shaking, and other earthquake and geologic hazards. 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.

Local

City of San Diego General Plan

The City of San Diego General Plan contains the Public Facilities, Services, and Safety Element which addresses seismic safety. The fundamental objective of the seismic safety policies

included in the General Plan is to reduce the risk of seismic-and geologic-related hazards. Seismic hazards that can occur in the San Diego Region include ground shaking, ground displacement, tsunami, and landslides.

5.12.4 IMPACTS

Issue 1: Would the Pure Water Program expose people or property to geologic hazards such as earthquakes, landslides, mudslides, liquefaction, ground failure, or similar hazards?

The Program would be located in the San Diego Region of seismically active Southern California. Based on conceptual alignments shown on Figure 5.12-5 there is a potential for segments of pipeline alignments to be located within an Aliquist-Priolo Earthquake Fault Zone as identified on State Department of Conservation Special Studies Zones La Jolla Quadrangle Map (Department of Conservation 1991). The only other Alquisto-Priolo Earthquake Fault Zone map within the affected Program area is for the Point Loma Quadrangle; however, the proposed Program alignments would not intersect any identified earthquake fault zones in this quadrangle (Department of Conservation 2003). As such, the Program would be subject to earthquakes similar to that of the entire region. The Program components may be locally subject to seismically induced secondary effects related to liquefaction, lateral spreading, local subsidence of soil, landslides, mudslides, ground failure, and other geologic hazards. The potential for these conditions and susceptibility to such hazards would depend on site-specific conditions that would not be known until future project-level analysis is conducted.

5.12.5 SIGNIFICANCE OF IMPACTS

The Program areas contain geologic conditions which would pose significant risks for construction of facilities and associated components if not properly addressed at the project-level. Unstable conditions relating to earthquakes, landslides, mudslides, liquefaction, ground failure and other similar hazards represent a **potentially significant** impact for future development, and mitigation is required.

5.12.6 MITIGATION, MONITORING, AND REPORTING

MM-GEO-1 Impacts associated with geologic hazards shall be mitigated at the project-level through adherence to the City's Seismic Safety Study and recommendations of a site-specific geotechnical report prepared in accordance with the City's Geotechnical Report Guidelines. Impacts shall also be avoided or reduced through engineering design that meets or exceeds adherence to the City's Municipal Code and the California Building Code.

More specifically, compressible soils impacts shall be mitigated through the removal of undocumented fill, colluvium/topsoil, and alluvium to firm the ground. Future development shall also be required to clean up deleterious material and properly moisture, condition, and compact the soil in order to provide suitable foundation support.

Regarding impacts related to expansive soils, future development shall be required to implement typical remediation measures, which shall include placing a minimum 5-foot cap of low expansive (Expansion Index [EI] of 50 or less) over the clays; or design of foundations and surface improvements to account for expansive soil movement.

Level of Significance after Mitigation

Incorporation of Mitigation Framework measure MM-GEO-1 would reduce potential impacts related to geologic hazards including, but not limited to, earthquakes, landslides, mudslides, liquefaction, or ground failure to **below a level of significance**.

5.12.7 IMPACTS

Issue 2: Would the Pure Water Program increase the potential for erosion of soils on- or off-site?

The potential for an increase in erosion of soils on or off site would occur during both the construction and operation phases of the Program. Construction of the treatment facilities, pump stations, and pipelines would temporarily expose soils to wind and water erosion. The majority of pipelines would be located within roadways, where feasible, which would reduce potential erosion. However, regardless of final location of Program components, construction of Program components would be required to comply with the State Water Quality Control Board's Construction General Permit, which requires the development and implementation of a Stormwater Pollution Prevention Plan as well as implementation of Best Management Practices. Construction would also be required to comply with all applicable jurisdictions' grading requirements, which would minimize erosion during construction. Common Best Management Practices include site watering, sediment filters, and specific materials handling and storage.

5.12.8 SIGNIFICANCE OF IMPACTS

Based on the steep nature of many of the hillsides and the generally poorly consolidated nature of the sedimentary materials and soils found throughout the Program area, erosion would

represent a **potentially significant** impact, particularly in conjunction with some portions of the San Diego Formation and in drainages and stream valleys, and mitigation is required.

5.12.9 MITIGATION, MONITORING, AND REPORTING

MM-GEO-2 All subsequent projects implemented in accordance with the Program shall be designed to avoid or reduce geologic hazards to the satisfaction of the City Engineer.

Submittal, review, and approval of site specific geotechnical investigations shall be completed in accordance with the City's Municipal Code requirements. Engineering design specifications based on future project-level construction plans shall be incorporated into all future projects implemented in accordance with the Program to minimize hazards associated with site-level geologic and seismic conditions satisfactory to the City Engineer and shall include the following measures to control erosion during and after grading or construction:

- Desilting basins, improved surface drainage, or planting of ground covers installed early in the improvement process in areas that have been stripped of native vegetation or areas of fill material;
- Short-term measures, such as sandbag placement and temporary detention basins;
- Restrictions on grading during the rainy season (November through March), depending on the size of the grading operation, and on grading in proximity to sensitive wildlife habitat; and
- Immediate post-grading slope revegetation or hydroseeding with erosion-resistant species to ensure coverage of the slopes prior to the next rainy season.

Conformance to mandated City grading requirements shall ensure that future grading and construction operations would avoid significant soil erosion impacts. Furthermore, any development involving clearing, grading, or excavation that causes soil disturbance of one or more acres, or any project involving less than one acre that is part of a larger development plan, shall be subject to NPDES General Construction Storm Water Permit provisions. Additionally, any development of this significant size within the City shall be required to prepare and comply with an approved Stormwater Pollution Prevention Plan (SWPPP) that shall consider the full range of erosion control BMPs such as, but not limited to, including any additional site-specific and seasonal conditions. Project compliance with NPDES requirements would significantly reduce the potential for substantial erosion or topsoil loss to occur in association with new development.

Prior to obtaining grading permits for future actions a site-specific geotechnical investigation shall be completed as necessary in accordance with the City of San Diego Guidelines for Preparing Geotechnical Reports. Engineering design specifications based on project-level grading and site plans shall be incorporated into the project design to minimize hazards associated with site-level geologic and seismic conditions satisfactory to the City Engineer. Measures designed to reduce erosion at the project-level shall include the following:

- Control erosion by minimizing the area of slope disturbance and coordinate the timing of grading, resurfacing, and landscaping where disturbance does occur.
- On sites for industrial activities require reclamation plans that control erosion, where feasible, in accordance with the LDC.
- Control erosion caused by storm runoff and other water sources.
- Preserve as open space those hillsides characterized by steep slopes or geological instability in order to control urban form, insure public safety, provide aesthetic enjoyment, and protect biological resources.
- Replant with native, drought-resistant plants to restore natural appearance and prevent erosion.
- Practice erosion control techniques when grading or preparing building sites.
- Utilize ground cover vegetation when landscaping a development in a drainage area to help control runoff.
- Incorporate sedimentation ponds as part of any flood control or runoff control facility.
- During construction, take measures to control runoff from construction sites. Filter fabric fences, heavy plastic earth covers, gravel berms, or lines of straw bales are a few of the techniques to consider.
- Phase grading so that prompt revegetation or construction can control erosion. Only disturb those areas that will later be resurfaced, landscaped, or built on. Resurface parking lots and roadways as soon as possible, without waiting until completion of construction.
- Promptly revegetate graded slopes with groundcover or a combination of groundcover, shrubs, and trees. Hydroseeding may substitute for container plantings. Groundcovers shall have moderate to high erosion control qualities.
- Where necessary, design drainage facilities to ensure adequate protection for the community while minimizing erosion and other adverse effects of storm runoff to the natural topography and open space areas.

- Ensure that the timing and method of slope preparation protects natural areas from disturbance due to erosion or trampling. The final surface shall be compacted and spillovers into natural areas shall be avoided.
- Plant and maintain natural groundcover on all created slopes.

When required, the geologic technical report shall consist of a preliminary study, a geologic reconnaissance, or an in-depth geologic investigation report that includes field work and analysis. The geologic reconnaissance report and the geologic investigation report shall include all pertinent requirements per the City Engineer in accordance with Section 145.1803 of the San Diego Municipal Code, San Diego Seismic Safety Study (2009).

Level of Significance after Mitigation

Implementation of Mitigation Framework measure MM-GEO-2 would reduce potential impacts related to erosion to **below a level of significance**.

5.12.10 IMPACTS

Issue 3: Would the Pure Water Program be located on a geological 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?

The Program components may be located on a geological unit or soil that is unstable or would result in landslides, lateral spreading, subsidence, liquefaction, or collapse. The potential for these conditions and susceptibility to such hazards would depend on site specific conditions that would not be known until future project-level analysis can be conducted.

5.12.11 SIGNIFICANCE OF IMPACTS

The Program areas contain geologic conditions which would pose significant risks for construction of facilities and associated components if not properly addressed at the project-level. Unstable conditions relating to landslides, lateral spreading, subsidence, liquefaction or collapse represent a **potentially significant** impact for future development, and mitigation is required.

5.12.12 MITIGATION, MONITORING, AND REPORTING

Implementation of Mitigation Framework measure MM-GEO-1 would reduce potential impacts related to geologic hazards including, but not limited to, landslides, lateral spreading, subsidence, liquefaction or collapse.

Level of Significance after Mitigation

Implementation of Mitigation Framework measure MM-GEO-1 would reduce potential impacts to **below a level of significance**.

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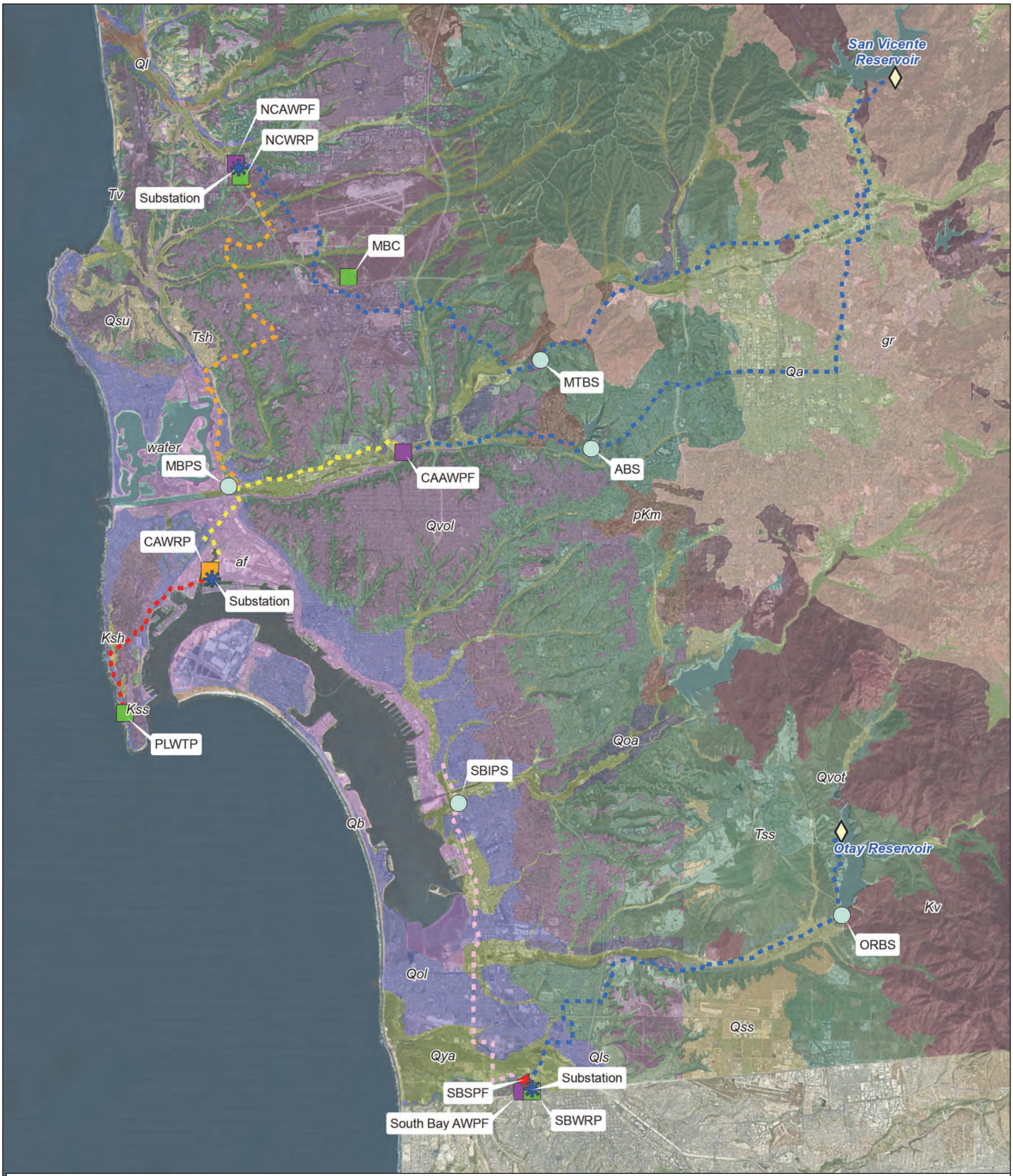

Potential Facilities

- Advanced Water Purification Facility (AWPF)
- Improvements/Upgrades to Existing Facilities
- Water Reclamation Plant (WRP)
- Pump Station
- Reservoir Outfall / Discharge Structure
- SDGE Substation
- Solids Processing Facility

Potential Pipelines

- Purified Water Pipeline
- Sludge Pipeline
- Tertiary Water Pipeline and Brine Pipeline
- Wastewater Forcemain
- Wastewater Forcemain and Brine Pipeline

Geology

- Ksh:Fine-grained Cretaceous age formations of sedimentary origin
- Kss:Coarse-grained Cretaceous age formations of sedimentary origin
- Kv:Cretaceous age formations of volcanic origin
- Qa:Alluvial Valley Deposits
- Qb:Beach Deposits
- Ql:Lacustrine, Playa and Estuarine (Paralic) Deposits
- Qls:Landslide Deposits; may include debris flows and older landslides
- Qoa:Old Alluvial Valley Deposits
- Qol:Old Lacustrine, Playa and Estuarine (Paralic) Deposits
- Qss:Coarse-grained formations of Pleistocene age and younger; primarily sandstone and conglomerate
- Qsu:Undifferentiated Surficial Deposits; includes colluvium, slope wash, talus deposits, and other surface deposits of all ages
- Qvol:Very Old Lacustrine, Playa and Estuarine (Paralic) Deposits
- Qvot:Very Old Terrace Deposits
- Qya:Young Alluvial Valley Deposits
- Tsh:Fine-grained Tertiary age formations of sedimentary origin
- Tss:Coarse-grained Tertiary age formations of sedimentary origin
- Tv:Tertiary age formations of volcanic origin
- af:Artificial Fill
- gr:Granitic and other intrusive crystalline rocks of all ages
- pKm:Cretaceous and Pre-Cretaceous metamorphic formations of sedimentary and volcanic origin
- Water

DUDEK

SOURCE: Bing Imagery, 2015; SANGIS, 2015; California Geological Survey.

FIGURE 5.12-1

Geologic Formations: Overview

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Potential Facilities

- Advanced Water Purification Facility (AWPF)
- Improvements/Upgrades to Existing Facilities
- Pump Station
- Reservoir Outfall / Discharge Structure
- SDGE Substation

Potential Pipelines

- Purified Water Pipeline
- Wastewater Forcemain and Brine Pipeline

Geology

- Kss:Coarse-grained Cretaceous age formations of sedimentary origin
- Kv:Cretaceous age formations of volcanic origin
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- Ql:Lacustrine, Playa and Estuarine (Paralic) Deposits
- Qls:Landslide Deposits; may include debris flows and older landslides
- Qoa:Old Alluvial Valley Deposits
- Qol:Old Lacustrine, Playa and Estuarine (Paralic) Deposits
- Qsu:Undifferentiated Surficial Deposits; includes colluvium, slope wash, talus deposits, and other surface deposits of all ages
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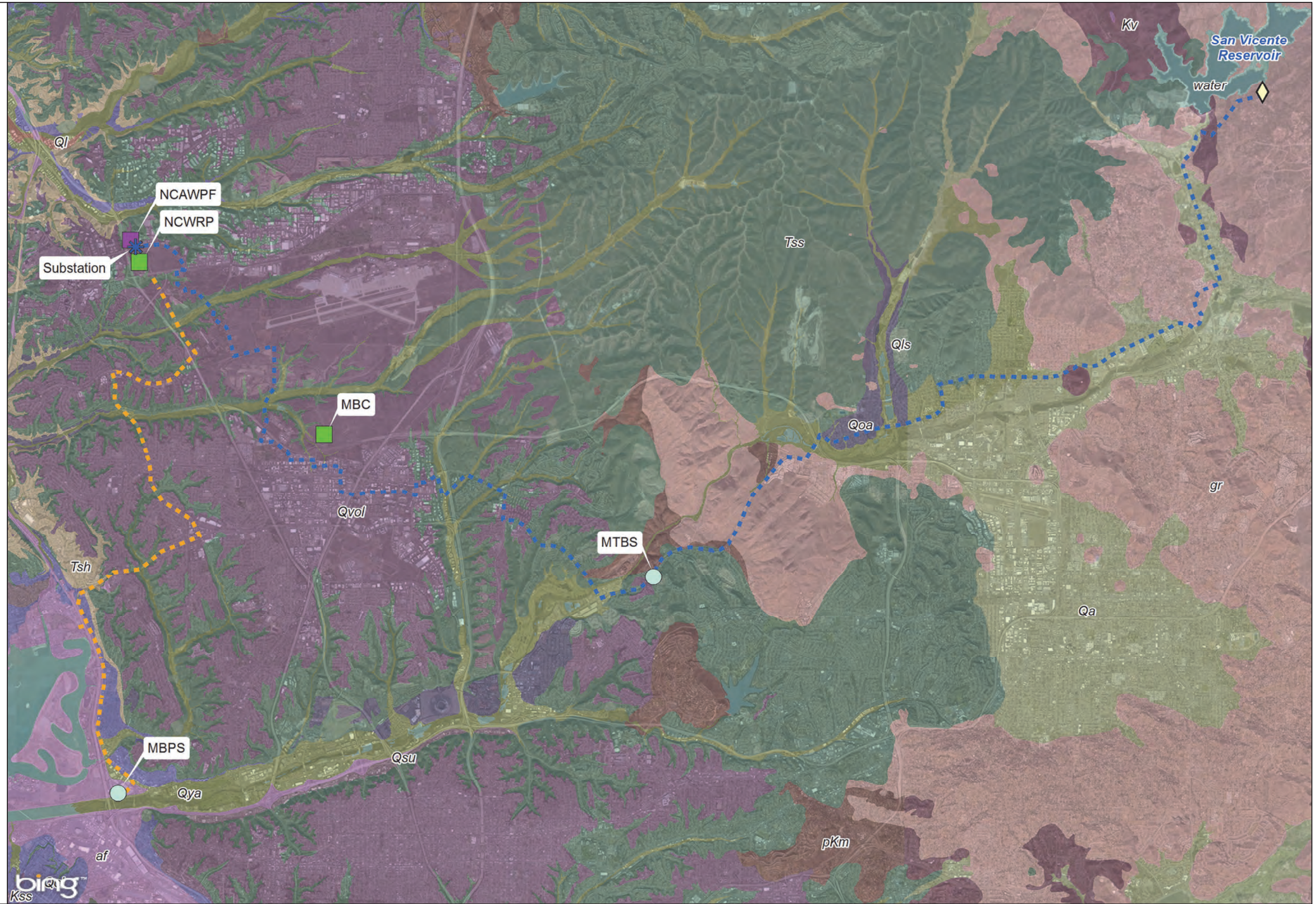
- Water



SOURCE: Bing Imagery, 2015; SANGIS, 2015; California Geological Survey.

FIGURE 5.12-2

Geological Formations: North City Component

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Pure Water Program EIR

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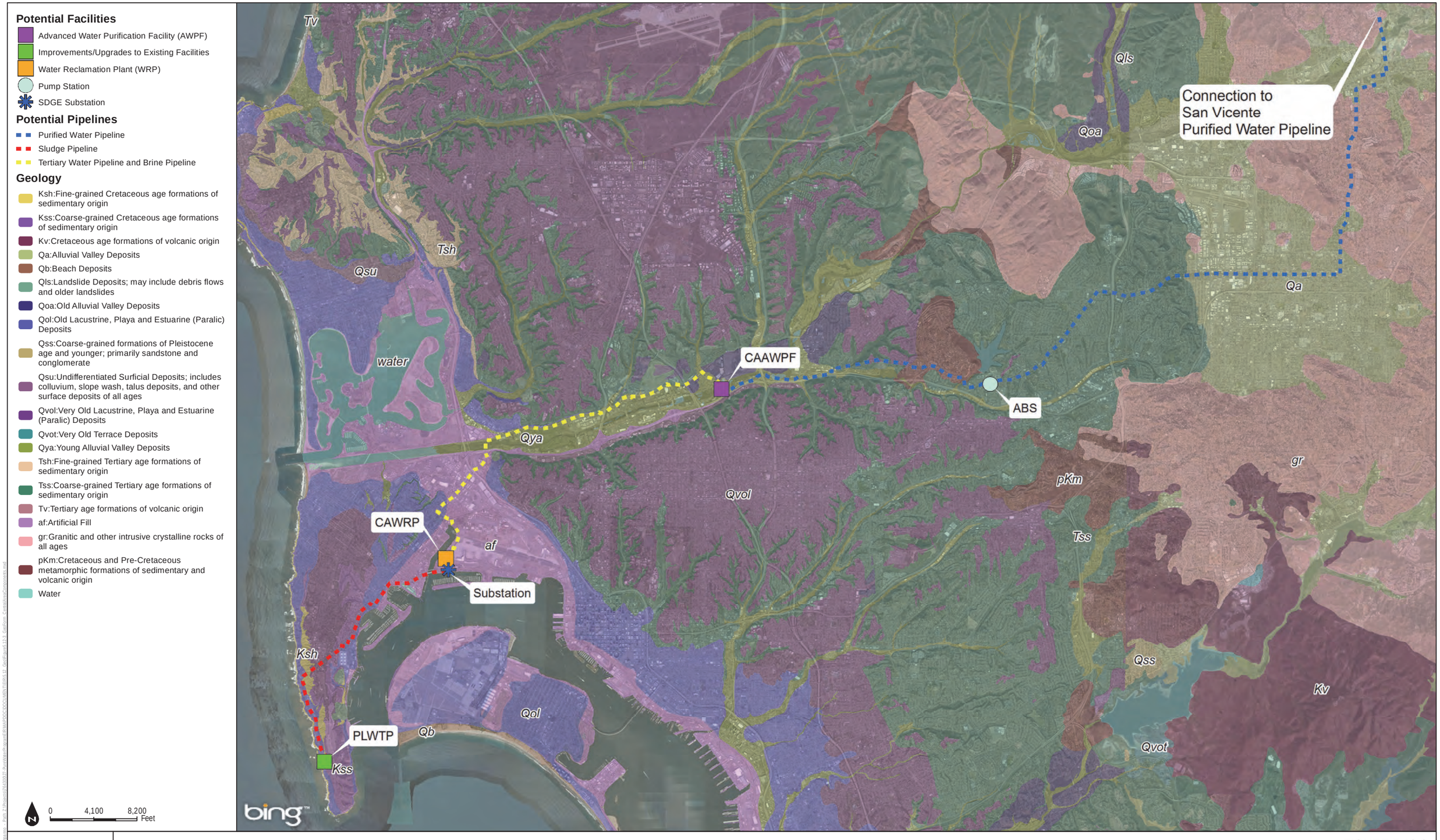

SOURCE: Bing Imagery, 2015; SANGIS, 2015; California Geological Survey.

FIGURE 5.12-3

Geological Formations: Central Area Component

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Pure Water Program EIR

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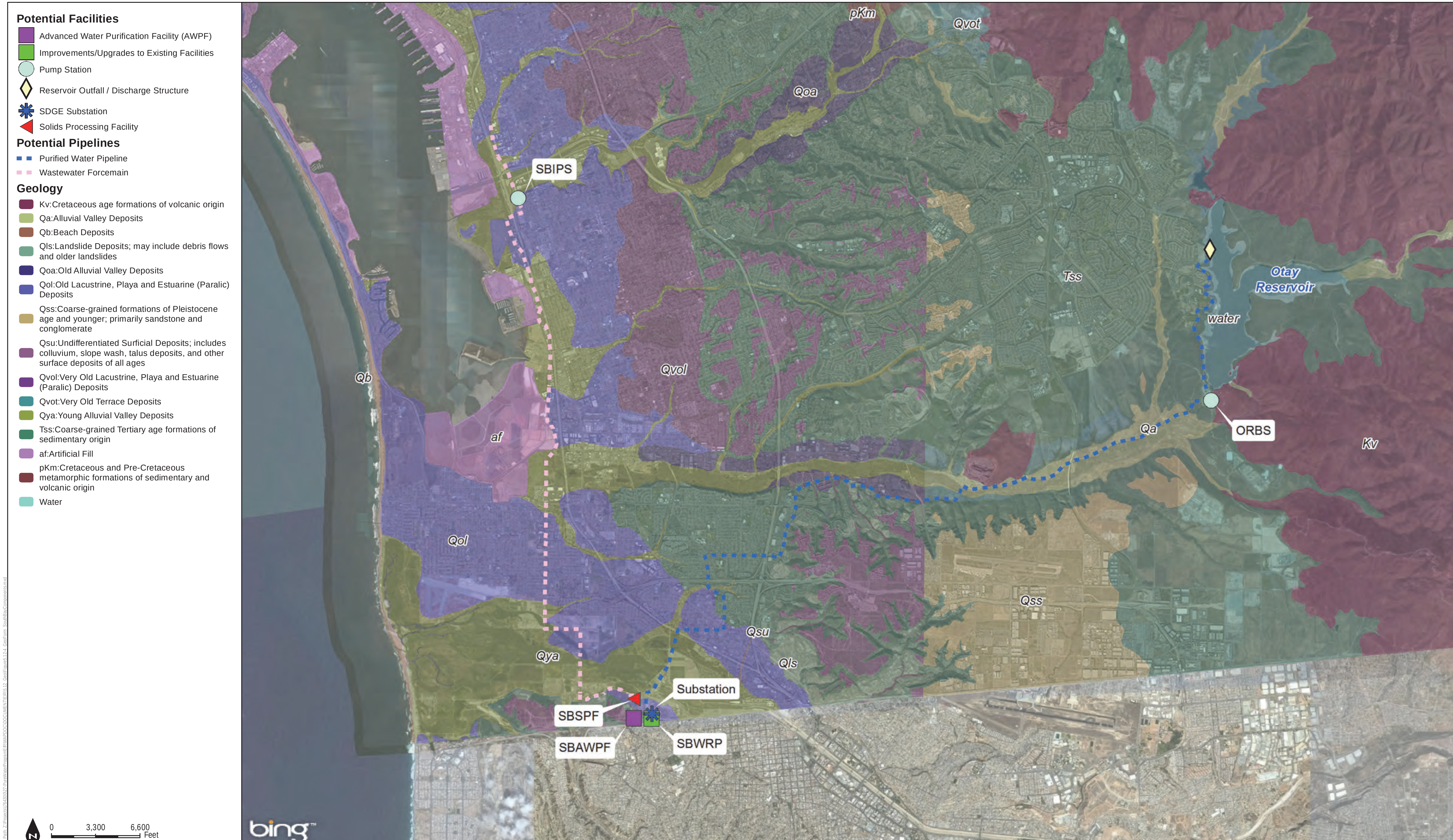

Potential Facilities
Advanced Water Purification Facility (AWPF)
Improvements/Upgrades to Existing Facilities
Pump Station
Reservoir Outfall / Discharge Structure
SDGE Substation
Solids Processing Facility
Potential Pipelines
Purified Water Pipeline
Wastewater Forcemain
Geology
Kv:Cretaceous age formations of volcanic origin
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Qb:Beach Deposits
Qls:Landslide Deposits; may include debris flows and older landslides
Qoa:Old Alluvial Valley Deposits
Qol:Old Lacustrine, Playa and Estuarine (Paralic) Deposits
Qss:Coarse-grained formations of Pleistocene age and younger; primarily sandstone and conglomerate
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Tss:Coarse-grained Tertiary age formations of sedimentary origin
af:Artificial Fill
pKm:Cretaceous and Pre-Cretaceous metamorphic formations of sedimentary and volcanic origin
Water
0
3,300
6,600
Feet
N
pKm
Qvot
Qoa
SBIPS
Tss
Otay Reservoir
water
Qvol
Qb
af
Qa
ORBS
Kv
Qol
Qss
Qsu
Qls
Qya
Substation
SBSPF
SBAWPF
SBWRP
bing

SOURCE: Bing Imagery, 2015; SANGIS, 2015; California Geological Survey.

DUDEK

FIGURE 5.12-4

Geological Formations: South Bay Area Component

Pure Water Program EIR

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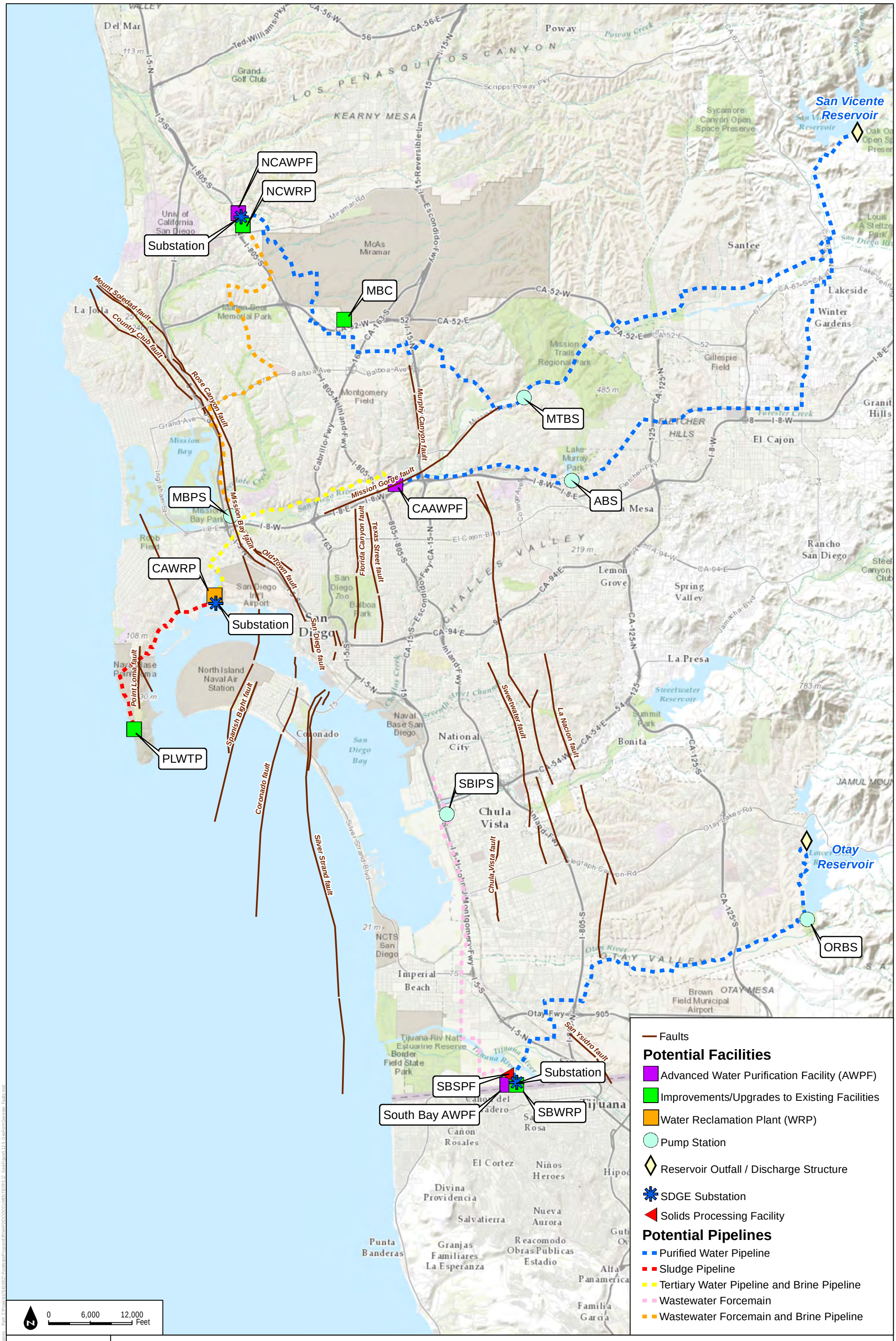

SOURCE: ESRI, 2015; SANGIS, 2015.

FIGURE 5.12-5

Faults

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Pure Water Program EIR

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5.13 TRANSPORTATION, CIRCULATION, AND PARKING

5.13.1 INTRODUCTION

This section discusses the existing conditions related to transportation, circulation, and parking; identifies any potential impacts resulting from the implementation of the Pure Water Program (Program); and includes Mitigation Framework measures as necessary.

5.13.2 EXISTING CONDITIONS

This section generally describes the circulation system within the affected jurisdictions from a broad perspective. Additionally, potentially affected major roadways are identified as shown on Figure 3-3, in Chapter 3, Project Description. It should be noted that the proposed Program components, including pipeline alignments are conceptual and are subject to change upon project-level analysis and final design. For these reasons, specific segments of potentially affected roadways are not identified in this section.

City of San Diego

The City of San Diego circulation system contains numerous components including freeways, arterial roadways and corridors, collector streets, and residential streets. The primary street system is identified on Figure LU-2 of the City of San Diego's General Plan. Major roadways and freeways include Interstate 5 (I-5), Interstate 805 (I-805), Interstate 15 (I-15), State Route 163 (SR-163), Genesee Avenue, Balboa Avenue, Morena Boulevard, El Cajon Boulevard, University Avenue, Harbor Drive, Friars Road, and Market Street (City of San Diego 2008). The majority of affected roadways would be located within the City of San Diego. At the current conceptual level, potential affected major roadways include Genesee Avenue, Morena Boulevard, Balboa Avenue, Mission Gorge Road, Lake Murray Boulevard, Claremont Mesa Boulevard, and Friars Road.

City of Chula Vista

The City of Chula Vista's circulation system is generally divided by I-805. The area west of I-805 generally has a grid-like roadway pattern with major roadways such as H Street, Broadway, and Fourth Avenue. The area west of I-805 has a more distributed roadway system which includes major roadways such as Olympic Parkway, East Palomar Street, East H Street, and La Media Road. Conceptual plans show pipeline alignments along Heritage Road/Wiley Road.

City of El Cajon

The City of El Cajon is traversed by three highways: I-8, which generally bisects the City of El Cajon in an east–west direction; SR-125; and S-67. Major roadways include El Cajon Boulevard, North Second Street, Main Street, Mollison Avenue, Jamacha Road, Broadway, and Johnson Avenue. Conceptual alignments show pipelines along Fletcher Parkway and North Second Street.

City of La Mesa

The City of La Mesa is traversed by SR-125 in a north–south direction and is generally bisected by I-8 in an east–west direction. SR-94 also travels along the southern border of the jurisdiction. Major roadways include University Avenue, Fletcher Parkway, Baltimore Drive, and El Cajon Boulevard. Conceptual plans show pipeline alignments along Lake Murray Boulevard.

City of Santee

Several highways are located within the boundaries of the City of Santee, including SR-125, SR-52, and SR-67. Major roadways include Mast Boulevard, Cuyamaca Street, and Mission Gorge Road. Conceptual plans show pipeline alignments along Mast Boulevard.

County of San Diego

Program pipelines would travel through the unincorporated area of Lakeside within the County of San Diego. SR-67 and I-8 travel through this area. Major roadways include Scripps Poway Parkway, Riverford Road, Riverside Drive, and Winter Gardens Boulevard. Conceptual plans show pipeline alignments along Winter Gardens Boulevard and Moreno Avenue.

5.13.3 IMPACTS

Issue 1: Would implementation of the Pure Water Program result in an increase in projected traffic specifically associated with project-related construction that is substantial in relation to the capacity of the existing and planned circulation system?

The City's *California Environmental Quality Act (CEQA) Significance Determination Thresholds* identify significant impacts if one of the following criteria is met (City of San Diego 2011):

- If any intersection, roadway segment, or freeway segment affected by a project would operate at level of service (LOS) E or F under either direct or cumulative conditions, or if project traffic takes a facility from acceptable to unacceptable LOS, the impact would be

significant if the project exceeds the thresholds shown in Table 5.13-1, City of San Diego Traffic Impact Significance Thresholds.

- At any ramp meter location with delays above 15 minutes, the impact would be significant if the project exceeds the thresholds shown in Table 5.13-1, City of San Diego Traffic Impact Significance Thresholds.
- If a project would add a substantial amount of traffic to a congested freeway segment, interchange, or ramp as shown in Table 5.13-1, City of San Diego Traffic Impact Significance Thresholds, the impact may be significant.

Table 5.13-1
City of San Diego Traffic Impact Significance Thresholds

	Allowable Change Due to Project Impact					
	Freeways		*Roadway Segments*		*Intersections*	*Ramp Metering*
LOS with Project	*V/C*	*Speed (mph)*	*V/C*	*Speed (mph)*	*Delay (seconds)*	*Delay (minutes)*
E (or ramp-meter delays above 15 minutes)	0.010	1.0	0.02	1.0	2.0	2.0
F (or ramp-meter delays above 15 minutes)	0.005	0.5	0.01	0.5	1.0	1.0

Source: City of San Diego 2011

Pure Water Program

For the purposes of analysis, construction- and operation-related trip assumptions were based on the analysis found in the Air Quality Technical Report which used the California Emissions Estimator Model (CalEEMod) to determine approximate trip generation for each phase of construction of the Program (Appendix B). Generally, one worker per piece of construction equipment (equipment mix assumes 2-10 pieces of equipment per construction phase), a foreman, and several additional workers would be anticipated on a daily basis. Additionally, it was assumed approximately two vendor trucks per day would be required for general material deliveries, and approximately five haul trucks per day would be required when backfill/slurry deliveries would occur, if necessary. To the extent that trip generation is provided within this section, current estimations are based upon conceptual designs and information, which is subject to change upon future project-level analysis and final design.

The Program would result in short-term and temporary increases in traffic during construction of the various Program components. Traffic generated during construction would primarily be from workers traveling to and from the sites, delivery of equipment and materials, and removal of construction debris. Although the number would vary depending on the Program component, the number of construction worker trips and truck trips required for the construction of a given

pipeline, pump station, or treatment facility associated with the Program components is anticipated to be minimal due to the limited number of construction workers. Additionally, the construction of the Program components would generally be isolated from each other over a large geographic area with staggered construction schedules, and therefore, construction trips would have little to no overlap between the Program components.

Construction of the Central Area component is anticipated to result in the maximum number of expected daily construction trips of the Program components and is expected to generate approximately 130 daily construction-related trips It is anticipated that the North City and South Bay components would have similar or slightly fewer construction-related daily trips.

Construction-related trips would be temporary as construction advances along various phases of the Program. Construction trips associated with Program components would generally be isolated from each other over a large geographic area. Construction details for the various components are not available at this time, and overall, the increase in traffic is not expected to substantially affect the capacity of the existing or planned circulation system. Please refer to Issue 2 for analysis regarding physical changes and roadway access during construction.

5.13.4 SIGNIFICANCE OF IMPACTS

Because construction-related trips would be temporary, the increase in traffic would not substantially affect the capacity of the existing or planned circulation system. Therefore, impacts would be **less than significant**.

5.13.5 MITIGATION, MONITORING, AND REPORTING

Impacts would be less than significant; therefore, no mitigation is required.

Level of Significance after Mitigation

Even in the absence of mitigation, impacts would be **less than significant**.

5.13.6 IMPACTS

Issue 2: Would the Pure Water Program create alterations to present circulation movements in the area including effects on existing public access points?

Construction

All pipeline facilities of each of the Program components would be located within a roadway right-of-way, where feasible. The majority of the pipeline alignments would be constructed using open trench construction techniques. Construction of pipelines would require encroachment onto

public rights-of-way at different times throughout the construction phase of each Program component. In addition to the required lay-down area for supplies and equipment, a temporary 30-foot easement may be required for trenching operations. Portions of the pipeline alignments would utilize trenchless construction in areas of sensitive environmental resources or at freeway and railroad crossings. The likely size of the impacted area for trenchless technology would be approximately 20 feet by 40 feet at the beginning of the tunnel and 15 feet by 15 feet the end of the tunnel. Pipeline construction locations within a roadway would be temporary as workers and equipment would move along each pipeline alignment as portions are completed. Therefore, construction of pipelines would have potential to temporarily impede or obstruct access along and within roadways at any given time and location along each alignment.

Pipeline construction would require physical changes (i.e., excavation) to roadways for trenching or utilization of trenchless technology. These physical alterations would be short-term and temporary, and all potentially affected roadways would be repaved or returned to existing condition upon completion of construction. These alterations would not result in any permanent changes in roadway capacities or vehicle movement.

Similar to pipeline construction, treatment facility and pump station construction would be temporary. Construction and staging of equipment for the treatment facilities and pump stations of each Program component would likely be limited to each respective site. However, construction of treatment facilities and pump stations may require temporary encroachment onto public rights-of-way and roadways for ingress/egress of workers and equipment. Construction staging may also require temporary staging of equipment off site if the size of the site does not permit staging. Such off-site staging may only likely be required of the pump stations due to the expected smaller site size as compared to the treatment facilities. Therefore, for any given treatment facility and pump station, construction may require encroachment upon a roadway that could temporarily impede or obstruct access.

As described above, construction of pipelines, treatment facilities, and pump stations may result in temporary obstruction of access along roadways. However, prior to construction of any project that requires encroachment into public roadways, a traffic control plan (TCP) would be prepared by the City in conformance with the City's and each affected municipalities traffic control regulations. The TCP would be prepared to ensure that vehicular, bicycle, and pedestrian access would be maintained to individual properties and businesses, and that emergency access would not be restricted. The TCP would show all signage and striping, and shall delineate detours, flagging operations, and any other procedures that would be used during construction to guide motorists safely through the construction zone. The TCP would also include provisions to ensure that the construction contractor's work in any public street does not interfere unnecessarily with the operation of other agencies vehicles, such as emergency service providers. With the

implementation of a TCP for all Program related construction of pipelines, treatment facilities, and pump stations, vehicular movement and access would not be substantially affected.

Operation

The Program does not include any permanent alterations to the existing or planned circulation system. All pipelines would be located underground to the extent feasible; any segments of pipeline that may be located aboveground would be designed in such a way as to not disrupt circulation movements. Pump stations and treatment facilities would be located on appropriate sites that would not cause the alteration or removal of public roadways such that circulation movement would be adversely affected. Therefore, during the operational phase, Program operation would not adversely affect vehicle movement and access to roadways.

Operational trips were determined as part of the Air Quality Technical Report (see Appendix D) and Program information. As described in Chapter 3, Project Description, the Program would result in 65-76 additional staff per new manned facility (including the North City AWPF, Central Area WRP, Central Area AWPF and South Bay AWPF), yielding 271 total new employees. It is expected that during normal operations, these workers would generate in 542 one-way trips (i.e., 1 one-way trip from home to work and 1 one-way trip from work to home). Ancillary trips related to lunch breaks or other personal errands may also occur. Additionally, operational trips would be generated as a result of routine maintenance, periodic inspections and repairs of system facilities, monitoring, brush maintenance, and other operational procedures similar to those under the City's current water and wastewater treatment and distribution system. It was assumed only a minor increase in personal, operations and maintenance trips (in addition to the 271 new employees) would be required; therefore, it was assumed approximately 15 additional one-way trips per day per facility would occur for a total of 30 personal, operations and maintenance trips per day. In total, Program operations would be expected to generate approximately 572 average daily trips (ADT) across the entire Program area.

With the exception of the 542 ADT, operation and maintenance trip generation (e.g., the additional 30 ADT) and distribution would likely vary and be dispersed over a large area, due to the total area covered by Program pipelines, pump stations, and treatment facilities, and their respectively daily maintenance schedules. The 542 ADT would also be split among the new staffed facilities. This would result in 130-152 ADT to and from the North City Advanced Water Purification Facility (AWPF), South Bay AWPF, Central Area AWPF, and Central Area Water Reclamation Plant. This minimal increase in traffic would quickly disperse among roadways and freeways within the vicinity of each new treatment facility. Therefore, due to the minimal increase in traffic and expected distribution of trips across the entire City and neighboring jurisdictions, operational trips would not substantially affect the capacity of existing or planned roadways.

5.13.7 SIGNIFICANCE OF IMPACTS

Construction

Construction of pipelines, pump stations, and treatment facilities may temporarily result in disrupted access along roadways, resulting in a **potentially significant** impact related to construction traffic.

Operation

Program operation would not adversely affect vehicle movement and access to roadways. Therefore, impacts would be **less than significant**.

5.14.8 MITIGATION, MONITORING, AND REPORTING

MM-TRA-1 Prior to construction, the construction contractor shall prepare a traffic control plan (TCP) implemented for all affected roadways. The TCP shall be prepared in accordance with the City's and each of the affected municipalities' traffic control guidelines, as applicable. The TCP shall be prepared to ensure that access will be maintained to individual properties and businesses, and that emergency access will not be restricted. Any construction traffic impacts will be short-term in nature.

The TCP shall show all signage and striping, and shall delineate detours, flagging operations, and any other procedures that shall be used during construction to guide motorists safely through the construction zone and allow for a minimum of one lane of travel. The TCP shall also include provisions for coordinating with local emergency service providers regarding construction times and locations of lane closures.

Prior to the start of construction, the construction contractor shall provide a minimum 2-week written notice by mail to owners/occupants along streets to be impacted during construction.

During construction, the construction contractor shall ensure continuous, unobstructed, safe, and adequate pedestrian and vehicular access to and from public facilities (e.g., public utility stations and community centers). If normal access to these facilities is blocked by construction, an alternative access shall be provided. Should this occur, the construction contractor shall coordinate with each facility's administrators in preparing a plan for alternative access.

During construction, the construction contractor shall ensure continuous, unobstructed, safe, and adequate pedestrian and vehicular access to commercial/industrial establishments during regular business hours. If normal access to business establishments is blocked, alternative access shall be provided. Should this occur, the construction contractor shall coordinate with the businesses in preparing a plan for alternative access.

During construction, the construction contractor shall maintain continuous vehicular and pedestrian access to residential driveways from the public street to the private property line, except where necessary construction precludes such continuous access for reasonable periods of time. For example, when a given pipeline segment is initially being excavated, access to individual driveways may be closed during the course of a workday. Access shall be reestablished at the end of the workday. If a driveway needs to be closed or interfered with as described previously, the construction contractor shall notify the owner or occupant of the closure of the driveway at least 5 working days prior to the closure.

The TCP shall include provisions to ensure that the construction contractor's work in any public street does not interfere unnecessarily with the operation of other agencies vehicles, such as emergency service providers.

Level of Significance after Mitigation

With implementation of Mitigation Framework measure MM-TRA-1 which requires preparation of traffic control plans to maintain access to individual properties and businesses (including that of emergency access), impacts to vehicle movement and access to roadways would be reduced to **below a level of significance**.

5.14 PUBLIC SERVICES

5.14.1 INTRODUCTION

Public facilities and services are those functions that serve residents on a community-wide basis. These functions include fire and police protection, public parks and recreation facilities, schools, and libraries. This section discusses the existing public services, identifies any potential impacts to public services resulting from the implementation of the Pure Water Program (Program), and includes Mitigation Framework measures as necessary.

5.14.2 EXISTING CONDITIONS

This section describes the existing public services and facilities for each major geographical component of the Program. It should be noted that all of the facilities that would be staffed would be located within the City of San Diego. All unmanned portions of each Program component would be located across several different jurisdictions as discussed below.

Police

The City of San Diego General Plan Public Facilities, Services, and Safety Element includes goals, policies, and other information regarding police protection services. The City of San Diego Police Department (SDPD) focuses on providing police protection services with a goal for safe, peaceful, and orderly communities through a Neighborhood Policing philosophy that engages a responsibility between police officers and residents (City of San Diego 2008). The SDPD divides its jurisdiction into multiple neighborhood divisions, which are discussed in the following paragraphs.

North City Component

The North City component includes expansion of the existing North City Water Reclamation Plant (NCWRP), construction of a new full-scale advanced water purification facility (NCAWPF) adjacent to the NCWRP, pipelines, and support facilities such as pump stations (see Figure 3-6). The North City component of the Program would be located within the City of San Diego, City of Santee, and unincorporated portions of the County of San Diego.

The NCWRP, NCAWPF, a number of the pump stations, and portions of the pipelines would be located within the City of San Diego and the jurisdiction of the SDPD. The NCAWPF would be located within the Northwestern Division of the SDPD, which is headquartered at 12592 El Camino Real approximately 3.5 miles northwest. The Northern Division headquarters is located in the vicinity of the NCAWPF, approximately 1 mile to the west (San Diego Police Department 2013).

Unmanned facilities of the North City component including a portion of the pipelines and the Mission Trails Booster Station would also be located within the City of Santee and unincorporated portions of the County of San Diego. These portions of the North City component would be located within the jurisdiction of the San Diego County Sheriff's Department for both the City of Santee and unincorporated areas of the County.

Central Area Component

The Central Area component includes construction of a new water reclamation facility (Central Area WRP (CAWRP)) and the Central Area AWPF (CAAWPF). The CAWRP would be constructed at Harbor Drive near the convergence of the North and South Metro Interceptors and Pump Station No. 2 (PS2), which carry all of the flows that are conveyed to the Point Loma Wastewater Treatment Plant (PLWTP). Wastewater flows from PS2 would be diverted to the water reclamation facility to produce reclaimed water. The CAAWPF would be located in Mission Valley (see Figure 3-7).

The CAWRP and a portion of the pipelines would be located within the SDPD Western Division, which is headquartered at 5215 Gaines Street, San Diego, California 92110. The CAAWPF, the Alvarado WTP Booster Station, and a portion of the pipelines would be located within the SDPD Eastern Division, which is headquartered at 9225 Aero Drive, San Diego, California 92123 (San Diego Police Department 2013).

Central Area pipelines would also be located within the City of La Mesa, City of El Cajon, and portions of unincorporated County land; the City of La Mesa Police Department, City of El Cajon Police Department, and San Diego County Sheriff's Department serve these jurisdictions, respectively.

South Bay Component

The South Bay component of the Program would include the expansion of the South Bay WRP (SBWRP), installation of a new pump station and pipeline to convey additional wastewater to the plant, construction of a new South Bay AWPF (SBAWPF), and construction of a conveyance system to deliver purified water to the Otay Reservoir (see Figure 3-8).

The SBAWPF and a portion of the pipelines would be located within the SDPD Southern Division, which is headquartered at 1120 27th Street, San Diego, California 92154 (San Diego Police Department 2013).

Unmanned facilities of the South Bay component including a portion of the pipelines and pump stations would also be located within the City of Chula Vista and the City of Chula Vista Police Department.

Fire

The City of San Diego General Plan Public Facilities, Services, and Safety Element includes goals, policies, and other information regarding fire protection services. City of San Diego Fire-Rescue Department (SDFD) provides traditional fire protection services as well as emergency medical services, water rescue, hazardous material response, confined space rescue, cliff rescue, high angle rescue, mass casualty incidents, and response to terrorism (City of San Diego 2008). The SDFD employs 801 fire personnel, 338, lifeguard personnel, and 161 civilian personnel across 47 fire stations and 9 permanent lifeguard stations (City of San Diego 2015a).

North City Component

The NCWRP, NCAWPF, a number of the pump stations, and portions of the pipelines would be located within the City of San Diego and the jurisdiction of the SDFD. The nearest fire station is SDFD Fire Station 35, located at 4285 Eastgate Mall, San Diego, California 92037. Fire Station 35 houses the following apparatus: battalion, engine, truck, brush, and chemical rig (City of San Diego 2015b).

Unmanned facilities of the North City component including a portion of the pipelines and a pump station would also be located within the City of Santee within the jurisdiction of the City of Santee Fire Department and unincorporated portions of the County of San Diego within the jurisdiction of the San Diego County Fire Authority (specifically the Lakeside Fire Protection District) (San Diego County Fire Authority 2015).

Central Area Component

The CAWRP, CAAWPF, the Alvarado WTP Booster Station, and a portion of the pipelines would be located within the jurisdiction of the SDFD. SDFD Fire Station 22 is the nearest fire station to the CAWRP, located at 1055 Catalina Boulevard, San Diego, California 92107; this fire station houses one fire engine (City of San Diego 2015b). The nearest fire station to the CAAWPF is SDFD Fire Station 45, located within the Qualcomm Stadium parking lot and houses one fire engine (City of San Diego 2015b).

Central Area pipelines would also be located within the City of La Mesa, City of El Cajon, and portions of unincorporated County land. The Cities of La Mesa and El Cajon are both served by Heartland Fire and Rescue, which also serves the City of Lemon Grove. Within unincorporated County land, the Central Area components would be located within the jurisdiction of the San Diego County Fire Authority, specifically the Lakeside Fire Protection District (San Diego County Fire Authority 2015).

South Bay Component

The SBAWPF and a portion of the pipelines would be located within the jurisdiction of the SDFD. The nearest fire station is SDFD Fire Station 29 located at 198 West San Ysidro Boulevard, San Diego, California 92173. Fire Station 29 houses the following apparatus: engine, truck, brush, and paramedic (City of San Diego 2015b).

Unmanned facilities of the South Bay component including a portion of the pipelines and pump stations would also be located within the City of Chula Vista and under the jurisdiction of the City of Chula Vista Police Department.

Schools

The staffed facilities of the Program would be located within the San Diego Unified School District (North City and Central Area components) as well as the South Bay Union Elementary School District and the Sweetwater Union High School District (South Bay component) (City of San Diego 2008). The San Diego Unified School District serves more than 132,000 students and employs nearly 6,000 teachers across 226 educational facilities (San Diego Unified School District 2015). The South Bay Union Elementary School District enrolls approximately 8,462 students across 12 schools (South Bay Union Elementary School District 2015). The Sweetwater Union High School District enrolls approximately 41,000 students, including approximately 24, 000 adult students, across 32 campuses (Sweetwater Union High School District 2015).

Parks

The primary components of the Program would be located within the City of San Diego where the City of San Diego Park and Recreation Department is responsible for managing more than 340 parks, 26 miles of shoreline, 13 pools, 3 public golf courses, and 56 recreation centers (City of San Diego 2015c). The City of San Diego General Plan Recreation Element establishes a population-based park standard of 2.8 useable acres per 1,000 residents (City of San Diego 2008).

Libraries

The primary components of the Program would be located within the City of San Diego and within the San Diego Public Library system. The San Diego Public Library consists of the Central Library and 35 branch libraries throughout the City of San Diego (City of San Diego 2015d).

5.14.3 IMPACTS

Issue 1: Would the Pure Water Program result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services?

According to the City's *California Environmental Quality Act (CEQA) Significance Determination Thresholds* (City of San Diego 2011), the impacts analysis should address a project's potential to result in physical impacts from the construction or alteration of government facilities needed to maintain acceptable service ratios, response times, or other performance objectives for public services. The analysis should identify if a project would result in a conflict with the community plan in terms of the number, size, and location of public service facilities. If a conflict exists, the analysis should determine potential direct impacts from the construction of new public service facilities needed to serve the project.

Police

Construction

All pipeline facilities of each of the Program components would be located within the roadway right-of-way, where feasible. Construction of pipelines would require encroachment onto public right-of-ways at different times throughout the construction phase of each Program component. Pipeline construction locations within a roadway would be temporary as workers and equipment would move along each pipeline alignment as portions are completed. Therefore, construction of pipelines would have the potential to temporarily impede or obstruct access, including police emergency access, along, and within roadways at any given time and location along each alignment. As such, construction of pipelines may temporarily result in inadequate access along roadways such that police response times would be adversely affected.

Similar to pipeline construction, treatment facility and pump station construction would be temporary. Construction and staging of equipment for the treatment facilities and pump stations of each Program component would likely be limited to each respective site. However, construction of treatment facilities and pump stations may require temporary encroachment onto public right-of-ways and roadways for ingress/egress of workers and equipment. Construction may also require temporary staging of equipment off site and within roadways if the size of the site does not permit staging. Such off-site staging would only likely be required for the pump stations due to the expected smaller site size as compared to the treatment facilities. Therefore,

for any given treatment facility and pump station, construction may require roadway encroachments that could temporarily impede or obstruct access, including police emergency access. As such, construction of treatment facilities and pump stations may temporarily result in inadequate access along roadways such that police response times would be adversely affected.

As described above, construction of pipelines, treatment facilities, and pump stations may result in temporary obstruction of access along roadways. However, prior to construction of any project that requires encroachment into public roadways, a traffic control plan (TCP) would be prepared by the City in conformance with the City's and each affected municipality's traffic control regulations. The TCP would be prepared to ensure that all access, including police access, would not be restricted. Refer also to Section 5.13, Transportation, Circulation, and Parking, for more detail regarding the TCP.

Operation

Pipelines and Pump Stations

Once operational, all pipelines would be located underground, and pump stations would be unmanned. Operational activities associated with all pipelines and pump stations would be limited to occasional maintenance. Maintenance activities would be sporadic and temporary in nature at any given location along the pipeline alignment. Any potential for calls for police protection associated with these maintenance activities would not be permanent. Therefore, it is not expected that such pipeline and pump station maintenance activities would result in a substantial increase in demand for police protection services.

Treatment Facilities

Each AWPF and the CAWRP would include an operations and maintenance building on site. Sixty-five new workers are anticipated to be required to operate each new AWPF and 76 new workers are anticipated to be required to operate the new CAWRP, for a total of 271 new permanent workers. This staff would be provided by the City. The facilities would be staffed in shifts 24-hours per day and a fully automated control system would allow for remote monitoring.. For each new facility, it can be expected that similar security measures that are in place for existing facilities (such as the NCWRP) would be employed; these security measures may include on-site security guards, cameras, and a secure entrance. Additionally, each treatment facility would be located nearby existing development currently serviced by the SDPD. Therefore, with the combination of staffing, 24-hour monitoring, and likely implementation of security measures, the treatment facilities would not result in a substantial increase in demand for police protection services.

Population Growth

Of the 271 new permanent workers, any portion may currently live within the region, and therefore, would not contribute to an incremental increase in police services. However, some of the 271 new permanent workers may relocate to the area (along with their families) as a result of the Program. Any workers that would relocate would likely reside in any location within the City of San Diego or neighboring jurisdictions. The new workers and their families would result in a permanent incremental increase in demand for police protection. However, as their potential relocation to the area would likely be at any location within the City of San Diego and neighboring cities, the effect of this increase in demand would be distributed and minimal.

The Program is not anticipated to represent an additional water supply over and above what is already contemplated for the San Diego region. Rather, the Program would offset supplies that would have otherwise been obtained through another method, such as importing. Therefore, it is not anticipated that implementation of the Program would have any effect on planned growth within the service area of the Program. As such, the long-term operation of the Program would not result in a substantial incremental increase in regional demand for police protection services such that service ratios would be adversely affected.

Fire

Construction

Similar to police services, construction of pipelines would have potential to temporarily impede or obstruct access, including fire department access, along and within roadways at any given time and location along each alignment. As such, construction of pipelines may temporarily result in inadequate access along roadways such that fire department response times would be adversely affected.

Similar to police services, for any given treatment facility and pump station, construction may require roadway encroachments that could temporarily impede or obstruct access, including fire emergency access. As such, construction of treatment facilities and pump stations may temporarily result in inadequate access along roadways such that fire response times would be adversely affected.

As described above, construction of pipelines, treatment facilities, and pump stations may result in temporary obstruction of access along roadways. However, prior to construction of any project that requires encroachment into public roadways, a TCP would be prepared by the City in conformance with the City's and each affected municipality's traffic control regulations. The TCP would be prepared to ensure that all access, including fire response access, would not be restricted. Refer also to Section 5.13, Transportation, Circulation, and Parking, for more detail regarding the TCP.

Operation

Pipelines

Once operational, all pipelines would be located underground and would not result in potential source of ignition for fires. Operational activities associated with all pipelines and pump stations would be limited to occasional maintenance. Maintenance activities would be sporadic and temporary in nature at any given location along the pipeline alignment. Any potential for calls for fire protection associated with these maintenance activities would not be permanent. Therefore, it is not expected that such pipeline and pump station maintenance activities would result in a substantial increase in demand for fire protection services.

Treatment Facilities and Pump Stations

Similar to police services, the new treatment facilities and pump stations would not be expected to result in a substantial increase in demand for fire protection services due to location relative to existing development and existing fire stations. While the project-level site-specific details for each treatment facility and pump station are not known at this time, for a program-level analysis it can be assumed that each facility and pump station would be required to meet design and construction standards of the SDFD and City of San Diego Municipal Code with respect to fire hazard safety prior to future project approval. These standards can include fire apparatus access requirements, fuel modification buffers, and automatic fire protection systems. These requirements, in combination with staffing and 24-hour monitoring of treatment facilities and pump stations, would minimize adverse effects on fire protection.

Population Growth

As discussed previously, the Program would not have any effect on planned growth within the service area of the Program. Additionally, the 271 new permanent workers would minimally increase demand for fire protection services. As such, the long-term operation of the Program would not result in a substantial incremental increase in regional demand for fire protection services such that service ratios would be adversely affected.

Schools

Implementation of the Program would not result in the temporary or permanent alteration, closure, construction, or demolition of any school facilities.

As discussed previously, the Program would not have any effect on planned growth within the service area of the Program. Additionally, the 271 new permanent workers would minimally increase demand for fire protection services. Workers that currently reside within the City of San

Diego or neighboring cities would not result in a population increase that would affect schools. Any workers (and their families) that would relocate as a result of the implementation of the Program would likely be dispersed throughout the region such that the effect of this increase in demand would be minimal and distributed among several schools and districts. Therefore, the Program would not result in a substantial increase in demand for schools such that new school facilities would be required.

Parks

Implementation of the Program would not result in the temporary or permanent alteration, closure, construction, or demolition of any park or recreational facilities. As discussed previously, the Program would not result in a substantial increase in population. Therefore, similar to schools, the Program would not result in a substantial increase in demand for parks and recreational facilities.

Libraries

Implementation of the Program would not result in the temporary or permanent alteration, closure, construction, or demolition of any library. As discussed previously, the Program would not result in a substantial increase in population. Therefore, similar to schools, the Program would not result in a substantial increase in demand for libraries.

5.14.4 SIGNIFICANCE OF IMPACTS

Police

Construction

Construction of pipelines, pump stations, and treatment facilities may temporarily result in inadequate access along roadways such that police response times would be adversely affected but with required preparation of traffic control plans, impacts to vehicle movement and access to roadways would remain below a level of significance.

Operation

Any potential for calls for police protection associated with pipeline and pump station maintenance activities would not be permanent. Additionally, with the combination of staffing, 24-hour monitoring, and likely implementation of security measures, the treatment facilities would not result in a substantial increase in demand for police protection services such that new or altered facilities would be required to maintain adequate service ratios. Therefore, impacts to police services during operation would be **less than significant**.

Long-term operations of the Program would result in a minimal increase in population such that a substantial increase in demand for police protection would not occur. New or altered police protection facilities would not be required. Therefore, impacts to police services related to population during operation would be **less than significant**.

Fire

Construction

Construction of pipelines, pump stations, and treatment facilities may temporarily result in inadequate access along roadways such that fire department response times would be adversely affected but with required preparation of traffic control plans, impacts to vehicle movement and access to roadways would remain below a level of significance.

Operation

Any potential for calls for fire protection associated with pipeline and pump station maintenance activities would not be permanent. SDFD and City of San Diego Municipal Code requirements for fire safety design and construction, in combination with staffing and 24-hour monitoring of treatment facilities and pump stations, would minimize adverse effects on fire protection. Therefore, impacts to fire response and protection would be **less than significant**.

Long-term operations of the Program would result in a minimal increase in population such that a substantial increase in demand for fire response and protection would not occur. New or altered fire protection facilities would not be required. Therefore, impacts to fire response and protection related to population growth during operation would be **less than significant**.

Schools

The Program would not result in a substantial increase in demand for schools such that the provision of school facilities and service ratios would be adversely affected. Therefore, no new or altered school facilities would be required, and impacts would be **less than significant**.

Parks

The Program would not result in a substantial increase in demand for parks such that the provision of parks and recreational facilities and service ratios would be adversely affected. Therefore, no new or altered parks and recreational facilities would be required, and impacts would be **less than significant**.

Libraries

The Program would not result in a substantial increase in demand for libraries such that the provision of libraries and service ratios would be adversely affected. Therefore, no new or altered libraries would be required and impacts would be **less than significant**.

5.14.5 MITIGATION, MONITORING, AND REPORTING

Impacts related to public services, including police, fire, schools, parks and libraries, would be less than significant and no mitigation is required.

Level of Significance after Mitigation

Without mitigation, impacts would be **less than significant**.

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5.15 GREENHOUSE GAS EMISSIONS

5.15.1 INTRODUCTION

The purpose of this section is to estimate and evaluate the potential greenhouse gas (GHG) emissions impacts associated with implementation of the Pure Water Program (Program) relative to the City's significance thresholds for GHGs. The report includes a quantitative analysis of Program-related greenhouse gas emissions.

5.15.2 EXISTING CONDITIONS

The Greenhouse Effect and Greenhouse Gases

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind, lasting for an extended period (decades or longer). Gases that trap heat in the atmosphere are often called "greenhouse gases" (GHGs). The greenhouse effect traps heat in the troposphere through a threefold process as follows: Short-wave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long-wave radiation; and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and toward the Earth. This "trapping" of the long-wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect. Principal GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone (O_3), and water vapor (H_2O). Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted to the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely byproducts of fossil fuel combustion, whereas CH_4 results mostly from off-gassing associated with agricultural practices and landfills. Man-made GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3), which are associated with certain industrial products and processes (CAT 2015).

Temperatures are projected to rise 2°F to 4°F in most areas of the United States over the next few decades. Reductions in some short-lived human-induced emissions that contribute to warming, such as black carbon (soot) and methane, could reduce some of the projected warming over the next couple of decades, because, unlike carbon dioxide, these gases and particles have relatively short atmospheric lifetimes. The amount of warming projected beyond the next few decades is directly linked to the cumulative global emissions of heat-trapping gases and particles. By the end of this century, a roughly 3°F to 5°F rise is projected under a lower emissions scenario, which would require substantial reductions in emissions, and a 5°F to 10°F rise for a higher emissions scenario assuming continued increases in emissions, predominantly from fossil fuel combustion (National Climatic Data Center 2014). The effect each GHG has on climate

change is measured as a combination of the mass of its emissions and the potential of a gas or aerosol to trap heat in the atmosphere, known as its "global warming potential" (GWP). GWP varies between GHGs; for example, the GWP of CH_4 is 21, and the GWP of N_2O is 310. Total GHG emissions are expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG gas emissions are typically measured in terms of pounds or tons of "CO_2 equivalent" (CO_2E).[1]

Contributions to Greenhouse Gas Emissions

In 2012, the United States produced 6,525 million metric tons (MMT) of CO_2E (EPA 2014). The primary GHG emitted by human activities in the United States was CO_2, representing approximately 82.5% of total GHG emissions. The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 94.2% of the CO_2 emissions.

According to the 2012 GHG inventory data compiled by the California Air Resources Board (CARB) for the California Greenhouse Gas Inventory for 2000–2012, California emitted 459 MMT CO_2E of GHGs, including emissions resulting from out-of-state electrical generation (CARB 2014a). The primary contributors to GHG emissions in California are transportation, industry, electric power production from both in-state and out-of-state sources, agriculture, and other sources, which include commercial and residential activities. GHG emissions associated with water and wastewater supply, treatment and conveyance are included in residential, commercial, industrial activities as well as electrical consumption associated with treatment and conveyance. These primary contributors to California's GHG emissions and their relative contributions in 2012 are presented in Table 5.15-1.

Table 5.15-1
GHG Sources in California

Source Category	Annual GHG Emissions (MMT CO_2E)	% of Total[a]
Agriculture	37.86	8.3%
Commercial uses	14.20	3.1%
Electric power	95.09[b]	20.7%
Industrial uses	89.16	19.4%
Recycling and waste	8.49	1.9%

[1] The CO_2 equivalent for a gas is derived by multiplying the mass of the gas by the associated GWP, such that metric tons of CO_2E = (metric tons of a GHG) × (GWP of the GHG). CalEEMod assumes that the GWP for CH_4 is 21, which means that emissions of 1 metric ton of CH_4 are equivalent to emissions of 21 metric tons of CO_2, and the GWP for N_2O is 310, based on the Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report. Although the IPCC has released subsequent Assessment Reports with updated GWPs, CARB reporting and other statewide documents utilize the GWP in the IPCC Second Assessment Report. As such, it is appropriate to use the hardwired GWP values in CalEEMod from the IPCC Second Assessment Report.

Table 5.15-1
GHG Sources in California

Source Category	Annual GHG Emissions (MMT CO_2E)	% of Total[a]
Residential uses	28.09	6.1%
Transportation	167.38	36.5%
High GWP substances	18.41	4.0%
Totals[c]	**458.68**	**100%**

Source: CARB 2014a.
MMT CO_2E = million metric tons of carbon dioxide equivalent
[a] Percentage of total has been rounded.
[b] Includes emissions associated with imported electricity, which account for 44.07 MMT CO_2E annually.
[c] Totals may not sum due to rounding.

Potential Effects of Human Activity on Climate Change

According to CARB, some of the potential impacts in California of global warming may include loss in snow pack, sea level rise, more extreme heat days per year, more high O_3 days, more large forest fires, and more drought years (CAT 2010a). Several recent studies have attempted to explore the possible negative consequences that climate change, left unchecked, could have in California. These reports acknowledge that climate scientists' understanding of the complex global climate system, and the interplay of the various internal and external factors that affect climate change, remains too limited to yield scientifically valid conclusions on such a localized scale. Substantial work has been done at the international and national level to evaluate climatic impacts, but far less information is available on regional and local impacts.

The primary effect of global climate change has been a rise in average global tropospheric temperature of 0.2°C per decade, determined from meteorological measurements worldwide between 1990 and 2005.

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. Climate change is already affecting California: Average temperatures have increased, leading to more extreme hot days and fewer cold nights; shifts in the water cycle have been observed, with less winter precipitation falling in the form of snow, and both snowmelt and rainwater running off earlier in the year; sea levels have risen; and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (CAT 2010a). Climate change modeling using 2000 emission rates shows that further warming would occur, which would induce further changes in the global climate system during the current century. Changes to the global climate system and ecosystems and to California would include, but would not be limited to:

- Changes in precipitation or melting snow and ice that are altering hydrological systems and affecting water resources in terms of quantity and/or quality (IPCC 2014).

- Changes in terrestrial, freshwater and marine specific as to their geographic ranges, seasonal activities, migration patterns and species interactions (IPCC 2014).
- Negative impacts on agricultural crop yields (IPCC 2014).
- Impacts from climate-related extremes such as heat waves, droughts, floods, wildfires and other natural disasters (IPCC 2014).
- A decline of Sierra snowpack, which is one of three primary water sources in California (in addition to reservoirs and groundwater). The Sierra Nevada snowpack is currently at 14% of normal (California Department of Water Resources 2015).
- Rising regional sea level increases high-tide water levels and augments extreme storm-forced sea-level fluctuations, allowing more wave energy to reach farther shoreward and thus increasing the potential for coastal flooding (CEC 2012a).

5.15.3 REGULATORY SETTING

Federal Activities

Massachusetts vs. EPA. On April 2, 2007, in *Massachusetts v. EPA*, the Supreme Court directed the U.S. Environmental Protection Agency (EPA) Administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the EPA Administrator is required to follow the language of Section 202(a) of the Clean Air Act (CAA). On December 7, 2009, the Administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the CAA:

- The Administrator found that elevated concentrations of GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the "endangerment finding."
- The Administrator further found the combined emissions of GHGs—CO_2, CH_4, N_2O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the CAA.

Energy Independence and Security Act. On December 19, 2007, President Bush signed the Energy Independence and Security Act of 2007. Among other key measures, the Act would do the following, which would aid in the reduction of national GHG emissions:

1. Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
2. Set a target of 35 miles per gallon (mpg) for the combined fleet of cars and light trucks by model year 2020 and direct National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
3. Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

EPA and NHTSA Joint Final Rule for Vehicle Standards. On April 1, 2010, the EPA and NHTSA announced a joint final rule to establish a national program consisting of new standards for light-duty vehicles model years 2012 through 2016. The joint rule is intended to reduce GHG emissions and improve fuel economy. The EPA is finalizing the first-ever national GHG emissions standards under the CAA, and NHTSA is finalizing Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act (EPA 2010). This final rule follows the EPA and Department of Transportation's joint proposal on September 15, 2009, and is the result of President Obama's May 2009 announcement of a national program to reduce greenhouse gases and improve fuel economy (EPA 2011). The final rule became effective on July 6, 2010 (75 FR 25324–25728).

The EPA GHG standards require new passenger cars, light-duty trucks, and medium-duty passenger vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile in model year 2016, equivalent to 35.5 mpg if the automotive industry were to meet this CO_2 level through fuel economy improvements alone. The CAFE standards for passenger cars and light trucks will be phased in between 2012 and 2016, with the final standards equivalent to 37.8 mpg for passenger cars and 28.8 mpg for light trucks, resulting in an estimated combined average of 34.1 mpg. Together, these standards will cut GHG emissions by an estimated 960 MMT and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program. The rules will simultaneously reduce GHG emissions, improve energy security, increase fuel savings, and provide clarity and predictability for manufacturers (EPA 2011).

In August 2012, the EPA and NHTSA approved a second round of GHG and CAFE standards for model years 2017 and beyond (77 FR 62623–63200). These standards will reduce motor vehicle GHG emissions to 163 grams of CO_2 per mile, which is equivalent to 54.5 mpg if this

level were achieved solely through improvements in fuel efficiency, for cars and light-duty trucks by model year 2025. A portion of these improvements, however, will likely be made through improvements in air conditioning leakage and through use of alternative refrigerants, which would not contribute to fuel economy. The first phase of the CAFE standards, for model years 2017 to 2021, are projected to require, on an average industry fleet-wide basis, a range from 40.3 to 41.0 mpg in model year 2021. The second phase of the CAFE program, for model years 2022 to 2025, are projected to require, on an average industry fleet-wide basis, a range from 48.7 to 49.7 mpg in model year 2025. The second phase of standards have not been finalized due to the statutory requirement that NHTSA set average fuel economy standards not more than five model years at a time. The regulations also include targeted incentives to encourage early adoption and introduction into the marketplace of advanced technologies to dramatically improve vehicle performance, including:

- Incentives for electric vehicles, plug-in hybrid electric vehicles, and fuel cells vehicles.
- Incentives for hybrid technologies for large pickups and for other technologies that achieve high fuel economy levels on large pickups.
- Incentives for natural gas vehicles.
- Credits for technologies with potential to achieve real-world greenhouse gas reductions and fuel economy improvements that are not captured by the standards test procedures.

State of California

Title 24. Title 24 of the California Code of Regulations was established in 1978, and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically establishes energy efficiency standards for residential and non-residential buildings constructed in the State of California in order to reduce energy demand and consumption. Part 6 is updated periodically to incorporate and consider new energy efficiency technologies and methodologies. The most recent amendments, referred to as the 2013 standards, become effective on July 1, 2014. Buildings constructed in accordance with the 2013 standards will use 25% less energy for lighting, heating, cooling, ventilation, and water heating than the 2008 standards. Additionally, the standards will save 200 million gallons of water per year and avoid 170,500 tons of GHG emissions per year (CEC 2012b).

Title 24 also includes Part 11, known as California's Green Building Standards (CALGreen). The CALGreen standards took effect in January 2011, and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential and state-owned buildings, as well as schools and hospitals. The mandatory standards require:

- 20% mandatory reduction in indoor water use.

- 50% of construction and demolition waste must be diverted from landfills.
- Mandatory inspections of energy systems to ensure optimal working efficiency.
- Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring and particle boards.

The CALGreen standards also include voluntary efficiency measures that are provided at two separate tiers and implemented per the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15% improvement in energy requirements; more strict water conservation; 65% diversion of construction and demolition waste; 10% recycled content in building materials; 20% permeable paving; 20% cement reduction; and, cool/solar reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30% improvement in energy requirements; more strict water conservation; 75% diversion of construction and demolition waste; 15% recycled content in building materials; 30% permeable paving; 30% cement reduction; and, cool/solar reflective roofs.

Assembly Bill (AB) 1493. In a response to the transportation sector accounting for more than half of California's CO_2 emissions, AB 1493 (Pavley) was enacted on July 22, 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles whose primary use is noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22% in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30%.

Before these regulations could go into effect, the EPA had to grant California a waiver under the federal CAA, which ordinarily preempts state regulation of motor vehicle emission standards. The waiver was granted by Lisa Jackson, the EPA Administrator, on June 30, 2009. On March 29, 2010, the CARB Executive Officer approved revisions to the motor vehicle GHG standards to harmonize the state program with the national program for 2012–2016 model years (see "EPA and NHTSA Joint Final Rule for Vehicle Standards" above). The revised regulations became effective on April 1, 2010.

Executive Order S-3-05. In June 2005, Governor Schwarzenegger established California's GHG emissions reduction targets in Executive Order S-3-05. The Executive Order established the following goals: GHG emissions should be reduced to 2000 levels by 2010; GHG emissions should be reduced to 1990 levels by 2020; and GHG emissions should be reduced to 80% below 1990 levels by 2050. The California EPA secretary is required to coordinate efforts of various agencies to collectively and efficiently reduce GHGs. The Climate Action Team is responsible

for implementing global warming emissions reduction programs. Representatives from several state agencies comprise the Climate Action Team. The Climate Action Team fulfilled its report requirements through the March 2006 Climate Action Team Report to the governor and the legislature (CAT 2006).

The 2009 *Climate Action Team Biennial Report* (CAT 2010b), published in April 2010, expands on the policy outlined in the 2006 assessment. The 2009 report provides new information and scientific findings regarding the development of new climate and sea level projections using new information and tools that have recently become available and evaluates climate change within the context of broader social changes, such as land use changes and demographics. The 2009 report also identifies the need for additional research in several different aspects that affect climate change in order to support effective climate change strategies. The aspects of climate change determined to require future research include vehicle and fuel technologies, land use and smart growth, electricity and natural gas, energy efficiency, renewable energy and reduced carbon energy sources, low GHG technologies for other sectors, carbon sequestration, terrestrial sequestration, geologic sequestration, economic impacts and considerations, social science, and environmental justice.

Subsequently, the 2010 *Climate Action Team Report to Governor Schwarzenegger and the California Legislature* (CAT 2010a) reviews past climate action milestones including voluntary reporting programs, GHG standards for passenger vehicles, the Low Carbon Fuel Standard, a statewide renewable energy standard, and the cap-and-trade program. Additionally, the 2010 report includes a cataloguing of recent research and ongoing projects; mitigation and adaptation strategies identified by sector (e.g., agriculture, biodiversity, electricity, and natural gas); actions that can be taken at the regional, national, and international levels to mitigate the adverse effects of climate change; and today's outlook on future conditions.

AB 32. In furtherance of the goals established in Executive Order S-3-05, the legislature enacted AB 32 (Núñez and Pavley), the California Global Warming Solutions Act of 2006, which Governor Schwarzenegger signed on September 27, 2006. The GHG emissions limit is equivalent to the 1990 levels, which are to be achieved by 2020.

CARB has been assigned to carry out and develop the programs and requirements necessary to achieve the goals of AB 32. Under AB 32, CARB must adopt regulations requiring the reporting and verification of statewide GHG emissions. This program will be used to monitor and enforce compliance with the established standards. CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 allows CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing

any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted.

The first action under AB 32 resulted in the adoption of a report listing early action GHG emission reduction measures on June 21, 2007. The early actions include three specific GHG control rules. On October 25, 2007, CARB approved an additional six early action GHG reduction measures under AB 32. The three original early-action regulations meeting the narrow legal definition of "discrete early action GHG reduction measures" include:

1. A low-carbon fuel standard to reduce the "carbon intensity" of California fuels.
2. Reduction of refrigerant losses from motor vehicle air conditioning system maintenance to restrict the sale of "do-it-yourself" automotive refrigerants.
3. Increased methane capture from landfills to require broader use of state-of-the-art methane capture technologies.

The additional six early-action regulations, which were also considered "discrete early action GHG reduction measures," consist of:

1. Reduction of aerodynamic drag, and thereby fuel consumption, from existing trucks and trailers through retrofit technology
2. Reduction of auxiliary engine emissions of docked ships by requiring port electrification
3. Reduction of PFCs from the semiconductor industry
4. Reduction of propellants in consumer products (e.g., aerosols, tire inflators, and dust removal products)
5. Requirements that all tune-up, smog check, and oil change mechanics ensure proper tire inflation as part of overall service in order to maintain fuel efficiency
6. Restriction on the use of SF_6 from non-electricity sectors if viable alternatives are available.

As required under AB 32, on December 6, 2007, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was set at 427 MMT CO_2E. In addition to the 1990 emissions inventory, CARB also adopted regulations requiring mandatory reporting of GHGs for large facilities that account for 94% of GHG emissions from industrial and commercial stationary sources in California. About 800 separate sources fall under the new reporting rules and include electricity generating facilities, electricity retail providers and power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and other industrial sources that emit CO_2 in excess of specified thresholds.

On December 11, 2008, CARB approved the *Climate Change Proposed Scoping Plan: A Framework for Change* (Scoping Plan; CARB 2008) to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program.

The key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards.
- Achieving a statewide renewables energy mix of 33%.
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions.
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets.
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard.
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation.

CARB is required to update its Scoping Plan at least once every 5 years (Health and Safety Code, Section 38561(h). The First Update to the Climate Change Scoping Plan (Scoping Plan Update; CARB 2014b) was approved by the CARB Board on May 22, 2014. The Scoping Plan Update builds upon the initial Scoping Plan with new strategies and recommendations. The update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The update adjusts California's target GHG emissions for 2020 at 431 MMT CO_2E based on use of GWP factors in the IPCC's Fourth Assessment Report, which was published in 2007. The update defines CARB's climate change priorities for the next 5 years and sets the groundwork to reach California's long-term climate goals set forth in Executive Orders S-3-05 and B-16-2012. The update highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the initial Scoping Plan and finds that California is on track to meet

the near-term 2020. These efforts were pursued to achieve the near-term 2020 goal and have created a framework for ongoing climate action that can be built upon to maintain and continue economic sector-specific reductions beyond 2020, as required by AB 32. The document recommends efforts to reduce so-called short-lived climate pollutants (black carbon, methane, and hydrofluorocarbons). These pollutants remain in the atmosphere for shorter periods of time and have much larger GWPs compared to CO_2. The Scoping Plan Update identifies a number of key focus areas or sectors (energy, transportation, agriculture, water, waste management, and natural and working lands), along with short-lived climate pollutants, green buildings, and the cap-and-trade program. The update also recommends that a statewide mid-term target and mid-term and long-term sector targets be established toward meeting the 2050 goal established by Executive Order S-3-05 to reduce California's GHG emissions to 80% below 1990 levels, although no specific recommendations are made.

Executive Order B-30-15. On April 29, 2015, Governor Jerry Brown issued an executive order which identified an interim GHG reduction target in support of targets previously identified under S-3-05 and AB 32. Executive Order B-30-15 set an interim target goal of reducing GHG emissions to 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050 as set forth in S-3-05. To facilitate achievement of this goal, B-30-15 calls for an update to CARB's Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent. The Executive Order also calls for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets. Sector-specific agencies in transportation, energy, water, and forestry will be required to prepare GHG reduction plans by September 2015, followed by a report on actions taken in relation to these plans in June 2016. The Executive Order does not require local agencies to take any action to meet the new interim GHG reduction threshold. It is important to note that Executive Order B-30-15 was not adopted by a public agency through a public review process that requires analysis pursuant to CEQA Guidelines Section 15064.4 and that is has not been subsequently validated by a statute as an official GHG reduction target of the State of California. The Executive Order itself states it is "not intended to create, and does not, create any rights of benefits, whether substantive or procedural, enforceable at law or in equity, against the State of California, its agencies, departments, entities, officers employees, or any other person."

Senate Bill (1368). In September 2006, Governor Schwarzenegger signed SB 1368, which requires the California Energy Commission to develop and adopt regulations for GHG emissions performance standards for the long-term procurement of electricity by local publicly owned utilities. These standards must be consistent with the standards adopted by the California Public Utilities Commission. This effort will help protect energy customers from financial risks associated with investments in carbon-intensive generation by allowing new capital investments

in power plants whose GHG emissions are as low or lower than new combined-cycle natural gas plants, by requiring imported electricity to meet GHG performance standards in California, and by requiring that the standards be developed and adopted in a public process.

SB 97. In August 2007, the legislature enacted SB 97 (Dutton), which directs the Governor's Office of Planning and Research (OPR) to develop guidelines under the California Environmental Quality Act (CEQA) for the mitigation of GHG emissions. OPR was to develop proposed guidelines by July 1, 2009, and the Natural Resources Agency was directed to adopt the guidelines by January 1, 2010. On April 13, 2009, OPR submitted to the Secretary for Natural Resources its proposed amendments to the State CEQA Guidelines.

On June 19, 2008, OPR issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents (OPR 2008). The advisory indicated that a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities, should be identified and estimated. The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures that are necessary to reduce GHG emissions to a level that is less than significant.

On April 13, 2009, OPR submitted to the Natural Resources Agency its proposed amendments to the state CEQA Guidelines relating to GHG emissions. On July 3, 2009, the Natural Resources Agency commenced the Administrative Procedure Act rulemaking process for certifying and adopting the proposed amendments, starting the public comment period.

The Natural Resources Agency adopted the CEQA Guidelines Amendments on December 30, 2009, and transmitted them to the Office of Administrative Law on December 31, 2009. On February 16, 2010, the Office of Administrative law completed its review and filed the amendments with the secretary of state. The amendments became effective on March 18, 2010. The amended guidelines establish several new CEQA requirements concerning the analysis of GHGs, including the following:

- Requiring a lead agency to "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" (Section 15064(a))
- Providing a lead agency with the discretion to determine whether to use quantitative or qualitative analysis or performance standards to determine the significance of GHG emissions resulting from a particular project (Section 15064.4(a))

- Requiring a lead agency to consider the following factors when assessing the significant impacts from greenhouse gas emissions on the environment:
  - The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.
  - Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
  - The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. (Section 15064.4(b))
- Allowing lead agencies to consider feasible means of mitigating the significant effects of GHG emissions, including reductions in emissions through the implementation of project features or off-site measures, including offsets that are not otherwise required (Section 15126.4(c)).

The amended guidelines also establish two new guidance questions regarding GHG emissions in the Environmental Checklist set forth in CEQA Guidelines Appendix G:

- Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The adopted amendments do not establish a GHG emission threshold, and instead allow a lead agency to develop, adopt, and apply its own thresholds of significance or those developed by other agencies or experts.[2] The Natural Resources Agency also acknowledges that a lead agency may consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions.[3]

SB 375. In August 2008, the legislature passed and on September 30, 2008, Governor Schwarzenegger signed SB 375 (Steinberg), which addresses GHG emissions associated with the

[2] "The CEQA Guidelines do not establish thresholds of significance for other potential environmental impacts, and SB 97 did not authorize the development of a statement threshold as part of this CEQA Guidelines update. Rather, the proposed amendments recognize a lead agency's existing authority to develop, adopt and apply their own thresholds of significance or those developed by other agencies or experts" (California Natural Resources Agency 2009, p. 84).

[3] "A project's compliance with regulations or requirements implementing AB 32 or other laws and policies is not irrelevant. Section 15064.4(b)(3) would allow a lead agency to consider compliance with requirements and regulations in the determination of significance of a project's greenhouse gas emissions" (California Natural Resources Agency 2009, p. 100).

transportation sector through regional transportation and sustainability plans. Regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035, as determined by CARB, are required to consider the emission reductions associated with vehicle emission standards (see SB 1493), the composition of fuels (see Executive Order S-1-07), and other CARB-approved measures to reduce GHG emissions.

Regional metropolitan planning organizations (MPOs) will be responsible for preparing a Sustainable Communities Strategy within their Regional Transportation Plan. The goal of the Sustainable Communities Strategy is to establish a development plan for the region, which, after considering transportation measures and policies, will achieve, if feasible, the GHG reduction targets. If a Sustainable Communities Strategy is unable to achieve the GHG reduction target, an MPO must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

SB 375 provides incentives for streamlining California Environmental Quality Act (CEQA) requirements by substantially reducing the requirements for "transit priority projects," as specified in SB 375, and eliminating the analysis of the impacts of certain residential projects on global warming and the growth-inducing impacts of those projects when the projects are consistent with the Sustainable Communities Strategy or Alternative Planning Strategy. On September 23, 2010, CARB adopted the SB 375 targets for the regional MPOs. The targets for the San Diego Association of Governments (SANDAG) are a 7% reduction in emissions per capita by 2020 and a 13% reduction by 2035. Achieving these goals through adoption of a Sustainable Communities Strategy will be the responsibility of the MPOs.

SB X1 2. On April 12, 2011, Governor Jerry Brown signed SB X1 2 in the First Extraordinary Session, which would expand the Renewable Portfolio Standard (RPS) by establishing a goal of 20% of the total electricity sold to retail customers in California per year, by December 31, 2013, and 33% by December 31, 2020, and in subsequent years. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current and that meets other specified requirements with respect to its location.

In addition to the retail sellers covered by SB 107, SB X1 2 adds local publicly owned electric utilities to the RPS. By January 1, 2012, the California Public Utilities Commission is required to establish the quantity of electricity products from eligible renewable energy resources to be procured by retail sellers in order to achieve targets of 20% by December 31, 2013; 25% by December 31, 2016; and 33% by December 31, 2020. The statute also requires that the

governing boards for local publicly owned electric utilities establish the same targets, and the governing boards would be responsible for ensuring compliance with these targets. The California Public Utilities Commission will be responsible for enforcement of the RPS for retail sellers, while the California Energy Commission and CARB will enforce the requirements for local publicly owned electric utilities.

California Air Pollution Control Officers Association. The California Air Pollution Control Officers Association (CAPCOA) is the association of Air Pollution Control Officers representing all 35 air quality agencies throughout California. CAPCOA is not a regulatory body, but has been an active organization in providing guidance in addressing the CEQA significance of GHG emissions and climate change as well as other air quality issues.

Local Plans

City of San Diego General Plan

The State of California requires cities and counties to prepare and adopt a general plan to set out a long-range vision and comprehensive policy framework for its future. The state also mandates that the plan be updated periodically to ensure relevance and utility. The *City of San Diego General Plan 2008* (General Plan) was unanimously adopted by the City Council on March 10, 2008, with additional amendments approved in December 2010 and January 2012. The General Plan builds upon many of the goals and strategies of the former 1979 General Plan, in addition to offering new policy direction in the areas of urban form, neighborhood character, historic preservation, public facilities, recreation, conservation, mobility, housing affordability, economic prosperity, and equitable development. It recognizes and explains the critical role of the community planning program as the vehicle to tailor the City of Villages strategy for each neighborhood. It also outlines the plan amendment process, and other implementation strategies, and considers the continued growth of the City beyond the year 2020 (City of San Diego 2008).

Conservation Element. The Conservation Element contains policies to guide the conservation of resources that are fundamental components of San Diego's environment, that help define the City's identity, and that are relied upon for continued economic prosperity. The purpose of this element is to help the City become an international model of sustainable development and conservation and to provide for the long-term conservation and sustainable management of the rich natural resources that help define the City's identity, contribute to its economy, and improve its quality of life.

The City has also adopted the following General Plan Conservation Element policies related to climate change:

- **CE-A.2.** Reduce the City's carbon footprint. Develop and adopt new or amended regulations, programs, and incentives as appropriate to implement the goals and policies set forth in the General Plan to:
  - Create sustainable and efficient land use patterns to reduce vehicular trips and preserve open space;
  - Reduce fuel emission levels by encouraging alternative modes of transportation and increasing fuel efficiency;
  - Improve energy efficiency, especially in the transportation sector and buildings and appliances;
  - Reduce the Urban Heat Island effect through sustainable design and building practices, as well as planting trees (consistent with habitat and water conservation policies) for their many environmental benefits, including natural carbon sequestration;
  - Reduce waste by improving management and recycling programs;
  - Plan for water supply and emergency reserves.
- **CE-A.8.** Reduce construction and demolition waste in accordance with Public Facilities Element, Policy PF-1.2, or by renovating or adding on to existing buildings, rather than constructing new buildings.
- **CE-A.9.** Reuse building materials, use materials that have recycled content, or use materials that are derived from sustainable or rapidly renewable sources to the extent possible, through factors including:
  - Scheduling time for deconstruction and recycling activities to take place during project demolition and construction phases;
  - Using life cycle costing in decision-making for materials and construction techniques. Life cycle costing analyzes the costs and benefits over the life of a particular product, technology, or system.
- **CE-F.3.** Continue to use methane as an energy source from inactive and closed landfills.
- **CE-I.4.** Maintain and promote water conservation and waste diversion programs to conserve energy.

- **CE-I.5.** Support the installation of photovoltaic panels, and other forms of renewable energy production.
  - Seek funding to incorporate renewable energy alternatives in public buildings.
  - Promote the use and installation of renewable energy alternatives in new and existing development.
- **CE-I.10.** Use renewable energy sources to generate energy to the extent feasible.

5.15.4 THRESHOLDS OF SIGNIFICANCE

The California Natural Resources Agency, through its December 2009 amendments to the CEQA Guidelines (14 CCR 15000 et seq.), and the City of San Diego, through its interim guidance for assessment of GHG emissions, provide a framework for the evaluation of the GHG emissions associated with construction and operation of the Program components. The state's and City's guidance are discussed in the following sections.

State of California

The State of California has developed guidelines to address the significance of climate change impacts based on Appendix G of the CEQA Guidelines, which provides guidance that a project would have a significant environmental impact if it would:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Neither the State of California nor the San Diego Air Pollution Control District (SDAPCD) has adopted emission-based thresholds for GHG emissions under CEQA. The Office of Planning and Research's (OPR's) Technical Advisory titled *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review* states that "public agencies are encouraged but not required to adopt thresholds of significance for environmental impacts. Even in the absence of clearly defined thresholds for GHG emissions, the law requires that such emissions from CEQA projects must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact" (OPR 2008). Furthermore, the advisory document indicates in the third bullet item on page 6 that "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define

what constitutes a 'significant impact,' individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice."

City of San Diego

In order to determine the significance of the Program's GHG emissions, the City of San Diego's Scoping Letter for the Program was used (City of San Diego 2014). With respect to GHG emissions, the Scoping Letter recommends the use of the thresholds established in Appendix G of the CEQA Guidelines (referenced earlier).

As the City of San Diego has not established official thresholds of significance for GHG emissions, the City has adopted a screening threshold of 900 MT CO_2E per year based on the approach outlined in the CAPCOA report *CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act* (CAPCOA 2008). Under this interim guidance, any project exceeding 900 MT CO_2E per year would be required to demonstrate a 28.3% reduction in emissions from the "business as usual" scenario consistent with the goal of AB 32 to achieve 1990 statewide GHG emission levels by 2020. The City requires that projects analyze emissions associated with both construction and operation, where construction emissions are amortized over a 30-year "project life" and then included with the operational emissions.

5.15.5 IMPACTS

Issue 1: Would the Program generate GHG emissions that may have a significant cumulative impact on the environment?

Construction Impacts

GHG emissions would be associated with the construction phase of the Program components through use of construction equipment and vehicle trips. Emissions of CO_2 were estimated using the California Emissions Estimator Model (CalEEMod), Version 2013.2.2, available online (www.caleemod.com).

For the purposes of modeling, it was assumed that construction of Program components would commence in May 2019 and would occur intermittently over an approximately 13-year period; however, final commissioning and facility testing could continue to occur following completion of construction activities and final facilities may come online as late as December 2035. It is

anticipated that the 83 MGD[4] "buildout" of the Program would be completed at this time. Precise project-level construction schedule and phasing details are not known at this time.

The North City Advanced Water Purification Facility (NCAWPF) is anticipated to produce 31.4 MGD of purified water (1.4 MGD of which would be diverted for non-potable reuse purposes). The Central Area Advanced Water Purification Facility (CAAWPF) is anticipated to produce between 38 to 53 MGD of purified water and the South Bay Advanced Water Purification Facility (SBAWPF) is anticipated to produce up to 15 MGD of purified water.

Table 5.15-2 provides the conceptual construction timeline and potential phasing of the components that would come online to achieve the target milestones. The conceptual construction schedule has been developed based on available information, typical construction practices, and best engineering judgment. Conceptual construction phasing is intended to represent a general schedule of anticipated activities for use in estimating potential Program-generated construction emissions Construction phasing and assumptions will be refined upon final system programming and project-level design have been achieved. Subsequent project-level analysis will be conducted at that time as well.

Table 5.15-2
Conceptual Pure Water Program Construction Phasing Assumptions

Facility	Construction Begin	Construction Complete
North City Component		
NCAWPF	May 2019	May 2021
San Vicente Purified Water Pipeline	May 2019	May 2022
Mission Trails Booster Station	May 2019	May 2020
San Vicente Tunnel	May 2019	May 2022
Morena Boulevard Pump Station	May 2019	May 2020
WW Force Main and Brine Pipeline	May 2019	May 2021
North City Water Reclamation Plant (NCWRP) Expansion	May 2019	November 2020
North City Cogeneration Facilities Expansion	November 2020	February 2022
Central Area Component		
Central Area Water Reclamation Plant (CAWRP)	July 2025	December 2027
Central Area Tertiary Water Pipeline and Brine Pipeline	February 2026	January 2028
Sludge Conveyance	February 2026	January 2028
CAAWPF	April 2026	March 2028
Central Area Purified Water Pipeline	May 2026	April 2028

[4] Although at least 83 MGD would be produced under the Pure Water Program, for the purposes of emissions calculations, 84.4 MGD was analyzed to account for an additional 1.4 MGD of recycled water to be generated at the NCAWPF.

Table 5.15-2
Conceptual Pure Water Program Construction Phasing Assumptions

Facility	Construction Begin	Construction Complete
Alvarado WTP Booster Station	May 2026	May 2027
Point Loma Wastewater Treatment Plant (PLWTP) Improvements	May 2026	April 2028
Metropolitan Biosolids Center (MBC) Improvements	May 2026	August 2027
Central Area SDG&E Power Supply Improvements	April 2026	March 2028
South Bay Component		
South Bay Influent Pump Station and Force Main	November 2029	October 2031
SBWRP Expansion	November 2029	October 2031
SBAWPF	August 2029	July 2031
South Bay Purified Water Pipeline	February 2030	February 2032
Otay Reservoir Booster Station	February 2030	February 2031
South Bay Solids Processing Facility	July 2029	January 2032
South Bay SDG&E Power Supply Improvements	July 2029	January 2032

Because this analysis was conducted at a program level, specific details on project-level design, schedule, construction methods, etc. were not known at the time of analysis. Therefore, in order to estimate the potential effects of construction on GHG emissions, typical construction equipment used for similar water infrastructure projects are shown in Tables 5.15-3, 5.15-4, and 5.15-5, and reflect the construction of program-related components such as pipelines, pump stations, and AWPF/water reclamation plants (WRPs) and existing facility improvements, respectively. Equipment mix assumptions for construction activity are based on typical infrastructure construction practices, review of related projects conducted in the Southern California area,[5] and CalEEMod default equipment, where appropriate. The equipment mix is meant to represent a reasonably conservative estimate of construction activity. For the analysis, it is generally assumed that heavy construction equipment would be operating at the site for approximately 8 hours per day, 5 days per week. Default assumptions provided in CalEEMod were utilized to determine worker trips for each potential construction phase during pipeline, pump station, and facility

[5] City of Vista 2008 Sewer Master Plan Update (Dudek 2008); Vallecitos Water District 2008 Water, Wastewater and Recycled Water Master Plan PEIR (PBS&J 2011); Plano Lift Station Force Main Relocation Project (Dudek 2013a); El Toro Water District Recycled Water Distribution System Expansion Project and Addendum (Dudek 2012a; Dudek 2014a); El Toro Water District Recycled Water Tertiary Treatment Plant Project and Addendum (Dudek 2012b; Dudek 2014b); Lee Lake Water District Temescal Canyon and Dawson Canyon Pipelines and Non-Potable Water Tank Project (Dudek 2012c); South Pasadena Sewer Rehabilitation and Replacement Project (Dudek 2013b); Carpinteria Sanitary District West Padaro Lane Main Sewer Extension Project (Dudek 2013c); and South Orange County Wastewater Authority Export Sludge Force Main Replacement Project (Dudek 2013d).

construction. Generally, one worker per piece of construction equipment, a foreman, and several additional workers would be anticipated on a daily basis. Additionally, it was assumed approximately two vendor trucks per day would be required for general material deliveries and approximately five haul trucks per day would be required when backfill/slurry deliveries, if necessary. To conservatively estimate potential annual emissions, it was assumed pipelines and force main facilities would be constructed simultaneously with other construction components including pump stations and treatment facilities.

Pipelines

Pipeline construction would require both open trench and trenchless tunneling construction methods depending on the location of the pipeline to be installed. A description of construction activities and equipment associated with each of these methods is provided.

Open Trench

This type of construction would involve the digging of an open trench along the pipeline alignment and placement of the pipeline directly in the ground. The sequence of activities for open trench pipeline construction would typically commence with trenching and excavation, followed by pipe installation and covering of the installed pipe, and concluding with paving the pipeline corridor area of disturbance. For the purposes of quantifying emissions from daily construction activity associated with pipeline construction, it was assumed that each contractor would complete construction of approximately 150 to 200 linear feet of pipeline per day; however, daily activity and linear feet installed would vary depending on field conditions, site/easement access, and other factors associated with continual site location changes. Assuming concurrent construction by two contractors, approximately 300 to 400 linear feet of pipeline installation could occur each day depending on the component under construction and total linear feet of pipeline or conveyance infrastructure to be constructed over a given period.[6]

For the purposes of modeling, it was assumed paving activities would occur for approximately 2 weeks every 6 months over a given construction period. It was also assumed that after pipe installation is completed, a portion of the paved roads would require light grading and reapplication of pavement, which was assumed to occur during the last month of pipeline construction for each project component. In addition, for the purposes of estimating emissions for disclosure purposes, it was assumed that typical open trench construction phasing would occur as follows:

[6] Linear feet per day assumptions based on typical construction practices for pipeline construction, and review of related projects as listed in footnote 3.

- Trenching and excavation would be ongoing throughout pipeline construction phase.
- Pipe installation would occur intermittently as trenching and excavation activities occur throughout the pipeline construction phase
- Paving, intermittent – approximately 2 weeks every 6 months for duration of pipeline construction
- Final paving – 1 month at the end of construction

Phasing for individual component construction is provided in Appendix E.

For the purposes of estimating general construction activity and associated GHG emissions from off-road equipment during open trench pipeline construction, it was assumed that the equipment mix shown in Table 5.15-3, or similar equipment, would be employed. Table 5.15-3 presents the number of equipment per potential contractor and total equipment, assuming simultaneous construction by two contractors working on several portions of a given project alignment. Due to the length of the alignment, it was assumed that two contractors would potentially be required for construction of the San Vicente Purified Water Pipeline, and one contractor each for the other pipeline alignments, as these alignments require fewer linear feet of total pipeline.

Table 5.15-3
Construction Equipment – Open Trench

Construction Phase	Equipment	Quantity per Contractor	Total Equipment*
Trenching	Dozers	1	2
	Excavators	1	2
	Tractors/loaders/backhoes	2	4
	Trenchers	1	2
Installation	Crane	1	2
	Forklift	1	2
	Tractors/loaders/backhoes	1	2
Paving (continual)	Pavers	1	2
	Rollers	1	2
	Paving equipment	1	2

* Assumes simultaneous construction by two contractors for worst-case daily construction scenario. Additionally, it was assumed approximately two vendor trucks per day would be required for general material deliveries and approximately five haul trucks per day would be required when backfill/slurry deliveries would occur, if necessary.

Trenchless Tunneling

Trenchless tunneling would involve the excavation of a portal at either end of the pipeline segment to be installed, where the pipeline would be fed through and connected. The sequence of activities for trenchless tunneling construction would typically commence with site preparation of the first portal

location followed by excavation of the portal. Excavation of the tunnel would occur following portal excavation. It is assumed all excavated material would be hauled off-site. The second portal location would then be prepped and excavated. Installation of pipeline would occur once the tunnel has been fully excavated and portals are clear. The pipeline would then be connected and the portal sites would be restored to their preconstruction condition. Trenchless tunneling practices would be employed for the 1-mile San Vicente Tunnel as well as specific segments of other pipeline alignments such as freeway or waterway crossings or within avoidance areas where ground disturbance (i.e., an open trench) is not permitted such as wetlands or other environmentally sensitive locations.

For the purposes of estimating emissions, it was assumed that typical construction phasing would occur as follows during tunneling:

- Site preparation at first portal site
- Excavation of first portal site
- Tunnel excavation
- Site preparation at second portal site
- Excavation of second portal site
- Pipeline installation
- Pipeline connection
- Site restoration

Phase durations would depend on the location of the site to be tunneled. For the purposes of estimating daily construction activity and associated emissions from off-road equipment during tunneling activities, it was assumed that the equipment mix shown in Table 5.15-4, or similar equipment, would be employed.

Table 5.15-4
Construction Equipment – Tunneling

Construction Phase	Equipment	Total Equipment
Site preparation at Portal Sites	Scraper	1
	Grader	1
	Tractors/Loaders/Backhoes	1
Portal Excavation	Dozer	1
	Excavator	1
	Tractors/Loaders/Backhoes	1
	Trencher	1
	Crushing/Processing Equipment	1

Table 5.15-4
Construction Equipment – Tunneling

Construction Phase	Equipment	Total Equipment
Tunnel Excavation	Dozer	1
	Excavator	1
	Tractors/Loaders/Backhoes	1
	Trencher	1
	Crushing/Processing Equipment	1
Pipe Installation	Tractors/Loaders/Backhoes	1
	Crane	1
	Welders	2
Pipe Connections	Other General Industrial Equipment	4
Site Restoration	Tractors/Loaders/Backhoes	1

Additionally, it was assumed that approximately two vendor trucks per day would be required for general material deliveries and approximately five haul trucks per day would be required for backfill/slurry deliveries and soil export.

Pump Stations

For the purposes of estimating emissions, it was assumed that pump stations would take an average of 12 months to construct. Typical construction phasing would occur as follows:

- Site preparation and grading (4 weeks)
- Pump station construction (10 months)
- Paving (4 weeks)

For the purposes of estimating general construction activity and associated emissions from off-road equipment, it was assumed that the equipment shown in Table 5.15-5, or similar equipment, would be employed for the construction of a single pump station. For components that would involve the construction of more than one pump station, it was assumed that multiple pump stations would be constructed simultaneously. Additionally, it was assumed that approximately two vendor trucks per day would be required for general material deliveries and five haul trucks per day would be required for soil export and other material hauling during pump station construction.

Table 5.15-5
Construction Equipment – Pump Stations

Construction Phase	Equipment	Total Equipment
Site preparation/grading	Dozers	1
	Tractors/loaders/backhoes	1
Facility construction	Excavator	1
	Tractors/loaders/backhoes	1
	Forklifts	1
	Pumps	1
	Welders	2
Paving	Pavers	1
	Rollers	1
	Paving equipment	1

Treatment Facilities

For the purposes of estimating emissions it was assumed that construction of new facilities such as AWPFs and the CAWRP would take approximately 24 to 36 months. Typical construction phasing would occur as follows during facility construction:

- Site preparation (4 weeks)
- Grading (8 weeks)
- Facility construction (28 – 36 months)
- Paving (4 weeks)

Improvements to existing facilities would take approximately 15 to 30 months depending on the type of facility and scope of facility improvements.

For the purposes of estimating general construction activity and associated emissions from off-road equipment, it was assumed that the equipment shown in Table 5.15-6 would be employed during construction of AWPFs, the CAWRP, PLWTP upgrades, MBC Improvements, South Bay Solids Processing Facility and SDG&E improvements.

Table 5.15-6
Construction Equipment – Treatment Facilities

Construction Phase	Equipment	Total Equipment
Site preparation	Dozers	1
	Tractors/loaders/backhoes	1
Grading	Excavators	1
	Tractors/loaders/backhoes	2
	Dozers	1
	Compactors	1
Facility construction	Cranes	1
	Forklifts	1
	Generator sets	1
	Tractors/loaders/backhoes	2
	Welders	2
Paving	Pavers	1
	Paving equipment	1

Additionally, it was assumed that approximately two vendor trucks per day would be required for general material deliveries and approximately five haul trucks per day would be required for soil export and other material hauling, if necessary.

A detailed depiction of the program-level, conceptual construction schedule—including information regarding subphases and equipment assumed for each subphase—is included in Appendix E of this report.

Table 5.15-7, Estimated Annual Construction GHG Emissions, shows the estimated annual GHG construction emissions associated with program components, as well as the annualized construction emissions over a 30-year "project life."

Table 5.15-7
Estimated Annual Construction GHG Emissions

Program Component	MT CO_2	MT CH_4	MT N_2O	MT CO_2E
North City Component				
NCAWPF	481	0.10	0.00	483
San Vicente Purified Water Pipeline	2,519	0.70	0.00	2,533
Mission Trails Booster Station	235	0.05	0.00	236
San Vicente Tunnel	784	0.14	0.00	787
Morena Boulevard Pump Station	235	0.05	0.00	236
WW Force Main and Brine Pipeline	1,663	0.46	0.00	1,673
NCWRP Expansion	145	0.03	0.00	146

Table 5.15-7
Estimated Annual Construction GHG Emissions

Program Component	MT CO_2	MT CH_4	MT N_2O	MT CO_2E
North City Cogeneration Facilities Expansion	311	0.06	0.00	312
Total GHG Emissions – North City Component	***6,373***	***2***	***0***	***6,406***
Central Area Component				
CAWRP	629	0.12	0.00	632
Central Area Tertiary Water Pipeline and Brine Pipeline	599	0.10	0.00	601
Sludge Conveyance	464	0.08	0.00	466
CAAWPF	470	0.09	0.00	471
Central Area Purified Water Pipeline	922	0.23	0.00	927
Alvarado WTP Booster Station	231	0.04	0.00	232
PLWTP Improvements	492	0.09	0.00	494
MBC Improvements	309	0.06	0.00	310
Central Area SDG&E Power Supply Improvements	481	0.09	0.00	483
Total GHG Emissions – Central Area Component	***4,598***	***0.90***	***0.00***	***4,616***
South Bay Component				
South Bay Influent Pump Station and Force Main	506	0.02	0.00	506
SBWRP Expansion	661	0.03	0.00	662
SBAWPF	687	0.06	0.00	688
South Bay Purified Water Pipeline	1,048	0.04	0.00	1,049
Otay Reservoir Booster Station	253	0.01	0.00	253
South Bay Solids Processing Facility	723	0.05	0.00	724
South Bay SDG&E Power Supply Improvements	823	0.06	0.00	824
Total GHG Emissions – South Bay Component	**4,700**	**0**	**0**	**4,706**
Total Program construction emissions	**15,671**	**3**	**-**	**15,728**
Amortized construction emissions	***522***	***0.09***	***-***	***524***

Source: CalEEMod Version 2013.2.2. See Appendix E for complete results.
Note: Totals may not sum due to rounding.

Operational Impacts

Operation of the Program would result in direct GHG emissions from vehicular traffic, testing and maintenance of stationary diesel generators, and indirect GHG emissions from use of electricity.

Mobile Sources (Motor Vehicles)

As described in Chapter 3, Project Description, the Program would result in 65 additional staff per each of the three AWPF facilities, plus 76 workers for the CAWRP facility, yielding 271 total new employees. It is expected that during normal operations, these workers would generate in 542 one-way trips. Additionally, operational trips would be generated as a result of routine

maintenance, periodic inspections and repairs of system facilities, monitoring, brush maintenance, and other operational procedures similar to those under the City's current water and wastewater treatment and distribution system. It was assumed only a minor increase in operations and maintenance trips (in addition to the 271 new employees) would be required; therefore, it was assumed on a worst-case day an additional 30 operations and maintenance-related trips would occur. In total, Program operations would be expected to generate approximately 572 average daily trips (ADT) across the entire Program area.

Annual CO_2 emissions from motor vehicle trips for full project buildout were quantified using CalEEMod Version 2013.2.2 (refer to Appendix E for additional details and model assumptions). Project-related traffic was assumed to include a mixture of vehicles in accordance with the model outputs for traffic. Emission factors representing the vehicle mix and emissions for 2023 were used to estimate emissions associated with the first phase of the Program. Table 5.15-8 presents estimated annual motor vehicle GHG emissions resulting from Program-generated trips.

Table 5.15-8
Estimated Annual Motor Vehicle GHG Emissions

Emissions Source	MT CO_2	MT CH_4	MT N_2O	MT CO_2E
Mobile Sources	865	0.03	0	866

Source: Appendix E

Electricity Consumption

The generation of electricity through combustion of fossil fuels typically results in emissions of CO_2 and, to a smaller extent, CH_4 and N_2O. Electricity would be required to operate various components of the Program including the proposed CAWRP, pump stations, and AWPFs. At the NCWRP, approximately 75% of power generated by the existing cogeneration facility is utilized for plant-specific electrical consumption, and the excess power credited using the SDG&E RES BCT (Renewable Energy – Bill Credit Transfer) to other City facilities (City of San Diego 2015a). The Program would include construction of a new cogeneration facility to serve the NCAWPF. The Central Area components, including the CAWRP, CAAWPF, and pump stations, would be powered by SDG&E through construction of a new transmission-level substation to be constructed by SDG&E in the Mission Valley Area. The South Bay component facilities and pump stations will be powered by additional feed supplies from SDG&E.

Annual electricity required for typical urban water sources was estimated using data and factors derived from the National Water Resource Institute's study *Direct Potable Reuse: Benefits for Public Water Supplies, Agriculture, the Environment, and Energy Conservation* (NWRI 2012) in support of the *Recycled Water Study* prepared by Brown and Caldwell for the City of San Diego

(City of San Diego 2012). The study assessed electrical consumption required for typical urban water supply, treatment, and conveyance in Southern California, as well as electrical consumption rates and approximate electrical consumption offsets associated with purified water production as an alternative to imported water from the State Water Project, the Colorado River, and the Owens Valley. Annual electricity for the Program was provided by the City of San Diego. As shown in Table 5.15-9, electricity consumption was analyzed for the following sources: Supply and Conveyance, Treatment, Distribution, and Wastewater Treatment.

Table 5.15-9
Electricity Consumption for Typical Urban Water Systems versus Pure Water

Water Use Process	Current Water Purchase -Electricity Consumption (kW-hr/MG)[1]	Pure Water Program-Electricity Consumption (kW-hr/MG)[2]
Supply and Conveyance	10,000	0
Program Treatment Beyond Secondary	NA	3,600
Program Conveyance	NA	3,700
Water Treatment	100	100
Distribution	1,200	1,200
Collection System and Wastewater Treatment	2,500	2,500
Total	**13,800**	**11,100**

Sources:
[1] NWRI 2012; City of San Diego 2012; [2] Pearce 2015

As shown in Table 5.15-9, typical urban water consumption would require approximately 13,800 kilowatt hours (kW-hr) per million gallons (MG) for supply, conveyance, treatment, distribution, and wastewater collection system and treatment. City of San Diego data on purified water operations reports that energy required for the production of purified water would be approximately 11,100 kW-hr/MG. This estimate was used to calculate the approximate energy reduction from implementation of the Program by applying the rates shown in Table 5.15-8 for typical urban water use to the proposed 84.4 MGD that would be offset through implementation of the Program. To estimate GHG emissions from electricity consumption for both typical urban water consumption and proposed purified water consumption, CO_2, CH_4, and N_2O intensity factors for SDG&E derived from CalEEMod were multiplied by the estimated annual electricity consumption.

It was estimated that typical urban water use (imported water use) would require approximately 425,122,800 kW-hr/year to process and distribute 84.4 MGD ((84.4 MGD × 365) × 13,800 kW-hr/MG). The proposed purified water consumption was estimated to require approximately 341,946,600 kW-hr/year to process and convey 84.4 MGD ((84.4 MGD × 365) × 11,100 kW-hr/MG). Table 5.15-10 presents GHG emissions associated with the typical urban imported water use and the Program's anticipated annual electricity consumption.

Table 5.15-10
Estimated Annual Electricity Consumption GHG Emissions

Emissions Source	MT CO_2	MT CH_4	MT N_2O	MT CO_2E
Imported Water Use				
Electricity Consumption	138,934	5.59	1.19	139,420
Pure Water Program				
Electricity Consumption	111,751	4.50	0.96	112,142
Net Change in Emissions	**(27,183)**	**(1.09)**	**(0.23)**	**(27,278)**

Source: Appendix E

As presented in Table 5.15-10, GHG emissions associated with imported water use electrical demand was estimated to be 139,420 MT CO_2E per year and GHG emissions associated with purified water electrical demand was estimated to be 112,142 MT CO_2E per year. Accordingly, the resulting reduction in electricity consumption from imported water use results in a corresponding reduction in GHG emissions of 27,278 MT CO_2E per year. Refer to Appendix E for details.

Wastewater Process Emissions

Centralized wastewater treatment processes can result in CH_4 and N_2O emissions. CH_4 emissions can result under processes associated with anaerobic digestion of soluble organic material when the captured biogas is not completely combusted. It is assumed that the majority of the generated biogas would be combusted (e.g., cogeneration, boilers, flares) but a small amount (e.g., 1%) would not be completely combusted. N_2O emissions may be generated from the treatment of municipal wastewater during both nitrification and denitrification of the nitrogen present, usually in the form of urea, ammonia, and proteins. These compounds are converted to nitrate (NO_3) through the aerobic process of nitrification. Denitrification occurs under anoxic conditions (without free oxygen), and involves the biological conversion of nitrate into nitrogen gas (N_2). N_2O can be an intermediate product of both processes (CARB et al. 2010). Methodologies used to estimate CH_4 and N_2O emissions from wastewater treatment processes were derived from the Local Government Operations Protocol (CARB et al. 2010).

Stationary CH_4 Emissions

According to the City of San Diego's *Sewer Design Guide*, daily per capita wastewater flow is approximately 80 gallons per capita per day (City of San Diego 2015b). The SBWRP, which would generate the biosolids processed by the SBSPF, would have an AADF of 44 MGD after expansion resulting in a net increase of 29 MGD; therefore, for the purposes of estimating emissions, it is estimated that the SBSPF facility would have a service population equivalent of 362,500. The CAWRP would have a design capacity of 72 MGD which would result in a service

population equivalent of 900,000. The NCWRP would increase capacity by 21 MGD resulting in a service population equivalent of 262,500. Stationary CH_4 emissions from incomplete combustion of biogas were estimated to be approximately 1,424 MT CO_2E per year (see Appendix E for details).

Process N_2O Emissions

Process N_2O emissions can occur in facilities with nitrification/denitrification processes, and to a lesser extent in facilities without these processes. For purposes of a conservative analysis, it was assumed the new CAWRP would employ nitrification/denitrification processes, which would result in higher N_2O emissions than a facility that would not employ nitrification/denitrification.

The CAWRP would have a design capacity of 72 MGD. Using the same factor of 80 gallons per capita per day as described previously, it is estimated that the CAWRP would have a service population equivalent of 900,000. The NCWRP would increase capacity by 21 MGD during peak daily loads resulting in a service population equivalent of 262,500. Expansion at the SBWRP would result in a net increase in capacity of 29 MGD resulting in a population equivalent of 362,500. Process N_2O emissions were estimated to be approximately 4,137 MT CO_2E per year (see Appendix E for details).

N_2O emissions can also be generated through discharge to surface waters such as the San Vicente reservoir. Minimal N_2O emissions could occur from AWPF effluent discharge due to the removal of nitrogen compounds by reverse osmosis. The Program would produce 84.4 MGD[7] of purified water that could be discharged to a surface water source resulting in minimal process emissions. Based on test results, the average total nitrogen in discharged effluent would be 0.8 mg/L (City of San Diego 2013). N_2O emissions from discharge were estimated to be approximately 227 MT CO_2E per year (see Appendix E for details).

Table 5.15-11 provides a summary of process and discharge GHG emissions.

Table 5.15-11
Estimated Annual Wastewater Process and Discharge GHG Emissions

Source	MT CH_4	MT N_2O
Incomplete combustion of digester gas	1,424	—
WWTP with nitrification/denitrification	—	4,137

[7] Although at least 83 MGD would be produced under the Pure Water Program, for the purposes of emissions calculations, 84.4 MGD was analyzed to account for an additional 1.4 MGD of recycled water to be generated at the NCAWPF.

Table 5.15-11
Estimated Annual Wastewater Process and Discharge GHG Emissions

Source	MT CH_4	MT N_2O
Effluent discharge emissions	—	227
Total Process Emissions	**5,788 MT CO_2E**	

Source: Appendix E

Diesel Generators

To conservatively estimate stationary source emissions related to generator use, it was assumed new diesel-powered emergency generators would be required for back-up power at the new CAWRP, AWPFs and the 5 proposed pump station locations. The North City and South Bay AWPFs would have separate power sources provided by SDG&E. Power at some reclamation facilities will use a combination of on-site generation and supplemental power supplied by SDG&E. The CAAWPF and pump stations would be powered by SDG&E power. Based on review of similar water and wastewater infrastructure projects in Southern California, it was assumed approximately two emergency generators per facility location would be required for appropriate back-up power supply (2 generators located at the CAWRP, 2 generators per AWPF and 2 generators per pump station = 18 new generators total).

For the purposes of a conservative analysis, it was assumed generators would be approximately 750 kilowatts (approximately 1,060 horsepower); however, most pump station generators would likely be smaller (between 300–500 horsepower) (PBS&J 2011). Moreover, pump stations installed for advanced purified water conveyance would require less power than pump stations designed for wastewater conveyance due to substantially reduced flows at advanced purified water facilities (City of San Diego 2012). It was assumed generators would only be used for emergency back-up power in the event of power outages, as well as for routine testing and maintenance. CARB's Airborne Toxic Control Measure for stationary diesel engines restricts diesel engine operation for testing and maintenance to 50 hours per year, unless a diesel particulate filter is used to reduce PM_{10} emissions (CARB 2011). Thus, it was assumed that the engines would operate up to 50 hours per year (1 hour per week, 50 weeks per year) for testing and maintenance. Emission factors for CO_2 and CH_4 were obtained from the CalEEMod User's Guide, Appendix D for generators over 1,001 HP[8] operating in 2023 (first year of first phase of Program operation). Table 5.15-12 presents estimated annual GHG emissions associated with testing and maintenance of emergency diesel generators.

[8] The CalEEMod User's Guide does not provide emission factors for generator sets rated at 751 to 1000 HP; however, the CO_2 emission factor for generator sets rated at 501–750 HP and greater than 1000 HP are the same and the CH_4 factor for the larger HP range is slightly higher than that for the smaller HP range.

Table 5.15-12
Estimated Annual Diesel Generators GHG Emissions

Emissions Source	MT CO_2	MT CH_4	MT N_2O	MT CO_2E
Diesel Generators	401	0.01	—	401

Source: Appendix E

As shown in Table 5.15-12, diesel generators would result in approximately 401 MT CO_2E per year (see Appendix E).

Summary of GHG Emissions

As shown in Table 5.15-13, Program Estimated GHG Emissions, the Program would result in an overall *net reduction* of approximately 19,699 MT CO_2E per year, after accounting for amortized construction emissions and Program operational emissions

Table 5.15-13
Summary of Estimated Annual GHG Emissions

Emissions Source	MT CO_2	MT CH_4	MT N_2O	MT CO_2E
Imported Water Use				
Electricity Consumption	138,934	5.59	1.19	139,420
Pure Water Program				
Mobile Sources	865	0.03	0	866
Electricity Consumption	111,751	4.50	0.96	112,142
Wastewater Process Emissions	—	—	—	5,788
Diesel Generators	401	0.01	—	401
Amortized Construction Emissions	522	0.09	-	524
Total Program Emissions	113,539	5	1	119,721
Net Change in Emissions	**(25,395)**	**(1)**	**(0)**	**(19,699)**

Source: See Appendix E for complete results.

Implementation of the Program, as analyzed at the program level of analysis, would result in a net decrease of approximately 19,699 MT CO_2E per year as a result of offsetting the need for imported water sources.

5.15.6 SIGNIFICANCE OF IMPACTS

As shown in Table 5.15-13, Summary of Estimated Annual GHG Emissions, the Program would result in a *reduction* in GHG emissions from existing conditions of approximately 19,699 MT CO_2E per year. The Program would not exceed the City's 900 MT CO_2E per year screening

threshold that has been established for the purposes of assessing the GHG emissions of projects in the City of San Diego, and impacts would be **less than significant**.

5.15.7 MITIGATION, MONITORING, AND REPORTING

Impacts would be less than significant; therefore, no mitigation is required.

Level of Significance after Mitigation

Without mitigation, impacts would be **less than significant**.

5.15.8 IMPACTS

Issue 2: Would the Program conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emission of GHGs?

The Scoping Plan, approved by CARB on December 12, 2008, provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. As such, the Scoping Plan is not directly applicable to specific projects. Relatedly, in the Final Statement of Reasons for the amendments to the CEQA Guidelines, the California Natural Resources Agency observed that "[t]he Scoping Plan may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009). Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products) and changes to the vehicle fleet (hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., Low Carbon Fuel Standard), among others. The Program will comply with all applicable regulations adopted in furtherance of the Scoping Plan to the extent required by law.

As described in Section 3.2, Executive Order B-30-15 established a statewide emissions reduction target of 40% below 1990 levels by 2030. This interim measure was identified to keep the State on a trajectory needed to meet the 2050 goal of reducing GHG emissions to 80% below 1990 levels by 2050 pursuant to Executive Order S-3-05. CARB has already identified the target 2050 emission levels of 431 MMT CO_2E. Executive Order B-30-15 instructs CARB to similarly express the 2030 target in terms of million metric tons of carbon dioxide equivalent.

It states in the First Update to the Climate Change Scoping Plan that "California is on track to meet the near-term 2020 greenhouse gas limit and is well positioned to maintain and continue

reductions beyond 2020 as required by AB 32" (see First Update to Scoping Plan, p. ES2). With regard to the 2050 target for reducing GHG emissions to 80% below 1990 levels, the First Update to the Climate Change Scoping Plan (CARB 2014b, page 34) states:

> This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts [MW] of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80% below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions.

In other words, CARB believes the state is on a trajectory to meet the 2020, 2030 and 2050 GHG reduction targets set forth in AB 32, Executive Order B-30-15 and Executive Order S-3-05.

The Program does not interfere with implementation of any of the above-described GHG reduction goals for 2030 or 2050. The Program would support achievement of the near-term 2020 goal (as codified in AB 32), the interim 2030 goal, and the long-term 2050 goal through providing a less energy-intensive, domestic water supply source for the region.

Additionally, as discussed in Section 5.15.3, Executive Order S-3-05 established a goal to reduce statewide GHG emissions to the 1990 level by 2020; and to reduce statewide GHG emissions to 80% below the 1990 level by 2050.[9] Relatedly, Executive Order B-30-15 established an interim goal to reduce statewide GHG emissions to 40% below 1990 levels by 2030. The Program would support achievement of the Executive Order's near-term 2020 goal (as codified in AB 32), mid-term 2030 goal (per Executive Order B-30-15) and the long-term 2050 goal through providing a domestic water supply source for the region which would require substantially less energy to import, treat and distribute water compared to energy-intensive imported water sources.

As discussed above, the Program would not exceed the City of San Diego's screening threshold of 900 MT CO_2E per year. For comparison, the Program would also be well below GHG emission thresholds considered by several California air districts, none of which have adopted or proposed a threshold as low as the City of San Diego's screening threshold. Other such GHG thresholds

[9] In adopting AB 32, the Legislature did not adopt the 2050 horizon-year goal from Executive Order No. S-3-05; and, in the last legislative session (2013–2014), the Legislature rejected bills proposing to enact the Executive Order's 2050 goal (*Cleveland National Forest Foundation v. San Diego Association of Governments* (2014) 231 Cal.App.4th 1056, 1096; *Professional Engineers in California Government v. Schwarzenegger* (2010) 50 Cal.4th 989, 1015; and OPR 2004).

include the Bay Area Air Quality Management District's (BAAQMD's) interim threshold of 1,100 MT CO_2E per year for commercial, industrial, and public land-use projects (BAAQMD 2010)[10]; the Sacramento Metropolitan Air Quality Management District's threshold of 1,100 MT CO_2E per year for projects with construction or operational phases (SMAQMD 2014); and the South Coast Air Quality Management District's draft, interim threshold of 3,000 MT CO_2E per year for residential and commercial projects (SCAQMD 2008). Because the Program would not exceed the screening threshold of the City of San Diego, or thresholds in other air districts with expertise in the area, this analysis provides support for the conclusion that the Program would not conflict with Executive Order S-3-05's GHG reduction goals for California.

At the regional level, SANDAG's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) has been adopted for the purpose of reducing GHG emissions attributable to passenger vehicles in the San Diego region. While the RTP/SCS does not regulate land use or supersede the exercise of land use authority by SANDAG's member jurisdictions (i.e., the County of San Diego and cities therein), the RTP/SCS is a relevant regional reference document for purposes of evaluating the intersection of land use and transportation patterns, and the corresponding GHG emissions. Here, the RTP/SCS is not directly applicable to the Program because the underlying purpose of the RTP/SCS is to provide direction and guidance on future regional growth (i.e., the location of new residential and nonresidential land uses) and transportation patterns throughout San Diego County as stipulated under SB 375. The Program would be consistent with existing zoning and land use designations through the various jurisdictions in which the Program would occur, and would not increase vehicle trips or land use intensities as provided in the RTP/SCS. Therefore, the Program would not conflict with the intent of the RTP/SCS.

Regarding local initiatives, the City has taken steps to address climate change impacts at a local level. The City has released a draft Climate Action Plan (CAP) which outlines measures the City will take to achieve target reduction goals of Executive Order S-3-05 which established a statewide GHG reduction target of 80% below 1990 levels by 2050. A 2035 "interim" GHG reduction target has been set in the draft CAP of 50% below 2010 baseline emissions, which is based on the reduction trajectory for meeting the 2050 target goal (City of San Diego 2015b).

[10] Subsequent to adoption of the BAAQMD's GHG and other significance thresholds, they were set aside by the Alameda County Superior Court, which concluded that the BAAQMD did not comply with CEQA when adopting its thresholds. The Superior Court did not find the thresholds were inadequate on their merits. Thereafter, the First District Court of Appeal reversed the Superior Court's decision in this respect, thereby reinstating the thresholds (Cal. Building Industry Assn. v. BAAQMD; Case No. A136212). In November 2013, the California Supreme Court granted a limited review of the decision (Case No. S213478) but the Supreme Court is not considering the adequacy of the BAAQMD's GHG thresholds. The case is awaiting a judicial determination (BAAQMD 2013).

The Program conceptual schedule and design was developed after release of the draft CAP; therefore, the Program has not been accounted for or evaluated as part of the CAP's long-term plan for GHG emission reductions. Although the Program was not accounted for in the GHG emissions reduction calculations in the draft CAP, the Program would assist the City in achieving the CAP's GHG emissions reduction targets by reducing the City's reliance on imported water supplies through the provision of a locally produced water supply. Additionally, the Program would substantially reduce energy consumption currently required for the import, supply, and conveyance of traditional water sources. Moreover, as shown in Table 5.15-12, implementation of the Program would result in a potential overall net reduction of 19,699 MT CO_2E per year. As such, the Program would comply with, and support the goals and policies of, the City's Draft CAP, as well as those of the General Plan (CE-A.2, CE-A.8, CE-A.9, CE-F.3, CE-I.4, and CE-I.5).

The Program would not exceed the City's 900 MT CO_2E screening threshold for the purposes of analyzing the significance of GHG emissions under CEQA. Additionally, the Program would not generate GHG emissions in quantities such that its implementation would conflict with the goals of AB-32, the draft Climate Action Plan, or General Plan.

5.15.9 SIGNIFICANCE OF IMPACTS

Implementation of the program would not conflict with applicable plans, policies and regulations for the purposes of reducing GHG emissions; therefore, impacts would be **less than significant**.

5.15.10 MITIGATION, MONITORING, AND REPORTING

Impacts would be less than significant; therefore, no mitigation is required.

Level of Significance after Mitigation

Without mitigation, impacts would be **less than significant**.

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5.16 WATER SUPPLY

5.16.1 INTRODUCTION

The following section examines the impacts of the Pure Water Program (Program) on existing and future water supply sources within the Program area. The information contained in this section was obtained from various sources, including the *San Diego County Water Authority Urban Water Management Plan* (SDCWA 2011) and the *City of San Diego Urban Water Management Plan* (City of San Diego 2011). Additional information is based on reports by the Metropolitan Water District of Southern California (MWD), the San Diego County Water Authority (SDCWA), and City of San Diego Public Utilities Department.

5.16.2 EXISTING CONDITIONS

Environmental Setting

Regional Water Supply

Metropolitan Water District of Southern California

MWD is a consortium of 27 cities and water districts that delivers an average of 1.7 billion gallons of water per day to nearly 19 million people in parts of Los Angeles, Orange, San Diego, Riverside, San Bernardino and Ventura Counties. MWD obtains imported water from two primary sources: the Colorado River and the State Water Project (SWP).

MWD has a 10-year average annual sales of 2.03 million acre-feet (AF). In the fiscal year 2013–2014, MWD sold 2.06 million AF of water, with daily system deliveries as high as 7,400 AF per day (for reference, 1 acre-foot will serve two households in and around their homes for a year). Treated and untreated water sales were each about 50% of total sales. Drought conditions that began in January 2013 led to water sales that were about 200,000 AF higher than the prior fiscal year. Year 2013 was the driest year statewide since California began measuring rainfall in 1849, and conditions remained dry through the first six months of 2014. As a result of the drought, MWD's SWP allocation was the lowest in SWP history (MWD 2014).

San Diego County Water Authority

SDCWA is responsible for providing a safe and reliable supply of water to its 24 member agencies, including the City of San Diego. SDCWA serves 95% of the County's population over an area of 951,000 acres. Up to 80% of the region's water is imported from the Colorado River and Northern California via the SWP. MWD is SDCWA's largest supplier, providing more than half of the water used in 2010. The remaining water supply comes from SDCWA's long-term

water conservation and transfer agreement with the Imperial Irrigation District, conserved water resulting from lining of portions of the All-American and Coachella Canals in Imperial Valley, and local supply sources including groundwater, local surface water, recycled water, and conservation (SDCWA 2015a). Seawater desalination is also scheduled to come on line by 2016. Table 5.16-1 shows the current (2014) portfolio of SDCWA water supplies and predicted future (2020) water supplies.

Table 5.16-1
SDCWA Water Supply

Water Source	2014		2020		2035	
	Amount (Acre-Feet)	*Percent of Total*	*Amount (Acre-Feet)*	*Percent of Total*	*Amount (Acre-Feet)*	*Percent of Total*
Metropolitan Water District	326,000	49%	231,000	30%	326,000	34%
Imperial Irrigation District transfer	100,000	15%	190,000	24%	201,000	21%
All American and Coachella Canal lining	80,000	12%	80,000	10%	77,000	8%
Conservation (existing and additional)	73,000	11%	103,000	13%	173,000	18%
Recycled water	29,000	4%	44,000	6%	48,000	5%
Seawater desalination	—	—	56,000	7%	57,000	6%
Groundwater	19,000	3%	27,000	4%	29,000	3%
Local surface water	40,000	6%	48,000	6%	48,000	5%
Total	**667,000**		**779,000**		**959,000**	

Sources: SDCWA 2015b; SDCWA 2013.

Water Use

Per-capita water use in the SDCWA's service area has fallen from more than 200 gallons per person (or per capita) per day (GPCD) to about 150 GPCD over the past decade. In 2014, total regional use of potable water was approximately 560,000 AF per year (AFY) – less than it was in 1990, even with a population increase of approximately 30% over that period. Between 1990 and 2014, total regional potable water use was lowest in 1992 (just below 500,000 AFY) and highest in 2007 at over 700,000 AFY (SDCWA 2015c).

City of San Diego

Potable Water Supply

The City's Public Utilities Department serves more than 1.3 million people populating more than 200 square miles of developed land. In addition to supplying approximately 274,000 metered service connections within its own incorporated boundaries, the City conveys and sells water to

the City of Del Mar, Santa Fe Irrigation District, San Dieguito Water District, and the California American Water Company (Cal-Am), which, in turn, serves the Cities of Coronado and Imperial Beach and portions of south San Diego. The City has agreements to sell surplus water to Otay Water District and exchange water to Ramona Municipal Water District. The City maintains several emergency connections to and from neighboring water agencies, including Santa Fe Irrigation District, Poway Municipal Water District, Otay Water District, Cal-Am, and Sweetwater Authority (City of San Diego 2011).

The City purchases imported water from SDCWA. The City's local water supplies consist of surface water obtained from local watersheds and recycled water. The City has nine local surface water reservoirs with more than 408,000 AF of capacity, which are connected directly or indirectly to three water treatment plants (WTP). The largest reservoir is the San Vicente Reservoir with a capacity of 242,000 AF since completion of the Emergency Storage Project (discussed in more detail in Section 3.2.2.3). The Miramar WTP has a rated capacity of 140 million gallons per day (MGD) and generally serves the City's geographical area north of the San Diego River (north San Diego). The Alvarado WTP recently underwent upgrades and improvements and has a current rated capacity of 200 MGD. The Alvarado WTP generally serves the geographical area from National City to La Jolla Village Drive/Miramar Road (central San Diego). The Otay WTP has a current rated capacity of 34.2 MGD and serves south San Diego (City of San Diego 2011). The geographic areas served by the three WTPs are flexible such that areas of the City can be supplied by more than one of the treatment plants.

The City's Public Utilities Department maintains and operates 49 water pump stations, more than 127 pressure zones, and 31 treated water storage facilities with more than 200 million gallons (MG) of potable water storage capacity, including steel tanks, standpipes, concrete tanks, and rectangular concrete reservoirs, with capacities varying from less than 1 MG to 35 MG. The water system consists of approximately 3,213 miles of pipeline, including transmission lines up to 84 inches in diameter and distribution lines as small as 4 inches in diameter (City of San Diego 2011).

City of San Diego Current and Projected Water Demands

The City's actual water use declined between 2005 and 2010 from 199,178 AFY to 162,291 AFY for many reasons including economic conditions, response to the mandatory water use restrictions associated with the Level 2 Drought Alert, increased retail water costs, and conversion of potable water system customers to the recycled water system. Nonetheless, with the City's expected population growth in the future, water demands are projected to reach 228,061 AFY in 2025 and 247,986 AFY in 2035 (City of San Diego 2011).

Non-potable Recycled Water

Existing recycled water use in the City currently consists of non-potable reuse, which uses disinfected tertiary treated recycled water that meets California water quality standards for uses that are not associated with drinking water, such as irrigation, industrial and construction purposes, ornamental fountains, and toilet and urinal flushing. The City owns and operates a recycled water system that supplies water to over 600 retail customers as well as several wholesale customers. The wholesale customers include the City of Poway, Olivenhain Municipal Water District, and the Otay Water District.

Non-potable recycled water use is expected to remain relatively constant with the North City Water Reclamation Plant providing an annual average of 7 MGD and South Bay Water Reclamation Plant providing 4–6 MGD.

Applicable Regional Plans and Policies

Metropolitan Water District of Southern California

Integrated Water Resources Plan

In 1996 MWD developed its first Integrated Water Resources Plan to address the complexity of developing, maintaining, and delivering a reliable supply of water to its member agencies. The plan established targets for a diversified portfolio of investments in water supply that have provided the foundation for continued water supply reliability during a period of prolonged drought and severe regulatory limitations. The plan established a long-term water resources strategy to fulfill MWD's mission of providing a high quality, reliable water supply for its service area by identifying a range of potential resource development needs, supply alternatives, adaptation measures, and program implementation blueprints.

An update in 2004 emphasized conservation and local resources development options and targets through 2025 and included the addition of a 10% "planning buffer." The 2010 update manages current challenges including below-average precipitation conditions for the Colorado River and historic regulatory cutbacks for the SWP. It has three main components: the core resources strategy, which is designed to maintain reliable water supplies; the uncertainty buffer, which activates a suite of buffer actions to mitigate short-term change; and foundational actions, which detail strategies for securing additional water resources.

San Diego County Water Authority

Urban Water Management Plan

SDCWA's 2010 Urban Water Management Plan (UWMP) was prepared in accordance with the Urban Water Management Planning Act, which requires urban water suppliers to update their UWMP and submit a complete version to the California Department of Water Resources every 5 years. The UWMP serves as SDCWA's long-term planning document to ensure a reliable water supply for the region.

SDCWA's 2010 UWMP provides actual water use data for the year 2010 and projections through 2035 (SDCWA 2011). The SDCWA projected water demands are based on the San Diego Association of Governments 2050 Regional Growth Forecast population projections for the SDCWA service area.

SDCWA anticipates that its population will increase from approximately 3.2 million in 2015 to 3.9 million in 2035, which would translate into water demands increasing from 654,022 AFY in 2015 to approximately 903,213 AFY in 2030 under normal weather conditions.

Regional Water Facilities Optimization and Master Plan Update

The 2013 Regional Water Facilities Optimization and Master Plan Update (2013 Master Plan) is intended to serve as the San Diego region's roadmap for new infrastructure development through the SDCWA's 2035 planning horizon. The 2013 Master Plan shifts from the previous 2003 Master Plan's emphasis on new infrastructure development to the operation and maintenance of a robust water production and delivery system. The 2013 Master Plan incorporates the latest supply and demand projections from the 2010 UWMP and places a greater emphasis on local supply development and conservation. Additionally, the 2013 Master Plan evaluates the emergence of new energy management and renewable energy opportunities, and the need to safeguard the regional aqueduct system from potential vulnerabilities and natural hazards (SDCWA 2014).

Water Shortage and Drought Response Plan

The Water Shortage and Drought Response Plan (2012) addresses the uncertainty associated with maintaining and developing local and imported water supplies by providing a way to allocate water when supplies fall short of demands and avoiding rationing through supply enhancement. The plan also contains a strategy to communicate with SDCWA's stakeholders regarding water supplies and provides guidance to SDCWA and its member agencies to plan for water supply reliability within the San Diego region. The plan contains a Drought Response

Matrix that identifies potential actions that the SDCWA can take to avoid an allocation of water supplies to the member agencies. When supply enhancement options have been exhausted, the plan also provides a methodology for allocation of supplies among member agencies in a fair and equitable manner (SDCWA 2012).

City of San Diego

Urban Water Management Plan

The City's 2010 UWMP, adopted in 2011, is the most recent iteration of the UWMP and provides actual water use data for the year 2010 and projections through 2035 (City of San Diego 2011). The City's 2010 UWMP describes historic and project water supply and demand scenarios, water supply reliability, water usage trends, current and planned facilities to support demand, current and planned demand management programs, water shortage contingency plans, water recycling efforts, groundwater use, and alternative sources of water that the City is considering. The City's water conservation efforts are an important component of the City's overall water supply strategy.

The City anticipates that its population will increase to over 1.68 million residents by 2030, which would translate into water demands increasing from 162,291 AFY in 2010 to approximately 238,772 AFY in 2030 under normal weather conditions. These projections assume the City continues with an aggressive water conservation program. SDCWA is planning to supply the City with 249,728 AF by 2030 (City of San Diego 2011).

5.16.3 IMPACTS

Issue 1: Would the Pure Water Program affect the ability of water serving agencies to provide water?

Potable Water

The Program would create a new supply of locally sourced potable water for the City of San Diego. Specifically, the Program would produce 15 MGD of potable recycled water by 2023, 30 MGD by 2027, and 83 MGD by 2035. The Program product water would meet all water quality standards established by the California Department of Public Health and would be suitable for human consumption. The production of potable recycled water would increase the reliability of water supplies in the San Diego region and would reduce uncertainties associated with the provision of imported water associated with the current drought situation. As discussed in Chapter 8, Growth Inducement, the Program is not anticipated to represent additional water supplies over and above what is already contemplated for the San Diego region. However, the replacement of imported water supplies with recycled water supplies produced by the Program

could have the effect of making the imported water supplies that are displaced by the recycled water supplies available for use outside of San Diego and the region. Determination of new uses for imported water supplies made available by implementation of this Program would require speculation that is beyond the scope of the environmental analysis for the Program, and therefore, in accordance with guidance provide in Section 15145 of the CEQA Guidelines, no further discussion is warranted or provided.

Non-potable Recycled Water

The North City Plant and South Bay Plant currently treat municipal wastewater to tertiary standards to produce non-potable recycled water. Under implementation of the Program, both plants would retain their current production levels of non-potable recycled water to serve existing recycled water customers. In order to continue serving existing customers, the AWPFs would operate at maximum design capacity in winter, when non-potable recycled water demands are lowest, and would operate at a reduced capacity in summer, when non-potable recycled water demands are highest.

5.16.4 SIGNIFICANCE OF IMPACTS

The Program would result in a **beneficial impact** related to the ability of the City of San Diego to provide water since the Program would increase the availability of local water supplies. Impacts related to the City's continued capacity to provide non-potable recycled water to existing customers would be **less than significant**.

5.16.5 MITIGATION, MONITORING, AND REPORTING

Impacts would be less than significant, and therefore, no mitigation would be required.

Level of Significance after Mitigation

Without mitigation, impacts related to water supply would be **less than significant**.

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CHAPTER 6 SIGNIFICANT ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED IF THE PROGRAM IS IMPLEMENTED

Section 15126.2 of the California Environmental Quality Act Guidelines requires a discussion of significant environmental effects which cannot be avoided if the project is implemented (14 CCR 15000 et seq.). In Chapter 5, impacts of the Pure Water Program (Program) were analyzed to determine if the Program would cause significant impacts in each environmental issue area. Where significant impacts were identified, Mitigation Framework measures were developed that would reduce impacts to less than significant. The analysis for the Program found that the Program would not result in potentially significant and unavoidable impacts which could not be mitigated to below a level of significance.

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CHAPTER 7 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

California Environmental Quality Act (CEQA) Guidelines Section 15126.2(c) requires the evaluation of:

> [u]ses of nonrenewable resources during the initial and continued phases of the project [that] may be irreversible since a large commitment of such resources makes removal or non-use thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as a 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.

The predominant irreversible environmental changes that would occur as a result of the Pure Water Program (Program) implementation would be the introduction of a new source of water at the San Vicente and Otay Reservoirs, the reduction in discharge at the Point Loma ocean outfall, and the commitment of land resources to develop the advanced water purification facilities and new water reclamation plant. The Program would irreversibly alter the sites identified for these facilities to water reclamation and water treatment facility uses for the foreseeable future. This would constitute a permanent change. Once construction occurs, reversal of the land to its original condition is highly unlikely. The advanced water purification facility sites are currently vacant and do not generate traffic, noise, or result in an increase in human presence. Permanent changes as a result of Program implementation would include traffic, noise, and an increased human presence in the area. The Central Area Water Reclamation Plant site is currently developed, but would be repurposed into a new treatment facility and full buildout of the public safety training center as envisioned in the NTC Precise Plan would not be likely to occur. Additionally, irreversible commitments of resources, such as electricity, natural gas, potable water, and building materials, and incremental demands for construction materials, such as lumber, petrochemicals, fuel, and gas, would occur.

Construction of the Program would result in incremental demands on lumber and forest products, sand and gravel, petrochemicals, and other materials. Construction would also incrementally reduce existing supplies of fuel oil, natural gas, and gasoline.

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CHAPTER 8 GROWTH INDUCEMENT

Section 15126.2(d) of the California Environmental Quality Act (CEQA) Guidelines mandates that the growth-inducing impact of a project be discussed. This guideline states that the growth-inducing analysis is intended to address the potential for the project to "foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment," and to "encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively," through extension or expansion of existing services, utilities, or infrastructure (14 CCR 15000 et seq.). As an example, population growth resulting from proposed residential development projects and new employees hired for proposed commercial and industrial development projects represent direct forms of growth. Examples of projects that are indirectly growth-inducing are the expansion of urban services into a previously unserved or underserved area, the creation or extension of transportation links, or the removal of major obstacles to growth. It is important to note that direct forms of growth have secondary effects of expanding the size of local markets and attracting additional economic activity to the area.

Typically, the growth-inducing potential of a project would be 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 the San Diego Association of Governments (SANDAG). Significant growth impacts could also occur if the project provides infrastructure or service capacity to accommodate growth levels beyond those anticipated by local or regional plans and policies. Per the CEQA Guidelines, it should be noted that growth-inducing effects are not necessarily beneficial, detrimental, or of little significance to the environment. This issue is presented to provide additional information about ways in which this project could contribute to significant changes in the environment, beyond the direct consequences of implementing a project.

The City of San Diego's CEQA Significance Determination Thresholds (City of San Diego 2011) state that a project would have a significant impact related to growth inducement if it would:

1. Induce substantial population growth in an area;
2. Substantially alter the planned location, distribution, density, or growth rate of the population of an area;
3. Include extensions of roads or other infrastructure not assumed in the community plan or adopted Capital Improvement Project list, when such infrastructure exceeds the needs of the project and could accommodate future development.

Using the City's CEQA Significance Determination Thresholds for growth inducement, the Pure Water Program (Program) would not result in significant impacts. These conclusions are presented in the following discussion.

The Program's growth-inducement potential considers to what extent the Program would help improve the reliability of existing supplies by offsetting a portion of the need for imported water to serve planned-for growth, or whether the Program might also contribute to serving additional growth within the City service area. As such, the key issue related to growth inducement for the Program is whether or to what extent water supplies provided by the Program would have indirect growth-inducing impacts. California courts have recognized that there is a different potential for indirect growth inducement when the "sole reason to construct" an 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 the analysis required for a project "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). Accordingly, this section examines the extent to which the Program would provide a catalyst for further development in San Diego as compared to the extent to which the Program has been designed to accommodate existing demand and planned development.

To understand this issue, it is first important to consider existing water supply issues within the Program's service area. It is also important to consider water supply in the context of other growth-related catalysts and constraints.

8.1 GROWTH CATALYSTS AND CONSTRAINTS

Generally speaking, catalysts and constraints to growth can effect (1) whether or not growth occurs in a given area and (2) the rate at which growth occurs. Even if there is latent growth potential in a given area, the area may not experience any growth, other than natural population increase, because of specific constraints. Such constraints could be temporary and easily removed, such as a short-term lack of sewage-treatment capacity, or long-term in nature and difficult to address, such as high air pollution levels in an air basin that discourage in-migration.

Generally, naturally occurring growth catalysts/constraints (e.g., natural topography, location of rivers, lakes, steep slopes, fault zones, sensitive habitats) are fairly straightforward and easy to define. Man-made catalysts and constraints typically are a consequence of a combination of economic forces (e.g., job availability, pay scales, housing costs, development incentives) and infrastructure provision (e.g., roadways, public utilities, public services) that combine in a way that makes an area appear more or less attractive than another area. In some cases, man-made factors may interact with the natural environment to create growth catalysts (e.g., the design of

new development within a desirable natural setting) or constraints (e.g., air pollution combined with a poor climate) affecting decisions to migrate to an area.

This relative attractiveness of the combined natural and man-made environment on the local, regional, state, or national level influences population growth. Areas that have healthy environmental factors, strong growth catalysts, and minimal or resolvable constraints would experience growth in the form of net in-migration.

8.2 GOVERNMENT'S ROLE REGARDING GROWTH

Government is the vehicle through which many growth catalysts and constraints are created, increased, decreased, or removed. While local cities and counties primarily play this role, service and utility agencies are also involved. The relationship between an area's growth catalysts, constraints, and government policy actions also facilitates or hinders growth.

Cities and Counties

In California, cities and counties are required to prepare and maintain "a comprehensive, long-term general plan for the physical development of the county or city, and of any land outside its boundaries which in the planning agency's judgment bears relation to its planning" (California Government Code Section 65300). Under state law, it is the responsibility of cities and counties to define the availability of land for future development in terms of the permitted location and intensity of residential, commercial, industrial, institutional, recreational, and other types of development. State requirements for the preparation and content of general plans, as well as CEQA requirements for their review, are intended to ensure that a city or county's land use plans are consistent with their circulation plans; are consistent with the agencies' plans for environmental management, public safety, and provision of housing for all economic segments of the community; and are supported by adequate public services and facilities. Overall, city and county general plans establish the governmental policies as to how growth catalysts and constraints are managed within each community.

Therefore, a city or county manages growth by affecting, influencing, and controlling growth catalysts and constraints. Through implementation of general plan policies and related implementation strategies, growth catalysts are either expanded or contracted. This effect can result in many outcomes, such as high rates of growth resulting from implementation of aggressive development plans or, conversely, low to no growth resulting from implementation of slow-growth development plans. Similarly, growth can be managed by either removing or leaving in place constraints to growth. For example, a completely built-out city that includes mountainous terrain can remove a growth constraint by enacting policies that allow development

of hillsides previously prohibited from development, or it can choose to keep the existing hillside development prohibition in place, thereby maintaining the growth constraint.

8.3 CITY OF SAN DIEGO GENERAL PLAN

The City of San Diego General Plan was most recently updated in 2008, and for the first time in the City's history, it addresses most future growth without expansion onto its open lands. This is due in large part to the effects of Proposition A – the Managed Growth Initiative of 1985, which required approval of a majority vote of the people for shifting land from the Future Urbanizing to the Planned Urbanizing Area phase of growth or development. Through implementation of Proposition A, a substantial amount of acreage has been placed into a category of very low density, open space, park, and agricultural uses. Within this context, the General Plan establishes the strategic framework for how the City grows while maintaining the qualities that best define San Diego.

The General Plan employs a "City of Villages" growth strategy, which calls for redevelopment, infill, and new growth to be targeted into compact, mixed-use, and walkable villages that are connected to a regional transit system. The strategy is designed to sustain the long-term economic, environmental, and social health of the City and its many communities.

8.4 EXISTING WATER SUPPLIES

As discussed in Section 5.16, Water Supply, current water supplies in San Diego are comprised primarily of imported water purchased from the Metropolitan Water District of Southern California (MWD). MWD is a consortium of 27 cities and water districts that delivers an average of 1.7 billion gallons of water per day to nearly 19 million people in parts of Los Angeles, Orange, San Diego, Riverside, San Bernardino and Ventura Counties (MWD 2010). MWD obtains imported water from two primary sources: the Colorado River and the State Water Project.

The San Diego County Water Authority (SDCWA) purchases imported water from MWD and from the Imperial Irrigation District through a water transfer agreement, and wholesales the imported water to its member agencies, including the City of San Diego, which in turn delivers the water to individual homes and businesses throughout the county (SDCWA 2015).

In addition to imported water, local water supplies comprise a portion of water delivered by SDCWA member agencies. On average, approximately 10% to 15% of all water used within the SDCWA service area comes from local sources. Seven major stream systems originate in the mountains of San Diego County and drain into the Pacific Ocean. Twenty-five (25) surface reservoirs are located within the SDCWA service area, with a combined capacity of approximately 587,000 acre-feet (AF) to capture and store runoff from these watersheds.

Groundwater is also a component of local water supplies. Total existing groundwater production within the SDCWA service area is approximately 31,100 AF per year.

Another local water supply source consists of water recycling. Currently, approximately 30,000 AF of recycled water is used within SDCWA's service area annually. This number is projected to increase to over 43,000 AF per year by 2020 (SDCWA 2015). While not technically a water supply "source," conservation is also an important strategy employed within the region to reduce demand for water supply. Water conservation programs are maintained by MWD, SDCWA, and the City of San Diego.

MWD, SDCWA, and the City of San Diego are increasingly recognizing the need to lessen the dependence on imported water in order to meet future demand generated by projected population growth. Accordingly, diversifying water supplies and reducing dependence on imported water is a primary component of MWD's 2010 Integrated Water Resources Plan **(**IRP), SDCWA's 2010 Urban Water Management Plan (SDCWA 2010 UWMP), 2013 Regional Water Facilities Optimization and Master Plan Update (2013 Master Plan), and the City of San Diego's 2010 Urban Water Management Plan (City 2010 UWMP).

The IRP includes target quantities for recycling, groundwater recovery, and seawater desalination. The IRP identifies the mix of water resources required to meet the region's water needs, the most significant being higher projected local supplies and greater conservation savings, to provide for reliability through 2035. The IRP identifies recycled water as a drought-proof supply that is not subject to weather-based fluctuations impacting local and imported water supplies. Southern California is a leader in water recycling; however, there is significantly more wastewater produced that could potentially be recycled. The IRP projects that Southern California could have a total recycled water potential of 747,800 AF by 2040. Advanced treated recycled water is currently being produced and blended with potable water by Los Angeles County's Montebello Forebay Groundwater Recharge Program and the West Coast, Dominguez Gap, and Alamitos seawater barriers injection system, and the Orange County Water District's Groundwater Replenishment System.

Additional discussion is provided in the following sections regarding SDCWA's Master Plan and the Plan's policies relative to potable reuse as well as the SDCWA 2010 UWMP and City 2010 UWMP.

8.5 REGIONAL PLANNING – GROWTH FORECASTS AND WATER DEMAND PROJECTIONS

San Diego County's population and employment base have grown and are expected to continue to grow at moderate rates. Between 2000 and 2010, the County's population grew by approximately 10% (281,480 people) thus reaching in excess of 3 million people (SANDAG

2011). The County's population is projected to grow to 3.8 million by 2030, an additional increase of approximately 35.7%. The water demand projected by SANDAG and SDCWA is expected to increase as a direct function of the anticipated growth in population and related housing and employment markets.

At the same time that water demand within the region increases as a result of increasing regional growth, imported water supplies are becoming more constrained. This is because growth in other regions that draw water from the same import sources (the Colorado River and the State Water Project) are placing increased pressures on imported water supplies and drought conditions are continuing, causing regional and local water agencies to develop strategies to increase non-imported water sources to meet demand and provide a more reliable long-term water supply.

In July 2004, SANDAG adopted its Regional Comprehensive Plan (RCP; SANDAG 2004), and certified the accompanying Final Program EIR. A draft of the RCP update, San Diego Forward: The Regional Plan, was published in April 2015; however, this updated draft does not address future water supply. The 2004 RCP was developed as the long-term planning framework for the San Diego region. It provides a broad context in which local and regional decisions affecting regional growth can be made. The RCP integrates local land use and transportation decisions, and focuses attention on where and how growth should occur. The RCP includes a discussion of public facilities, and specifically addresses future water supply. Part of the vision stated in the RCP for Public Facilities is to "have a diversified water supply with a broad range of water resources including water recycling." The RCP's long range plans call for the region to diversify its water supply portfolio to become less reliant on a single supply source. In meeting future water needs, the RCP anticipates that the 2020 normal year projection for water supplies will include 6% recycled water. The Program would represent approximately 12% of projected 2020 demands; however, the first phase (30 MGD) of the Program is not targeted to come online until 2023. The RCP states its water supply policy objective as: "Ensure a safe, sufficient, reliable, and cost-effective water supply for the San Diego Region," and further states as one of the recommended actions pursuant to this objective: "Maximize water resources through diversification strategies such as transfer agreements, water recycling and reclamation, seawater desalination, and sustainable groundwater development" (SANDAG 2004).

SDCWA and SANDAG have entered into a Memorandum of Agreement (MOA) to maintain ongoing communication and coordination to ensure that the future water supply needs of the San Diego region can be accomplished. SANDAG prepares long-range forecasts of population, housing, and employment through periodic updates to their Regional Growth Forecast (RGF). SDCWA uses the most current RGF to develop demand projections to be used in its water supply planning. The MOA ensures that the water demand projections for the San Diego region are linked with SANDAG's RGF and that water supply is a component of the overall growth

management strategy and regional comprehensive planning efforts. In this way, regional water demand is made consistent with regional population growth projections.

As a part of the SDCWA's planning efforts to meet future demands resulting from projected growth, the SDCWA Board adopted the 2013 Master Plan, which is a long-term plan to meet San Diego County's future water demands. The 2013 Master Plan encompasses a region-wide planning effort, incorporating three interrelated components: water demands, water supplies, and facilities. Planning began with estimating future water demands, identifying water supplies, and defining facilities needed to distribute the supplies to the points of demand. With respect to water supply, the plan discusses diversifying the region's water supply, with an emphasis on local supplies including recycling, to meet the region's water needs through 2035.

8.6 URBAN WATER MANAGEMENT PLANS

The City of San Diego maintains an Urban Water Management Plan (UWMP), as required under state law (California Water Code Sections 10631, 10633, 10634, and 10635). The UWMP is required to identify and quantify existing and future water supplies and must be updated every 5 years. The San Diego UWMP identifies a Reservoir Augmentation Project as a potential future water supply component, because at the time that the plan was prepared, the Demonstration Project was underway, and while schedule and supplies related to reservoir augmentation were not known, there was sufficient information to estimate the potential for the first increment of an advanced water purification supply component. The UWMP is currently being updated, and will address the full capabilities of advanced water purification and its role in the City's water supply portfolio. It can therefore be reasonably assumed that potable recycled water would replace a reciprocal component of the supplies anticipated to be purchased from SDCWA by the City of San Diego. Further, it is anticipated that future updates to the San Diego UWMP would include potable recycled water in the future local supply projections.

8.7 POTENTIAL GROWTH-INDUCING IMPACTS

As noted earlier, the City of San Diego has and continues to engage in comprehensive planning processes that regulate and control growth in a manner that preserve community integrity and quality of life for residents, taking into consideration a multitude of factors that influence and are affected by growth. Therefore, it is not anticipated that the addition of a new replacement water source would result in any changes to existing land use plans, growth projections, or growth management policies of the City of San Diego. It would require speculation beyond the scope of this PEIR to attempt to predict whether the City of San Diego would change any of its current land use, housing or population projections, or any of its existing growth management controls based on a change in the mix of water supply sources. In addition, the City is largely built out, and the availability of developable land is the primary factor in future growth potential.

Consequently, the availability of water from the Program is not anticipated to have a substantial effect on growth planning within the City of San Diego.

Moreover, with respect to the question of whether the project represents a new water supply or a replacement water supply within the region, as previously discussed, the Program contributes to the new supplies identified in the 2013 Master Plan, and as such, constitutes a portion of the new water supplies that have been considered and analyzed on a regional level. However, the Program is not anticipated to represent additional supplies over and above what is already contemplated for the San Diego region. Therefore, it is not anticipated that implementation of the Program would result in a net increase of water supply, beyond what is planned and necessary to accommodate future growth, particularly in light of current uncertainties and structural changes in water supply availability due to a variety of factors including changes in imported water allocations, and effects related to climate change resulting in reduced snow pack, accelerated runoff and prolonged and recurring drought. Therefore, the Project would not cause significant growth-inducing impacts in San Diego.

However, the replacement of imported water supplies with recycled water supplies produced by the Program could have the effect of making the imported water supplies that are displaced by the recycled water supplies available for use outside of San Diego and the region. Determination of the specific potential indirect growth-inducing effects outside of the San Diego region would require speculation that is beyond the scope of the environmental analysis for the Program, and therefore, in accordance with guidance provide in Section 15145 of the CEQA Guidelines, no further discussion is warranted or provided.

CHAPTER 9 CUMULATIVE IMPACTS

In many cases, the impact of an individual project may not be significant, but its cumulative impact may be significant when combined with those impacts from other related projects. Section 15355 of the California Environmental Quality Act (CEQA) Guidelines defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." CEQA Guidelines Section 15130(b) states that "the discussion [of cumulative impacts] need not provide as great detail as is provided for the effects attributable to the project alone." Section 15130(b) further states that a cumulative impacts discussion "should be guided by standards of practicality and reasonableness."

Cumulative impacts can occur from the interactive effects of a single project. For example, the combination of noise and dust generated during construction activities can be additive and can have a greater impact than either noise or dust alone. However, substantial cumulative impacts more often result from the combined effect of past, present, and future projects located in proximity to a proposed project. Thus, it is important for a cumulative impacts analysis to be viewed over time and in conjunction with other related past, present, and reasonably foreseeable future projects, the impacts of which might compound or interrelate with those of the project under review.

As provided by Section15130(b)(1) of the CEQA Guidelines, the evaluation of cumulative impacts is to be based on either:

A. A list of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those projects outside the control of the agency; or

B. A summary of projections contained in an adopted general plan or related planning document that is designed to evaluate regional or area wide conditions. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.

Pursuant to Section 15130(d), cumulative impact discussions may rely on previously approved land use documents such as general plans, specific plans, plans for the reduction of greenhouse gas emissions, and local coastal plans, which may be incorporated by reference. In addition, no further cumulative impact analysis is required when a project is consistent with such plans, and the lead agency determines that the regional or area-wide cumulative impacts of the proposed project have already been adequately addressed in a certified EIR for that plan. In addition, Section 15130(e) states that "if a cumulative impact was adequately addressed in a prior EIR for a community plan, zoning action, or general

plan, and the project is consistent with that plan or action, then an EIR for such a project should not further analyze that cumulative impact as provided in section 15183(j)."

9.1 PLANS AND PROGRAMS EVALUATED FOR CUMULATIVE IMPACTS

For the analysis of cumulative impacts associated with the Pure Water Program, the subject area primarily includes the City of San Diego, since new advanced water purification facilities and the majority of pump stations would be located within its corporate boundaries, but would also include the Cities of La Mesa, El Cajon, Santee, and Chula Vista, as well as unincorporated San Diego County, as pipelines would traverse these local jurisdictions. Because of both the broad geographical extent of the Program area and the uncertain timing of implementation of the Program components, attempting to prepare an accurate list of related past, present, and probable future projects was determined to be speculative at this juncture. Thus, consistent with Section 15130(b)(1)(B) of the CEQA Guidelines, this cumulative impact analysis relies primarily on the cumulative impact analysis of the City of San Diego General Plan Program Environmental Impact Report (PEIR), which concluded that implementation of the General Plan would result in significant and unmitigable cumulative impacts to the following environmental issue areas: agricultural resources, air quality, biological resources, geologic resources, health and safety, historical resources, hydrologic resources, mineral resources, noise, paleontological resources, population and housing, public facilities, public services and utilities, transportation/traffic/ circulation/parking, visual effects and community character, water quality, and global warming. In addition to the City of San Diego General Plan, the general plans for the Cities of La Mesa, El Cajon, Santee, and Chula Vista, as well as unincorporated San Diego County; the City of San Diego Multiple Species Conservation Plan (MSCP) Subarea Plan and Draft Vernal Pool Habitat Conservation Plan; the County of San Diego and City of Chula Vista MSCP Subarea Plans; the City of San Diego Land Development Code; and the Draft San Diego Association of Governments (SANDAG) San Diego Forward: The Regional Plan were used to evaluate cumulative impacts. A summary of anticipated significant impacts identified for the plans evaluated is included in Table 9-1.

Table 9-1
Plans and Programs used for the Cumulative Analysis

Planning Document	Jurisdiction	CEQA Document (as of September 2015)	Significant Impacts by Resource Issue Areas
City of San Diego General Plan	City of San Diego	Final EIR certified and plan adopted in March 2008	Agricultural resources; air quality; biological resources; geologic conditions; health and safety; historical resources; hydrology; land use; mineral resources; noise; paleontological resources; population and housing; public facilities; public utilities; traffic; visual effects/neighborhood character' water quality; greenhouse gas emissions
City of San Diego Land Development Code	City of San Diego	Final EIR certified and code adopted in 1999	Soils/ erosion hazards; air quality; hydrology/water quality; biological resources; land use; transportation/circulation; landform alteration; hilstorical resources; paleontological resources
City of La Mesa General Plan	City of La Mesa	Final EIR certified in 2013	Air quality; greenhouse gas emissions
City of El Cajon General Plan	City of El Cajon	Not Available	
City of Santee General Plan	City of Santee	Not Available	
City of Chula Vista General Plan	City of Chula Vista	Not Available	
County of San Diego General Plan	County of San Diego (unincorporated)	Final EIR certified and plan adopted in 2011	Aesthetics; agricultural resources; air quality; biological resources; hazards and hazardous materials; hydrology and water quality; mineral resources; noise; public services; transportation and traffic; utilities and service systems;
City of San Diego MSCP Subarea Plan	City of San Diego	Final EIR/EIS certified and plan adopted in March 1997	Land use and biology
City of Chula Vista MSCP Subarea Plan	City of Chula Vista	Final EIR/EIS certified in 1997 and plan adopted in 2003	Land use and biology
County of San Diego MSCP Subarea Plan	County of San Diego	Final EIR/EIS certified and plan adopted in 1997	Land use and biology

Table 9-1
Plans and Programs used for the Cumulative Analysis

Planning Document	Jurisdiction	CEQA Document (as of September 2015)	Significant Impacts by Resource Issue Areas
SANDAG Regional Comprehensive Plan	SANDAG	Final EIR certified and plan adopted in July 2004	Land use; population/housing; visual resources; transportation/circulation; air quality; noise; energy; geology; paleontology; hydrology/water resource; biological resources; cultural resources; and public services/utilities
Draft SANDAG San Diego Forward: The Regional Plan	SANDAG	Draft EIR and plan released October 2015	Aesthetics; agricultural and forestry resources; air quality; biology; cultural and paleontological resources; energy; mineral resources; greenhouse gas emissions; hazards and hazardous materials; land use; noise and vibration; population and housing; public services and utilities; transportation; and water supply.
San Diego International Airport ALUCP	San Diego County Regional Airport Authority	Final EIR certified and plan adopted in April 2014	Land use and planning, population and housing.

In addition to the plans and programs listed above, the cumulative analysis also considers the Padre Dam Municipal Water District's (District's) proposed East County Advanced Water Purification Program (ECAWPP). The ECAWPP is expected to produce up to 15.5 MGD of purified water for surface water augmentation at Lake Jennings. The goal of the project is to ultimately reduce East County's reliability on the City of San Diego to treat and discharge the East County's wastewater as well as supply additional drinking water.

The ECAWPP would expand Padre Dam's influent pump station and the City of San Diego's East Mission Gorge pump station to increase conveyance of wastewater to the Ray Stoyer Water Recycling Facility (WRF). A new three mile 20" wastewater forcemain would transport wastewater flows from the Influent pump station to the Ray Stoyer WRF and a new three and a half mile 30" wastewater forcemain would transport wastewater flows form the East Mission Gorge pump station to the Ray Stoyer WRF. The ECAWPP would require increased treatment capacity at the Ray Stoyer WRF and the addition of an adjacent AWPF. A new 24" AWP pipeline will run 10 miles from the new AWPF to Lake Jennings to deliver purified water. A new

solids handling facility would be located at Sycamore Landfill; a new 6" sludge pipeline and a 3" brine pipeline, both approximately 4 miles in length, would run from the Ray Stoyer WRF to the Solids Handling Facility.

A Mitigated Negative Declaration was adopted in July 2015 for the first phase expansion of the Ray Stoyer WRF from 2 MGD to 6 MGD, construction of a 2.2 MGD AWPF and upgrades at the Padre Dam influent pump station (Padre Dam Municipal Water District 2015). An environmental analysis has not yet been completed on the additional components of the ECAWPP.

9.2 CUMULATIVE IMPACT ANALYSIS

9.2.1 LAND USE

Applicable regional land use plans identified cumulatively significant and unavoidable land use impacts related to incremental adverse physical changes to the environment. Program implementation could potentially result in cumulative impacts associated with land use and planning when combined with other past, present, and reasonably foreseeable future projects in the broader Program area. However, the Program includes a mitigation framework designed to reduce potential Program incompatibility with applicable land use plans to below a level of significance, and therefore, with mitigation, the Program would not result in a cumulatively considerable contribution to significant cumulative impacts related to the compatibility of the Program with applicable land use plans, habitat conservation plans, and adopted Airport Land Use Compatibility Plans (ALUCPs). The ECAWPP is not anticipated to result in land use impacts and is located in a different community than the proposed Program, and therefore, would not be anticipated to contribute to cumulative land use impacts.

9.2.2 AIR QUALITY

If a project involves development that is greater than that anticipated in the local plan and SANDAG's growth projections, the project might be in conflict with the State Implementation Plan and Regional Air Quality Strategy and may contribute to a potentially significant cumulative impact on air quality. The proposed Program would be consistent with the existing zoning and General Plan land use designations for the various project component locations in each jurisdiction in which the Program would occur. Additionally, the Program would not include a residential component that would increase local population growth, nor would the Program provide additional water supplies that would result in growth-inducing effects; rather, the Program would provide a replacement water source for the City of San Diego's existing water supply. Moreover, implementation of the Program would result in a minor increase in employment of 65-76 personnel at each facility for a total of 271 new employees, which would likely be absorbed by the local workforce; and therefore, the Program would not substantially

increase the local employment base such that unanticipated air quality impacts due to an increase in vehicular sources would occur.

Additionally, if Program emissions generated during either construction or operation were to exceed applicable regional thresholds for any nonattainment pollutant, then the Program could have the potential to result in a cumulatively considerable net increase in these pollutants and thus could have a significant impact on the ambient air quality. However, both Program construction and operation emissions would not exceed the City of San Diego's significance thresholds for criteria pollutants: volatile organic compounds, oxides of nitrogen (NO_x), carbon monoxide (CO), sulfur oxides (SO_x), particulate matter less than or equal to 10 microns in diameter (PM_{10}), or particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$) with implementation of Mitigation Framework measures MM-AQ-1 and MM-AQ-2.

Construction of the ECAWPP would likely overlap construction of the Program; however, the ECAWPP is not proximally located to other Program components and is not anticipated to result in potentially significant air quality impacts.

Furthermore, while the specific design of the facility, including the location of specific facility components relative to sensitive receptors, is currently unknown, it can be reasonably concluded that odor control measures, as provided in Mitigation Framework measure MM-AQ-3, would reduce odor impacts to below a level of significance. Therefore, the Program's contribution to impacts associated with air quality is not considered cumulatively considerable.

9.2.3 HEALTH AND SAFETY

Program development could potentially result in cumulative impacts associated with health and safety when combined with other past, present, and reasonably foreseeable future projects in the broader Program area. However, on an individual basis, with implementation of Mitigation Framework measures MM-HAZ-1 through MM-HAZ-5 and MM-LU-11 and MM-LU-12, the Program will not expose people or property to health hazards, either via wildfire or the routine transport, use, or disposal of hazardous materials; create future risk of an explosion or the release of a hazardous substance; interface or intersect with a hazardous materials site; or result in a safety hazard for people working in a designated airport influence area. Other related projects located within the broader Program area, including the ECAWPP, would be required to comply with all applicable hazardous materials regulations set forth by the appropriate federal, state, and local jurisdiction, which are intended to address and reduce the risk of hazards. All related projects, regardless of location, would be subject to the requirements set forth by the U.S. Environmental Protection Agency (EPA), Federal Aviation Administration, Department of Toxic Substances Control, California Department of Transportation, the County of San Diego Department of Environmental Health, and local fire departments, all of which are designed to minimize impacts

related to hazards and hazardous materials. Therefore, the Program's contribution to impacts associated with health and safety is not considered cumulatively considerable.

9.2.4 BIOLOGICAL RESOURCES

Preservation of the region's biological resources has been addressed through the implementation of regional habitat conservation plans, including the City of San Diego, County of San Diego, and City of Chula Vista MSCP Subarea Plans.

Program development could potentially result in cumulative impacts associated with biological resources when combined with other past, present, and reasonably foreseeable future projects in the broader Program area. In particular, the ECAWPP has the potential to result in significant biological impacts similar to the potential impacts of the Program. However, the Program's individual impacts related to biological resources would be less than significant with the incorporation of mitigation. On an individual basis, with implementation of Mitigation Framework measures MM-LU-3 through MM-LU-10 and MM-BIO-1 through MM-BIO-3, the Program ~~would~~ is not anticipated to impact unique, rare, endangered, sensitive, or fully protected species of plants or animals; sensitive habitats or natural communities; or wetlands; or interfere with wildlife movement; or conflict with the provisions of all applicable habitat conservation plans and policies; or introduce inconsistent land uses in or adjacent to the Multi-Habitat Planning Area (MHPA); or introduce invasive species into the project area.

Other related projects located within the boundaries of the MSCP, MHPA, or any other applicable plan would be required to comply with all applicable provisions set forth in those plans, which are intended to address and reduce biological resources impacts. All related projects, regardless of location, would be subject to all applicable requirements set forth by the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, U.S. Army Corps of Engineers, and Regional Water Quality Control Board (RWQCB), all of which are designed to minimize impacts to those biological resources deemed rare, endangered, sensitive, protected, or otherwise worthy of conservation. Therefore, while the Program may contribute to incremental impacts to biological resources, compliance with the MSCP Subarea Plans, ESL Regulations and the City's Biology Guidelines, in addition to adherence to the Mitigation Framework measures would ensure the Program's contribution to impacts associated with biological resources is not considered cumulatively considerable.

9.2.5 NOISE

Program development could potentially result in cumulative impacts associated with noise resources when combined with other past, present, and reasonably foreseeable future projects in

the broader Program area. In particular, the ECAWPP has the potential to result in significant noise impacts similar to the potential impacts of the Program. However, the Program's individual impacts related to noise would be below a level of significance following implementation of Mitigation Framework measures. Therefore, on an individual basis, the Program would not create a significant temporary increase in ambient noise levels, result in a substantial permanent increase in ambient noise levels, or be a source of unacceptable levels of groundborne vibrations.

Other related projects located within the broader Program area would be required to comply with all applicable noise ordinances set forth by the appropriate local jurisdiction, which are intended to address and reduce noise impacts. All related projects, regardless of location, would be subject to these noise standards, including the ECAWPP. However, the ECAWPP is not proximally located to Program components, and therefore, would not likely result in cumulative increases in ambient noise levels. Therefore, the Program's contribution to impacts associated with noise is not considered cumulatively considerable.

9.2.6 HISTORICAL RESOURCES

A cumulative impact results from incremental impacts to historical resources from the continued pressure to develop or redevelop areas in the region including those that result from human activity. San Diego County is rich with historical resources. While any individual project may avoid or mitigate the direct loss of a specific resource, the effect would be cumulatively considerable, and therefore, would result in a cumulatively significant impact. The ECAWPP may result in potentially significant impacts to historical resources, but is anticipated to mitigate impacts to less than significant. However, while implementation of Program components could result in incremental impacts to historical resources, compliance with the City's Historical Resource Regulations and Historical Resource Guidelines, and adherence to Mitigation Framework measures MM-HIST-1 and MM-HIST-2 would ensure that impacts from subsequent Program components would not be cumulatively significant.

9.2.7 HYDROLOGY AND WATER QUALITY/OCEAN WATER QUALITY

The cumulative effects of past and current projects in the cumulative scenario have resulted in substantial water quality problems in the region's major waterways, and because water quality problems are generally cumulative in nature, all efforts must be made to reduce pollutant concentrations within stormwater discharges to the maximum extent practicable, even if the impact of an individual project appears inconsequential. Cumulatively considerable water quality issues are identified as "water quality limited" segments (or impaired water bodies) under Clean Water Act (CWA) Section 303(d). These segments are identified in Section 5.7.2 and Figure 5.7-1. Most of the major water bodies adjacent to or crossed by proposed Program components,

including the Tijuana River, San Diego River, Lower Otay Reservoir, San Vicente Reservoir, and the bays and estuaries into which they discharge, are listed under CWA Section 303(d) as impaired for one or more pollutants.

For short-term effects, the proposed Program, along with other projects occurring in the area, would be required to comply with applicable federal, state, and local water quality regulations. The proposed Program, along with other projects over 1 acre in size (which includes most of the projects in the cumulative scenario), would be required to obtain coverage under the National Pollutant Discharge Elimination System (NPDES) Construction General Permit, which requires project proponents to identify and implement stormwater best management practices (BMPs) that effectively control erosion and sedimentation and other construction-related pollutants. The City's stormwater standards manual also requires smaller projects (less than 1 acre) to implement a minimum set of water quality BMPs. The ECAWPP would fall within some of the same watersheds as the Program, potentially resulting in cumulative impacts to surrounding waterways. Further study would be required to determine potential water quality impacts of the ECAWPP. However, the ECAWPP would be required to comply with existing regulations, and therefore, impacts would likely be reduced to less than significant.

The typical long-term effect of substantial increases in impervious surfaces is that peak flows within the watershed's drainages are greater in magnitude, shorter in duration, and more responsive to storm events, since a greater portion of precipitation is carried by surface runoff rather than percolated into the soil. These effects are undesirable with respect to flood hazards, water quality, and habitat quality. To the extent Program components exacerbate this issue, especially in proximity to water quality sensitive areas such as impaired waters, it could result in a cumulatively significant impact.

The various NPDES permits required are aimed at maintaining the beneficial uses of the water bodies in the RWQCB Basin Plan and meeting water quality objectives associated with specific pollutants of concern. Because adverse water quality and major hydrologic alterations are linked to the large-scale, cumulative effects of development projects, as well as industrial and/or agricultural land uses, the provisions within the various NPDES permits, by their nature, seek to address cumulative conditions. Therefore, adherence to the Mitigation Framework measures requiring Program compliance with the Construction General Permit, the Municipal Stormwater Permit, and other regulatory requirements would ensure that Program contributions to cumulatively significant water quality impacts are less than significant. Among other things, compliance with the City's Storm Water Standards manual requires identification of impaired water bodies and implementation of strict controls to ensure construction and operation does not contribute pollutants for which the water body is impaired.

The California Ocean Plan and the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan; SWRCB 1975) contain objectives and standards for the protection of marine water quality. Wastewater treatment plants and water reclamation plants (WRPs) involving discharge to the ocean must meet these objectives, which are enforced through requirements to apply for and maintain valid NPDES permits and Waste Discharge Requirements. Implementation of the Pure Water Program would ultimately decrease the volume of water needing to be discharged through the Point Loma Ocean Outfall and the South Bay Ocean Outfall by diverting some of the treated wastewater to the advanced water purification facilities. The diversion of treated wastewater would reduce the rate and volume of discharge through the ocean outfalls, which would be beneficial with regards to the Point Loma Wastewater Treatment Plant variance from secondary treatment requirements for the discharge of total suspended solids and biochemical oxygen demand. The ECAWPP would also divert wastewater flows to the Point Loma Wastewater Treatment Plant and would reduce the rate and volume of discharge through the ocean outfalls, resulting in a net cumulative benefit to ocean water quality. As such, the Program is not expected to contribute to a cumulatively considerable impact to ocean water quality.

9.2.8 PALEONTOLOGICAL RESOURCES

Similar to historical resources, cumulative impacts to paleontological resources could occur due to the continued pressure for development and redevelopment in the region that requires extensive excavation into fossil bearing formations. Effects on paleontological resources depends on both the paleontological sensitivity of the formation and the depth/extent of excavation required for each cumulative project. It can reasonably be assumed that each cumulative project, including the ECAWPP, would employ mitigation for potential impacts to paleontological resources in the form of construction monitoring, similar to that of the Program, in order to minimize impacts to paleontological resources to the extent feasible. Therefore, the Program's contribution to impacts associated with paleontological resources is not considered cumulatively considerable.

9.2.9 PUBLIC UTILITIES

Program development could potentially result in cumulative impacts associated with public utilities and service systems when combined with other past, present, and reasonably foreseeable future projects in the broader Program area. Per the City's thresholds, 60 tons of waste may have cumulatively significant impacts. However, the Program's individual impacts related to solid waste would be less than significant following the incorporation of mitigation, which requires ongoing waste management and diversion of a minimum of 75% of the waste stream. On an individual basis, with mitigation, the Program will not significantly impact communication systems. Additionally, while new and/or improved storm drainage facilities would be required as

part of the Program, these improvements, and the potential environmental impacts associated with such improvements, are already analyzed within this PEIR.

Utility providers prepare and adopt long-term master plans in order to respond to future demands with system wide improvements. These plans are periodically updated based on both individual provider's projections and SANDAG population forecasts. Any new or expanded utilities as a result of cumulative growth is typically discussed and evaluated in these master plans.

The ECAWPP is anticipated to result in additional solid waste production; however, a minimum of 75 percent would be diverted and area landfills are anticipated to have sufficient capacity. The ECAWPP was not included in the City's long range water supply master plans; therefore, additional study is needed regarding the project's conformance with long-range utility planning.

Regardless of land use type, all other private projects located within the broader Program area would be required to contribute their fair share of development impact fees (DIFs) or other mitigation fees. Those projects that would trigger the need for additional utilities would not only be required to pay their fair share of DIFs to fund such facilities, but would be required to comply with the requirements of CEQA by analyzing the potential environmental impacts associated with construction of such utilities. Therefore, the Program's contribution to impacts associated with public utilities is not considered cumulatively considerable.

9.2.10 VISUAL EFFECTS AND NEIGHBORHOOD CHARACTER

Program development could potentially result in cumulative impacts associated with visual effects and neighborhood character when combined with other past, present, and reasonably foreseeable future projects in the broader Program area. However, the Program's individual impacts related to visual effects and neighborhood character would be less than significant following the incorporation of mitigation. On an individual basis, with implementation of Mitigation Framework measure MM-VIS-1 through MM-VIS-3, the Program will not result in a substantial change to natural topography, the blockage of public views, or substantial alteration to the existing character of the area, and would be compatible with surrounding development.

Visual consistency between adjacent land uses located in a specific area is typically governed by design standards and guidelines set forth by the City. Design guidelines established in the City's Municipal Code, for example, help to ensure a compatible aesthetic character throughout the area by creating uniform standards related to building height, floor area, setbacks, lot coverage, building materials, landscaping, and other requirements that would govern the layout of a particular project. Compliance with these guidelines during the design review process ensures that all new projects, as well as projects involving the remodeling and/or expansion of existing structures, are consistent with the visual character and quality of adjacent properties, as well as the broader area. Thus,

similar to the Program components, other related projects are subject to design review prior to discretionary approvals or permit issuance, which reduces the opportunity for significant cumulative visual effects and neighborhood character impacts. Similar to the Program, the majority of potential visual impacts from the ECAWPP would be related to short-term construction impacts and are not anticipated to be significant. Facility improvements would be located within existing facility footprints, or adjacent to existing public utilities and are not anticipated to result in significant visual impacts. Therefore, the Program's contribution to impacts associated with visual effects and neighborhood character is not considered cumulatively considerable.

9.2.11 ENERGY

The study area for the energy conservation cumulative effects analysis is defined as the San Diego region as the Program components would rely on a regional distribution network for electricity and natural gas service. Although electricity, natural gas, and petroleum consumption would increase due to the implementation of the Program, the Program would be required to comply with all applicable federal, state, and local regulations pertaining to energy efficiency. These provisions include the mandatory energy requirements set forth by Title 24, Part 6, of the California Code of Regulations. Additionally, the Program would replace the supply and conveyance component associated with typical urban water systems. The net electrical savings would equate to a savings of approximately 2,700 kilowatt hours per million gallons (kW-hr/MG). The ECAWPP is similarly expected to replace an imported water supply, resulting in a net reduction in electrical usage. Other related projects would similarly be required to comply with all applicable energy reduction provisions set forth by the state and the appropriate local jurisdiction, which are intended to both improve energy efficiency and reduce wasteful energy practices. Therefore, the Program's contribution to impacts associated with energy consumption is not considered cumulatively considerable, and cumulative energy consumption impacts would be less than significant.

9.2.12 GEOLOGY AND SOILS

Potential cumulative impacts on geology and soils would result from projects that combine to create geologic hazards, including unstable geologic conditions, or substantially contribute to erosion. The majority of impacts from geologic hazards, such as rupture of a fault line, liquefaction, landslides, expansive soils, and unstable soils, are site-specific and must be mitigated on a project-by-project basis. The Program, and each reasonably foreseeable cumulative project including the ECAWPP, would be required to adhere to proper building engineering design per most recent California Building Code in order to ensure the safety of building occupants and avoid a cumulative geologic hazard. Additionally, projects would incorporate individual mitigation for site-specific geologic hazards present on each individual

cumulative project site. Therefore, cumulative impacts related to site specific geologic hazards such as landslides, liquefaction, and soil stability characteristics would not occur.

The construction phase (primarily during excavation and grading) of the Program and reasonably foreseeable cumulative projects would increase the potential for erosion and loss of topsoil. The Program, in combination with reasonably foreseeable cumulative projects, could potentially result in an increase of sedimentation of local waterways and a cumulative loss of soils. However, each project, including the Program, would implement a Mitigation Framework measures MM-GEO-1 and MM-GEO-2 requiring adherence to the State Water Resources Control Board's Construction General Permit and the applicable jurisdictions' grading ordinance that provides erosion control standards and stormwater discharge requirements. Through compliance with applicable standards and implementation of the required BMPs, erosion impacts would be minimized with each subsequent project. Therefore, the Program's contribution to impacts associated with geology and soils is not considered cumulatively considerable.

9.2.13 TRANSPORTATION, CIRCULATION, AND PARKING

A cumulative traffic impact could occur if the Program, together with other reasonably foreseeable cumulative projects, adds a substantial amount of traffic to existing and planned roadways in relation capacity. Additionally, an adverse cumulative effect could occur through combined alterations to the existing and planned circulation system that may substantially affect public access and vehicular movement. As discussed in Section 5.13, Transportation, Circulation, and Parking, the Program's potential effects on the circulation system would be limited to the construction phase. However, implementation of Mitigation Framework measures MM-TRA-1 which requires an approved traffic control plan, in accordance with the City's (and applicable jurisdictions') municipal code, would ensure that the Program's impacts on transportation, circulation, and parking are minimized during construction. Significant temporary cumulative traffic circulation impacts could result if multiple projects were under construction simultaneously and in the same general location. Given the long time frame for Program implementation and large area of effect, it is possible for construction schedules of the Program and reasonably foreseeable cumulative projects to overlap. However, it can reasonably be assumed that, similar to the Program, all cumulative projects affecting the public right-of-way would require issuance of an encroachment permit and an approved traffic control plan. Implementation of traffic control plan would likely be coordinated between the City and other applicable jurisdictions throughout the construction phase of the Program. The required permitting process for encroachment onto the public right-of-way, implementation of project specific traffic control, and agency coordination would be required for future projects with overlapping construction schedules, ensuring that a cumulative impact would not occur. Because the ECAWPP is located significantly east of the Program construction locations, it is likely there

will be little to no cumulative traffic impacts as a result of these two projects occurring simultaneously. Therefore, the Program's contribution to impacts associated with transportation, circulation, and parking would not be cumulatively considerable.

9.2.14 PUBLIC SERVICES

Program development could potentially result in cumulative impacts associated with public services when combined with other past, present, and reasonably foreseeable future projects in the broader Program area. However, the Program's individual impacts related to public services and facilities would be less than significant. On an individual basis, the Program will result in only minimal increase in population such that a substantial increase in demand for fire and police response and protection, public school education, or park and recreational facilities would not occur.

Regardless of land use type, all private projects located within the broader Program area would be required to contribute their fair share of DIFs or other mitigation fees, including those established by such state laws as the Quimby Act. Those project that would trigger the need for fire or police stations, schools, and/or parks would not only be required to pay their fair share of DIFs to fund such facilities, but would be required to comply with the requirements of CEQA by analyzing the potential environmental impacts associated with implementation of such public facilities. The ECAWPP is not anticipated to require additional public services. Therefore, the project is not anticipated to contribute to cumulatively considerable impacts. However, since the Program would not require new or expanded fire or police services, public schools, parks or recreational facilities or any other related capital expenditures (e.g., personnel, training), the Program's contribution to impacts associated with public services and facilities is not considered cumulatively considerable, and cumulative public services impacts would be less than significant.

9.2.15 GREENHOUSE GAS EMISSIONS

Because of the broad nature of greenhouse gas (GHG) emissions, it is not feasible to analyze GHG emissions solely on an individual, project-level basis. Unlike air quality impacts, which could result in more localized or location-specific effects (e.g., CO Hotspots), any discussion and evaluation of GHG emissions already involves a cumulative-level assessment. As discussed and analyzed in Section 5.15, Greenhouse Gases, the Program's construction and operation GHG emissions were evaluated to determine whether they would have a significant cumulative impact on the environment.

Table 5.15-6, Estimated Annual Construction GHG Emissions, shows the estimated annual GHG construction emissions associated with program components, as well as the annualized construction emissions over a 30-year "project life." In regards to operations, Table 5.15-9, Pure Water Program Estimated GHG Emissions, presents the estimated annual GHG operation

emissions associated with program component. As addressed in Section 5.15, the Program would result in a reduction in GHG emissions from existing conditions of approximately 19,708 metric tons of carbon dioxide equivalent (MT CO_2E) per year. The Program would not exceed the City's 900 MT CO_2E per year screening criteria that has been established for the purposes of evaluating the GHG emissions of projects in the City of San Diego. Therefore, the Program's contribution to impacts associated with GHG emissions is not considered cumulatively considerable, and impacts would be less than significant.

9.2.16 WATER SUPPLY

The City's 2010 UWMP, adopted in 2011, is the most recent iteration of the UWMP and provides actual water use data for the year 2010 and projections through 2035 (City of San Diego 2011). The City's 2010 UWMP describes historic and project water supply and demand scenarios, water supply reliability, water usage trends, current and planned facilities to support demand, current and planned demand management programs, water shortage contingency plans, water recycling efforts, groundwater use, and alternative sources of water that the City is considering. The City's water conservation efforts are an important component of the City's overall water supply strategy.

The Program would create a new supply of locally sourced potable water for the City of San Diego. The production of potable recycled water would increase the reliability of water supplies in the San Diego region and would reduce uncertainties associated with the provision of imported water associated with the current drought situation. Thus, the Program would be consistent with the water supply projections set forth in the UWMP. The ECAWPP would also create a new supply of locally sourced potable water and reduce the region's dependence on imported water. Therefore, although the project was not addressed in the City's 2010 UWMP, it is anticipated to be consistent with water supply projections and combined with the Program would result in a cumulative benefit regarding water supply.

Future private projects located within the broader Program area that would want to connect to the local water supply would have to show consistency with the UWMP. Additionally, any cumulative project meeting the definition of a "project" under Senate Bill 610 and/or Senate Bill 221 would be required to prepare a Water Supply Assessment, which requires detailed information regarding water availability to be provided to City decision makers prior to approval of specified large development projects as well as updates to community plans, new specific plans, or certain plan amendments. Both statutes also require this detailed information be included in the administrative record that serves as the evidentiary basis for an approval action by the City on such projects. Only after a project demonstrates that existing and future water supplies are adequate to serve the project's projected needs would a private project be approved.

This would be the same process for a community plan update, specific plan or amendment. Therefore, the Program's contribution to impacts associated with water supplies would not be cumulatively considerable.

CHAPTER 10 EFFECTS NOT FOUND TO BE SIGNIFICANT

Section 15128 of the California Environmental Quality Act (CEQA) Guidelines requires that an Environmental Impact Report (EIR) briefly indicate the reasons that various possible significant effects of a project are determined not to be significant and why each of these effects are not discussed in detail in the EIR. The environmental issues discussed in the following sections are not considered significant, and the reasons for this conclusion are outlined in detail below.

10.1 AGRICULTURAL RESOURCES

The majority of the Pure Water Program (Program) components would be located on previously disturbed or developed sites, including roadway rights-of-way and urban areas. Use of these sites and alignments would not result in the loss or conversion of agricultural resources or Williamson Act contract lands. Additionally, the siting of a treatment facility in proximity of agricultural lands would not typically result in indirect adverse effects that would preclude operation of agricultural land uses. For example, the South Bay Water Reclamation Plant is located within 0.25 mile of existing and currently operating agricultural uses. Therefore, siting of facilities and pump stations would not result in the conversion of existing agricultural lands.

10.2 MINERAL RESOURCES

Given the large geographic area encompassing the Program, there is potential for Program sites and alignments to be located on land identified with known important or potentially important mineral resources. However, given that the conceptual locations of the treatment facilities, pump stations, and pipelines would generally be within already developed areas surrounded by existing uses such as commercial, residential, and recreational land uses, mineral resource extraction for potentially present mineral resources would likely not be compatible with surrounding land uses. Additionally, while some segments of pipeline may be located within areas away from existing land uses, the extent of excavation required for trenching or trenchless drilling technology would likely render extraction of potentially important mineral resources infeasible. Therefore, the Program would have less-than-significant impacts to mineral resources.

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CHAPTER 11 ALTERNATIVES

11.1 INTRODUCTION

The California Environmental Quality Act (CEQA) requires that an environmental impact report (EIR) evaluate a "reasonable" range of alternatives. According to the CEQA Guidelines, an EIR "shall describe a range of reasonable alternatives to the project, or to the location of the 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" (14 CCR 15126.6(a)). Specifically, the CEQA Guidelines require the analysis of the No Project Alternative and alternatives that would be "capable of avoiding or substantially lessening any significant effects of the project" (14 CCR 15126.6(b)). The CEQA Guidelines also require a discussion of why other alternatives were rejected if they were considered in developing the project and still would meet the project objectives. Although an exhaustive analysis is not necessary, an EIR "must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation" (14 CCR 15126.6(a)).

Pursuant to the CEQA Guidelines, a range of alternatives to the project are considered and evaluated in this Program Environmental Impact Report (PEIR). These alternatives were developed in the course of project planning, environmental review, public scoping, and public hearings. Per CEQA Guidelines, Section 15126.6(c), the alternatives were chosen by considering whether they can meet the basic Pure Water Program (Program) objectives, their feasibility, and their ability to avoid the Program's significant environmental effects. The discussion in this section provides:

1. A description of alternatives considered.
2. An analysis of how many objectives each of the Program alternatives completes.
3. Per CEQA Guidelines, Section 15126.6(d), a comparative analysis of the Program and the alternatives under consideration.

Factors that may be taken into account when addressing the feasibility of alternatives include site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control, or otherwise have access to alternative sites (14 CCR 15126.6(f)(1)).

A range of alternatives have been considered in an effort to meet most of the basic Program objectives (Section 11.4). A potential Off-Site Location Alternative was considered and eliminated from detailed consideration for the reasons identified in detail in Section 11.6.

11.2 WATER SUPPLY ALTERNATIVES PLANNING

The City of San Diego has a long history of ongoing evaluation of water supply alternatives. Over the past decade, potable reuse options have been extensively studied and weighed along with other water supply options. As part of a balanced approach to water supply portfolio diversification, no single water supply option is considered to be "preferred." Rather, the study of water supply alternatives has included broad-based considerations of feasibility, environmental considerations, and costs. For reuse options, specific focus has been given to the various options involved in implementing new and enhancing existing reuse practices. The following provides a summary of the City's recent water supply planning efforts which form a basis from which alternatives to the Program were considered for purposes of this PEIR. Specifically, the City's extensive planning and broad stakeholder-driven processes in developing options that ultimately led to definition of the Program provide the basis for alternatives that were considered and rejected through the planning process—all of which has undergone extensive public participation.

Long-Range Water Resources Plan

The Long-Range Water Resources Plan (LRWRP) was developed in 2012, and is a high-level strategy document intended to provide information to decision makers regarding the tradeoffs of future water resource investments, with a long-range viewpoint through the year 2035 planning horizon (City of San Diego 2013). The 2012 LRWRP evaluates water supply and conservation options with consideration of multiple planning objectives. The plan was developed using an open, participatory planning process, with input from a dedicated Stakeholder Committee. The outcome of the 2012 LRWRP is a flexible and adaptive implementation strategy that accounts for future risk and uncertainty.

The City developed its first LRWRP in 2002, which provided direction for the City to pursue additional conservation, recycled water, and groundwater, with consideration of implementing potential water transfers, marine transport, and ocean desalination options if warranted. In light of the following changed conditions since adoption of the 2002 LRWRP, the City decided to update the plan in 2012:

- Metropolitan Water District of Southern California/San Diego County Water Authority imported water reliability issues surrounding the Sacramento - San Joaquin Delta and Colorado River, especially in the areas of the Endangered Species Act
- Climate change and its potential impacts on water demands and supplies
- New approaches and public support for potable reuse, using advanced purification of recycled water
- Viability of water transfers, marine transport, and ocean desalination

As such, the 2012 LRWRP re-assessed planning objectives and stakeholder values, evaluated emerging issues, and used the most recent information available at that time to determine a long-term water resources strategy for the City. The 2012 LRWRP used projected water demands, imported water availability, and costs; it also evaluated new supply opportunities that were not considered in the 2002 LRWRP.

The 2012 LRWRP identified three (3) options for potable reuse for a total projected yield of up to 93,000 acre-feet per year (AFY; 83 million gallons per day (MGD)) (City of San Diego 2013). A total of twenty (20) additional options were identified as alternatives to imported water in the categories of conservation; groundwater development; non-potable recycled water; and rainwater harvesting, graywater, and ocean desalination. Because the goal of achieving a balanced portfolio of water supply involves weighing numerous factors among various alternatives, the LRWRP process included an evaluation and ranking of portfolios to show the relative trade-offs among performance measures. The LRWRP Objectives were defined as follows (City of San Diego 2013):

- Provide Reliability and Robustness
- Manage Cost and Provide Affordability
- Maximize Efficiency of Water Use
- Provide for Scalability of Implementation
- Maintain Current and Future Assets
- Provide for Local Control/Independence
- Maximize Project Readiness
- Protect Quality of Life
- Protect Habitats and Wildlife
- Reduce Energy Footprint
- Protect Quality of Receiving Waters

As a result of the alternative water supply evaluation process, the LRWRP recommended implementation of strategies that included the following (City of San Diego 2013):

- Additional Active Conservation – 20,900 AFY (18.7 MGD)
- Rainwater Harvesting – 420 AFY (0.38 MGD)
- Groundwater Supply – up to 4,000 AFY (3.6 MGD)
- Potable Reuse (for all 3 phases) – 93,000 AFY (83 MGD)

The Program implements a portion of the recommendations from the 2012 LRWRP that would complement the City's ongoing pursuit of planned water supply options.

Water Reuse Study

On January 13, 2004, the San Diego City Council directed the City Manager to conduct a study to evaluate options for increasing the beneficial use of the City's recycled water. As part of the planning process, the study team developed an objective and a mission statement for the project, which set forth parameters for an impartial, balanced, comprehensive, and science-based study of all recycled water opportunities to increase local water supply and reliability, and optimize local water assets. As such, the study represented the first step in the City's comprehensive consideration of alternatives to optimize recycled water.

The process used to develop the study started with the City assembling a diverse, participatory group that included stakeholders and noted specialists in the fields of science, technology, health and safety, and economics. Two key groups convened shortly after the project began: a stakeholder workshop, called the City of San Diego Assembly on Water Reuse (Assembly), and an Independent Advisory Panel (IAP). The City selected its 67 Assembly participants through a City-wide search for key stakeholders such as community leaders, policy-makers, water consumers, business leaders, and professionals in various fields of expertise. The IAP was established to provide independent oversight and guidance to the study team. IAP panel members were contracted through the National Water Research Institute, which was selected to ensure an unbiased and thorough examination of all possible water reuse opportunities. These two groups worked with City staff and consultants to develop and review and finalize the Water Reuse Study.

The following is an excerpt from the IAP's findings at the conclusion of the process:

> It is the unanimous conclusion of the Panel [IAP] that appropriate alternative water reuse strategies for the City of San Diego have been identified, and that these alternatives have been presented clearly so that the citizens of the City of San Diego can make informed choices with respect to water reuse.

The analysis consolidated a combination of reuse opportunities, which are referred to as *strategies*. The strategies represent a set of diverse reuse options for both the North City and South Bay systems. Decision charts, which could be referred to as roadmaps for each strategy's implementation, were included to summarize facilities and reuse volumes and were developed to help answer the primary study questions of: (1) which water recycling opportunities to pursue and, (2) depending on the opportunity, how much water to recycle. Supporting text included the benefits of each strategy, the value of recycled water, detailed costs for each strategy, and information on other water supply options.

The study resulted in an evaluation of six strategies integrating non-potable reuse and potable reuse opportunities for the North, Central, and South potable water service Areas. A potable reuse project using the City's San Vicente Reservoir through a concept known as "reservoir augmentation" was identified as the preferred reuse strategy. This concept forms the basis of the North City component of the Program.

Recycled Water Study

The Recycled Water Study followed the 2006 Water Reuse Study, with the objective of developing integrated reuse alternatives that the public and policy-makers could review and select from to guide the future of the reuse program located within the Metropolitan Sewerage System Service Area. The alternatives were evaluated to meet City, participating agency, and project stakeholder reuse goals through a 2035 planning horizon, and were part of a comprehensive regional program to evaluate and develop water reuse in San Diego.

The water reuse target, similar to past efforts, was based on study goals, stakeholders' input, and findings from technical analyses. The Recycled Water Study was initiated with a broader basis than the 2006 Water Reuse Study: to consider the water reuse goal to be limited only by the amount of wastewater available in the Metro Service Area. This was a more comprehensive goal, providing the potential to reuse ten times more water than previous targets, with approximately 200 MGD projected to be available in the Metro Service Area on an average dry weather year in 2035.

The study included a number of technical evaluations and coordination steps to identify and evaluate reuse alternatives within the City as well as areas served by the participating agencies. Throughout the study, regular stakeholder status update meetings were held to present progress and to receive input and feedback on the activities. Eight technical memoranda were developed to document information. Alternatives were developed through a participatory process, with stakeholder status update meetings and five work sessions that were used to frame, develop, refine, and communicate the alternatives included in this study.

"Area Concepts" were developed to provide detailed, comparable alternatives for discussion at a "Coarse Screening Session" and stakeholder status update meetings, and were then refined and compiled into Integrated Reuse Alternatives. The Area Concepts were strategically selected, based on the locations of available wastewater, existing facilities, and delivery points (non-potable recycled water customers, surface water reservoirs, or groundwater basins). Opportunities were sized and then pieced together by laying out treatment and conveyance facilities. Cost information was also developed, with pumping costs being a particularly important component because of the variability of pumping costs for potable reuse using reservoir augmentation, non-potable water, and wastewater. The availability of this information allowed stakeholders to compare the benefits of different approaches within each area. For

example, alternatives that required extensive wastewater pumping (which requires pumping approximately 30% more flow than advanced treated water), were identified as having added costs and risks compared to other alternatives. This point led to development of the Harbor Drive Plant concept later in the study. Area Concepts were refined into Integrated Reuse Alternatives in the "Fine Screening Session." Fine Screening Session participants considered a series of projects to meet the 100 MGD water reuse target.

Five Integrated Reuse Alternatives were developed based on the extensive, interactive Stakeholder process. Each alternative includes 83 MGD of new potable reuse and 3 MGD of new non-potable recycled (in addition to 4 MGD of already planned non-potable reuse).

Summary of Water Supply Alternatives Consideration

As summarized in this section, the City's evaluation of water supply alternatives over the past decade or more has focused on reducing dependence on imported water supplies, and has ranged from broad-based options for generating new supplies, to more focused studies on implementing specific supply options, such as reuse. The recent Recycled Water Study built on past efforts in defining supply options, by providing detail on facility needs to achieve the reuse supply targets. The Program comprises the facilities necessary to move the identified reuse options into an implementation stage, and represents the outcome of the City's deliberative efforts to diversify the City's water supply portfolio.

11.3 PROJECT SUMMARY

The Program would use advanced water purification technology to produce potable water from recycled water and provide a safe, reliable and cost-effective drinking water supply for San Diego. The Program consists of the design and construction of new advanced water purification facilities (AWPFs) and a new water reclamation plant, upgrades to existing water reclamation and wastewater treatment facilities, and design and construction of new pump stations and pipelines. The following Program components are currently contemplated as comprising the entirety of the Program; however, Program components are subject to change during future project-level design.

The Program would construct AWPFs at the existing North City Water Reclamation Plant (NCWRP) and South Bay Water Reclamation Plant (SBWRP) and a third AWPF and new WRP would be constructed. Upgrades would occur at the existing NCWRP and SBWRP in order to provide sufficient tertiary influent for the AWPFs. Pump station and pipeline facilities would convey different types of flows to and from the treatment facilities for: (1) diverting wastewater flows to water reclamation facilities; (2) conveying recycled water to advanced water purification facilities; (3) conveying purified water from AWPFs to either the San Vicente or

Lower Otay Reservoirs; and (4) transporting waste flows (brine and sludge) from treatment processes to solids handling facilities or back into the Metro System. Upgrades would also occur at the Metropolitan Biosolids Center and Point Loma Wastewater Treatment Plant (PLWTP) to handle the additional brine and sludge produced by the WRP expansions and advanced water purification process. Section 3 of this PEIR includes a comprehensive description of the project, including accompanying graphics.

The Program would create 83 MGD of locally controlled potable water and reduce flows to the PLWTP, which in turn would reduce total suspended solids discharged to the ocean. The Program would construct facilities that have the ability to produce at least 15 MGD by 2023, 30 MGD by 2027, and 83 MGD by 2035 in compliance with target online dates outlined in the 2014 Cooperative Agreement. The goals and targets of the Program would be met through a combination and variety of projects. The North City AWPF (NCAWPF) could produce 30 MGD of purified water. The Central Area AWPF (CAAWPF) could produce between 38 to 53 MGD of purified water. The South Bay AWPF (SBAWPF) could produce up to 15 MGD of purified water and would only be constructed if the Central Area component cannot accommodate a full 53 MGD.

11.4 PROJECT OBJECTIVES

The CEQA Guidelines require an EIR to include a statement of objectives sought by the project (14 CCR 15124). This disclosure assists in developing the range of project alternatives to be evaluated in the EIR. The objectives for the Program are listed in Section 3.4 of the PEIR and included here as follows:

1. Provide 83 MGD of local, high-quality drinking water to serve the San Diego Region.
2. Reduce dependence on imported water.
3. Reduce energy consumption associated with importing water.
4. Increase use of recycled water.
5. Reduce flows to the PLWTP and reduce total suspended solids discharged at the Point Loma ocean outfall to the same or lower levels as would be achieved by implementing full secondary treatment.

6. Implement the Program in scheduled phases that meet the target online dates agreed to in the 2014 Cooperative Agreement[1] and the 2015 Application for Renewal of the National Pollution Discharge Elimination System permit[1].

11.5 SIGNIFICANT IMPACTS

As previously mentioned, an EIR should consider a range of feasible alternatives that would attain most of the project objectives, listed above, while reducing one or more of the significant impacts of the project. As presented in Chapter 5 of this PEIR, the Program would result in potentially significant impacts to land use, air quality and odor, health and safety, biological resources, noise, historical resources, hydrology and water quality, paleontological resources, public utilities, visual effects and neighborhood character, geology and soils, and transportation, circulation, and parking. For all of these impact areas, Mitigation Framework measures have been identified that would reduce potentially significant impacts to less-than-significant levels.

11.6 ALTERNATIVES ELIMINATED FROM DETAILED CONSIDERATION

As noted in Section 11.2, over the past decade or more, the City has engaged in an extensive and deliberative process to consider water supply portfolio options generally, and water reuse options specifically. Through those processes, a variety of alternative concepts for water supply and reuse were evaluated, and as a result, the Program was developed. The various options and concepts that were included among those studies and evaluation processes are alternatives that were considered and rejected. Included among those are alternatives relating to increasing non-potable recycled water use and updating PLWTP to full secondary treatment, both of which were considered and rejected in the Water Reuse Study and the Recycled Water Study.

11.7 ALTERNATIVES UNDER CONSIDERATION

The alternatives evaluated in this section were developed with a focus on avoiding or lessening the environmental impacts of the Program as identified in this PEIR. The alternatives address the significant impacts identified in the Program environmental analysis presented in Chapter 5, Environmental Analysis. The analysis of alternatives in the section focuses only on the effects found to be significant through the project environmental analysis and provides a comparison analysis of those effects.

~~[1] Agreement between the City and Coastkeeper, Surfrider, Coastal Environmental Rights Foundation, and the San Diego Audubon Society in which the City committed to implementation of the Program and production of 83 MGD of potable reuse by 2035.~~

[1] Modified permit application that commits to the goal of implementing a potable reuse program and obtaining legislative or administrative actions such that the Point Loma ocean outfall discharge is recognized as equivalent to secondary treatment for purposes of compliance with the CWA (secondary equivalency).

11.7.1 NO PROGRAM/NO BUILD ALTERNATIVE

CEQA Guidelines, Section 15126.6(e), requires that an EIR evaluate a "no project" alternative along with its impact. The purpose of describing and analyzing a no project alternative is to allow a lead agency to compare the impacts of approving the project to the impacts of not approving it.

Under the No Program/No Build Alternative, the Program would not be implemented. The three AWPFs, the Central Area WRP (CAWRP) in the Central Area, and the associated pumping and conveyance facilities would not be constructed. Therefore, 83 MGD of purified water would not be produced. Instead, potable water demand would continue to be met through imported water supplies. In addition, current levels of wastewater flows would continue to the PLWTP, and the PLWTP would continue operating under a modified permit.

Environmental Analysis

Under this alternative, none of the environmental impacts associated with the construction and operation of the Program would occur. Beneficial impacts of the proposed Program, including the diversion of treated wastewater away from ocean outfalls and the provision of a reliable, local water supply, would not occur under this alternative. Additionally, under this alternative, the City would continue to purchase imported water to meet local demand, which would result in higher net energy use and associated GHG emissions.

Project Objectives

The No Program/No Build Alternative does not meet any of the objectives set forth in Section 3.4 and restated in Section 11.4 of this PEIR. ~~Additionally, this alternative does not result in the City's fulfillment of the 2014 Cooperative Agreement in which the City committed to implementation of the Program and production of 83 MGD of potable reuse by 2035.~~

11.7.2 POST OFFICE SITE ALTERNATIVE

As noted in Section 11.2, facility options to achieve the identified recycled water goals were developed based on a comprehensive evaluation of costs, feasibility, and environmental considerations. Specifically, the Recycled Water Study developed "Area Concepts" that identified feasible treatment and conveyance alternatives for each Area Concept sub-region (which correspond to the North City, Central Area, and South Bay components described in Chapter 3 of this Program EIR). The Area Concepts were screened to compare the benefits and costs of different facility approaches within each area. Therefore, the scope of alternatives for facility siting for purposes of this PEIR is influenced by the refinement of facility alternatives

achieved through the Recycled Water Study. This is particularly true for treatment facilities, because their locations are influenced by a number of limiting factors. Moreover, the Program concept includes flexibility in the specific siting of conveyance facilities such as pipelines, force mains, and pump stations, allowing for consideration of alternative alignments and siting at the project-level of analysis within the broader study areas identified in the PEIR. However, because the treatment plant locations involve more complicated siting considerations, such as proximity to wastewater conveyance infrastructure, infrastructure needed for disposal of solids, and adequate space for treatment processes, they are the focus of this alternative analysis; specifically, only the Central Area treatment facilities are being analyzed because the NCAWPF and SBAWPF facilities are logically planned to be located adjacent to the existing WRPs, and considering alternative sites for those components would likely result in greater overall environmental impacts.

Based on that background, the City identified an additional potentially feasible alternative location for a treatment facility that could provide an alternative to the CAWRP and CAAWPF. The Post Office Site Alternative is so named because it is located at the former site of the U.S. Post Office on the west side of Midway Drive, north of Barnett Avenue and south of Rosecrans Street (see Figure 11-1). The original U.S. Post Office site contained approximately 26 acres of land which is now divided into two parcels. The southern 19.5 acres was recently purchased by a private entity which intends to reuse the building and associated facilities in accordance with the light industrial land use designation and underlying zoning. The northern 6.5 acres of the site is still owned by the federal government where the U.S. Post Office currently operates a processing and distribution facility. Evaluation of the Post Office alternative site was included in the technical memorandum "Indirect Potable Reuse Siting Study Findings" dated February 2, 2015 (Brown and Caldwell 2015).

Zoning and land use designations for the site allow for a mix of light industrial/office uses (Zoning designation IP-2-1). However, although the Post Office alternative site is located in close proximity to the South and North Metro Interceptor sewer lines, diverting wastewater from these interceptors would require a deep diversion structure (more than 30 feet below ground surface). Alternatively, an influent pump station could be located near Pump Station No. 2, which would require a pipeline to traverse property near the west end of the airport and runway. Additional disadvantages of the site include highly liquefiable and compressible soil – subject to liquefaction and seismically induced settlement; high groundwater table (approximately 5 to 8 feet below ground surface); and the fact that the site is prone to flooding during major rain events. The technical memorandum identified significant geotechnical constraints associated with the Post Office alternative site related to the presence of deep, highly compressible and highly liquefiable soils, resulting in increased risks and costs associated with construction of the facility in this location (Brown and Caldwell 2015).

Environmental Analysis

Land Use

As discussed in Section 5.1, the CAWRP would potentially expose future sensitive lands uses (i.e., the proposed Business Hotel adjacent to North Harbor Drive and north of Kincaid Road) to substantial odors; however, implementation of appropriate mitigation would ensure that potential odor impacts remain less than significant. As such, the CAWRP would be considered a compatible land use pursuant to planned development of the area as envisioned in the NTC REUSE plan and NTC Precise Plan. Located outside of the NTC REUSE plan and NTC Precise Plan area, the Post Office site alternative is within the Midway/Pacific Highway Corridor Community Plan area, and is identified in the community plan as United States Post Office/Institutional use. The site is bordered by the San Diego Marine Corps Recruit Depot to the south and east, commercial uses to the north and northwest, and residential (naval housing) uses to the southwest. As noted in Section 5.1, pursuant to Section 53091 (e) of the California Government Code, the City of San Diego's zoning ordinance is not applicable to water infrastructure facilities.

Similar to the CAWRP, the Post Office alternative site is adjacent to sensitive receptors (i.e., the existing residential area immediately adjacent to the southwest of the site). Construction of the Central Area component WRP at the Post Office site may result in short–term impacts related to air quality and odors, noise, and transportation, similar to the Harbor Drive location. However, implementation of appropriate Mitigation Framework measures required for the Harbor Drive site would be anticipated to reduce indirect or secondary construction impacts to a less-than-significant level at the Post Office alternative site. In particular, similar to the Harbor Drive site, implementation of Mitigation Framework measures would provide appropriate sound and vibration attenuation such that operational noise generated by a treatment facility on the Post Office site could be reduced to less-than-significant levels. Additionally, implementation of odor control Mitigation Framework measures would ensure that potential sources of substantial odor do not adversely affect nearby sensitive receptors, and both potential air quality and odor and land use impacts would be less than significant, similar to the Harbor Drive site.

Therefore, land use compatibility issues would be similar when compared to the Harbor Drive site due to the proximity of sensitive receptors/existing residential land uses.

Air Quality and Odor

Construction and operation of the CAWRP would result in similar emissions at both the Harbor Drive site and the alternative Post Office site. As noted above in the comparison of land use

compatibility impacts, both the proposed Harbor Drive site and the alternative Post Office site would involve operations that could result in potentially significant odor impacts on adjacent existing and future sensitive receptors. While the location of specific WRP facility components relative to sensitive receptors is currently unknown, it can reasonably be assumed that the application of standard odor control measures, as provided in Mitigation Framework measure MM-AQ-3, would reduce potential odor impacts to below a level of significance for both sites. Therefore, air quality impacts would also be similar for both sites.

Health and Safety

The Harbor Drive site is located within the Airport Approach Overlay Zone of San Diego International Airport and would require review by the Airport Land Use Commission for consistency determinations with the Airport Land Use Compatibility Plan (ALUCP) and Federal Aviation Administration (FAA) notification of a potential airport safety hazard. Compliance with regulatory requirements is anticipated to ensure potential impacts related airport safety would be less than significant. The same general conditions and requirements would apply to the alternative Post Office site due to its location in proximity to San Diego International Airport. Other health and safety impacts (i.e., exposure to wildfire; use, storage, and transport of hazardous materials; and hazardous materials sites) would also be similar for both sites.

Biological Resources

Similar to the Harbor Drive site, the Post Office site is currently developed, and there are no sensitive habitats or species on the site. The Post Office site is not located within or adjacent to a designated preserve area; the nearest waterway is the boat channel of San Diego Bay located approximately 0.5 mile to the south. Therefore, similar to the Harbor Drive site, no significant impacts related to biological resources are anticipated, and no avoidance measures would be required.

Noise

Construction of the Central Area component WRP at the Post Office site may result in short–term impacts related to noise, similar to the Harbor Drive location. However, implementation of appropriate mitigation, as is anticipated with the Harbor Drive site, would be anticipated to reduce indirect or secondary construction impacts to a less-than-significant level. Furthermore, implementation of Mitigation Framework measure MM-NOI-2 would provide appropriate sound and vibration attenuation such that operational noise generated by a treatment facility on the Post Office site could be reduced to less-than-significant levels similar to the conditions at the Harbor Drive location.

Historical Resources

Construction of the WRP at the Post Office site would involve ground-disturbing activities, similar to Harbor Drive site, and could result in potential impacts to historical resources. Both sites are located in areas of relatively low cultural sensitivity, and it is anticipated that application of Mitigation Framework measures would reduce potential impacts to archaeological resources related to construction of a treatment facility to less-than-significant levels at both the Harbor Drive and Post Office sites. The Harbor Drive site intersects with one historic address of an unknown evaluation status and is in the vicinity of several others. The currently vacant post office building at the site was built in 1972, and therefore, does not meet the 45 year review criteria in accordance with the Historical Resources Regulations; however, the property is the historic location of the first flight of the Spirit of St. Louis at Dutch Flats by Charles Lindbergh on April 28, 1927 and is identified by a commemorative plaque inside the former Post Office building. Additionally, other historic properties which are over 45 years old may be located within the vicinity of the site, and although the potential for archaeological resources at this site may be low, further evaluation would be required should this alternative be adopted. It is anticipated that with implementation of Mitigation Framework measures similar to those applicable to the Harbor Drive site, potential impacts to archaeological and built-environment resources at the Post Office site would be reduced to below a level of significance. Therefore, historical resources impacts would be similar for both sites.

Hydrology and Water Quality

The Post Office site is currently developed, similar to the Harbor Drive site, and therefore, construction of the proposed treatment facility would not result in an increase of impervious surfaces. The Post Office site is also located above a shallow groundwater table and would require dewatering. It is anticipated that implementation of Mitigation Framework measures similar to those applicable to the Harbor Drive site, which require compliance with the City's stormwater standards, would reduce potential impacts related to dewatering to less-than-significant levels. Similar standards and best management practices would be required for construction and operation of a treatment facility at both sites, and therefore, impacts to water quality would be reduced to less-than-significant levels under both alternatives.

Paleontological Resources

Similar to the Harbor Drive site, the Post Office site is not located in an area with a mapped geologic formation, and therefore, no sensitivity rating exists for paleontological resources. As such, impacts are anticipated to be less than significant at the Post Office site, similar to the Harbor Drive site.

Public Utilities

Under this alternative, demolition of existing buildings would be required similar to the Harbor Drive site. It is anticipated that mitigation requiring preparation of a waste management plan would reduce Program-level impacts to less-than-significant levels. Other public utilities (i.e., communication systems and drainage) impacts would also be similar for both sites.

Visual Effects and Neighborhood Character

The findings of the visual analysis for the Harbor Drive site, as discussed in Section 5.10, conclude that construction of the WRP in the proposed location would result in potentially significant, but mitigable impacts related to visual effects and neighborhood character. The alternative Post Office site would be less visible from public views across the inlet channel than the Harbor Drive site, but would be more visible from adjacent public roadways (i.e., Barnett Avenue and Midway Drive). It is anticipated that implementation of Mitigation Framework measures similar to those applicable to the Harbor Drive site would reduce significant visual and neighborhood character impacts related to construction of a treatment facility at the Post Office site to less-than-significant levels.

Geology and Soils

Construction and operation of the proposed WRP facility at the Post Office site would have similar energy requirements, and therefore, result in similar greenhouse gas (GHG) emissions impacts, as the Harbor Drive site. However, since the Post Office site is located further from Pump Station No. 2, additional energy would be required to pump wastewater from Pump Station No. 2 to the CAWRP and to pump brine/waste back to Pump Station No. 2. As discussed above, the Post Office site has highly liquefiable and compressible soil that is subject to liquefaction and seismically induced settlement. Construction of the proposed WRP facility on this site would require additional geotechnical work, but it is assumed that potential impacts related to geology and soils could be reduced to less than significant similar to the proposed Harbor Drive site.

Other Environmental Issue Areas

Impacts related to greenhouse gas emissions, energy, transportation, public services, and water supply for this alternative would be similar to the proposed Program (see Table 11-2).

Program Objectives

This alternative would meet all of the objectives set forth in Section 3.4 and restated in Section 11.4 of this PEIR. However, although all Program objectives are met, this alternative does not

provide any benefits in terms of reducing significant environmental impacts that could not otherwise be reduced to less than significant with mitigation under the proposed Program.

11.7.3 ALTERNATE RESERVOIR AUGMENTATION ALTERNATIVE

The Scoping Letter (City of San Diego 2014) identified a "Direct Potable Reuse Project Alternative" to be considered in this PEIR. However, since the regulatory requirements for direct potable reuse are not anticipated to be drafted prior to Program implementation, this PEIR instead considers an Alternate Reservoir Augmentation alternative. Under the Alternate Reservoir Augmentation alternative, water purified at the NCAWPF would be conveyed to the Miramar Reservoir and water purified at the CAAWPF would be conveyed to Lake Murray, where it would be stored prior to treatment at a water treatment facility. Water purified at the SBAWPF would be conveyed to a more southern location at the Otay Reservoir avoiding the additional costs and impacts associated with construction of the pipeline to the northern portion of the reservoir (see Figure 11-2). Under this alternative, an additional treatment step using ozone-biological activated carbon would be included in the advanced water purification process. This additional treatment step would be implemented prior to microfiltration (MF) or ultrafiltration (UF) and reverse osmosis (RO) in order to increase cumulative log removals of pathogens and chemicals of emerging concerns (CECs) and to improve the water quality of the product water, thereby alleviating the need for the additional environmental buffer that is associated with the use of the larger San Vicente Reservoir, and for the Otay Reservoir a larger separation between product water delivery and withdrawal points.

Utilizing Miramar Reservoir and Lake Murray for storage of purified water would substantially reduce the miles of purified water pipeline needing to be constructed from the NCAWPF and CAAWPF. The Miramar Reservoir is owned and operated by the City of San Diego and is located in the Scripps Ranch Community. Lake Murray is also owned and operated by the City and is located within Mission Trails Regional Park, in the Navajo Community Planning Area.

North City Component

The NCAWPF would convey purified water to the Miramar Reservoir (approximately 7 miles). The majority of the Miramar Reservoir purified water pipeline alignment would be located in a commercial and industrial area and would not cross any federal land. The entirety of this alignment would be solely for purified water conveyance to the Miramar Reservoir and would not require any additional capacity to supply non-potable reuse customers.

Central Area Component

Under the Alternate Reservoir Augmentation alternative, the CAWRP would be located at the Harbor Drive site, similar to the proposed Program. However, in addition to housing the primary, secondary, and tertiary treatment processes associated with the WRP, under this alternative this site would also house the ozone and biological activated carbon processes. Treated flow would then be conveyed to the CAAWPF at the Camino del Rio site via the same alignment as the proposed Program. After water is treated at the CAAWPF, purified water would be pumped east to Lake Murray along Camino del Rio North via the same alignment as the proposed Program. However, the pipeline alignment between the CAAWPF and Lake Murray would be approximately 5 miles (one-third the distance of the alignment between the CAAWPF and the San Vicente Reservoir). The brine pipeline between the CAAWPF and CAWRP would follow the same alignment as under the proposed Program.

South Bay Component

Under the Alternate Reservoir Augmentation alternative, the purified water pipeline from the SBAWPF would discharge at a more southerly location at the Otay Reservoir. The biological activated carbon treatment process would be added at the SBAWPF prior to the MF/UF and RO processes. Approximately 12 miles of pipeline would be constructed under this alternative, as compared to 14.5 miles of pipeline constructed under the proposed Program.

Table 11-1
Comparison of Pipeline Lengths under Proposed Program and Alternative

	Proposed Program		Alternate Reservoir Augmentation Alternative		Reduction in Pipeline Length
	Reservoir	*Length of Pipeline*	*Reservoir*	*Length of Pipeline*	
North City Component	San Vicente	28 miles	Miramar	7 miles	17 miles
Central Area Component	San Vicente	17.5 miles	Lake Murray	5 miles	12.5 miles
South Bay Component	Otay (Upper Discharge Point)	14.5 miles	Otay (Lower Discharge Point)	12 miles	2.5 miles

Environmental Analysis

Land Use

As noted in Section 5.1, conveyance facilities would primarily be installed in roads and rights-of-way (ROWs), and once constructed, pipelines would not be noticeable; the potential for land use

conflicts would be less than significant. Eliminating segments of pipeline that would extend to the San Vicente Reservoir and the upper portions of Otay Reservoir under this alternative would further reduce the land use effects associated with pipeline construction. Additionally, the purified water pipeline alignment from the NCAWPF to the Miramar Reservoir would not traverse federal lands, reducing coordination and potential conflicts with federal activities. Therefore, impacts associated with this alternative would be slightly reduced when compared with the proposed Program.

Air Quality and Odor

Air quality impacts associated with conveyance facilities would primarily result from construction activities. Emissions associated with pipeline construction would be reduced proportionately to the reduction in the mileage of pipelines to be constructed under this alternative. Construction and operational emissions for the proposed Program would not exceed the City's significance thresholds with incorporation of Mitigation Framework measures MM-AQ-1 and MM-AQ-2. Under this alternative, potential impacts related to the exposure of sensitive receptors to odor impacts would be reduced to less than significant with implementation of Mitigation Framework measure MM-AQ-3, similar to the proposed Program. Therefore, this alternative would have slightly reduced air quality impacts when compared with the proposed Program.

Health and Safety

Under this alternative, additional treatment processes would be added at the AWPFs, resulting in incremental increases in the transport, storage, and use of hazardous materials at the AWPF sites. However, it is anticipated that similar to the proposed Program, implementation of Mitigation Framework measures requiring compliance with regulations and best management practices would reduce impacts to less than significant. Under this alternative, construction of pipeline would not occur within the Airport Influence Areas of Gillespie Field or Montgomery Field. The potential for pipelines to traverse or pass adjacent to hazardous materials sites would also be reduced under this alternative. Therefore, incremental reductions for potential impacts related to health and safety would occur under this alternative; overall impacts are anticipated to be mitigated to below a level of significance and be generally similar to the proposed Program.

Biological Resources

Under the proposed Program, the purified water pipelines would primarily be located within roadway ROW and would only result in temporary disturbance to biological resources during construction. Construction of the purified water pipeline alignments has the potential to impact a variety of sensitive vegetation communities and sensitive species. The Alternate Reservoir

Augmentation alternative would eliminate segments of the purified water pipelines, thereby reducing overall impacts to biological resources. Under this alternative, purified water would be conveyed to Miramar Reservoir and Lake Murray, both of which have much smaller storage capacities than San Vicente Reservoir. This could potentially result in changes to the composition of these reservoirs and the aquatic life they currently support. However, under both the proposed Program and alternative, it is anticipated that implementation of Mitigation Framework measures (MM-BIO-1 through MM-BIO-7) would reduce potential impacts to below a level of significance and impacts to biological resources would be slightly reduced when compared to the proposed Program.

Noise

The highest construction noise levels associated with the proposed Program would be during pipeline trenching activities resulting in noise levels at adjacent sensitive land uses that could exceed the City and other jurisdictions noise standards. However, it is anticipated that implementation of Mitigation Framework measures similar to what is proposed under the Program would reduce potential noise impacts to to below a level of significance. The Alternate Reservoir Augmentation alternative would eliminate the need for approximately 34 miles of pipeline, thereby reducing associated construction noise impacts. It is anticipated that, similar to the proposed Program, applicable noise mitigation would reduce impacts associated with the remainder of the proposed components to below a level of significance.

Historical Resources

Elimination of segments of pipeline under this alternative would reduce ground disturbance, thereby reducing the potential for conveyance facilities to impact archaeological and built-environment resources proportional to the reduction in pipeline length. Additionally, the implementation of Mitigation Framework measures similar to what is proposed under the Program would reduce potential impacts to historical resources for the remaining Program components that would be constructed under this alternative to below a level of significance, and this alternative would result in slightly reduced impacts overall.

Hydrology and Water Quality

Hydrologic and water quality impacts would generally be the same under this alternative as for the proposed Program. No additional impervious surfaces would be required or additional drainage facilities. Discharges of purified water to the Miramar Reservoir or at a lower point along the Otay Reservoir would comply with National Pollutant Discharge Elimination System permit regulations. Stormwater discharges during construction would be reduced under this alternative due to less ground disturbance and construction activities, and similar to the proposed

Program, it is anticipated that implementation of Mitigation Framework measures requiring compliance with regulations and best management practices would reduce impacts under this alternative to below a level of significance.

The additional treatment step at the AWPF that would occur under this alternative would also result in reduced TOC (and related biological oxygen demand) as well as reduced CECs in the discharge at the Point Loma Ocean Outfall, thereby resulting in additional ocean water quality benefits over the proposed Program.

Paleontological Resources

Elimination of segments of pipeline under this alternative would reduce the potential for conveyance facilities to be located in geologic formations with high or moderate resource potential, and therefore, potential impacts to sensitive paleontological resources would be reduced. Implementation of Mitigation Framework measures similar to those proposed under the Program would reduce potential impacts to paleontological resources for the remaining Program components that would be constructed under this alternative to below a level of significance. Therefore, overall impacts would be slightly reduced.

Public Utilities

Eliminating segments of pipeline under this alternative would incrementally reduce solid waste generated during construction of these portions of the alignment. However, the additional pre-treatment step proposed for the AWPFs under this alternative would incrementally increase solid waste generated during construction and operation of proposed Program facilities. It is anticipated that implementation of Mitigation Framework measures similar to those proposed under the Program would reduce impacts related to solid waste to below a level of significance. Similar to the proposed Program, coordination with other agencies would be required to avoid potential impacts with infrastructure, such as water and sewer pipelines, electrical wires, cables, etc., especially where these utilities would be located within the same right-of-way as pipeline alignments associated with the Program. Other impacts related to public utilities (i.e., communication systems and drainage) would be similar to the proposed Program or proportionally reduced.

Visual Effects and Neighborhood Character

As described in Section 5.10 and earlier in this section, conveyance facilities would primarily be installed in roadway ROW, and once constructed, would not be visible. Eliminating segments of pipeline under this alternative would incrementally reduce visual impacts associated with construction activities for those portions of the alignment. Additionally, fewer pump stations

would be constructed since purified water would be pumped over a shorter distance, thereby reducing permanent visual impacts associated with these facilities. However, long-term visual impacts associated with proposed treatment facilities would be similar to the proposed Program.

Other Environmental Issue Areas

Additional energy would be required to support the additional pre-treatment processes at the AWPFs ~~Energy~~ However, energy requirements associated with pumping the purified water to a reservoir for augmentation would be substantially reduced under this alternative due to the elimination of the intermediate booster station along the pipeline alignment and the shortened alignment length. As such, net overall energy consumption and associated long-term GHG emissions resulting from energy use associated with pumping the purified water to a reservoir for augmentation would ~~similarly~~ be reduced. ~~However, additional energy would be required to support the additional pre-treatment processes at the AWPFs such that an overall net increase in energy consumption, and related GHG emissions, is anticipated.~~

If, as described above, Miramar Reservoir and Lake Murray were converted to primarily purified water reservoirs, impacts could result to the fisheries supported by the reservoir, resulting in indirect impacts to recreation. Impacts to transportation corridors associated with closures due to construction of the pipelines would be reduced under this alternative since the pipeline alignment to Miramar Reservoir under this alternative would be located primarily in commercial and industrial areas, and therefore, construction could occur at night with minimal impacts to adjacent land uses.

Other impacts related to geology and soils, public services and water supply under this alternative would be similar to the proposed Program (see Table 11-2).

Program Objectives

This alternative would meet all of the objectives of the proposed Program. However, although all Program objectives are met, this alternative does not provide any benefits in terms of reducing significant environmental impacts that could not otherwise be reduced to less than significant with mitigation under the proposed Program.

11.8 SUMMARY MATRIX

Table 11-2
Comparative Summary of Alternatives' Impacts

Environmental Issue	Pure Water Program	Post Office Site Alternative	Alternate Reservoir Augmentation Alternative	No Project Alternative
Land Use	Less than significant with incorporation of Mitigation Framework measures	Similar impacts	~~Similar impacts~~Slightly reduced	Impacts avoided
Air Quality and Odor	Less than significant with incorporation of Mitigation Framework measures	Similar impacts	Slightly reduced	Impacts avoided
Health and Safety	Less than significant with incorporation of Mitigation Framework measures	Similar impacts	Similar impacts	Impacts avoided
Biological Resources	Less than significant with incorporation of Mitigation Framework measures	Similar impacts	Slightly reduced	Impacts avoided
Noise	Less than significant with incorporation of Mitigation Framework measures	Similar impacts	Slightly reduced	Impacts avoided
Historical Resources	Less than significant with incorporation of Mitigation Framework measures	Similar impacts	Slightly reduced	Impacts avoided
Hydrology and Water Quality	Less than significant with incorporation of Mitigation Framework measures	Similar impacts	Slightly reduced	Impacts avoided
Paleontological Resources	Less than significant with incorporation of mitigation Framework measures	Similar impacts	Slightly reduced	Impacts avoided
Public Utilities	Less than significant with incorporation of Mitigation Framework measures	Similar impacts	Similar impacts	Impacts avoided
Visual Effects and Neighborhood Character	Less than significant with incorporation of Mitigation Framework measures	Similar impacts	Slightly reduced	Impacts avoided

Table 11-2
Comparative Summary of Alternatives' Impacts

Environmental Issue	Pure Water Program	Post Office Site Alternative	Alternate Reservoir Augmentation Alternative	No Project Alternative
Energy	Less than significant	Similar impacts	~~Slightly greater~~Reduced	Impacts avoided; Beneficial Impacts are not realized
Geology and Soils	Less than significant with incorporation of Mitigation Framework measures	Slightly greater	Similar impacts	Impacts avoided
Transportation, Circulation, and Parking	Less than significant with incorporation of Mitigation Framework measures	Similar impacts	Slightly reduced	Impacts avoided
Public Services	Less than significant	Similar impacts	Similar impacts	Impacts avoided
Greenhouse Gas Emissions	Less than significant	Similar impacts	Slightly ~~greater~~reduced	Impacts avoided; Beneficial Impacts are not realized
Water Supply	Beneficial Impact	Similar impacts	Similar impacts	Beneficial Impacts are not realized
Meets Most of the Basic Project Objectives?	Yes	Yes	Yes	No

11.9 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Per Section 15126.6(e)(2) of the CEQA Guidelines, an environmentally superior alternative must be identified (other than the No Project Alternative). CEQA also requires that the environmentally superior alternative be selected from the range of reasonable alternatives that could feasibly attain the basic objectives of the project.

As discussed in Section 11.7 and summarized in Table 11-2, Comparative Summary of Alternatives' Impacts, impacts resulting from implementation of the proposed Program would not occur under the No Program Alternative. Under this alternative, however, none of the project objectives would be met. CEQA Guidelines, Section 15126.6(e)(2), states that "if the environmentally superior alternative is the no project alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." Additionally, under the No

Program/No Build Alternative, beneficial impacts realized by the proposed Program, such as reducing GHG emissions and energy requirements associated with importing water to the San Diego region and increasing the local water supply through implementation of a new, drought-proof supply, would not occur.

The Alternate Facility Siting alternative would result in similar land use compatibility impacts as the proposed Program. Impacts to geology and soils may be slightly greater under this alternative. Otherwise, impacts would be similar to the proposed Program and this alternative would meet all of the Program objectives.

The Alternate Reservoir Augmentation alternative would result in similar impacts related to land use, health and safety, public utilities, visual effects and neighborhood character, product water quality, geology and soils, public services, and water supply as the proposed Program. The additional treatment requirements at the AWPFs would result in slightly higher energy consumption and associated greenhouse gas emissions; however, the shortened purified water pipeline length would result in a net overall reduction in energy consumption and associated GHG emissions. ~~However, i~~Impacts related to air quality, biological resources, noise, historical resources, hydrology and water quality, paleontological resources, and transportation would be slightly reduced under this alternative. Additionally, this alternative would meet all of the Program objectives. Therefore, it is considered the environmentally superior alternative.

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SOURCE: Bing Imagery, 2015.

FIGURE 11-1

Post Office Alternate Site Alternative

DUDEK

Pure Water Program EIR

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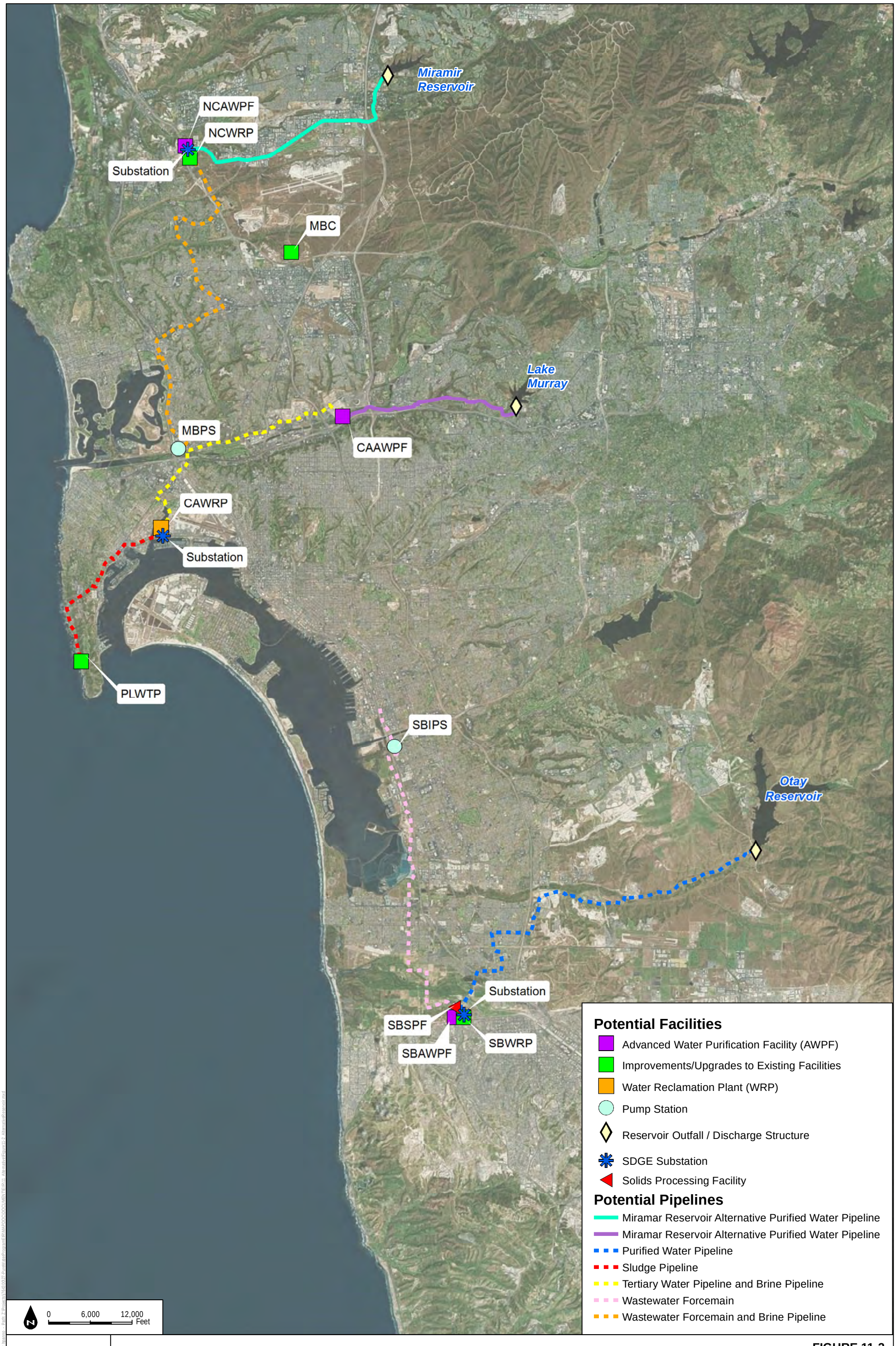

DUDEK

SOURCE: Bing Imagery, 2015, SANGIS, 2015.

FIGURE 11-2

Alternate Reservoir Augmentation Alternative

Pure Water Program EIR

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CHAPTER 12 MITIGATION, MONITORING, AND REPORTING PROGRAM

Section 21081.6 of the California Environmental Quality Act (CEQA) requires that a mitigation, monitoring, and reporting program (MMRP) be adopted upon certification of an Environmental Impact Report (EIR) to ensure that the mitigation measures are enforceable and implemented. It stipulates that "the public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation."

This MMRP has been developed in compliance with Section 21081.6 of CEQA and identifies (1) mitigation measures to be implemented prior to, during, and after construction of the Pure Water Program; (2) the individual/agency responsible for that implementation; and (3) criteria for completion or monitoring of the specific measures.

The Program Environmental Impact Report (PEIR), incorporated herein as referenced, focused on issues determined to be potentially significant by the City. Public Resources Code Section 21081.6 requires mitigation of only those impacts identified as significant or potentially significant. The environmental analysis resulted in the identification of a mitigation framework that would reduce potentially significant impacts for the following issue areas: land use; air quality; health and safety; biological resources; hydrology/water quality; historical resources; paleontological resources; noise, geology and soils, public utilities, visual effects and neighborhood character, and transportation, circulation and parking.

12.1 SPECIFIC MMRP ISSUE AREA CONDITIONS/REQUIREMENTS

12.1.1 LAND USE

Mitigation Framework

Environmentally Sensitive Lands Regulations

MM-LU-1 Subsequent project components implemented in accordance with the Program would be subject to discretionary review and further environmental review under CEQA and shall be reviewed in accordance with Mitigation Framework MM-LU-3; MM-BIO-1- through MM-BIO-3 in Section 5.4, Biological Resources; and MM-HYD-3 in Section 5.7, Hydrology and Water Quality.

Historical Resources Regulations

MM-LU-2 Subsequent project components implemented in accordance with the Program would be subject to discretionary review and further environmental review under CEQA and shall be reviewed in accordance with Mitigation Framework MM-HIST-1 and MM-HIST-2 in Section 5.6 Historical Resources.

Environmental Plan Consistency

MHPA adjacency impacts would be addressed at the project-level. Projects adjacent to the MHPA would incorporate features into the project and/or permit conditions that demonstrate compliance with the MHPA Land Use Adjacency Guidelines. To ensure avoidance or reduction of potential MHPA impacts resulting from new development adjacent to the MHPA, the following Mitigation Framework measures shall be required for all future projects as part of the subsequent environmental review and development permit processing:

MM-LU-3 All subsequent infrastructure implemented in accordance with the Program that are within or adjacent to designated MHPA areas shall comply with the Land Use Adjacency Guidelines of the MSCP in terms of land use, drainage, access, toxic substances in runoff, lighting, noise, invasive plant species, grading, and brush management requirements. Mitigation measures include, but are not limited to: sufficient buffers and design features, barriers (rocks, boulders, signage, fencing, and appropriate vegetation) where necessary, lighting directed away from the MHPA, and berms or walls adjacent to commercial or industrial areas and any other use that may introduce construction noise or noise from future development that could impact or interfere with wildlife utilization of the MHPA. The project biologist for each proposed component/project would identify specific mitigation measures needed to reduce impacts to below a level of significance. Subsequent environmental review would be required to determine the significance of impacts from land use adjacency and compliance with the Land Use Adjacency Guidelines of the MSCP. Prior to approval of any subsequent development project in an area adjacent to a designated MHPA, the City of San Diego shall identify specific conditions of approval in order to avoid or to reduce potential impacts to adjacent the MHPA. Specific requirements shall include:

- **Drainage -** All new and proposed parking lots and developed areas in and adjacent to the MHPA shall be designed so they do not drain directly into the MHPA. All developed and paved areas must prevent the release of toxins, chemicals, petroleum products, exotic plant materials prior to release by incorporating the use of filtration devices, planted swales and/or planted

detention/desiltation basins, or other approved permanent methods that are designed to minimize negative impacts, such as excessive water and toxins into the ecosystems of the MHPA.

- **Toxics/Project Staging Areas/Equipment Storage -** Projects that use chemicals or generate by-products such as pesticides, herbicides, and animal waste, and other substances that are potentially toxic or impactive to native habitats/flora/fauna (including water) shall incorporate measures to reduce impacts caused by the application and/or drainage of such materials into the MHPA. No trash, oil, parking, or other construction/development-related material/activities shall be allowed outside any approved construction limits. Provide a note in/on the CD's that states: "All construction related activity that may have potential for leakage or intrusion shall be monitored by the Qualified Biologist/Owners Representative or Resident Engineer to ensure there is no impact to the MHPA."
- **Lighting -** Lighting within or adjacent to the MHPA shall be directed away/shielded from the MHPA and be subject to City Outdoor Lighting Regulations per LDC Section 142.0740.D. Overhead lighting shall be shielded and either have a fixed downward-aiming position or have a locking feature to fix the light in the downward position. Additionally, overhead lighting adjacent to the MHPA shall be placed on a timer to turn off from 11 pm to sunrise unless determined by the City of San Diego that overhead lighting is necessary for public safety.
- **Noise -** New development adjacent to the MHPA must follow the protocol established under MM-BIO-1 and MM-BIO-3 with regard to Mitigation for Short-term Impacts on Sensitive Species from Project Construction.
- **Barriers -** New development within or adjacent to the MHPA shall be required to provide barriers (e.g., non-invasive vegetation; rocks/boulders; 6-foot high, vinyl-coated chain link or equivalent fences/walls; and/or signage) along the MHPA boundaries to direct public access to appropriate locations, reduce domestic animal predation, protect wildlife in the preserve, and provide adequate noise reduction where needed.
- **Invasive Species -** No invasive plant species shall be introduced into areas adjacent to the MHPA.
- **Brush Management -** New development adjacent to the MHPA shall be set back from the MHPA to provide required Brush Management Zone 1 area on the building pad outside of the MHPA. Zone 2 may be located within the

MHPA provided the Zone 2 management will be the responsibility of an HOA or other private entity except where narrow wildlife corridors require it to be located outside of the MHPA. Brush management zones will not be greater in size than currently required by the City's regulations, the amount of woody vegetation clearing shall not exceed 50 percent of the vegetation existing when the initial clearing is done and vegetation clearing shall be prohibited within native coastal sage scrub and chaparral habitats from March 1 - August 15 except where the City ADD/MMC has documented the thinning would be consist with the City's MSCP Subarea Plan. Existing and approved projects are subject to current requirements of Municipal Code Section 142.0412.

MM-LU-4 All development for utilities within the MHPA shall be designed to minimize environmental impacts and must avoid disturbing the habitat of MSCP-covered species, and wetlands. If such avoidance is unfeasible, impacts shall be mitigated. Temporary access roads and staging areas in the MHPA shall be located in agricultural lands or existing disturbed areas rather than in habitat. If temporary disturbance to habitat in the MHPA is unavoidable, restoration of and/or mitigation for the disturbed area shall be required after project completion. Construction and maintenance activities in wildlife corridors in the MHPA shall avoid significant disruption of corridor usage.

If a proposed project would encroach into the MHPA beyond the allowable development area pursuant to Sections 143.0142 and 131.0250(b) of the City of San Diego Land Development Code, Biology Guidelines, a MHPA boundary line adjustment shall be required. Under the City's MSCP Subarea Plan, an adjustment to the City's MHPA boundary is allowed only if the new MHPA boundary results in an exchange of lands that are functionally equivalent or higher in biological value. A determination of functionally equivalent or higher biological value shall be based on site-specific information (both quantitative and qualitative) that addresses the six boundary adjustment criteria outlined in Section 5.4.3 of the Final MSCP Plan (August 1998), which are as follows:

1. Effects on significantly and sufficiently conserved habitats (i.e., the exchange maintains or improves the conservation, configuration, or status of significantly and sufficiently conserved habitats, as defined in Section 3.4.2 [of the Final MSCP Plan]
2. Effects on covered species (i.e., the exchange maintains or increases the conservation of covered species).

3. Effects on habitat linkages and function of preserve areas (i.e., the exchange maintains or improves any habitat linkages or wildlife corridors);
4. Effects on preserve configuration and management (i.e., the exchange results in similar or improved management efficiency and/or protection of biological resources)
5. Effects on ecotones or other conditions affecting species diversity (i.e., the exchange maintains topographic and structural diversity and habitat interfaces of the preserve);
6. Effects on species of concern not on the covered species list (i.e., the exchange does not significantly increase the likelihood that an uncovered species will meet the criteria for listing under either the federal or state ESAs).

All proposed MHPA boundary adjustments require approval from the Wildlife Agencies. Approval is required prior to release of the environmental documentation for the project. Early consultation with the Wildlife Agencies shall be required for any proposed MHPA boundary adjustment. Any proposed boundary adjustment shall also be disclosed in the environmental document (i.e., CEQA) for the project.

~~**MM-LU-5** Subsequent environmental documentation for future project components located in County of San Diego Hardline Preserve Areas shall include an equivalency analysis to demonstrate that revegetation/restoration of temporary impact areas would provide equivalent or superior biological resources value in the Preserve. Future project-level analysis shall determine whether mitigation at more than 1:1 is required. If the Hardline Preserve lands are under a conservation easement or other restrictive covenant, allowed activities in the Hardline Preserve area would be dictated by that easement.~~

MM-LU-6<u>5</u> Subsequent environmental documentation for future project components with potential to impact resources protected by the County Resource Protection Ordinance shall complete a Resource Protection Study pursuant to Section 86.603 of the Resource Protection Ordinance. Specific actions and requirements determined by the County following review of the Resource Protection Study shall be considered by the City during subsequent environmental review for future project components.

MM-LU-~~7~~<u>6</u> Future project components located within City of Chula Vista preserve shall be subject to the Facilities Siting Criteria established in the Chula Vista MSCP

Subarea Plan and siting and design requirements in Otay Ranch Resource Management Plan. Consideration and implementation of siting and design criteria will ensure compatibility of Program components and the Chula Vista MSCP Subarea Plan and Otay Ranch Resource Management Plan.

MM-LU-~~8~~7 If the siting of Program components would require lands to be removed from the PLECA, an area of equal size and equal or greater ecological value will be added to the PLECA to offset the loss. Additional mitigation for impacts to habitat removed from the PLECA may be required and may consist of adding land to the PLECA or restoring habitat within or outside of the PLECA. Such mitigation shall be proposed in the associated NEPA/CEQA compliance document for future project components and this document shall be submitted to the PLECA Working Group for review. The PLECA Working Group shall determine if a PLECA boundary adjustment is required based on the final design and restoration/mitigation proposal(s) from the City or if alternative construction methods or use of existing utility corridors would be sufficient to satisfy the terms of the PLECA MOU and avoid a boundary adjustment.

For future project components that would impact native Diegan coastal sage scrub and southern maritime chaparral on Naval Base Point Loma, a determination of consistency with Section 30240 of the Coastal Act may be required. Section 30240 of the Coastal Act protects environmentally sensitive habitat areas from significant disruption of habitat values, and allows only uses dependent on those resources within those areas. The NEPA/CEQA compliance document associated with future project components on Naval Base Point Loma shall include a determination of consistency with Section 30240 of the Coastal Act and the document shall be submitted to the California Coastal Commission for review.

MM-LU-~~9~~8 Construction of facilities on federal lands in MCAS Miramar and the San Diego Bay NWR would require analysis under the National Environmental Policy Act (NEPA). As such, for proposed facilities on federal lands, appropriate NEPA documentation shall be prepared and submitted to necessary federal agencies and parties including MCAS Miramar, the San Diego Bay NWR, and USFWS. The City shall coordinate with MCAS Miramar and the San Diego Bay NWR regarding project components located on federal lands and shall ensure consistency with applicable land use regulations of MCAS Miramar INRMP and the San Diego Bay NWR CCP. Actions in existing rights-of-way or easements on MCAS Miramar lands may not require authorization from MCAS Miramar and

therefore shall require that the City consult directly with the USFWS under Section 10 of the ESA to address potential species and habitat issues.

MM-LU-~~10~~9 All development for future project components with potential to impact vernal pools, the City shall implement avoidance and minimization measures to minimize potential impacts to vernal pools consistent with the VPHCP and the City's ESL Regulations. If impacts to vernal pools are unavoidable and/or infeasible, temporary impacts shall be mitigated on site through restoration of the impact area back to a level equal to or greater quality than pre-construction conditions in accordance with MM-BIO-2. Permanent impacts to vernal pools shall be addressed via appropriate compensatory mitigation as established in MM-BIO-2.

Airport Land Use Plan Consistency

MM-LU-~~11~~10 Subsequent projects, implemented in accordance with the Program, shall submit a description of each Program component located in an airport influence area to the Airport Land Use Commission for consistency determinations with the applicable adopted Airport Land Use Compatibility Plan. In addition, any Program components located within the Part 77 imaginary surfaces for determining obstructions area or that meets the Part 77 criteria shall be required to submit a notification for review to the Federal Aviation Administration (FAA).

MM-LU-~~12~~11 Subsequent projects, implemented in accordance with the Program, that (1) are located in the Airport Approach Overlay Zone and receive an FAA determination of hazard and that are not exempt or (2) located within the Airport Land Use Compatibility Overlay Zone and proposing deviations from the overlay zone requirements, or that include a rezone or land use plan approval, shall obtain a Site Development Permit in accordance with San Diego Municipal Code Section 126.0502(e).

12.1.2 AIR QUALITY

Mitigation Framework

The City's process for the evaluation of discretionary projects includes environmental review and documentation pursuant to CEQA as well as an analysis of those projects for consistency with the Program. In general, implementation of the Program and associated project design features would preclude or reduce air quality impacts. Compliance with the standards is required of all projects and is not considered to be mitigation. However, it is possible that for certain

projects, adherence to the regulations would not adequately protect air quality, and such projects would require additional measures to avoid or reduce significant air quality impacts. These additional measures would be considered mitigation.

Where mitigation is determined to be necessary and feasible, these measures shall be included in a Mitigation Monitoring and Reporting Program for the project.

Mitigation Framework measures MM-AQ-1, MM-AQ-2, and MM-AQ-3 shall be implemented to reduce project-level impacts related to construction emissions and odor (operational). These measures shall be updated, expanded and refined when applied to specific future projects based on project-specific design and changes in existing conditions, and local, state, and federal laws.

MM-AQ-1 The following best management practices shall be considered in all subsequent project-level environmental analysis and implemented during construction to comply with applicable SDAPCD rules and regulations, and to further reduce daily construction emissions:

- Best available control measures that shall be implemented during construction to reduce particulate emissions and reduce soil erosion and trackout include the following:
  - Cover or water, as needed, any on-site stockpiles of debris, dirt, or other dusty material.
- Use adequate water and/or other dust palliatives on all disturbed areas in order to avoid particle blow-off. Due to current drought conditions, the contractor shall consider use of a SDAPCD-approved dust suppressant where feasible to reduce the amount of water to be used for dust control. Use of recycled water in place of potable water shall also be considered provided that the use is approved by the City of San Diego and other applicable regulatory agencies prior to initiation of construction activity.1 Use of recycled water shall be in compliance with all applicable City of San Diego Rules and Regulation for Recycled Water

[1] The use of recycled water for construction purposes requires approval of the City and other regulatory agencies on a case-by-case basis. The permit shall be obtained prior to beginning construction. Recycled water used for construction purposes may only be used for soil compaction during grading operations, dust control and consolidation and compaction of backfill in trenches for non-potable water, sanitary sewer, storm drain, gas and electric pipelines. Equipment operators shall be instructed about the requirements contained herein and the potential health hazards involved with the use of recycled water. Water trucks, hoses, drop tanks, etc. shall be identified as containing non-potable water and not suitable for drinking. Determinations as to specific uses to be allowed shall be in accordance with the standards set forth in Title 22, Division 4 of the California Code of Regulations and with the intent of this ordinance to preserve the public health. The City may, at its discretion, set forth specific requirements as conditions to providing such services and/or require specific approval from the appropriate regulatory agencies. (City of San Diego 2008)

(City of San Diego 2008), particularly for the protection of public health per the California Code of Regulations, Title 22, Division 4. Wash down or sweep paved streets as necessary to control trackout or fugitive dust.

  - Cover or tarp all vehicles hauling dirt or spoils on public roads if sufficient freeboard is not available to prevent material blow-off during transport.
  - Use gravel bags and catch basins during ground-disturbing operations.
  - Maintain appropriate soil moisture, apply soil binders, and plant stabilizing vegetation.

- Additional construction measures to reduce equipment emissions may include:
  - Properly tune and maintain construction equipment.
  - Encourage carpooling by all construction workers.
  - Limit any lane closures to off-peak travel periods.

MM-AQ-2 The following measures shall be implemented during construction activities associated with the San Vicente Purified Water Pipeline components to reduce oxides of nitrogen (NO_x):

a. All construction equipment shall be equipped with Tier 3, or better (i.e., Tier 4) diesel engines.

b. The engine size of construction equipment shall be the minimum size suitable for the required job.

c. Construction equipment shall be maintained in accordance with the manufacturer's specifications.

MM-AQ-3 Program components shall implement odor control systems specifically designed to abate the odorous potential of the specific facility. Odor control systems shall be similar to those currently employed at City of San Diego wastewater treatment facilities and pump stations to reduce odor impacts. The following odor control systems or equivalent measures shall be implemented upon final facility design to mitigate nuisance odors:

a. Treatment plants and major pump stations: NaOCl/NaOH Wet Scrubber plus carbon or Biofilter plus carbon, or equivalent alternative.

b. Treatment plants and pump stations with lower sulfide loads: Biotrickling filter plus carbon or carbon only, or equivalent alternative.

c. Smaller municipal pump stations and air/vacuum relief valves at high points along forcemains: carbon only, or equivalent alternative.

12.1.3 HEALTH AND SAFETY

Mitigation Framework

MM-HAZ-1 A brush management plan shall be prepared by the City or its contractors prior to construction of Program components, as determined necessary by the City of San Diego. Construction within areas of dense foliage during dry conditions shall be avoided, when feasible. In cases where avoidance is not feasible, necessary brush fire prevention and management practices shall be incorporated. Details of the brush management program shall be determined as site plans for the Program components are finalized to the satisfaction of the City of San Diego Fire Marshal.

MM-HAZ-2 The City of San Diego shall provide fire safety information to construction crews during regular safety meetings. Fire management techniques shall be applied during construction as deemed necessary by the City of San Diego Fire Marshal based on vegetation within the site and surrounding areas.

MM-HAZ-3 A Hazardous Materials Reporting Form and Hazardous Materials Review by the Development Services Department shall be prepared for each Program component in compliance with the City of San Diego's Information Bulletin 116.

MM-HAZ-4 In accordance with Article of Chapter 6.95 of California Health and Safety Code and San Diego County Code Section 68.1113, a hazardous materials business plan (HMBP) shall be submitted to the Department of Environmental Health (DEH) Hazardous Materials Division prior to operations of each treatment facility and every 3 years thereafter. Other safety programs, including a worker safety program, fire response program, a plant safety program, and the facility's standard operating procedures, shall be developed addressing hazardous materials storage locations, emergency response procedures, employee training requirements, hazard recognition, fire safety, first aid/emergency medical procedures, hazard communication training, and release reporting requirements.

MM-HAZ-5 All hazardous materials shall be handled and stored, transported and disposed in accordance with all applicable federal, state, and local codes and regulations. Specific requirements of the California Fire Code that reduce the risk of fire or the potential for a release of hazardous materials that could affect public health or environment include:

- Provide an automatic sprinkler system for indoor hazardous material storage areas.
- Separate incompatible materials by isolating them from each other with noncombustible partition.
- Locate incompatible materials as far away from each other as practical and safe.
- Provide spill control in all storage, handling, and dispensing areas.
- Separate secondary containment for each liquid chemical storage system.
- Chlorine in liquid form (sodium hypochlorite) instead of chlorine gas shall be used to mitigate concerns associated with accidental toxic gas plume releases and potential odor emissions from the chlorine storage facility.
- Use aqua ammonia of a concentration below the regulatory threshold limit of 20% and amount below the regulatory threshold of 20,000 gallons shall be used to mitigate concerns associated with accidental release of toxic ammonia gas plume or measurable size.
- Equip all liquid chemical storage tanks with a pressure relief valve, vapor equalization, carbon filter vent, and vacuum breaker. Any potential vapor fume releases from the tanks would be absorbed by the carbon filter vent, thereby providing an additional odor control for volatile chemicals such as ammonia and chlorine.

MM-HAZ-6 Subsequent projects, implemented in accordance with the Program, shall conduct a site-specific record search for the locations and type of hazardous materials to the satisfaction of the City of San Diego. An analysis shall be conducted for each Program component to determine whether a proposed facility is (1) located within 1,000 feet of a known contamination site; (2) located within 2,000 feet of a known 'border zone property' (also known as a 'Superfund' site) or a hazardous waste property subject to corrective action pursuant to the Health and Safety Code; (3) where a DEH site file is closed; (4) located in Centre City San Diego (No known as Downtown San Diego), Barrio Logan or other areas known or suspected to contain contamination sites; (5) located on or near an active or former landfill; or (5) properties historically developed with industrial or commercial uses which involved

dewatering. In the event that one of the above conditions is met, the City shall coordinate with the Department of Environmental Health to determine the appropriate corrective action (i.e., remediation) or avoidance measures (i.e. alternative facility siting).

12.1.4 BIOLOGICAL RESOURCES

Mitigation Framework

MM-BIO-1 Prior to subsequent project level review, all projects which could have potentially significant impacts resulting in a reduction in the number of unique, rare, endangered, sensitive, or fully protected species of plants or animals shall be analyzed in accordance with the CEQA Significance Thresholds, which require that site-specific biological resources surveys be conducted in accordance with City of San Diego Biology Guidelines (2012) and MSCP Subarea Plan. Where sensitive biological resources are known or suspected on or adjacent to a proposed project site, a biological assessment shall be performed by a qualified City-approved biologist familiar with MSCP Subarea Plans for the City of San Diego, County of San Diego, and City of Chula Vista for that project. Based on available habitat within the project areas, focused presence/absence surveys shall be conducted in accordance with the Biology Guidelines and applicable resource agency survey protocols. Engineering design specifications based on project-level grading and site plans shall be incorporated into the design of future projects to minimize or eliminate direct impacts on sensitive plant and wildlife species consistent with the FESA, MBTA, CESA, MSCP Subarea Plan, and ESL Regulations. Mitigation for impacts on rare plant species shall be in accordance with the City's Biology Guidelines (City of San Diego 2012), which require habitat-based mitigation according to the established MSCP mitigation ratios (see Table MM-BIO-1A below, Table 3 in the City's Biology Guidelines), soil salvage, and/or translocation or restoration of species.

It is expected that the majority of sensitive species not covered by the MSCP will be adequately mitigated through the habitat-based mitigation required by the City of San Diego (2012) and detailed below. However, mitigation requirements and protocols may be required to ensure that impacts on sensitive species are reduced to below a level of significance. Sensitive wildlife mitigation must be developed in accordance with all applicable federal, state, and local laws and protocols (including the MSCP Subarea Plan Appendix A Conditions of Coverage) in effect at the time when permits are applied for. Mitigation measures for general nesting

birds and some individual species, including least Bell's vireo, coastal California gnatcatcher, and coastal cactus wren, have been standardized by the City's Mitigation Monitoring and Reporting Program (MMRP) and would be implemented at a project level. Mitigation measures may include, but are not limited to, the following:

Mitigation for Impacts on Sensitive Upland Habitats

Future projects resulting in impacts on sensitive upland Tier I, II, IIIA, or IIIB habitats shall implement avoidance and minimization measures consistent with the City Biology Guidelines and MSCP Subarea Plan and provide suitable mitigation in accordance with Table 3 in the City's Biology Guidelines (see Table MM-BIO-1A) and MSCP Subarea Plan. Future project-level grading and site plans shall incorporate project design features to minimize direct impacts on sensitive vegetation communities including but not limited to riparian habitats, wetlands, maritime succulent scrub, coastal sage scrub, and grasslands consistent with federal, state, and City guidelines. Any required mitigation for impacts on sensitive vegetation communities shall be outlined in a conceptual mitigation plan following the outline provided in the City Biology Guidelines.

Mitigation for impacts on sensitive vegetation communities shall be implemented at the time future projects are proposed. Project-level analysis shall determine whether the impacts are within or outside the MHPA. Any MHPA boundary adjustments shall be processed by the individual project applicants through the City and Wildlife Agencies during the early project planning stage.

Mitigation for impacts on sensitive upland habitats shall occur in accordance with the MSCP mitigation ratios as specified within the City's Biology Guidelines (City of San Diego 2012). These mitigation ratios are based on the tier level of the vegetation community, the location of the impact, and the location of the mitigation site(s). For example, impacts on lands inside the MHPA and mitigated outside the MHPA would have the highest mitigation ratio, whereas impacts on lands outside the MHPA and mitigated inside the MHPA would have the lowest mitigation ratio.

Mitigation for Impacts to Wetlands

Please refer to Mitigation Framework MM-BIO-2 under Impact 5.4-7.

Mitigation for Short-term Impacts on Sensitive Species from Project Construction

Within the Program area, for proposed project components adjacent to or within the MHPA, construction noise that exceeds the maximum levels allowed shall be avoided during the breeding seasons for protected avian species such as: western snowy plover (March 1-September 15); California least tern (May 1-August 30); coastal California gnatcatcher (March 1-August 15); least Bell's vireo (March 15-September 15); coastal cactus wren (February 15-August 15); burrowing owl (February 1-August 31); southwestern willow flycatcher (May 1-August 30); light-footed Ridgway's rail (March 1-August 31); and western yellow-billed cuckoo (mid-June-late August). If construction is proposed during the breeding season for these species, USFWS protocol surveys shall be required in order to determine species presence/absence. When applicable, adequate noise reduction measures shall be incorporated.

Additional specific measures necessary for reducing potential indirect impacts on sensitive bird species are further detailed in Mitigation Framework MM-LU-3.

A revegetation plan must be prepared by a qualified City-approved biologist familiar with Multiple Species Conservation Program (MSCP) Subarea Plans for the City of San Diego, County of San Diego, and City of Chula Vista.

Other Agency Mitigation Requirements

Permanent impacts to sensitive upland communities in the Chula Vista MSCP Subarea Plan area shall require mitigation at the following ratios, assuming mitigation is provided inside the Preserve: CVTier I – 1:1 for impacts outside the Preserve and 2:1 for impacts inside the Preserve; CVTier II – 1:1 for impacts outside the Preserve and 1.5:1 for impacts inside the Preserve; CVTier III – 0.5:1 for impacts outside the Preserve and 1:1 for impacts inside the Preserve.

Permanent impacts to sensitive upland communities in the County MSCP Subarea Plan area shall require mitigation at the following ratios, assuming the land conserved as mitigation meets the definition of biological resource core area: CoTier II – 1:1 if impacted land does not meet the definition of biological resource core area and 1.5:1 if impacted land meets the definition of biological resource core area; CoTier III – 0.5:1 if impacted land does not meet the definition of biological resource core area and 1:1 if impacted land meets the definition of biological resource core area. Non-native grassland shall be

mitigated at 0.5:1. Mitigation may be proposed through preservation of biological resource core areas by fee title transfer, conservation easement, or other appropriate title encumbrances.

Permanent impacts to sensitive upland communities on MCAS Miramar shall require mitigation at the ratios provided in the MCAS Miramar Integrated Natural Resources Management Plan (INRMP). Mitigation for impacts by non-military entities shall be provided on land outside of MCAS Miramar. Tables 6.2.2.2a and 6.2.2.2b of the INRMP provide mitigation ratios for temporary and permanent impacts, respectively. Compensatory mitigation shall be required only when threatened or endangered species are present in the impact area, and ratios range from 1:1 to 2:1 for temporary impacts and between 1:1 and 3:1 for permanent impacts.

All mitigation for unavoidable wetland impacts within the Coastal Overlay Zone shall occur within the Coastal Overlay Zone.

Table MM-BIO-1A
Mitigation Ratios for Impacts on Upland
Vegetation Communities and Land Cover Types

Tier	Habitat Type	Mitigation Ratios			
TIER 1 (rare uplands)	Southern Foredunes Torrey Pines Forest Coastal Bluff Scrub Maritime Succulent Scrub Maritime Chaparral Scrub Oak Chaparral Native Grassland Oak Woodlands			Location of Preservation Inside	 Outside
		Location of Impact	Inside	2:1	3:1
			Outside	1:1	2:1
TIER II (uncommon uplands)	Diegan Coastal Sage Scrub (CSS) CSS/Chaparral			Location of Preservation Inside	 Outside
		Location of Impact	Inside*	1:1	2:1
			Outside	1:1	1.5:1
TIER IIIA (common uplands)	Chamise Chaparral Southern Mixed Chaparral			Location of Preservation Inside	 Outside
		Location of Impact	Inside*	1:1	1.5:1
			Outside	0.5:1	1:1

Table MM-BIO-1A
Mitigation Ratios for Impacts on Upland
Vegetation Communities and Land Cover Types

Tier	Habitat Type	Mitigation Ratios			
TIER IIIB (common uplands)	Non-native Grassland			Location of Preservation	
				Inside	Outside
		Location of Impact	Inside*	1:1	1.5:1
			Outside	0.5:1	1:1

Notes:
For all Tier I impacts, the mitigation could (1) occur within the MHPA portion of Tier I or (2) occur outside of the MHPA within the affected habitat type (in-kind).
For impacts on Tier II, IIIA, and IIIB habitats, the mitigation could (1) occur within the MHPA portion of Tiers I – III (out-of-kind) or (2) occur outside of the MHPA within the affected habitat type (in-kind). Project-specific mitigation will be subject to applicable mitigation ratios at the time of project submittal.

MM-BIO-2 To reduce potential direct impacts on City, state, and federally regulated wetlands, all subsequent projects shall be required to comply with ACOE CWA Section 404 requirements and special conditions, RWQCB in accordance with Section 401 of the CWA, CDFW Section 1602 Streambed Alteration Agreement requirements and special conditions, and the City of San Diego ESL Regulations for minimizing impacts on wetlands. Achieving consistency with these regulations for impacts on wetlands and special aquatic sites would reduce potential impacts on regulated wetlands and provide compensatory mitigation (as required) to ensure no net loss of wetland habitats. In addition, the USFWS would be involved under Section 7 of the FESA during consultation initiated by the ACOE during the 404 permit process if federal listed species are present. If there is no federal nexus to jurisdictional waters, then a Section 10(A) authorization from USFWS would be required to cover any potential effects on federal listed species.

Prior to obtaining discretionary permits for future actions implemented in accordance with the Program that are subject to ESL, and/or where the CEQA review has determined that there may be a significant impact on other biological resources considered sensitive under CEQA, a site-specific biological resources survey shall be completed in accordance with City of San Diego Biology Guidelines. In addition, a preliminary or final jurisdictional waters/wetlands delineation of the project site shall be completed following the methods outlined in the ACOE's 1987 *Wetlands Delineation Manual*, the 2008 *Regional Supplement to the Corps of Engineers Delineation Manual for the Arid West Region*, and any required updated or additional standards. A determination of the presence/absence and boundaries of any waters of the U.S. and waters of the state

shall also be completed following the appropriate ACOE guidance documents for determining the OHWM boundaries. The limits of any riparian habitats on-site under the sole jurisdiction of CDFW shall also be delineated, as well as any special aquatic sites (excluding vernal pools) that may not meet federal jurisdictional criteria but are regulated by the RWQCB. Engineering design specifications based on project-level grading and site plans shall be incorporated into the project design to minimize direct impacts to wetlands, jurisdictional waters, riparian habitats, and vernal pools consistent with federal, state, and City guidelines. Any required mitigation for proposed impacts shall be outlined in a conceptual wetland mitigation plan prepared in accordance with the City's Biology Guidelines (2012).

Additionally, any impacts on wetlands in the City of San Diego would require a deviation from the ESL wetland regulations. Under the wetland deviation process, development proposals that have wetland impacts shall be considered only pursuant to one of three options: Essential Public Project, Economic Viability Option, or Biologically Superior Option. ESL Regulations require that impacts on wetlands be avoided. Unavoidable impacts on wetlands shall be minimized to the maximum extent practicable and mitigated as follows for Essential Public Projects:

- As part of the project-specific environmental review pursuant to CEQA, all unavoidable wetland impacts shall be analyzed, and mitigation shall be required in accordance with Table 2A in the City's Biology Guidelines (see Table MM-BIO-2A). Mitigation shall be based on the impacted type of wetland and project design. Mitigation shall prevent any net loss of wetland functions and values of the impacted wetland.

Table MM-BIO-2A
City of San Diego Wetland Mitigation Ratios (for Essential Public Projects and with Biologically Superior Design)

Vegetation Community	Mitigation Ratio
Riparian	2:1 to 3:1
Vernal pool[1]	2:1 to 4:1
Basin with fairy shrimp[1]	2:1 to 4:1
Freshwater marsh	2:1

Notes:
[1] The City does not have "take" authority for vernal pool species. A draft vernal pool HCP is currently being prepared by the City in coordination with the Wildlife Agencies. If adopted, the City would have "take" authority for the vernal pool species occurring within the vernal pool HCP areas.

As part of any future project-specific environmental review pursuant to CEQA, all unavoidable wetlands impacts (both temporary and permanent) shall be analyzed and mitigation required in accordance with the City Biology Guidelines; mitigation shall be based on the impacted type of wetland habitat. Mitigation shall prevent any net loss of wetland functions and values of the impacted wetland. Operational definitions of the four types of activities that constitute wetland mitigation under the ESL Regulations are as follows:

- **Wetland creation** is an activity that results in the formation of new wetlands in an upland area. An example is excavation of uplands adjacent to existing wetlands and the establishment of native wetland vegetation.
- **Wetland restoration** is an activity that re-establishes the habitat functions of a former wetland. An example is the excavation of agricultural fill from historic wetlands and the re-establishment of native wetland vegetation.
- **Wetland enhancement** is an activity that improves the self-sustaining habitat functions of an existing wetland. An example is removal of exotic species from existing riparian habitat.
- **Wetland acquisition** may be considered in combination with any of the three mitigation activities above.

Wetland enhancement and wetland acquisition focus on the preservation or the improvement of existing wetland habitat and function and do not result in an increase in wetland area; therefore, a net loss of wetland may result. As such, acquisition and/or enhancement of existing wetlands shall be considered as partial mitigation only for any balance of the remaining mitigation requirement after restoration or creation if wetland acreage is provided at a minimum of a 1:1 ratio.

For permanent wetland impacts that are unavoidable and minimized to the maximum extent feasible, mitigation shall consist of creation of new in-kind habitat to the fullest extent possible and at the appropriate ratios. If on-site mitigation is not feasible, then at least a portion of the mitigation must occur within the same watershed. The City's Biology Guidelines and MSCP Subarea Plan require that impacts on wetlands, including vernal pools, shall be avoided, and that a sufficient wetland buffer shall be maintained, as appropriate, to protect resource functions/values. The project specific biology report shall include an analysis of on-site wetlands (including City, state, and federal jurisdiction analysis) and, if present, include project alternatives that fully/substantially avoid wetland impacts. Detailed evidence supporting why there is no feasible less

environmentally damaging location or alternative to avoid any impacts must be provided for City staff review, as well as a mitigation plan that specifically identifies how the project is to compensate for any unavoidable impacts. A conceptual wetland mitigation plan (which includes identification of the mitigation site) shall be approved by City staff prior to the release of the draft environmental document. Avoidance shall be the first requirement; mitigation shall only be used for impacts clearly demonstrated to be unavoidable.

Prior to the commencement of any construction-related activities on-site for projects impacting wetland habitat (including earthwork and fencing), the applicant shall provide evidence of the following to the Mayor-appointed Environmental Designee prior to any construction activity:

- Compliance with ACOE Section 404 nationwide permit;
- Compliance with the RWQCB Section 401 Water Quality Certification; and
- Compliance with the CDFW Section 1601/1603 Streambed Alteration Agreement.

MM-BIO-3: Mitigation to reduce potentially significant impacts from subsequent project components that would interfere with the nesting, foraging, or movement of wildlife species within the Program area shall be identified in a site-specific biological resources report prepared in accordance with City of San Diego Biology Guidelines, as further detailed in MM-BIO-1 during the discretionary review process. The biology report shall identify the limits of any identified local-scale wildlife corridors or habitat linkages and analyze potential impacts in relation to local fauna, and the effects of conversion of vegetation communities to minimize direct impacts on sensitive wildlife species and to provide for continued wildlife movement through the corridor.

Measures that shall be incorporated into project-level construction documents to minimize direct impacts on wildlife movement, nesting, or foraging activities shall be addressed in the biology report and shall include recommendations for preconstruction protocol surveys to be conducted during established breeding seasons, construction noise monitoring and implementation of any species-specific mitigation plans in order to comply with the FESA, MBTA, State Fish and Game Code, and/or the ESL Regulations.

12.1.5 NOISE

Mitigation Framework

MM-NOI-1 Project-level environmental analyses shall evaluate noise impacts of subsequent project-specific features. The City of San Diego shall incorporate and/or modify and augment facility design as appropriate to address project-specific noise effects:

- Pumps and associated equipment (e.g., portable generators etc.) used during nighttime hours (10 p.m. to 7 a.m.) and during construction activities shall be shielded from sensitive uses using local temporary noise barriers or enclosures, or shall otherwise be designed or configured so as to comply with applicable municipal code nighttime noise standards. The specific location and design of such barriers shall be determined in conjunction with construction plans for individual projects.
- Construction activities shall not occur during nighttime restrictive time periods according to applicable requirements. The hours of construction, including noisy maintenance activities and all spoils and material transport, shall be restricted to the periods and days permitted by the local noise or other applicable ordinance.
- Nighttime work, where necessary to avoid daytime traffic jams or service outages, shall be planned to the extent practical to minimize the number and type of operating equipment, restrict the movement of equipment adjacent to the noise-sensitive receivers, and minimize noise from back-up alarms.
- All noise-producing equipment and vehicles using internal combustion engines shall be equipped with mufflers; air-inlet silencers where appropriate; and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specification. Mobile or fixed "package" equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment.
- All mobile or fixed noise-producing equipment used on the Program facilities that are regulated for noise output by a local, state, or federal agency shall comply with such regulation while in the course of Program activity.
- Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where feasible.
- Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.

- Construction site and access road speed limits shall be established and enforced during the construction period.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.
- No project-related public address or music system shall be audible at any adjacent receptor.

MM-NOI-2 Subsequent Program components shall be evaluated by the City of San Diego at the project-specific environmental/design phase to determine if potential noise or groundborne vibration impacts in excess of applicable noise or vibration standards would result. If such a potential exists, a noise and vibration study shall be conducted including recommendations for mitigation. Mitigation shall be specific to the Program feature, and designed to assure that noise and vibration produced by operation of the facility shall not cause the limits in the municipal code to be exceeded, and any such mitigation shall be required as part of the subsequent Program component.

A site-specific acoustical analysis shall be required for any project located within 500 feet of any residential dwellings, which would ensure compliance with construction noise and outdoor noise standards. It is reasonable to assume that feasible mitigation is available through project-specific design features that would provide appropriate sound and vibration attenuation for operational impacts from Program components, such as pump stations and treatment facilities. Such design features, including construction of attenuation walls or structures, and location/placement of noise/vibration generating equipment shall be applied to reduce potentially significant impacts to less than significant levels at the project-level of analysis, to the satisfaction of the City of San Diego.

12.1.6 HISTORICAL RESOURCES

Mitigation Framework

MM-HIST-1 Archaeological and Tribal Cultural Resources

Prior to issuance of any permit for a future development project implemented in accordance with the Program area that could directly affect an archaeological or tribal cultural resource, the City shall require the following steps be taken to determine: (1) the presence of archaeological or tribal cultural resources and (2) the appropriate mitigation for any significant resources which may be impacted by a development

activity. Sites may include, but are not limited to, residential and commercial properties, privies, trash pits, building foundations, and industrial features representing the contributions of people from diverse socio-economic and ethnic backgrounds. Sites may also include resources associated with prehistoric Native American activities.

Initial Determination

The environmental analyst will determine the likelihood for the project site to contain historical resources by reviewing site photographs and existing historic information (e.g., Archaeological Sensitivity Maps, the Archaeological Map Book, and the City's "Historical Inventory of Important Architects, Structures, and People in San Diego") and may conduct~~ing~~ a site visit. If there is any evidence that the site contains archaeological or tribal cultural resources, then an ~~historic~~ archaeological evaluation consistent with the City Guidelines would be required. All individuals conducting any phase of the archaeological evaluation program must meet professional qualifications in accordance with the City Guidelines.

Step 1:

Based on the results of the Initial Determination, if there is evidence that the site contains historical resources, preparation of a historic evaluation is required. The evaluation report would generally include background research, field survey, archeological testing and analysis. Before actual field reconnaissance would occur, background research is required which includes a record search at the South Coastal Information Center (SCIC) at San Diego State University and the San Diego Museum of Man. A review of the Sacred Lands File maintained by the Native American Heritage Commission (NAHC) must also be conducted at this time. Information about existing archaeological collections should also be obtained from the San Diego ~~Archaeology~~ Archaeological Center and any tribal repositories or museums.

In addition to the record searches mentioned above, background information may include, but is not limited to: examining primary sources of historical information (e.g., deeds and wills), secondary sources (e.g., local histories and genealogies), Sanborn Fire Maps, and historic cartographic and aerial photograph sources; reviewing previous archeological research in similar areas, models that predict site distribution, and archeological, architectural, and historical site inventory files; and conducting informant interviews. The results of the background information would be included in the evaluation report.

Once the background research is complete, a field reconnaissance must be conducted by individuals whose qualifications meet the standards outlined in the City Guidelines. Consultants are encouraged to employ innovative survey techniques when conducting enhanced reconnaissance, including, but not limited to, remote sensing, ground penetrating radar, and other soil resistivity techniques as determined on a case-by-case basis. Native American participation is required for field surveys when there is likelihood that the project site contains prehistoric archaeological resources or traditional cultural properties. If through background research and field surveys historical resources are identified, then an evaluation of significance, based on the City's Guidelines must be performed by a qualified archaeologist.

Step 2:

Where a recorded archaeological site or Tribal Cultural Resource (as defined in the Public Resources Code) is identified, the City would be required to initiate consultation with identified California Indian tribes pursuant to the provisions in Public Resources Code Section 21080.3.1 and 21080.3.2., in accordance with Assembly Bill 52. ~~Once a historical resource has been identified, a significance determination must be made.~~ It should be noted that during the consultation process, tribal representative(s) ~~and/or Native American monitors~~ will be involved in making recommendations regarding the significance of a tribal cultural resource which also could be a prehistoric archaeological site~~s during this phase of the process~~. ~~The~~ A testing program may be recommended which requires reevaluation of the proposed project in consultation with the Native American representative which could result in a combination of project redesign to avoid and/or preserve significant resources as well as mitigation in the form of data recovery and monitoring (as recommended by the qualified archaeologist and Native American representative). An archaeological testing program will be required which includes evaluating the horizontal and vertical dimensions of a site, the chronological placement, site function, artifact/ecofact density and variability, presence/absence of subsurface features, and research potential. A thorough discussion of testing methodologies, including surface and subsurface investigations, can be found in the City Guidelines. Results of the consultation process will determine the nature and extent of any additional archaeological evaluation or changes to the proposed project.

The results from the testing program shall be evaluated against the Significance Thresholds found in the Guidelines. If significant historical resources are

identified within the Area of Potential Effect, the site may be eligible for local designation. However, this process would not proceed until such time that the tribal consultation has been concluded and an agreement is reached (or not reached) regarding significance of the resource and appropriate mitigation measures are identified. ~~At this time,~~When the final testing report must be submitted to Historical Resources Board staff for eligibility determination and possible designation. An agreement on the appropriate form of mitigation is required prior to distribution of a draft environmental document. If no significant resources are found, and site conditions are such that there is no potential for further discoveries, then no further action is required. Resources found to be non-significant as a result of a survey and/or assessment will require no further work beyond documentation of the resources on the appropriate Department of Parks and Recreation (DPR) site forms and inclusion of results in the survey and/or assessment report. If no significant resources are found, but results of the initial evaluation and testing phase indicates there is still a potential for resources to be present in portions of the property that could not be tested, then mitigation monitoring is required.

Step 3:

Preferred mitigation for historical resources is to avoid the resource through project redesign. If the resource cannot be entirely avoided, all prudent and feasible measures to minimize harm shall be taken. For archaeological resources where preservation is not an option, a Research Design and Data Recovery Program is required, which includes a Collections Management Plan for review and approval. When tribal cultural resources are present and also cannot be avoided, appropriate and feasible mitigation will be determined through the tribal consultation process and incorporated into the overall data recovery program, where applicable or project specific mitigation measures incorporated into the project. The data recovery program shall be based on a written research design and is subject to the provisions as outlined in CEQA, Section 21083.2. The data recovery program shall be based on a written research design and is subject to the provisions as outlined in CEQA, Section 21083.2. The data recovery program must be reviewed and approved by the City's Environmental Analyst prior to distribution of a draft CEQA document ~~distribution~~ and shall include the results of the tribal consultation process. Archaeological monitoring may be required during building demolition and/or construction grading when significant resources are known or suspected to be present on a site, but cannot be recovered prior to grading due to obstructions such as, but not limited to, existing development or dense vegetation.

A Native American observer must be retained for all subsurface investigations, including geotechnical testing and other ground-disturbing activities, whenever a Native American ~~Traditional Cultural Property~~tribal cultural resource or any archaeological site located on City property or within the Area of Potential Effect of a City project would be impacted. In the event that human remains are encountered during data recovery and/or a monitoring program, the provisions of California Public Resources Code Section 5097 must be followed. In the event that human remains are discovered during project grading, work shall halt in that area and the procedures set forth in the California Public Resources Code (Section 50987.98) and State Health and Safety Code (Section 7050.5), and in the federal, state, and local regulations described above shall be undertaken. These provisions ~~are~~ will be outlined in the Mitigation Monitoring and Reporting Program (MMRP) included in ~~the~~ a subsequent project-specific environmental document. The Native American monitor shall be consulted during the preparation of the written report, at which time they may express concerns about the treatment of sensitive resources. If the Native American community requests participation of an observer for subsurface investigations on private property, the request shall be honored.

Step 4:

Archaeological Resource Management reports shall be prepared by qualified professionals as determined by the criteria set forth in Appendix B of the Guidelines. The discipline shall be tailored to the resource under evaluation. In cases involving complex resources, such as traditional cultural properties, rural landscape districts, sites involving a combination of prehistoric and historic archaeology, or historic districts, a team of experts will be necessary for a complete evaluation.

Specific types of historical resource reports are required to document the methods (see Section III of the Guidelines) used to determine the presence or absence of historical resources; to identify the potential impacts from proposed development and evaluate the significance of any identified historical resources; to document the appropriate curation of archaeological collections (e.g., collected materials and the associated records); in the case of potentially significant impacts to historical resources, to recommend appropriate mitigation measures that would reduce the impacts to below a level of significance; and to document the results of mitigation and monitoring programs, if required.

Archaeological Resource Management reports shall be prepared in conformance with the California Office of Historic Preservation "Archaeological Resource

Management Reports: Recommended Contents and Format" (see Appendix C of the Guidelines), which will be used by Environmental ~~Analysis Section~~ staff in the review of archaeological resource reports. Consultants must ensure that archaeological resource reports are prepared consistent with this checklist. This requirement will standardize the content and format of all archaeological technical reports submitted to the City. A confidential appendix must be submitted (under separate cover) along with historical resources reports for archaeological sites and ~~traditional~~ tribal cultural ~~properties~~ resources containing the confidential resource maps and records search information gathered during the background study. In addition, a Collections Management Plan shall be prepared for projects which result in a substantial collection of artifacts and must address the management and research goals of the project and the types of materials to be collected and curated based on a sampling strategy that is acceptable to the City. Appendix D (Historical Resources Report Form) may be used when no archaeological resources were identified within the project boundaries.

Step 5:

For Archaeological Resources: All cultural materials, including original maps, field notes, non-burial related artifacts, catalog information, and final reports recovered during public and/or private development projects must be permanently curated with an appropriate institution, one which has the proper facilities and staffing for insuring research access to the collections consistent with state and federal standards unless otherwise determined during the tribal consultation process. In the event that a prehistoric and/or historic deposit is encountered during construction monitoring, a Collections Management Plan would be required in accordance with the project MMRP. The disposition of human remains and burial related artifacts that cannot be avoided or are inadvertently discovered is governed by state (i.e., Assembly Bill 2641 [Coto] and California Native American Graves Protection and Repatriation Act of 2001[Health and Safety Code 8010-8011]) and federal (i.e., Native American Graves Protection and Repatriation Act [U.S.C. 3001-3013]) law, and must be treated in a dignified and culturally appropriate manner with respect for the deceased individual(s) and their descendants. Any human bones and associated grave goods of Native American origin shall be turned over to the appropriate Native American group for repatriation.

Arrangements for long-term curation of all recovered artifactsmust be established between the applicant/property owner and the consultant prior to the initiation of

the field reconnaissance~~, and~~. When tribal cultural resources are present, or non-burial-related artifacts associated with tribal cultural resources area suspected to be recovered, the treatment and disposition of such resources will be determined during the tribal consultation process. This information must then be included in the archaeological survey, testing, and/or data recovery report submitted to the City for review and approval. Curation must be accomplished in accordance with the California State Historic Resources Commission's Guidelines for the Curation of Archaeological Collection (dated May 7, 1993) and, if federal funding is involved, Title 36 of the Code of Federal Regulations, Part 79~~ of the Federal Register~~. Additional information regarding curation is provided in Section II of the Guidelines.

MM-HIST-2 Historic Buildings, Structures, and Objects

Prior to issuance of any permit for a future development project implemented in accordance with the Program that would directly or indirectly affect a building/structure in excess of 45 years of age, the City shall determine whether the affected building/structure is historically significant. The evaluation of historic architectural resources shall be based on criteria such as: age, location, context, association with an important person or event, uniqueness, or structural integrity, as indicated in the Guidelines.

Preferred mitigation for historic buildings or structures shall be to avoid the resource through project redesign. If the resource cannot be entirely avoided, all prudent and feasible measures to minimize harm to the resource shall be taken. Depending upon project impacts, measures shall include, but are not limited to:

- Preparing a historic resource management plan;
- Adding new construction which is compatible in size, scale, materials, color and workmanship to the historic resource (such additions, whether portions of existing buildings or additions to historic districts, shall be clearly distinguishable from historic fabric);
- Repairing damage according to the Secretary of the Interior's Standards for Rehabilitation;
- Screening incompatible new construction from view through the use of berms, walls and landscaping in keeping with the historic period and character of the resource;

- Shielding historic properties from noise generators through the use of sound walls, double glazing and air conditioning; and
- ~~Removing industrial pollution at the source of production.~~

Specific types of historical resource reports, outlined in Section III of the HRG, are required to document the methods to be used to determine the presence or absence of historical resources, to identify potential impacts from a proposed project, and to evaluate the significance of any historical resources identified. If potentially significant impacts to an identified historical resource are identified these reports will also recommend appropriate mitigation to reduce the impacts to below a level of significance, where possible. If required, mitigation programs can also be included in the report.

12.1.7 HYDROLOGY AND WATER QUALITY

Mitigation Framework

MM-HYD-1 During construction of all Program components, the City shall comply with the current State Water Resources Control Board (SWRCB) construction general permit (Order Number 2009-009-DWQ, as amended) and the City's Storm Water Management and Discharge Control Ordinance (San Diego Municipal Code 43.0301 et seq.). In compliance with these requirements, a water pollution control plan (for land disturbances of less than 1 acre) or a stormwater pollution prevention plan (SWPPP) (for land disturbances of greater than 1 acre) shall be prepared identifying stormwater best management practices (BMP) to be implemented as appropriate for site conditions and receiving water risk. Minimum BMPs shall include erosion controls, sediment controls, tracking controls, wind erosion control, non-storm water management (i.e., dewatering BMPs), and proper materials and water waste management.

MM-HYD-2 Program components shall be designed to comply with the City's Storm Water Standards manual and the Municipal Stormwater Permit (San Diego RWQCB Order No. R9-2013-0001, as amended by Order No. R9-2015-0001 and Order No. R9-2015-0100, and other future amendments), including implementation of source control BMPs, treatment control BMPs, and LID features that are appropriate for site conditions and adequately sized to meet site's design capture volume for stormwater. Per the City's Storm Water Standards manual, program components classified as priority development projects shall prepare a water quality technical report, a drainage study, and where appropriate, a

hydromodification management plan. Site BMPs and LID designs shall together be adequate to (1) match or reduce the pre-development peak flow rates and volumes, and (2) eliminate or substantially reduce pollutant loads from stormwater runoff.

MM-HYD-3 Proposed Program facilities located within a 100-year flood hazard area shall be located and designed in a manner that protects proposed facilities from flooding (e.g., elevated above the 100-year flood or flood-proofed) and does not alter the boundaries or depth of the existing floodplain for off-site properties as mapped by the Federal Emergency Management Agency and the County. Belowground components of the proposed Program crossing 100-year flood zones shall be installed below the anticipated depth of scour, as determined by a scour analysis/report to be conducted by a qualified individual (e.g., professional engineer, professional geologist, or certified engineering geologist) experienced in scour analysis. Design and construction specifications of pipeline components crossing floodplains shall incorporate recommendations from the report to ensure that potential impacts from scouring do not comprise the integrity of the pipeline. Proposed Program construction, development or alterations located within or across a 100-year flood hazard area shall be reviewed and approved by the County's floodplain administrator or designee prior to notice to proceed.

MM-HYD-4 Construction Groundwater Dewatering. Prior to issuance of any permit that would allow excavation which requires dewatering, a plan for disposal of the dewatering effluent shall be prepared. If groundwater is to be discharged to the sanitary sewer system, such discharges shall be made by permit/approval from the Industrial Waste Division of the City of San Diego Public Utilities Department. If groundwater is to be discharged to land, the stormwater drainage system, or a surface water body, such discharge shall be made in coordination with the San Diego Regional Water Quality Control Board (RWQCB) and the appropriate flood control district, and in accordance with applicable waste discharge requirements. Discharges to land and surface waters shall require submittal of a notice of intent to the RWQCB and compliance with a number of physical, chemical, and thermal parameters (as applicable), along with pertinent site-specific conditions, pursuant to direction from the RWQCB.

MM-HYD-5 Failsafe Disposal Plan During project-level review for the proposed treatment and conveyance facilities, the City shall prepare and submit a Failsafe

Disposal Plan and submit it to the SWRCB Division of Drinking Water and San Diego RWQCB for review and approval. At a minimum, the plan shall specify the locations where off-specification water could be discharged, the anticipated flow rate and duration, and the minimum level of treatment the water would have at the discharge point. The objectives of the plan shall be to ensure that (1) adequate storm drain hydraulic capacity is available to convey the off-spec water from the diversion point to downstream surface waters during periods of peak storm flows, and (2) no adverse hydrodynamic effects on downstream surface waters would occur.

The plan shall identify the beneficial uses and water quality objectives for the waterways affected by failsafe disposal and shall develop a Monitoring and Reporting Program to be put in place. The plan shall identify a shutdown coordinator responsible for managing failsafe disposal, establish switching/valving procedures, outline neutralization methods for chlorinated or chloraminated water, establish roles and responsibilities, and identify action triggers and notification requirements to relevant agencies (e.g., RWQCB, local flood control agency). The plan shall be consistent with and demonstrate compliance with State Water Resources Control Board (SWRCB) Order No. 2014-0194-DWQ (General Waste Discharge Requirements for Discharges from Drinking Water Systems to Surface Waters).

If existing storm drain facilities are not available (or are undersized) at the selected diversion points, the construction (or upgrade) of diversion channels and/or energy dissipation facilities may be required to ensure that off-spec water diversions do not create adverse scour or erosion effects in downstream surface waters.

12.1.8 PALEONTOLOGICAL RESOURCES

Mitigation Framework

MM-PALEO-1: Prior to the approval of subsequent development projects implemented in accordance with the Program areas, the City shall determine the potential for impacts to paleontological resources based on review of the project application submitted, and recommendations of a project-level analysis completed in accordance with the steps presented below. Future projects shall be sited and designed to minimize impacts on paleontological resources in accordance with the City's Paleontological Resources Guidelines and CEQA Significance Thresholds. Monitoring for paleontological resources required during construction activities shall be implemented at the project-level and shall

provide mitigation for the loss of important fossil remains with future subsequent development projects that are subject to environmental review.

I. Prior to Project Approval

A. The environmental analyst shall complete a project-level analysis of potential impacts on paleontological resources. The analysis shall include a review of the applicable USGS Quad maps to identify the underlying geologic formations, and shall determine if construction of a project would:

- Require over 1,000 cubic yards of excavation and/or a 10-foot, or greater, depth in a high resource potential geologic deposit/formation/rock unit.
- Require over 2,000 cubic yards of excavation and/or a 10-foot, or greater, depth in a moderate resource potential geologic deposit/formation/rock unit.
- Require construction within a known fossil location or fossil recovery site. Resource potential within a formation is based on the Paleontological Monitoring Determination Matrix.

B. If construction of a project would occur within a formation with a moderate to high resource potential, monitoring during construction would be required.

- Monitoring is always required when grading on a fossil recovery site or a known fossil location.
- Monitoring may also be needed at shallower depths if fossil resources are present or likely to be present after review of source materials or consultation with an expert in fossil resources (e.g., the San Diego Natural History Museum).
- Monitoring may be required for shallow grading (<10 feet) when a site has previously been graded and/or unweathered geologic deposits/formations/rock units are present at the surface.

Monitoring is not required when grading documented artificial fill. When it has been determined that a future project has the potential to impact a geologic formation with a high or moderate fossil sensitivity rating a Paleontological MMRP shall be implemented during construction grading activities.

12.1.9 PUBLIC UTILITIES

MM-PU-1 During construction, the construction contractor shall comply with the Standard Specifications for Public Work Construction (aka "The WHITEBOOK"), Section 702, which sets forth the requirements for construction and demolition waste management, and 90% waste reduction during demolition and 75% waste reduction during construction. Requirements include preparation of the Waste Management Form, discussions of waste management and recycling at worker orientations and all construction meetings, and implementation of a waste diversion strategy such as source separation.

MM-PU-2 During operation, the City shall manage solid waste to ensure a minimum 75% waste diversion through source reduction, recycling, composting, or transformation.

12.1.10 VISUAL RESOURCES AND COMMUNITY CHARACTER

MM-VIS-1 The City shall minimize and limit the potential for substantial landform alteration by implementing the following during project-level design:

- In selection of sites for treatment facilities and pump stations, the City shall avoid steep slopes where feasible.
- In the event that a chosen site contains steep slopes as defined by the City of San Diego Municipal Code, the treatment facility or pump station shall be designed to avoid or disturb steep hillsides or design development within the allowable encroachment in accordance with the City of San Diego Land Development Code, Environmentally Sensitive Land Regulations.
- Final grading plans for each treatment facility and pump station shall minimize alterations to existing topography and mimic existing topography to the extent feasible.

MM-VIS-2 During future project-level analysis, the City shall analyze and determine the potential for Program components to block public scenic views or views of important visual resources. The City shall make necessary alterations to site design to minimize such impacts as necessary, prior to final design, and to the satisfaction of the City's Planning Department.

MM-VIS-3 Prior to final design, subsequent projects implemented in accordance with the Program shall incorporate the following visual design measures into the design of

each treatment facility and pump station in order to minimize the contrast with the existing visual character of the chosen site:

- Setbacks from the property line to minimize apparent bulk, scale, and mass of structures (in accordance with San Diego Municipal Code Chapter 14, Article 2, Division 7 Section 142.0730)
- Nonreflective exterior finishes that do not substantially contrast with the existing surrounding natural and built environment (in accordance with San Diego Municipal Code Chapter 14, Article 2, Division 4)
- Landscaping consistent with the existing surroundings to provide for visual screening and softening of views of structures (in accordance with San Diego Municipal Code Chapter 14, Article 2, Division 7, Section 142.0740)
- Use of lighting only as necessary for nighttime security purposes (in accordance with San Diego Municipal Code Chapter 14, Article 2, Division 7, Section 142.0740)
- Use of lighting that is shielded and directed downward and away from neighboring property lines (in accordance with San Diego Municipal Code Chapter 14, Article 2, Division 7, Section 142.0740)

12.1.11 GEOLOGY AND SOILS

Mitigation Framework

MM-GEO-1 Impacts associated with geologic hazards shall be mitigated at the project-level through adherence to the City's Seismic Safety Study and recommendations of a site-specific geotechnical report prepared in accordance with the City's Geotechnical Report Guidelines. Impacts shall also be avoided or reduced through engineering design that meets or exceeds adherence to the City's Municipal Code and the California Building Code.

More specifically, compressible soils impacts shall be mitigated through the removal of undocumented fill, colluvium/topsoil, and alluvium to firm the ground. Future development shall also be required to clean up deleterious material and properly moisture, condition, and compact the soil in order to provide suitable foundation support.

Regarding impacts related to expansive soils, future development shall be required to implement typical remediation measures, which shall include placing

a minimum 5-foot cap of low expansive (Expansion Index [EI] of 50 or less) over the clays; or design of foundations and surface improvements to account for expansive soil movement.

MM-GEO-2 All subsequent projects implemented in accordance with the Program shall be designed to avoid or reduce geologic hazards to the satisfaction of the City Engineer.

Submittal, review, and approval of site specific geotechnical investigations shall be completed in accordance with the City's Municipal Code requirements. Engineering design specifications based on future project-level construction plans shall be incorporated into all future projects implemented in accordance with the Program to minimize hazards associated with site-level geologic and seismic conditions satisfactory to the City Engineer and shall include the following measures to control erosion during and after grading or construction:

- Desilting basins, improved surface drainage, or planting of ground covers installed early in the improvement process in areas that have been stripped of native vegetation or areas of fill material;
- Short-term measures, such as sandbag placement and temporary detention basins;
- Restrictions on grading during the rainy season (November through March), depending on the size of the grading operation, and on grading in proximity to sensitive wildlife habitat; and
- Immediate post-grading slope revegetation or hydroseeding with erosion-resistant species to ensure coverage of the slopes prior to the next rainy season.

Conformance to mandated City grading requirements shall ensure that future grading and construction operations would avoid significant soil erosion impacts. Furthermore, any development involving clearing, grading, or excavation that causes soil disturbance of one or more acres, or any project involving less than one acre that is part of a larger development plan, shall be subject to NPDES General Construction Storm Water Permit provisions. Additionally, any development of this significant size within the City shall be required to prepare and comply with an approved Stormwater Pollution Prevention Plan (SWPPP) that shall consider the full range of erosion control BMPs such as, but not limited to, including any additional site-specific and seasonal conditions. Project compliance with NPDES requirements would significantly reduce the potential for substantial erosion or topsoil loss to occur in association with new development.

Prior to obtaining grading permits for future actions a site-specific geotechnical investigation shall be completed as necessary in accordance with the City of San Diego Guidelines for Preparing Geotechnical Reports. Engineering design specifications based on project-level grading and site plans shall be incorporated into the project design to minimize hazards associated with site-level geologic and seismic conditions satisfactory to the City Engineer. Measures designed to reduce erosion at the project-level shall include the following:

- Control erosion by minimizing the area of slope disturbance and coordinate the timing of grading, resurfacing, and landscaping where disturbance does occur.
- On sites for industrial activities require reclamation plans that control erosion, where feasible, in accordance with the LDC.
- Control erosion caused by storm runoff and other water sources.
- Preserve as open space those hillsides characterized by steep slopes or geological instability in order to control urban form, insure public safety, provide aesthetic enjoyment, and protect biological resources.
- Replant with native, drought-resistant plants to restore natural appearance and prevent erosion.
- Practice erosion control techniques when grading or preparing building sites.
- Utilize ground cover vegetation when landscaping a development in a drainage area to help control runoff.
- Incorporate sedimentation ponds as part of any flood control or runoff control facility.
- During construction, take measures to control runoff from construction sites. Filter fabric fences, heavy plastic earth covers, gravel berms, or lines of straw bales are a few of the techniques to consider.
- Phase grading so that prompt revegetation or construction can control erosion. Only disturb those areas that will later be resurfaced, landscaped, or built on. Resurface parking lots and roadways as soon as possible, without waiting until completion of construction.
- Promptly revegetate graded slopes with groundcover or a combination of groundcover, shrubs, and trees. Hydroseeding may substitute for container plantings. Groundcovers shall have moderate to high erosion control qualities.
- Where necessary, design drainage facilities to ensure adequate protection for the community while minimizing erosion and other adverse effects of storm runoff to the natural topography and open space areas.

- Ensure that the timing and method of slope preparation protects natural areas from disturbance due to erosion or trampling. The final surface shall be compacted and spillovers into natural areas shall be avoided.
- Plant and maintain natural groundcover on all created slopes.

When required, the geologic technical report shall consist of a preliminary study, a geologic reconnaissance, or an in-depth geologic investigation report that includes field work and analysis. The geologic reconnaissance report and the geologic investigation report shall include all pertinent requirements per the City Engineer in accordance with Section 145.1803 of the San Diego Municipal Code, San Diego Seismic Safety Study (2009).

12.1.12 TRANSPORTATION, CIRCULATION, AND PARKING

MM-TRA-1 Prior to construction, the construction contractor shall prepare a traffic control plan (TCP) implemented for all affected roadways. The TCP shall be prepared in accordance with the City's and each of the affected municipalities' traffic control guidelines, as applicable. The TCP shall be prepared to ensure that access will be maintained to individual properties and businesses, and that emergency access will not be restricted. Any construction traffic impacts will be short-term in nature.

The TCP shall show all signage and striping, and shall delineate detours, flagging operations, and any other procedures that shall be used during construction to guide motorists safely through the construction zone and allow for a minimum of one lane of travel. The TCP shall also include provisions for coordinating with local emergency service providers regarding construction times and locations of lane closures.

Prior to the start of construction, the construction contractor shall provide a minimum 2-week written notice by mail to owners/occupants along streets to be impacted during construction.

During construction, the construction contractor shall ensure continuous, unobstructed, safe, and adequate pedestrian and vehicular access to and from public facilities (e.g., public utility stations and community centers). If normal access to these facilities is blocked by construction, an alternative access shall be provided. Should this occur, the construction contractor shall coordinate with each facility's administrators in preparing a plan for alternative access.

During construction, the construction contractor shall ensure continuous, unobstructed, safe, and adequate pedestrian and vehicular access to commercial/industrial establishments during regular business hours. If normal access to business establishments is blocked, alternative access shall be provided. Should this occur, the construction contractor shall coordinate with the businesses in preparing a plan for alternative access.

During construction, the construction contractor shall maintain continuous vehicular and pedestrian access to residential driveways from the public street to the private property line, except where necessary construction precludes such continuous access for reasonable periods of time. For example, when a given pipeline segment is initially being excavated, access to individual driveways may be closed during the course of a workday. Access shall be reestablished at the end of the workday. If a driveway needs to be closed or interfered with as described previously, the construction contractor shall notify the owner or occupant of the closure of the driveway at least 5 working days prior to the closure.

The TCP shall include provisions to ensure that the construction contractor's work in any public street does not interfere unnecessarily with the operation of other agencies vehicles, such as emergency service providers.

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CHAPTER 6 – SIGNIFICANT ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED IF THE PROGRAM IS IMPLEMENTED

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CHAPTER 7 –SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

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CHAPTER 8 – GROWTH INDUCEMENT

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CHAPTER 14 CERTIFICATION PAGE

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