

6.3.7 LEVEL OF IMPACT AFTER MITIGATION SUMMARY

Table 6.3-18 shows the Project components where mitigation measures MM-AQ-1, MM-AQ-2, and MM-AQ-3 are applicable.

**Table 6.3-18
Applicability of Air Quality Mitigation Measures to Project Components**

Project Component	MM-AQ-1	MM-AQ-2	MM-AQ-3
<i>Project Components Common to Alternatives</i>			
Morena Pump Station and Pipelines	X	X	X
NCWRP Expansion	X	X	X
NCPWF Influent Pump Station	X	X	
North City Pump Station	X	X	
North City Renewable Energy Facility	X	X	
Landfill Gas Pipeline	X	X	
MBC Improvements	X	X	
NCPWF	X	X	
<i>Miramar Reservoir Alternative</i>			
North City Pipeline	X	X	
Pure Water Dechlorination Facility	X	X	
Miramar WTP Improvements	X	X	
<i>San Vicente Reservoir Alternative</i>			
San Vicente Pipeline	X	X	
Mission Trails Booster Station	X	X	

Notes: Morena Pump Station and Pipelines = Morena Pump Station, Wastewater Forcemain, and Brine/Centrates Line; NCWRP = North City Water Reclamation Plant; NCPWF = North City Pure Water Facility; MBC = Metro Biosolids Center; North City Pipeline = North City Pure Water Pipeline; Miramar WTP = Miramar Water Treatment Plant; San Vicente Pipeline = San Vicente Pure Water Pipeline.

No Project/No Action Alternative

The No Project/No Action Alternative would have a **less-than-significant impact** on the environment.

Miramar Reservoir Alternative

With the implementation of mitigation measures MM-AQ-1 and MM-AQ-2, the construction related NO_x emissions were estimated to be below the City of San Diego’s significance threshold. With implementation of mitigation measure MM-AQ-3, the operations-related odor impacts would be mitigated and reduced to a less-

than-significant level. Therefore, implementation of the mitigation measures would reduce the impact of the Miramar Reservoir Alternative to **below significant**.

San Vicente Reservoir Alternative

With the implementation of mitigation measures MM-AQ-1 and MM-AQ-2, the construction related daily NO_x emissions for the San Vicente Reservoir Alternative were estimated to exceed the City of San Diego's significance threshold. Therefore, implementation of the mitigation measures would not reduce the impact of the San Vicente Reservoir Alternative to below significant and would result in a **significant and unavoidable impact**.

With implementation of mitigation measure MM-AQ-3 the operations-related odor impacts would be reduced to a **less-than-significant** level.

6.4 BIOLOGICAL RESOURCES

6.4.1 INTRODUCTION

The following section examines the impacts of the North City Project on biological resources. Potential impacts that may result from implementation of the North City Project have been evaluated in accordance with the City of San Diego’s California Environmental Quality Act Significance Determination Thresholds (City of San Diego 2016a), City of San Diego Municipal Code, Land Development Manual — Biology Guidelines (City of San Diego 2012), and the City of San Diego Land Development Code, Environmentally Sensitive Lands Regulations (Section 143.0101; City of San Diego 2006). Other regulations considered in the evaluation of impacts include the National Environmental Policy Act (NEPA), federal Endangered Species Act (FESA), California Environmental Quality Act (CEQA), Clean Water Act (CWA), the Porter-Cologne Water Quality Control Act, ~~the Migratory Bird Treaty Act (MBTA)~~, Sections 3511 and 4700 of the California Fish and Game Code, California Endangered Species Act (CESA; California Fish and Game Code, Section 2050 et seq.), the California Coastal Act, the City of San Diego Final Multiple Species Conservation Program (MSCP) Subarea Plan (Subarea Plan; City of San Diego 1997), the ~~Draft-Final~~ *City of San Diego Vernal Pool Habitat Conservation Plan* (VPHCP-2016; City of San Diego 2016b2017), and the Marine Corps Air Station (MCAS) Miramar *Integrated Natural Resource Management Plan* (INRMP 2011–2015; MCAS Miramar INRMP 2011).

The analysis is based on the review of existing biological resources, technical data, and applicable laws, regulations, and guidelines, as well as the Biological Resources Report for the North City Project, City of San Diego, California prepared by Dudek in ~~September 2017~~ February 2018, and provided as Appendix C.

The North City Project has been designed to occur primarily within developed or previously disturbed areas. Access to Project components would be through existing roads, and no new access roads would be constructed under the Miramar Reservoir Alternative and only one under the San Vicente Reservoir Alternative. In order to avoid and/or minimize impacts to sensitive biological resources to the furthest extent possible, refinements were made to facility layouts and pipeline alignments where Project components overlapped sensitive resources. In addition, the use of trenchless construction methods will be implemented during pipeline construction to avoid sensitive resources.

Appendix C outlines mitigation measures that would mitigate adverse and significant impacts to biological resources resulting from the proposed North City Project. The

following mitigation measures are described in this section: MM-BIO-1a (Mitigation for Upland Impacts), MM-BIO-1b (Mitigation for Vernal Pools), MM-BIO-1c (Mitigation for Wetlands), MM-BIO-2 (Habitat Revegetation), MM-BIO-3 (Nesting Bird), MM-BIO-4a and MM-BIO-4b (Coastal California Gnatcatcher), MM-BIO-5 (Burrowing Owl), MM-BIO-6 (Riparian Bird), ~~MM-BIO-7 (Western Pond Turtle)~~, MM-BIO-7~~8~~ (Vernal Pool Watersheds), MM-BIO-8~~9~~ (Wetland Permits), and MM-BIO-9~~10~~ (Biological Monitoring).

Definition of Impacts

Direct Impacts

Direct impacts include short-term, construction-related (i.e., temporary) impacts as well as permanent impacts, which refer to the 100% loss of a biological resource. For purposes of this EIR/EIS, temporary impacts include areas of vegetation removal where open cut trenching will occur, launching and receiving pits for trenchless pipeline construction, and staging and work areas. Permanent, direct impacts refer to areas where permanent facilities are proposed, or areas that will be converted to impervious surfaces or landscaping.

Indirect Impacts

Indirect impacts are reasonably foreseeable effects caused by project implementation on remaining or adjacent biological resources outside the direct limits of clearing and grading. Indirect impacts may affect areas within the defined Project area but outside the limits of grading, including non-impacted areas and areas outside the Project area, 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 and operation of the facilities. In most cases, indirect effects are not quantified, but rather described qualitatively.

Indirect impacts include the generation of fugitive dust, chemical pollutants, altered hydrology, non-native invasive species, increased human activity, noise, and changes in limnological features, 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.

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.

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).

Changes in Limnology. Changes to nutrient concentrations and other water quality constituents of a water body (including chlorophyll-*a*) can indirectly affect the composition of the aquatic community, potentially resulting in impacts to aquatic species and food webs. Due to the complexity of species interactions within the reservoir and their responses to reduced nutrient concentrations, as well as the influence of external contributing factors, effects on the aquatic community cannot be precisely quantified. Additionally, potential changes to the aquatic community will likely occur gradually over time.

6.4.2 CEQA THRESHOLDS OF SIGNIFICANCE

The City has approved guidelines for determining significance based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) and has identified specific significance criteria to be addressed in the EIR/EIS, as outlined in the Public Notice of Preparation (NOP) for the Pure Water San Diego Program, North City Project (City of San Diego 2016b^e). A significant impact to biological resources would occur if the proposed project would result in an affirmative answer to the following:

1. Would the proposed North City Project result in significant impacts to a sensitive habitat or sensitive natural community as identified in local, regional, state or federal plans, policies, or regulations?

2. Would the proposed North City Project result in a significant impact to City, state, or federally regulated wetlands through direct removal, filling, hydrological interruption or other means?
3. Would implementation of the proposed North City Project result in a reduction in the number of any unique, rare, endangered, sensitive, or fully protected species of plants or animals?
4. Would the proposed North City Project result in interference with the movement of any native resident or migratory wildlife through linkages or wildlife corridors?
5. Would the North City Project conflict with provisions of adopted local habitat conservation plans or policies protecting biological resources?
6. Would the North City Project introduce land uses within or adjacent to the MHPA that would result in adverse edge effects?
7. Would the proposed North City Project introduce invasive species into natural open space areas?

6.4.3 ISSUE 1 – VEGETATION COMMUNITIES

Would the proposed North City Project result in impacts to a sensitive habitat or sensitive natural community as identified in local, regional, state or federal plans, policies, or regulations?

6.4.3.1 Impacts

No Project/No Action Alternative

No impacts to sensitive habitat or sensitive natural communities as identified in local, regional, state or federal plans, policies, or regulations would result from the No Project/No Action Alternative.

Miramar Reservoir Alternative

The Miramar Reservoir Alternative includes the construction of a new North City Pure Water Facility (NCPWF), three new pump stations, a new North City Renewable Energy Facility, a new North City Dechlorination Facility, upgrades to existing facilities (including the North City Water Reclamation Plant (NCWRP), Metro Biosolids Center (MBC) and Miramar Water Treatment Plant (WTP)), a new Wastewater Forcemain and Brine/Centrates Line (Morena Pipelines) between the

new Morena Pump Station and the NCWRP, the North City Purified Water Pipeline (North City Pipeline) to deliver purified water from the NCPWF to the Miramar Reservoir, and a Landfill Gas (LFG) Pipeline to deliver landfill gas from a new compressor station at Miramar Landfill to the new renewable energy facility.

Direct Impacts

Morena Pump Station

Construction of the Morena Pump Station would involve excavation and grading of the entire site. Once constructed, the site would be developed with a new pump station and associated facilities. The Morena Pump Station site is entirely developed and contains no sensitive vegetation communities. No direct impacts to botanical resources would occur as a result of the construction of the Morena Pump Station.

Morena Wastewater Forcemain and Brine/Centrates Line

The Morena Pipelines would primarily be constructed in roadway right-of-way. Where the Morena Pipelines cross sensitive resources, the pipelines will be constructed using trenchless construction methods such as auger boring/auger jack and bore, micro-tunneling, or horizontal directional drilling to the greatest extent practicable. These methods are applied to areas where sensitive biological resources occur, as well as to heavily congested areas or to cross-controlled access freeway and railroad crossings where open cut is not allowed.

Construction of the Morena Pipelines would result in temporary impacts to ~~44.0548.36~~ acres, including 0.31 ~~0.30~~ acre of temporary impacts to Diegan coastal sage scrub (including disturbed), which is considered a sensitive vegetation community. These temporary impacts would occur where Genesee Road crosses Rose Canyon, just north of the railroad. Trenchless construction was not feasible below Genesee Road and the railway due to engineering constraints. Temporary impacts to 0.03 acre would occur within the concrete-lined channel portion of Tecolote Creek, mapped as ephemeral stream channel (developed – concrete channel). Trenchless construction at this location would result in maintenance and emergency-situation challenges, and therefore was not possible.

The Morena Pipelines would impact 0.01 acre of lands located within the MHPA boundary, however impacts would be located within an existing roadway (urban/developed). Additional impacts would occur to Urban/Developed land,

non-native vegetation, eucalyptus woodland, and disturbed habitat, none of which provide habitat value or foraging opportunities for wildlife, particularly when they occur in densely urban environments such as the Morena Pipelines.

North City Water Reclamation Plant Expansion, North City Pure Water Facility Influent Pump Station, and North City Renewable Energy Facility

Expansion to the North City Water Reclamation Plant (NCWRP) and construction of the NCPWF Influent Pump Station and North City Renewable Energy Facility would occur within the existing facility's footprint of 35.08 acres. Direct impacts include tunnel access for the Morena Pipelines, the NCPWF Influent Pump Station, and a switch yard, warehouse, control and power buildings associated with the North City Renewable Energy Facility. Sensitive vegetation communities within this footprint include Diegan coastal sage scrub, 0.17 acre; and non-native grassland, 0.99 acre. Therefore, 1.16 acres of permanent impacts would occur to sensitive vegetation communities.

North City Pure Water Facility and North City Pump Station

The NCPWF site, including the portion on which the North City Pump Station would be located, is currently undeveloped. The approximately 11-acre NCPWF site would be developed with the various structures that comprise the treatment facility. The entire site would be cleared and graded. Major structures would include the process building, operations and maintenance building, product water tank, electrical building, chemical systems building, and the North City Pump Station. Portions of the site that are not occupied with buildings would be paved with asphalt or concrete, or landscaped. A biofiltration basin would be located at the northern end of the site.

The NCPWF and North City Pump Station would result in 10.41 acres of permanent impacts from construction of the facility and 0.59 acre of temporary impacts from the facility work area. Impacts to sensitive vegetation communities, as defined by the City of San Diego biological guidelines, include Diegan coastal sage scrub (including disturbed), 2.75 acres; native grasslands, 1.30 acres; and non-native grasslands, 5.10 acres. The NCPWF and North City Pump Station would result in 0.38 acre of permanent impacts to vernal pools.

North City Pure Water Pipeline

The North City Pipeline would primarily be constructed in roadway right-of-way. Where the North City Pipeline crosses sensitive resources, the pipeline will be constructed using trenchless construction methods such as auger boring/auger jack

and bore, micro-tunneling, or horizontal directional drilling. These methods are applied to areas where sensitive biological resources occur, as well as to heavily congested areas or to cross-controlled access freeway and railroad crossings where open cut is not allowed.

Direct impacts from construction of the North City Pipeline include open cut trenching, excavation of jacking and receiving pits, staging areas, and the subaqueous pipeline staging and laydown area. The North City Pipeline would result in ~~37.14~~~~38.19~~ acres of temporary impacts and 0.06 acre of permanent impacts. Impacts to sensitive vegetation communities, as defined by the City's biological guidelines, include non-native grassland, ~~0.13~~~~0.10~~-acre. All wetlands and other sensitive vegetation that cross the pipeline alignment would be avoided using trenchless construction methods.

A portion of the North City Pipeline is within MCAS Miramar lands and therefore subject to the 2011–2015 INRMP. All impacts associated with this portion of the pipeline would be located within Miramar Road in the Level V Management Area (MA); and therefore mitigation is not required for impacts within existing roadways.

Landfill Gas Pipeline

The LFG Pipeline would primarily be constructed within the City's existing utility easement in the Miramar National Cemetery and MCAS Miramar or within roadway ROW.

The LFG Pipeline and compressor station would result in ~~14.04~~~~14.30~~ acres of temporary impacts and 0.12 acre of permanent impacts as a result of open cut trenching, excavation of launching and receiving pits, and work areas. A total of ~~5.25~~~~5.34~~ acres of temporary impacts to sensitive vegetation communities, as defined by the City's biological guidelines, include coastal sage scrub and subtypes, ~~4.73~~~~4.82~~ acres; chaparral, 0.50 acre; and non-native grassland, ~~0.02~~~~0.03~~-acre.

The only permanent impacts from the LFG Pipeline would occur to 0.12 acres of Urban/Developed land cover on the Miramar Landfill from construction of the LFG compressor station.

The majority of the LFG Pipeline is within MCAS Miramar lands and is therefore subject to the 2011-2015 INRMP. The LFG Pipeline would impact a total of ~~11.55~~~~11.29~~ acres within Level I-V MAs (including ~~0.85~~~~0.70~~ acre of Level I MA, 0.54 acre of Level II MA, 1.45 acres of Level III MA, 1.20 acres of Level IV MA, and ~~7.52~~~~7.40~~ acres

of Level V MA). The LFG Pipeline would impact ~~5.34~~5.25 acres of sensitive upland vegetation communities within Level I-V MAs.

Metro Biosolids Center

Improvements at the MBC would occur within the existing facility's footprint of 30.22 acres. Sensitive vegetation communities within this footprint include ~~0.90~~0.91 acre of coastal sage scrub and subtypes. Therefore, ~~0.90~~0.91 acre of permanent impacts would occur to sensitive vegetation communities.

The entire MBC is within MCAS Miramar lands and is therefore subject to the 2011–2015 INRMP. The MBC would impact 30.22 acres within Levels II, IV, and V MAs (including 0.36 acre of Level II MA, 4.11 acres of Level IV MA, and 25.75 acres of Level V MA). The MBC would impact ~~0.90~~0.91 acre of sensitive upland vegetation communities within Levels II, IV, and V MAs.

Miramar Water Treatment Plant Improvements

Improvements at the Miramar WTP and the Miramar Reservoir Pump Station would occur within the existing facility's footprint of 29.13 acres. Direct impacts include project component upgrades and replacement of pumps at the existing pump station. Sensitive vegetation communities within this footprint include 1.32 acres of disturbed Diegan coastal sage scrub. ~~Therefore~~Of the total 1.32 acres, 1.28 acres of permanent impacts would occur outside the MHPA and 0.04 acre of ~~temporary~~permanent impacts would occur within the MHPA to sensitive vegetation.

Pure Water Dechlorination Facility

The Dechlorination Facility would result in 0.07 acre of permanent impacts as a result of excavation and grading of the facility site; no impacts would occur to a sensitive vegetation community.

Summary of Direct Impacts

The Miramar Reservoir Alternative footprint supports 17 vegetation communities and/or land cover types. Construction of the Miramar Reservoir Alternative would result in impacts to ~~208.25~~207.96 acres of land, the majority, ~~175.93~~175.29 acres, is to urban/developed land (see Table 6.4-1; Figures 6.4-1A through 6.4-1P, Biological Resources Impacts – Miramar Reservoir and San Vicente Reservoir Alternatives). Overall, impacts to sensitive vegetation would be minimal as the majority of the pipeline alignments and facility upgrades and improvements have been designed

to be constructed within developed lands. Impacts to sensitive vegetation total ~~18.30~~ 18.22 acres, 12.54 acres of which are permanent impacts while the remaining are temporary. Impacts to these resources would largely occur as a result of the NCPWF, North City Pump Station and LFG Pipeline components. Temporary and permanent impacts to sensitive vegetation would be considered an adverse effect.

Table 6.4-1
Summary of Impacts to Vegetation Communities and Land Cover Types
within the Miramar Reservoir Alternative Footprint (Acres)

Vegetation Community/ Land Cover Type	Subarea Plan Designation	Miramar Reservoir Alternative Impacts				
		Within MHPA		Outside MHPA		Total
		Temp	Perm	Temp	Perm	
<i>Tier I – Rare Uplands</i>						
Native Grassland	I	0	0	0	1.30	1.30
<i>Uplands Tier II – Uncommon Uplands</i>						
Coastal Sage-Chaparral Transition	II	0	0	0.14	0.30	0.44 (0.14)*
Diegan Coastal Sage Scrub	II	0	0	4.06 <u>4.15</u>	3.49	7.56 <u>7.64</u> (6.79 6.95)*
Diegan Coastal Sage Scrub (disturbed)	II	0	0.04	0.81 <u>0.80</u>	1.31	2.16 (0.85)*
Diegan Coastal Sage Scrub— Baccharis-Dominated	II	0	0	0.03	0	0.03
Flat-Topped Buckwheat	II	0	0	<0.01	0	<0.01
Flat-Topped Buckwheat (disturbed)	II	0	0	0.01	0	0.01
<i>Tier III – Common Uplands</i>						
Chamise Chaparral	IIIA	0	0	0.50	0	0.50
Southern Mixed Chaparral	IIIA	0	0	<0.01	0	<0.01
Non-native Grassland	IIIB	0	0	0.13 <u>0.16</u>	6.09	6.22 <u>6.26</u> (5.24 5.26)*
<i>Sensitive Vegetation (Tier I-III) Subtotal¹</i>		0	0.04	5.75 <u>5.70</u>	12.50	18.30 <u>18.25</u> (15.04 14.86)
<i>Tier IV – Other Uplands</i>						
Urban/Developed	IV	0.01	0	85.84 <u>85.38</u>	89.89 <u>90.07</u>	175.93 <u>175.29</u>
Developed – Concrete Channel**	IV	0	0	0.03	0	0.03
Non-native Vegetation	IV	0	0	0.96 <u>0.23</u>	0.56	1.52 <u>0.79</u>

**Table 6.4-1
Summary of Impacts to Vegetation Communities and Land Cover Types
within the Miramar Reservoir Alternative Footprint (Acres)**

Vegetation Community/ Land Cover Type	Subarea Plan Designation	Miramar Reservoir Alternative Impacts				
		Within MHPA		Outside MHPA		Total
		Temp	Perm	Temp	Perm	
Eucalyptus Woodland	IV	0	0	1.98	0.38	2.36
Extensive Agriculture – Field/Pasture, Row Crops	IV	0	0	<u>0.33</u> 0.45	0	<u>0.33</u> 0.45
Disturbed Habitat	IV	0	0	<u>7.63</u> 7.85	2.19	<u>9.79</u> 10.04
<i>Other Uplands (Tier IV) Subtotal</i>		<i>0.01</i>	<i>0</i>	<i><u>96.39</u></i> <i><u>96.32</u></i>	<i><u>93.00</u></i> <i><u>93.18</u></i>	<i><u>189.58</u></i> <i><u>189.33</u></i>
<i>Wetlands</i>						
Vernal Pool	Wetland	0	0	0	0.38	0.38
<i>Wetland Vegetation Subtotal</i>		<i>0</i>	<i>0</i>	<i>0</i>	<i>0.38</i>	<i>0.38</i>
Total		0.01	0.04	<u>102.03</u> <u>102.14</u>	<u>105.884</u> <u>06.06</u>	<u>207.9520</u> <u>8.25</u>

Notes:

- ¹ Total permanent impacts to sensitive upland vegetation is 12.54 acres.
- * This total accounts for the acreage previously mitigated at the MBC (0.91 acre), Miramar WTP (1.32 acres) and/or the NCWRP (1.16 acres).
- ** This land cover is not considered a wetlands according to the San Diego Municipal Code, Land Development Code—Biology Guidelines (City of San Diego 2012) due to the lack of wetland vegetation present. However, impacts to this land cover would require agency permits.

Table 6.4-2 shows the total acreage of impacts for each component of the Miramar Reservoir Alternative.

**Table 6.4-2
Summary of Impacts by Project Component
for the Miramar Reservoir Alternative (Acres)**

Project Component	% Urban/ Developed	Within MHPA (acres)		Outside MHPA (acres)		Total Acreage
		Temp	Perm	Temp	Perm	
Morena Pump Station	100%	0	0	<u>6,220.72</u>	<u>0,831.04</u>	<u>7,051.73</u>
Morena Pipelines	96.5%	0.01	0	<u>44.04</u> 48.35	0	<u>44.05</u> 48.36
NCWRP Expansion ¹	92.8%	0	0	0	35.08	35.08
NCPWF ²	4.7%	0	0	0.59	10.41	10.99

**Table 6.4-2
Summary of Impacts by Project Component
for the Miramar Reservoir Alternative (Acres)**

Project Component	% Urban/ Developed	Within MHPA (acres)		Outside MHPA (acres)		Total Acreage
		Temp	Perm	Temp	Perm	
North City Pipeline	90%	0	0	<u>37.14</u> 38.19	0.06	<u>37.21</u> 38.25
LFG Pipeline	22.4%	0	0	<u>14.04</u> 14.30	0.12	<u>14.15</u> 14.42
MBC	96.7%	0	0	0	30.22	30.22
Miramar WTP	93.2%	0	0.04	0	29.09	29.13
Dechlorination Facility	14.3%	0	0	0	0.07	0.07
Total		0.01	0.04	<u>102.03</u> 102.14	<u>105.88</u> 106.06	<u>207.95</u> 208.25

Notes:

- ¹ The NCWRP Expansion includes impacts related to the NCPWF Influent Pump Station and North City Renewable Energy Facility.
- ² The NCPWF includes impacts related to the North City Pump Station.

Indirect Impacts

Short-term indirect impacts to sensitive vegetation communities include dust, construction-related soil erosion and runoff, invasive plant species, and increased human presence as a result of the construction activities associated with the Project components. Long-term, indirect impacts to sensitive vegetation communities could also occur as a result of increased runoff from additional impervious surfaces and increased human presence at facilities during operation.

San Vicente Reservoir Alternative

The impacts to sensitive vegetation communities described above under the Miramar Reservoir Alternative for the Morena Pump Station, Morena Pipelines, NCWRP Expansion, North City Renewable Energy Facility, NCPWF Influent Pump Station, NCPWF, North City Pump Station, LFG Pipeline, and MBC Improvements would also be applicable to this alternative. In addition, impacts associated with following components would occur: San Vicente Pipeline (including the San Vicente – Repurposed 36-inch Water Line (air and blow-off vales)), San Vicente Pipeline - Tunnel Alternative Terminus (San Vicente Pipeline – TAT), San Vicente Pipeline - In-Reservoir Alternative Terminus (San Vicente

Pipeline – IRAT), San Vicente Pipeline - Marina Alternative Terminus (San Vicente Pipeline – MAT), and the Mission Trails Booster Station (MTBS).

Direct Impacts

San Vicente Pure Water Pipeline

The San Vicente Pipeline would primarily be constructed in roadway right-of-way. Where the San Vicente Pipeline alignment crosses MCAS Miramar, the alignment has been designed to repurpose and utilize an existing 36-inch recycled water line. Where the San Vicente Pipeline crosses sensitive resources, the pipeline will be constructed using trenchless construction methods such as auger boring/auger jack and bore, micro-tunneling, or horizontal directional drilling to the greatest extent practicable. These methods are applied to areas where sensitive biological resources occur, as well as to heavily congested areas or to cross-controlled access freeway and railroad crossings where open cut is not allowed.

Temporary, direct impacts from construction of the San Vicente Pipeline include open cut trenching, excavation of jacking and receiving pits, and staging areas. Permanent, direct impacts would also occur from establishment of work areas to make improvements to and service existing air and blow-off valves which occur along the existing 36-inch recycled water line.

The San Vicente Pipeline would result in a total of 101.51 acres of direct impacts, of which 101.45 acres are temporary impacts as a result of construction. Temporary impacts to sensitive vegetation communities as defined by the City's biological guidelines include coastal sage scrub and subtypes, 2.28 acres; chaparral, 0.03 acre; coast live oak woodland, 0.01 acre; and wetland communities, 0.59 acre. A total of 0.06 acre of permanent impacts would occur along the San Vicente Pipeline - Repurposed 36-inch Recycled Water Line at the air and blow-off valves. Permanent impacts to sensitive vegetation communities include coastal sage scrub and subtypes, 0.01 acre; chaparral, <0.01 acre; and wetland communities, <0.01 acre.

The air and blow-off valves associated with the San Vicente Pipeline - Repurposed 36-inch Recycled Water Line are within MCAS Miramar lands, and therefore, subject to the 2011–2015 INRMP. The San Vicente Pipeline - Repurposed 36-inch Recycled Water Line air and blow-off valves would impact 0.05 acre within Levels I-V MAs (including <0.01 acre of Level I MA, <0.01 acre of Level II MA, <0.01 acre of Level III MA, <0.01 acre of Level IV MA, and 0.04 acre of Level V MA). The San Vicente Pipeline - Repurposed 36-inch Recycled Water Line air and blow-off valves would impact 0.03 acre of sensitive upland and wetland vegetation communities within Levels I-V MAs.

San Vicente Pipeline – Tunnel Alternative Terminus

The San Vicente Pipeline – TAT would result in 0.54 acres of permanent impacts from construction of a new access road, the tunnel entrance and exit, and road widening improvements. Permanent impacts to sensitive vegetation communities as defined by the City’s biological guidelines include coast live oak woodlands, 0.07 acre; chaparral, 0.26 acre; and wetland communities, 0.02 acre.

San Vicente Pipeline – In-Reservoir Alternative Terminus

The San Vicente Pipeline – IRAT would result in 7.87 acres of temporary impacts from open cut trenching and staging areas and 0.38 acre of permanent impacts from installation of riprap at the shoreline. Temporary impacts to sensitive vegetation communities as defined by the City’s biological guidelines include Diegan coastal sage scrub, 1.74 acres; non-native grassland, 0.01 acre; and open water, 0.12 acre. Permanent impacts would occur to <0.01 acre of coast live oak woodland and 0.37 acre of open water.

San Vicente Pipeline – Marine-Marina Alternative Terminus

The San Vicente Pipeline – MAT would result in 13.99 acres of temporary impacts from open cut trenching and staging areas and 0.15 acre of permanent impacts from installation of riprap at the shoreline and a new structure at the end of the pipeline. Temporary impacts to sensitive vegetation communities as defined by the City’s biological guidelines include coastal sage scrub and subtypes, 2.11 acres; chaparral, 0.34 acre; non-native grassland, 0.01 acre; and wetland communities, 1.49 acres. Permanent impacts would occur to 0.15 acre of open water.

Mission Trails Booster Station

The MTBS would result in 1.22 acres of permanent impacts from construction of the new facility. Permanent impacts to sensitive vegetation communities as defined by the City’s biological guidelines include 1.22 acres of coastal sage scrub and subtypes. No temporary impacts would occur.

Summary of Direct Impacts

The San Vicente Reservoir Alternative footprint supports 25 vegetation communities and/or land cover types. Construction of the San Vicente Reservoir Alternative would result in impacts to ~~258.58~~259.32 acres, the majority of which is urban/developed land, ~~218.56~~219.00 acres (see Figures 6.4-1A through 6.4-1I, and 6.4-1N through 6.4-1P, Biological Resources Impacts – Miramar Reservoir and San

Vicente Reservoir Alternatives, and Figures 6.4-1Q through 6.4-1AD, Biological Resources Impacts – San Vicente Reservoir Alternative).

The acreages represented in Table 6.4-3 include all three alternatives for San Vicente Pipeline inlet. Impacts to wetland vegetation total to 3.00 acres, 0.93 acre of which are permanent impacts while the remaining are temporary. Overall, impacts to sensitive vegetation or jurisdictional resources, as well as sensitive plant and wildlife species, would be minimal as the majority of the alignment and related components would remain within existing developed lands. Impacts to sensitive vegetation total ~~24.46~~ 24.38 acres, 12.80 acres of which are permanent impacts while the remaining are temporary. Impacts to these resources would largely occur as slivers along the pipeline alignments. A total of 0.55 acre of impacts to open water within the San Vicente Reservoir would be considered permanent; however, this acreage is inflated because it includes all three inlet alternatives. Temporary and permanent impacts to sensitive vegetation would be considered an adverse effect.

Table 6.4-3
Summary of Impacts to Vegetation Communities and Land Cover Types
within the San Vicente Reservoir Alternative Footprint (Acres)

Vegetation Community/ Land Cover Type	Subarea Plan Designation	San Vicente Reservoir Alternative Impacts				
		Within MHPA		Outside MHPA		Total
		Temp	Perm	Temp	Perm	
<i>Tier I – Rare Uplands</i>						
Native Grassland	I	0	0	0	1.30	1.30
Coast Live Oak Woodland	I	0	0	0.01	0.07	0.08
<i>Uplands Tier II – Uncommon Uplands</i>						
Coastal Sage-Chaparral Transition	II	0	0	0.14	0.31	0.44 (0.14)*
Diegan Coastal Sage Scrub	II	1.99	0	4.44 <u>4.53</u>	3.51 <u>3.50</u>	9.93 <u>10.02</u> (9.16 <u>9.33</u>)*
Diegan Coastal Sage Scrub (disturbed)	II	0.01	0	2.38 <u>2.37</u>	1.25	3.64
Diegan Coastal Sage Scrub – Restored	II	0.07	0	0.37	0	0.43
Diegan Coastal Sage Scrub: Baccharis-Dominated	II	0	0	0.03	<0.01	0.03
Flat-Topped Buckwheat	II	0	0	<0.01	0	<0.01
Flat-Topped Buckwheat (disturbed)	II	0	0	0.01	0	0.01

**Table 6.4-3
Summary of Impacts to Vegetation Communities and Land Cover Types
within the San Vicente Reservoir Alternative Footprint (Acres)**

Vegetation Community/ Land Cover Type	Subarea Plan Designation	San Vicente Reservoir Alternative Impacts				
		Within MHPA		Outside MHPA		Total
		Temp	Perm	Temp	Perm	
<i>Tier III – Common Uplands</i>						
Chamise Chaparral	IIIA	0	0	0.50	<0.01	0.50
Southern Mixed Chaparral	IIIA	0.03	0	0.34	0.26	0.63
Non-native Grassland	IIIB	0.43	0	0.86	6.09	7.38 (6.39)*
<i>Sensitive Vegetation (Tier I-III) Subtotal¹</i>		2.53	0	<u>9.069.14</u>	12.80	<u>24.38</u> 24.46 (22.31)
<i>Tier IV – Other Uplands</i>						
Urban/Developed	IV	15.65	0.02	<u>140.54</u> 139.92	<u>62.78</u> 62.96	<u>219.00</u> 218.56
Developed – Concrete Channel ²	IV	0	0	0.03	0	0.03
Non-native Vegetation	IV	0	0	<u>0.960.23</u>	0.57	<u>1.530.80</u>
Non-native Woodland	IV	0	0	0.15	0	0.15
Eucalyptus Woodland	IV	0	0	0.18	0	0.18
Extensive Agriculture – Field/Pasture, Row Crops	IV	0	0	<u>0.330.45</u>	0	<u>0.330.45</u>
Intensive Agriculture – Dairies, Nurseries, Chicken	IV	0	0	0.05	0	0.05
Disturbed Habitat	IV	0.23	0	<u>8.558.77</u>	1.89	<u>10.6710.90</u>
<i>Other Uplands (Tier IV) Subtotal¹</i>		15.89	0.02	149.78	65.42	231.11
<i>Wetlands</i>						
Non-vegetated Channel or Floodway	Wetland	0.02	0	0.06	<0.01	0.08
Open Water – Freshwater	Wetland	0	0	1.49	0.55	2.04
Southern Arroyo Willow Riparian Forest	Wetland	0	0	0.11	0	0.11
Southern Willow Scrub	Wetland	0.17	0	0.22	<0.01	0.40
Vernal Pool	Wetland	0	0	0	0.38	0.38
<i>Wetland Vegetation Subtotal¹</i>		0.19	0	1.88	0.93	3.00
Total^{1,3,4}		18.60	0.02	<u>161.73</u> 160.81	<u>78.97</u> 79.15	<u>259.32</u> 258.58

Notes:

¹ This land cover is not considered a wetland according to the San Diego Municipal Code, Land Development Code—Biology Guidelines (City of San Diego 2012) due to the lack of wetland vegetation present. However, impacts to this land cover would require agency permits.

- ² Total includes impact acreage from all three San Vicente Pipeline inlet alternatives (0.54 acre from the Tunnel Alternative Terminus; 8.24 acres from the In-Reservoir Alternative Terminus; and 14.14 acres from the Marina Alternative Terminus). The final total will only include acreage from one of these alternatives. It also includes the impacts from air and blow off-valves associated with the San Vicente Pipeline - Repurposed 36-inch Recycled Water Line.
- ³ This total accounts for the acreage previously mitigated at the MBC and/or the NCWRP.

Table 6.4-4 shows the total acreage of impacts for each component of the San Vicente Reservoir Alternative.

Table 6.4-4
Summary of Impacts by Project Component for the
San Vicente Reservoir Alternative (Acres)

Project Component	% Urban/ Developed	Within MHPA (acres)		Outside MHPA (acres)		Total Acreage
		Temp	Perm	Temp	Perm	
Morena Pump Station	100%	0	0	6.22	0.83	7.05
				0.72	1.04	1.73
Morena Pipelines	96.5%	0.01	0	44.04	0	44.05
				48.35		48.36
NCWRP Expansion ¹	92.8%	0	0	0	35.08	35.08
NCPWF ²	4.7%	0	0	0.59	10.41	10.99
San Vicente Pipeline (includes the San Vicente Pipeline – Repurposed 36-inch Recycled Water Line) ³	94.9%	12.43	0	89.02	0.06	101.51
San Vicente Pipeline – TAT	13%	0	0.02	0	0.51	0.54
San Vicente Pipeline – IRAT	72.7%	5.08	0	2.79	0.38	8.24
San Vicente Pipeline – MAT	55.8%	6.16	0	7.83	0.15	14.14
LFG Pipeline	22.4%	0	0	14.04	0.12	14.15
				14.30		14.42
MBC	96.7%	0	0	0	30.22	30.22
MTBS	0.1%	0	0	0	1.22	1.22
San Vicente Pipeline – Repurposed 36-inch Recycled Water Line ³	33.3%	0	0	0	0.06	0.06
Total		18.60	0.02	161.73	78.97	258.58
				160.81	79.15	259.32

Notes:

- ¹ The NCWRP Expansion includes impacts related to the NCPWF Influent Pump Station and North City Renewable Energy Facility.
- ² The NCPWF includes impacts related to the North City Pump Station.

³ The Repurposed 36-inch Recycled Water Line is an existing pipeline is a segment of the San Vicente Pipeline and is only included in the San Vicente Reservoir Alternative.

Indirect Impacts

Short-term indirect impacts to sensitive vegetation communities and jurisdictional areas include dust, construction-related soil erosion and runoff, invasive plant species, and increased human presence. The velocity of runoff may also change during construction and could potentially affect off-site sensitive vegetation communities associated with the San Diego River, Tecolote Creek, San Clemente Creek, San Vicente Creek, and San Vicente Reservoir, including erosion and sedimentation.

Long-term, indirect impacts to sensitive vegetation communities could also occur as a result of increased runoff from additional impervious surfaces and increased human presence at facilities during operation.

6.4.3.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

No impacts would occur as a result of No Project/No Action Alternative.

Miramar Reservoir Alternative

Urban/developed lands, non-native vegetation, and disturbed habitat provide little native habitat value and foraging opportunities for wildlife, particularly when they occur in densely urban environments such as the Project area; therefore, impacts to these land covers would be considered **less than significant** under CEQA. The construction of the Miramar Reservoir Alternative would result in ~~18.30~~ 18.25 acres of impacts to sensitive upland vegetation, 12.54 acres of which are permanent impacts while the remaining are temporary. Additionally, the construction of the Miramar Reservoir Alternative would result in 0.38 acre of permanent impacts to vernal pools, which are considered City wetlands. Impacts to sensitive vegetation (including City wetlands) would be **potentially significant** under CEQA.

Indirect impacts to sensitive vegetation would be **potentially significant** under CEQA.

San Vicente Reservoir Alternative

Urban/developed lands, non-native vegetation, and disturbed habitat provide little native habitat value and foraging opportunities for wildlife, particularly when they occur in densely urban environments such as the Project area; therefore, impacts to these land covers would be considered **less than significant** under CEQA. The construction of the San Vicente Reservoir Alternative would result in ~~24.46~~ 24.38 acres of impacts to sensitive upland vegetation, 12.80 acres of which are permanent impacts while the remaining are temporary. Additionally, construction of the San Vicente Reservoir Alternative would result in impacts to 3.00 acres of wetland vegetation. Impacts to sensitive vegetation (including wetlands) would be **potentially significant** under CEQA.

Indirect impacts to sensitive vegetation would be **potentially significant** under CEQA.

6.4.3.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No impacts to sensitive vegetation would occur under the No Project/No Action Alternative; therefore, no mitigation is required.

Miramar Reservoir Alternative

Previously Mitigated Impacts

Impacts to sensitive vegetation within the footprints of the NCWRP, MBC, and Miramar WTP have been previously mitigated. All previous mitigation occurred within the MHPA and is consistent with MSCP, which identifies monitoring and management activities. Management activities include signage, fencing, trash removal, and habitat restoration. Direct impacts to sensitive upland vegetation communities (Diegan coastal sage scrub (including disturbed) and non-native grassland) at the NCWRP have been adequately addressed and mitigated for during the North City Water Reclamation Project for the Clean Water Program (City of San Diego 1991). The 30-acre Del Mar Mesa property was purchased to offset impacts to uplands and additional acreage was applied at Marron Valley Cornerstone Lands (City of San Diego 1993). The Del Mar Mesa property, which is within the MHPA, is managed in accordance with the City's MSCP Subarea Plan directives (City of San Diego 1997). The purchase of credits at the Marron Valley Cornerstone Lands Bank are placed in a special account used to fund maintenance and restoration activities.

Direct impacts to sensitive upland vegetation communities (including Diegan coastal sage scrub and chaparral) at the MBC have been adequately addressed and mitigated for in the MBC PEIR (City of San Diego 1994). The purchase of the Goat Mesa parcel for uplands mitigates impacts to Diegan coastal sage scrub and coastal sage-chaparral transition at the MBC (City of San Diego 1996). The Goat Mesa property, which is within the MHPA, is managed in accordance with the City's MSCP Subarea Plan directives (City of San Diego 1997).

Direct impacts to sensitive vegetation communities (disturbed Diegan coastal sage scrub) at the Miramar WTP have been adequately addressed and mitigated for during the Miramar WTP Upgrade/Expansion Project FEIR (City of San Diego 2001). The previous mitigation included the allocation of credits at Marron Valley Cornerstone Lands for uplands (including Diegan coastal sage scrub) to offset impacts at the Miramar WTP (City of San Diego 2002). The purchase of credits at the Marron Valley Cornerstone Lands Bank are placed in a special account used to fund maintenance and restoration activities.

Mitigation Measures

The North City Project would include mitigation that is consistent with the MSCP and the INRMP, and would therefore, require mitigation for impacts to sensitive vegetation communities (i.e., Tier I–III and wetlands). Mitigation ratios for permanent impacts to sensitive vegetation communities is determined by their location within or outside of the MHPA and if mitigation would occur within or outside of the MHPA. No sensitive vegetation communities within MHPA would be impacted by the Miramar Reservoir Alternative and all mitigation would occur within the MHPA¹. As such, Table 6.4-5 outlines the mitigation requirements for those impacts outside of the MHPA for the Miramar Reservoir Alternative.

¹ Impacts to 0.04 acre of Diegan Coastal Sage Scrub (disturbed) within MHPA would occur in association with the Miramar WTP Improvements; however, impacts to this resource have been previously mitigated through the allocation of credits at Marron Valley Cornerstone Lands (City of San Diego 2002). Therefore, no additional mitigation is required.

**Table 6.4-5
Permanent Impacts to Vegetation Communities and Land Cover Types
Outside of the MHPA – Miramar Reservoir Alternative (Acres)**

Vegetation Community/ Land Cover Type	Subarea Plan Designation	Impact Acreage Outside the MHPA	Mitigation			
			Outside MCAS Miramar		Within MCAS Miramar [^]	
			Mitigation Ratio	Mitigation Acres	Mitigation Ratio	Mitigation Acres
<i>Tier I – Rare Uplands</i>						
Native Grassland ^{^^}	I	1.30	1:1	1.30	—	—
<i>Tier II – Uncommon Uplands</i>						
Coastal Sage-Chaparral Transition (Level IV, V MA)	II	0.30 (0.00)*	1:1	—	2:1	0 [^]
Diegan Coastal Sage Scrub (II, V MA)	II	3.49 (2.72)*	1:1	2.72	2:1	0 [^]
Diegan Coastal Sage Scrub (disturbed)	II	1.31 (0.03)*	1:1	0.03	—	—
<i>Tier III – Common Uplands</i>						
Non-native Grassland	IIIB	6.09 (5.10)*	0.5:1	2.55	—	—
<i>Subtotal for Sensitive Uplands Tier I-III (MM-BIO-1a)</i>				6.61		
<i>Tier IV – Other Uplands</i>						
Urban/Developed (Level IV, V MA)	IV	90.07 89.89	No mitigation required.			
Non-native Vegetation (Level V MA)	IV	0.56				
Eucalyptus Woodland	IV	0.38				
Disturbed Habitat (Level I-V MA)	IV	2.16				
<i>Wetlands</i>						
Vernal Pool ¹	Wetland	0.38	2:1**	0.75	—	—
<i>Subtotal for Vernal Pools (MM-BIO-1b)</i>				0.75		
Total		106.06 105.88	—	7.36	—	0

Notes:

- [^] The only permanent impacts under the Miramar Reservoir Alternative within MCAS Miramar would occur at the MBC to 0.91 acre; however, these impacts have been previously mitigated.
- ^{^^} It should be noted that permanent impacts to native grassland would be mitigated at a 1:1 ratio and created at a 1:1 for an overall ratio of 2:1. Mitigation (in Tier) will occur at the SANDER site and creation (in kind) will occur at the Pueblo South site.

- * The acreage in parenthesis is the corrected total after the previously mitigated acreage totaling 3.38 acres from the MBC (0.91 acre), Miramar WTP (1.32 acres), and/or the NCWRP (1.16 acres) has been removed and should be used as the corrected total to be mitigated.
- ** Mitigation for vernal pools can range from 2:1 when no listed species are present, up to 4:1 when listed species with very limited distributions.
- ¹ Protocol-level surveys were conducted for pools and the results were negative for listed species. Since there are no listed species present, the pools would be mitigated at a 2:1 ratio.

In order to offset permanent impacts to 12.54 acres (9.16 acres after the previous mitigation is subtracted) of sensitive vegetation communities from the Miramar Reservoir Alternative, mitigation measure MM-BIO-1a is required.

MM-BIO-1a Mitigation for Upland Impacts. In order to offset the permanent impacts to sensitive upland vegetation communities, 6.61 acres of mitigation would be required for the Miramar Reservoir Alternative and 8.14 acres of mitigation would be required for the San Vicente Reservoir Alternative. Mitigation would be provided through restoration and preservation of uplands at the SANDER Vernal Pool and Upland Mitigation Site. All mitigation would occur within the Multiple Species Conservation Program's (MSCP's) Multi-Habitat Planning Area (MHPA). Additionally, in order to satisfy the cumulative impacts requirement, a Native Grassland Creation Mitigation Plan – Pueblo South (Appendix S, of Appendix C) would be implemented for mitigation of impacts to 1.30 acres of native grassland. Native grassland creation would be conducted at Pueblo South, which is outside the MHPA and would be required for either Project Alternative.

In order to offset permanent impacts to 0.38 acre of vernal pool impacts related to the construction of the NCPWF from the Miramar Reservoir Alternative, mitigation measure MM-BIO-1b is required.

MM-BIO-1b Mitigation for Vernal Pool Impacts. In order to offset permanent impacts to vernal pools, 0.75 acre of mitigation would be required for both Project Alternatives. Mitigation would be provided through restoration of vernal pools and adjacent uplands at the SANDER Vernal Pool and Upland Mitigation site, which is within the Vernal Pool Habitat Conservation Plan (VPHCP) hard line preserve. The SANDER Vernal Pool and Upland Mitigation site is within MHPA lands; therefore all mitigation would occur within the MSCP's MHPA and would be implemented in accordance with City/U.S. Army Corps of Engineers

(ACOE)/California Department of Fish and Wildlife (CDFW)/Regional Water Quality Control Board (RWQCB) guidelines. The SANDER Vernal Pool and Upland Mitigation Plan (Appendix R, of Appendix C) would be developed and implemented at the SANDER Vernal Pool and Upland Mitigation Site. Both upland vegetation, including in Tier mitigation, and vernal pool impacts would be mitigated at the SANDER site.

All temporary construction areas in sensitive habitat communities would require revegetation following the completion of construction. Post construction erosion control would occur in temporary impact areas that don't impact sensitive habitat (i.e., dirt roads and/or areas of non-native vegetation).

As required under the INRMP Table 6.2.2.2a, mitigation for temporary direct impacts to sensitive habitat communities would include: implementing temporary disturbance requirements (outlined under mitigation measure MM-BIO-910(j)); restoration at a 1:1 ratio with additional habitat enhancement (Table 6.4-6); and minimizing habitat-disturbing activities between February 15 and August 31 by conducting preconstruction surveys for coastal California gnatcatcher (MM-BIO-4b). Implementation of these measures would satisfy the INRMP requirements.

All temporary impacts under the Miramar Reservoir Alternative are outside the MHPA except for impacts to 0.01 acre of urban/developed lands along Genesee Avenue from the Morena Pipelines. Table 6.4-6 outlines the restoration requirements for temporary impacts either within or outside of the MHPA and MCAS Miramar for the Miramar Reservoir Alternative. A total of ~~0.42~~0.45 acre of restoration would occur outside MCAS Miramar and the MHPA, and ~~5.34~~5.25 acres or restoration would occur within MCAS Miramar (outside of the MHPA) under the Miramar Reservoir Alternative. All restoration would be implemented in accordance with City/ACOE/CDFW/RWQCB guidelines summarized in MM-BIO-2. Additionally, to satisfy the INRMP habitat enhancement requirement for temporary impacts to sensitive communities within MCAS Miramar, the City would conduct a total of ~~6.27~~6.14 acres of habitat enhancement within MCAS Miramar ~~adjacent to habitat revegetation activities along the LFG Pipeline, to the greatest extent feasible.~~ The ~~6.27~~6.14 acres of enhancement would occur within disturbed habitat types and would include invasive plant control, trash removal, erosion control, and seeding and/or supplemental planting as necessary in accordance with the Conceptual Revegetation Plan. All restoration for both alternatives would be implemented in accordance with City/ACOE/CDFW/RWQCB guidelines summarized in MM-BIO-2.

**Table 6.4-6
Temporary Impacts to Vegetation Communities and
Land Cover Types – Miramar Reservoir Alternative (Acres)**

Vegetation Community/ Land Cover Type	Subarea Plan Designation	Impact Acreage	Outside MCAS Miramar Restoration Acres	Within MCAS Miramar Restoration Acres	Enhancement Occurring within MCAS Miramar ¹	
					Ratio ²	Enhancement Acreage
<i>Tier II – Uncommon Uplands</i>						
Coastal Sage-Chaparral Transition (Level II MA)	II	0.14	—	0.14	2:1	0.27
Diegan Coastal Sage Scrub (Level I-V MA)	II	4.15 <u>4.06</u>	0.19	3.96 <u>3.88</u>	2:1 (Level I, II MA)	1.51 <u>1.43</u>
					1:1 (Level III-V MA)	3.21 <u>3.16</u>
Diegan Coastal Sage Scrub (disturbed) (Level IV-V MA)	II	0.80 <u>0.81</u>	0.12 <u>0.13</u>	0.68	1:1	0.68
Diegan Coastal Sage Scrub: Baccharis-Dominated (Level I MA)	II	0.03	—	0.03	2:1	0.05
Flat-Topped Buckwheat (Level I MA)	II	<0.01	—	<0.01	2:1	<0.01
Flat-Topped Buckwheat (disturbed) (Level I MA)	II	0.01	—	0.01	2:1	0.02
<i>Tier III – Common Uplands</i>						
Chamise Chaparral (Level IV, V MA)	IIIA	0.50	—	0.50	1:1	0.50

**Table 6.4-6
Temporary Impacts to Vegetation Communities and
Land Cover Types – Miramar Reservoir Alternative (Acres)**

Vegetation Community/ Land Cover Type	Subarea Plan Designation	Impact Acreage	Outside MCAS Miramar Restoration Acres	Within MCAS Miramar Restoration Acres	Enhancement Occurring within MCAS Miramar ¹	
					Ratio ²	Enhancement Acreage
Southern Mixed Chaparral (Level III MA)	IIIA	<0.01	—	<0.01	1:1	<0.01
Non-native Grassland (Level V MA)	IIIB	0.13 0.16	0.10 0.13	0.03	1:1	0.03
<i>Tier IV – Other Uplands</i>						
Urban/Developed	IV	85.39 ³ 85.86 ³	No habitat restoration required; however, these land covers would be included in the Landscape Plan <u>as appropriate</u> . Temporary disturbance requirements would be implemented in areas within MCAS Miramar (MM-BIO-910(j)). <u>Roadways, parking areas, and other active use areas will not be included in the Conceptual Revegetation Plan (Appendix P, of Appendix C).</u>			
Developed – Concrete Channel ⁴	IV	0.03 ⁴				
Non-native Vegetation	IV	0.23 0.96				
Eucalyptus Woodland	IV	1.98				
Extensive Agriculture – Field/Pasture, Row Crops	IV	0.45 0.33				
Disturbed Habitat	IV	7.85 7.63				
Total		102.16 102.04	0.41 0.45	5.34 5.25	—	6.27 6.14

Notes:

¹ To satisfy the INRMP requirements, the City will be conducting ~~6.27–6.14~~ acres of habitat enhancement within MCAS Miramar, in addition to the restoration of ~~5.34–5.25~~ acres of temporary impact areas within MCAS Miramar.

² Enhancement ratios for temporary impacts within MCAS Miramar are based on Table 6.2.2.2a in the INRMP and consideration is given to the Management Area where the vegetation community occurs.

- ³ This total includes the 0.01 acre of impact within the MHPA from the Morena Pipelines along Genesee Avenue.
- ⁴ Although no wetland vegetation would be removed, agency permits would still be required.

In order to offset temporary impacts to 5.755.70 acres of sensitive vegetation communities under the Miramar Reservoir Alternative, mitigation measure MM-BIO-2 is required.

MM-BIO-2 Habitat Revegetation. Habitat revegetation and erosion control treatments will be installed within temporary disturbance areas in native habitat, in accordance with the San Diego Municipal Code, Land Development Code—Biology Guidelines (City of San Diego 2012) and the San Diego Municipal Code, Land Development Code—Landscape Standards (City of San Diego 2016c~~d~~). The Conceptual Revegetation Plan (Appendix P, of Appendix C) was prepared by a Restoration Specialist. Habitat revegetation will feature native species that are typical of the area, and erosion control features will include silt fence and straw fiber rolls, where appropriate. The revegetation areas will be monitored and maintained for 25 months to ensure adequate establishment and sustainability of the plantings/seedings.

Revegetation Plan(s) and Specifications:

1. Landscape Construction Documents (LCD) shall be prepared on D-sheets and submitted to the City of San Diego Development Services Department, Landscape Architecture Section (LAS) for review and approval. LAS shall consult with Mitigation Monitoring Coordination (MMC) and obtain concurrence prior to approval of LCD. The LCD shall consist of revegetation, planting, irrigation and erosion control plans; including all required graphics, notes, details, specifications, letters, and reports as outlined below.
2. Landscape Revegetation Planting and Irrigation Plans shall be prepared in accordance with the San Diego Land Development Code (LDC) Chapter 14, Article 2, Division 4, the LDC Landscape Standards submittal requirements, and Attachment “B” (General Outline for Revegetation/ Restoration Plans) of the City of San Diego’s LDC Biology Guidelines (April 2012). The Principal Qualified Biologist (PQB) shall identify and adequately document all pertinent information

concerning the revegetation goals and requirements, such as but not limited to, plant/seed palettes, timing of installation, plant installation specifications, method of watering, protection of adjacent habitat, erosion and sediment control, performance/ success criteria, inspection schedule by City staff, document submittals, reporting schedule, etc. The LCD shall also include comprehensive graphics and notes addressing the ongoing maintenance requirements (after final acceptance by the City). For areas where a water source is not available irrigation can be completed by a water truck. Additionally, it is recommended that planting/seeding occur in the fall or early winter, to the maximum extent practical, in order to minimize the amount of water truck visits needed.

3. The Revegetation Installation Contractor (RIC), Revegetation Maintenance Contractor (RMC), Construction Manager (CM) and Grading Contractor (GC), where applicable shall be responsible to insure that for all grading and contouring, clearing and grubbing, installation of plant materials, and any necessary maintenance activities or remedial actions required during installation and the 120-day plant establishment period are done per approved LCD. The following procedures at a minimum, but not limited to, shall be performed:
 - a. The RMC shall be responsible for the maintenance of the upland mitigation area for a minimum period of 120 days.
 - b. At the end of the 120-day period the PQB shall review the revegetation area to assess the completion of the short-term plant establishment period and submit a report for approval by MMC. If the 120-day plant establishment period success criteria has not been met, an extension may be warranted at the discretion of the PQB.
 - c. MMC would provide approval in writing to begin the 25-month maintenance and monitoring program.
 - d. Existing indigenous/native species shall not be pruned, thinned, or cleared in the revegetation/mitigation area.
 - e. The revegetation site shall not be fertilized.
 - f. The RIC is responsible for reseeding (if applicable) if weeds are not removed, within one week of written recommendation by the PQB.

- g. Weed control measures shall include the following: (1) hand removal, (2) cutting, with power equipment, and (3) chemical control. Hand removal of weeds is the most desirable method of control and would be used wherever possible.
- h. Damaged areas shall be repaired immediately by the RIC/RMC. Insect infestations, plant diseases, herbivory, and other pest problems would be closely monitored throughout the 25-month maintenance period. Protective mechanisms such as metal wire netting shall be used as necessary. Diseased and infected plants shall be immediately disposed of off site in a legally acceptable manner at the discretion of the PQB or Qualified Biological Monitor (City approved). Where possible, biological controls would be used instead of pesticides and herbicides.

Mitigation measure MM-BIO-~~910~~ will be included in the design and construction documents for each Project component and will reduce the potential for short-term and long-term indirect impacts to sensitive vegetation communities. A biological monitor will be present during construction within or adjacent to sensitive resources and would ensure that the Project adheres to and implements the appropriate measures to protect sensitive resources.

MM-BIO-~~910~~ The following measures will be included in the design and construction documents for each Project component to reduce potential impacts to sensitive resources:

- a. **Qualified Biologist.** The owner/permittee shall provide a letter to the City's Mitigation Monitoring Coordination (MMC) section stating that a Project Biologist (Qualified Biologist) as defined in the City of San Diego Municipal Code, Land Development Code—Biology Guidelines (City of San Diego 2012), has been retained to implement the project's biological monitoring program. The letter shall include the names and contact information of all persons involved in the biological monitoring of the project.
- b. **Preconstruction Meeting.** The Qualified Biologist shall attend the preconstruction meeting, discuss the Project's biological monitoring program, and arrange to perform any follow up mitigation measures and reporting including site-specific monitoring, restoration or revegetation, and additional fauna/flora surveys/salvage.

- c. **Documentation.** The Qualified Biologist shall submit all required documentation to MMC verifying that any special mitigation reports including but not limited to, maps, plans, surveys, survey timelines, or buffers are completed or scheduled per City Biology Guidelines, Multiple Species Conservation Program (MSCP), Environmentally Sensitive Lands Ordinance, project permit conditions; California Environmental Quality Act (CEQA); National Environmental Policy Act (NEPA); endangered species acts (federal Endangered Species Act and California Endangered Species Act); and/or other local, state or federal requirements.
- d. **Biological Construction Mitigation/Monitoring Exhibit.** The Qualified Biologist shall present a Biological Construction Mitigation/Monitoring Exhibit (BCME), which includes the biological documents above. In addition, the BCME would include restoration/revegetation plans, plant salvage/relocation requirements (e.g., burrowing owl exclusions, etc.), avian or other wildlife surveys/survey schedules (including general avian nesting and U.S. Fish and Wildlife (USFWS) protocol), timing of surveys, wetland buffers, avian construction avoidance areas/noise buffers/barriers, other impact avoidance areas, and any subsequent requirements determined by the Qualified Biologist and the City Assistant Deputy Director (ADD)/MMC. The BCME shall include a site plan, written and graphic depiction of the Project's biological mitigation/monitoring program, and a schedule. The BCME shall be approved by MMC and referenced in the construction documents.
- e. **Construction Fencing.** Prior to construction activities, the Qualified Biologist shall supervise the placement of orange construction fencing or equivalent along the limits of disturbance adjacent to sensitive biological habitats and verify compliance with any other project conditions as shown on the BCME. This phase shall include flagging plant specimens and delineating buffers to protect sensitive biological resources (e.g., habitats/flora & fauna species, including nesting birds) during construction. Appropriate steps/care should be taken to minimize attraction of nest predators to the site.

- f. **On-site Education.** Prior to commencement of construction activities, the Qualified Biologist shall meet with the owner/permittee or designee and the construction crew and conduct an on-site educational session regarding the need to avoid impacts outside of the approved construction area and to protect sensitive flora and fauna (e.g., explain the avian and wetland buffers, flag system for removal of invasive species or retention of sensitive plants, and clarify acceptable access routes/methods and staging areas).
- g. **Biological Monitoring.** During construction, a Qualified Biologist would be present to assist in the avoidance of impacts to native vegetation, jurisdictional aquatic resources, sensitive plants and wildlife, and nesting birds. Specific biological monitoring and or mitigation measures for sensitive wildlife, sensitive vegetation communities, and jurisdictional aquatic resources are described further in the mitigation measures.
- h. **Cover Trenches.** General biological monitoring shall include verifying that the contractor has covered all steep-walled trenches or excavations over night or after shift. If trenches or excavations cannot be covered, the monitor would verify that the contractor has installed exclusionary fencing (e.g., silt fence) around the trenches or excavation areas or installed ramps to prevent entrapment of wildlife (e.g., reptiles and mammals). If animals are encountered within any trenches or excavated areas, they would be removed by the biological monitor, if possible, or provided with a means of escape (e.g., a ramp or sloped surface) and allowed to disperse. In addition, the biological monitor would provide training to construction personnel to increase awareness of the possible presence of wildlife beneath vehicles and equipment and to use best judgment to avoid killing or injuring wildlife. The biological monitor would be available to assist with moving wildlife, if necessary.
- i. **Nighttime Construction.** To reduce impacts to nocturnal species in those areas where they have a potential to occur, nighttime construction activity within undeveloped areas containing sensitive biological resources would be minimized whenever feasible and shielded lights would be utilized when

necessary. Construction nighttime lighting would be subject to City Outdoor Lighting Regulations per San Diego Land Development Code (LDC) Section 142.0740.

- j. **Best Management Practices/Erosion/Runoff.** The City will incorporate methods to control runoff, including a Stormwater Pollution Prevention Plan (SWPPP) to meet National Pollutant Discharge Elimination System (NPDES) regulations or batch discharge permit from the City. Implementation of stormwater regulations are expected to substantially control adverse edge effects (e.g., erosion, sedimentation, habitat conversion) during and following construction both adjacent and downstream from the study area. Typical construction Best Management Practices (BMPs) specifically related to reducing impacts from dust, erosion, and runoff generated by construction activities would be implemented. During construction, material stockpiles shall be placed such that they cause minimal interference with on-site drainage patterns. This will protect sensitive vegetation from being inundated with sediment-laden runoff. Dewatering shall be conducted in accordance with standard regulations of the Regional Water Quality Control Board (RWQCB). An NPDES permit, issued by RWQCB to discharge water from dewatering activities, shall be required prior to start of dewatering. This will minimize erosion, siltation, and pollution within sensitive communities. Design of drainage facilities shall incorporate long-term control of pollutants and stormwater flow to minimize pollution and hydrologic changes.
- k. **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 impactful 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. Where applicable, this requirement shall be incorporated into leases on publicly owned property when applications for renewal occur. Provide a note in/on the CDs 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.”

The following avoidance and minimization measures were taken directly from the Final VPHCP and apply to all components (North City Pipeline, MBC, LFG Pipeline, and the San Vicente Pipeline - Repurposed 36-inch Recycled Water Line) adjacent to vernal pools:

- l. **Silt Fencing.** Covered projects shall require temporary fencing (with silt barriers) of the limits of Project impacts (including construction staging areas and access routes) to prevent additional vernal pool impacts and prevent the spread of silt from the construction zone into adjacent vernal pools. Fencing shall be installed in a manner that does not impact habitats to be avoided. Final construction plans shall include photographs that show the fenced limits of impact and all areas of vernal pools to be impacted or avoided. If work inadvertently occurs beyond the fenced or demarcated limits of impact, all work shall cease until the problem has been remedied to the satisfaction of the City. Temporary construction fencing shall be removed upon project completion.
- m. **Dust.** Impacts from fugitive dust that may occur during construction grading shall be avoided and minimized through watering and other appropriate measures.
- n. **Vernal Pool Biologist.** A qualified monitoring biologist that has been approved by the City shall be on site during Project construction activities to ensure compliance with all mitigation measures identified in the CEQA environmental document. The biologist shall be knowledgeable of vernal pool species biology and ecology. The biologist shall perform the following duties:
 - a. Oversee installation of and inspect the fencing and erosion control measures within or upslope of vernal pool restoration and/or preservation areas a minimum of once per week and daily during all rain events to ensure that any breaks in the fence or erosion control measures are repaired immediately.

- b. Periodically monitor the work area to ensure that work activities do not generate excessive amounts of dust.
- c. Train all contractors and construction personnel on the biological resources associated with this project and ensure that training is implemented by construction personnel. At a minimum, training shall include (1) the purpose for resource protection; (2) a description of the vernal pool species and their habitat(s); (3) the conservation measures that must be implemented during Project construction to conserve the vernal pool species, including strictly limiting activities, and vehicles, equipment, and construction materials to the fenced Project footprint to avoid sensitive resource areas in the field (i.e., avoided areas delineated on maps or on the Project site by fencing); (4) environmentally responsible construction practices as outlined in measures 5, 6, and 7; (5) the protocol to resolve conflicts that may arise at any time during the construction process; and (6) the general provisions of the project's mitigation monitoring and reporting program (MMRP), the need to adhere to the provisions of FESA, and the penalties associated with violating FESA.
- d. Halt work, if necessary, and confer with the City to ensure the proper implementation of species and habitat protection measures. The biologist shall report any violation to the City within 24 hours of its occurrence.
- e. Submit regular (e.g., weekly) letter reports to the City during Project construction and a final report following completion of construction. The final report shall include as-built construction drawings with an overlay of habitat that was impacted and avoided, photographs of habitat areas that were avoided, and other relevant summary information documenting that authorized impacts were not exceeded and that general compliance with all conservation measures was achieved.
- o. **Limits of Work.** The following conditions shall be implemented during Project construction:

 - a. Employees shall strictly limit their activities, vehicles, equipment, and construction materials to the fenced Project footprint.

- b. The Project site shall be kept as clean of debris as possible. All food-related trash items shall be enclosed in sealed containers and regularly removed from the site.
- c. Disposal or temporary placement of excess fill, brush, or other debris shall be limited to areas within the fenced Project footprint.
- p. **Equipment Staging.** All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities shall occur in designated areas within the fenced Project impact limits. These designated areas shall be located in previously compacted and disturbed areas to the maximum extent practicable in such a manner as to prevent any runoff from entering the vernal pools or their watersheds, and shall be shown on the construction plans. Fueling of equipment shall take place within existing paved areas greater than 100 feet from the vernal pools or their watersheds. Contractor equipment shall be checked for leaks prior to operation and repaired as necessary. A spill kit for each piece of construction equipment shall be on site and must be used in the event of a spill. "No-fueling zones" shall be designated on construction plans.
- q. **Grading Activities.** Grading activities immediately adjacent to vernal pools shall be timed to avoid wet weather to minimize potential impacts (e.g., siltation) to the vernal pools unless the area to be graded is at an elevation below the pools. To achieve this goal, grading adjacent to avoided pools shall comply with the following:
 - a. Grading shall occur only when the soil is dry to the touch both at the surface and 1 inch below. A visual check for color differences (i.e., darker soil indicating moisture) in the soil between the surface and 1 inch below indicates whether the soil is dry.
 - b. After a rain of greater than 0.2 inch, grading shall occur only after the soil surface has dried sufficiently as described above, and no sooner than 2 days (48 hours) after the rain event ends.
 - c. To prevent erosion and siltation from stormwater runoff due to unexpected rains, best management practices (i.e., silt fences) shall be implemented as needed during grading.
 - d. If rain occurs during grading, work shall stop and resume only after soils are dry, as described above.

- e. Grading shall be done in a manner to prevent runoff from entering preserved vernal pools.
- f. If necessary, water spraying shall be conducted at a level sufficient to control fugitive dust but not to cause runoff into vernal pools.
- g. If mechanized grading is necessary, grading shall be performed in a manner to minimize soil compaction (i.e., use the smallest type of equipment needed to feasibly accomplish the work).

San Vicente Reservoir Alternative

Table 6.4-7 outlines the mitigation requirements for those impacts outside of the MHPA for the San Vicente Reservoir Alternative². No sensitive vegetation communities within the MHPA would be permanently impacted by the San Vicente Reservoir Alternative, and all mitigation would occur within the MHPA.

**Table 6.4-7
Permanent Impacts to Vegetation Communities and Land Cover Types
Outside of the MHPA – San Vicente Reservoir Alternative (Acres)**

Vegetation Community/ Land Cover Type	Subarea Plan Designation	Impact Acreage Outside of the MHPA	Mitigation			
			Outside MCAS Miramar		Within MCAS Miramar	
			Mitigation Ratio	Mitigation Acres	Mitigation Ratio [^]	Mitigation Acres
<i>Tier I – Rare Uplands</i>						
Coast Live Oak Woodland	I	0.07	2:1	0.14	—	—
Native Grassland ^{^^}	I	1.30	1:1	1.30	—	—
<i>Tier II – Uncommon Uplands</i>						
Coastal Sage-Chaparral Transition (Level V MA)	II	0.31 (<0.01)*	—	—	2:1	<0.01
Diegan Coastal Sage Scrub (Level I-V MA)	II	3.50 3.51 (2.73 2.74)*	1:1	2.72	2:1	0.03
Diegan Coastal Sage Scrub (disturbed)	II	1.25	1:1	1.25	—	—

² Impacts to 0.02 acre of urban/developed lands would occur within the MHPA in association with the San Vicente Pipeline – TAT; however, impacts to this resource occurs to developed lands. Therefore, no additional mitigation is required.

**Table 6.4-7
Permanent Impacts to Vegetation Communities and Land Cover Types
Outside of the MHPA – San Vicente Reservoir Alternative (Acres)**

Vegetation Community/ Land Cover Type	Subarea Plan Designation	Impact Acreage Outside of the MHPA	Mitigation			
			Outside MCAS Miramar		Within MCAS Miramar	
			Mitigation Ratio	Mitigation Acres	Mitigation Ratio [^]	Mitigation Acres
Diegan Coastal Sage Scrub: Baccharis-Dominated (Level I MA)	II	<0.01	—	—	2:1	<0.01
<i>Tier III – Common Uplands</i>						
Chamise Chaparral (Level V MA)	IIIA	<0.01	—	—	1:1	<0.01
Southern Mixed Chaparral	IIIA	0.26	0.5:1	0.13	—	—
Non-native Grassland (Level V)	IIIB	6.09 (5.10)*	0.5:1	2.55	1:1	<0.01
<i>Subtotal for Sensitive Uplands Tier I-III (MM-BIO-1a)</i>				8.14		
<i>Tier IV – Other Uplands</i>						
Urban/Developed (Level IV, V MA)	IV	62.96 62.81	No mitigation required			
Non-native Vegetation (Level V MA)	IV	0.57				
Disturbed Habitat (Level I-V MA)	IV	1.89				
<i>Wetlands</i>						
Non-vegetated Channel or Floodway	Wetland	<0.01	2:1	0.01	—	—
Open Water	Wetland	0.55	2:1	1.10	—	—
Southern Willow Scrub (Level II MA, CDFW-only jurisdiction; Level IV MA, ACOE-, RWQCB-, and CDFW-jurisdiction)	Wetland	<0.01	—	—	2:1**	0.01
<i>Subtotal for Wetlands (MM-BIO-1c)</i>				1.12		
Vernal Pool ²	Wetland	0.38	2:1* [^]	0.75	—	—
<i>Subtotal for Vernal Pools (MM-BIO-1b)</i>				0.75		
Total¹		79.1578.99	—	9.96	—	0.05

Notes:

[^] Mitigation ratios for permanent impacts within MCAS Miramar are based on Table 6.2.2.2b in the INRMP and consideration is given to the Management Area where the vegetation community occurs.

- ^^ It should be noted that in order to satisfy the cumulative impact requirement permanent impacts to native grassland would be mitigated at a 1:1 ratio and created at a 1:1 ratio for an overall ration of 2:1. Mitigation (in Tier) will occur at the SANDER site and creation (in kind) will occur at the Pueblo South site.
- * The acreage in parenthesis is the corrected total after the previously mitigated acreage totaling 2.07 acres from the MBC (0.91 acre), and/or the NCWRP (1.16 acres) has been removed and should be used as the corrected total to be mitigated.
- ** The INRMP calls for a 1:1 ratio but the City typically uses a 2:1 ratio for wetlands, therefore the more conservative ratio would be used.
- *^ Mitigation for vernal pools can range from 2:1 when no listed species are present, up to 4:1 when listed species with very limited distributions.
- ¹ Totals may not sum due to rounding.
- ² Protocol-level surveys were conducted for pools and the results were negative for listed species. Since there are no listed species were present in the pools, mitigation would occur at a 2:1 ratio.

In order to offset permanent impacts to 12.80 acres of sensitive vegetation communities from the San Vicente Reservoir Alternative, mitigation measure MM-BIO-1a is required. In order to offset permanent impacts to 0.38 acre of vernal pools related to the construction of the NCPWF from the San Vicente Reservoir Alternative, mitigation measure MM-BIO-1b is required.

In order to offset permanent impacts to 0.56 acre (excluding vernal pools) of City, state, or federally regulated wetlands incurred under the San Vicente Reservoir Alternative, mitigation measure MM-BIO-1c is required.

MM-BIO-1c Mitigation for Impacts to Jurisdictional Aquatic Resources. In order to offset permanent impacts to jurisdictional resources (excluding vernal pools), 1.12 acres of mitigation would be required for the San Vicente Reservoir Alternative. Mitigation would be provided at the SANDER Mitigation site (subject to the satisfaction of ACOE and RWQCB) or through allocation of credit at the San Diego River Mitigation Site subject to ACOE and RWQCB approval. All mitigation would occur within the MSCP's MHPA and is in accordance with City/ACOE/CDFW/RWQCB guidelines.

Table 6.4-8 outlines the restoration requirements for those temporary impacts either within or outside the MHPA and MCAS Miramar for the San Vicente Reservoir Alternative. A total of 2.71 acres of restoration within MHPA (outside MCAS Miramar), 5.68 acres of restoration outside the MHPA and MCAS Miramar, and ~~5.34~~ 5.25 acres of restoration within MCAS Miramar (outside the MHPA) would occur under the San Vicente Reservoir Alternative. Additionally, to satisfy the INRMP

habitat enhancement requirement for temporary impacts to sensitive communities within MCAS Miramar, the City would conduct a total of ~~6.27~~6.14 acres of habitat enhancement within MCAS Miramar ~~adjacent to habitat revegetation activities along the LFG Pipeline, to the greatest extent feasible.~~ The ~~6.27~~6.14 acres of enhancement would occur within disturbed habitat types and would include invasive plant control, trash removal, erosion control, and seeding and/or supplemental planting as necessary in accordance with the Conceptual Revegetation Plan (Appendix P of Appendix C).

Table 6.4-8
Temporary Impacts to Vegetation Communities and
Land Cover Types – San Vicente Reservoir Alternative (Acres)

Vegetation Community/ Land Cover Type	Subarea Plan Designation	Impact Acreage	Outside MCAS Miramar Restoration Acres		Within MCAS Miramar Restoration Acres	Enhancement Occurring at SANDER ¹	
			Within MHPA	Outside MHPA		Ratio ²	Enhancement Acreage
<i>Tier I – Rare Uplands</i>							
Coast Live Oak Woodland	I	0.01	—	0.01	—	—	—
<i>Tier II – Uncommon Uplands</i>							
Coastal Sage-Chaparral Transition (Level II MA)	II	0.14	—	—	0.14	2:1	0.27
Diegan Coastal Sage Scrub (Level I-V MA)	II	6.51 <u>6.42</u>	1.99	0.56	3.96 <u>3.88</u>	2:1 (Level I, II MA)	1.51 <u>1.43</u>
						1:1 (Level III-V MA)	3.21 <u>3.16</u>
Diegan Coastal Sage Scrub (disturbed) (Level IV-V MA)	II	2.39	0.01	1.70	0.68	1:1	0.68

**Table 6.4-8
Temporary Impacts to Vegetation Communities and
Land Cover Types – San Vicente Reservoir Alternative (Acres)**

Vegetation Community/ Land Cover Type	Subarea Plan Designation	Impact Acreage	Outside MCAS Miramar Restoration Acres		Within MCAS Miramar Restoration Acres	Enhancement Occurring at SANDER ¹	
			Within MHPA	Outside MHPA		Ratio ²	Enhancement Acreage
Diegan Coastal Sage Scrub: Baccharis-Dominated (Level I MA)	II	0.03	—	—	0.03	2:1	0.05
Diegan Coastal Sage Scrub: Restored	II	0.43	0.07	0.37	—		
Flat-Topped Buckwheat (Level I MA)	II	0.02 <0.01	—	—	0.02 <0.01	2:1	0.05 <0.01
Flat-Topped Buckwheat (disturbed) (Level I MA)	II	<0.01	—	—	<0.01	2:1	<0.01 0.02
<i>Tier III – Common Uplands</i>							
Chamise Chaparral (Level IV-V MA)	IIIA	0.50	—	—	0.50	1:1	0.50
Southern Mixed Chaparral (Level III MA)	IIIA	0.37	0.03	0.34	<0.01	1:1	<0.01
Non-Native Grassland (Level V MA)	IIIB	1.28	0.43	0.83	0.03	1:1	0.03

**Table 6.4-8
Temporary Impacts to Vegetation Communities and
Land Cover Types – San Vicente Reservoir Alternative (Acres)**

Vegetation Community/ Land Cover Type	Subarea Plan Designation	Impact Acreage	Outside MCAS Miramar Restoration Acres		Within MCAS Miramar Restoration Acres	Enhancement Occurring at SANDER ¹	
			Within MHPA	Outside MHPA		Ratio ²	Enhancement Acreage
<i>Wetlands</i>							
Non-vegetated Channel or Floodway	Wetland	0.08	0.02	0.06		—	
Open Water	Wetland	1.49	—	1.49		—	
Southern Arroyo Willow Riparian Forest	Wetland	0.11	—	0.11		—	
Southern Willow Scrub	Wetland	0.39	0.17	0.22		—	
<i>Tier IV – Other Uplands</i>							
Non-native Woodland	IV	0.15	No habitat restoration required, however these land covers would be included in the Landscape Plan as appropriate. Temporary disturbance requirements would be implemented in areas within MCAS Miramar (MM-BIO-910(j)). Roadways, parking areas, and other active use areas will not be included in the Conceptual Revegetation Plan (Appendix P, of Appendix C).				
Non-native Vegetation	IV	0.23 0.96					
Eucalyptus Woodland	IV	0.18					
Extensive Agriculture – Field/Pasture, Row Crops	IV	0.45 0.33					
Intensive Agriculture – Dairies, Nurseries, Ranches	IV	0.05					
Disturbed Habitat	IV	9.01 8.79					
Urban/Developed	IV	155.57 156.19					

**Table 6.4-8
Temporary Impacts to Vegetation Communities and
Land Cover Types – San Vicente Reservoir Alternative (Acres)**

Vegetation Community/ Land Cover Type	Subarea Plan Designation	Impact Acreage	Outside MCAS Miramar Restoration Acres		Within MCAS Miramar Restoration Acres	Enhancement Occurring at SANDER ¹	
			Within MHPA	Outside MHPA		Ratio ²	Enhancement Acreage
Developed – Concrete Channel ³	IV	0.03					
Total		179.40 180.33	2.71	5.68 5.69	5.34 5.25	—	6.27 6.14

Notes:

- ¹ To satisfy the INRMP requirements, the City will be conducting ~~6.27-6.14~~ acres of habitat enhancement at the SANDER Vernal Pool and Upland Mitigation site, which is adjacent to MCAS Miramar, in addition to the restoration of ~~5.34-5.25~~ acres of temporary impact areas within MCAS Miramar.
- ² Enhancement ratios for temporary impacts within MCAS Miramar are based on Table 6.2.2a in the INRMP and consideration is given to the Management Area where the vegetation community occurs.
- ³ Although no wetland vegetation would be removed, agency permits would still be required.

In order to offset temporary impacts to ~~13.74-13.65~~ acres of sensitive vegetation communities under the San Vicente Reservoir Alternative, mitigation measure MM-BIO-2 is required.

Mitigation measure MM-BIO-~~940~~ will be included in the design and construction documents for each Project component and will reduce the potential for short-term and long-term indirect impacts to sensitive vegetation communities.

6.4.3.4 Level of Impact After Mitigation

Permanent, direct impacts to sensitive vegetation communities, including vernal pools, resulting from the Miramar Reservoir and San Vicente Reservoir Alternative would be reduced to **less than significant** through implementation of mitigation measures MM-BIO-1a and MM-BIO-1b in conformance with the mitigation ratios listed in Tables ~~6.4-5-7~~ and ~~6.4-78~~.

Temporary, direct impacts to sensitive vegetation communities for both Project Alternatives would be reduced to **less than significant** through implementation of mitigation measure MM-BIO-2.

Indirect impacts to sensitive vegetation communities within the Miramar Reservoir and San Vicente Reservoir Alternative would be **less than significant** through implementation of mitigation measure MM-BIO-940.

6.4.4 ISSUE 2 – JURISDICTIONAL RESOURCES

Would the proposed North City Project result in an impact on City, state, or federally regulated wetlands through direct removal, filling, hydrological interruption or other means?

6.4.4.1 Impacts

No Project/No Action Alternative

No impact on City, state, or federally regulated wetlands through direct removal, filling, hydrological interruption or other means would result from the No Project/No Action alternative.

Miramar Reservoir Alternative

Direct Impacts

Morena Pump Station

There are no direct impacts to jurisdictional aquatic resources associated with the Morena Pump Station footprint.

Morena Wastewater Forcemain and Brine/Centrates Line

There are temporary impacts to 0.03 acre under ACOE-, RWQCB-, and CDFW-jurisdiction within the Morena Pipelines footprint. This area is not considered a wetland by the San Diego Municipal Code, Land Development Code—Biology Guidelines (City of San Diego 2012) due to the lack of wetland vegetation present. The impact area is within a concrete-lined portion of Tecolote Creek, which flows to directly into Mission Bay.

North City Water Reclamation Plant Expansion, North City Pure Water Facility Influent Pump Station, and North City Renewable Energy Facility

There are no direct impacts to jurisdictional aquatic resources associated with the NCWRP Expansion, NCPWF Influent Pump Station, and North City Renewable Energy Facility.

North City Pure Water Facility and North City Pump Station

There would be permanent impacts to 0.38 acre of wetlands/riparian habitat (vernal pools) regulated by the City and potentially RWQCB within the NCPWF footprint.³ The vernal pools mapped at NCPWF are considered isolated from navigable waters with no federal nexus that would allow these pools to be considered jurisdictional wetlands by the ACOE. Additionally, these pools are small, isolated, and contain limited biological value given that they do not support listed species.

HELIX mapped 6 vernal pools (0.04 acre) on the NCPWF in 2015/2016, and an additional 0.34 acre of vernal pools were mapped in 2017. The 2017 pools expanded the surface area of the 6 HELIX pools to 0.24 acre and created 11 new pools (0.14 acre). Given the expanded area of the HELIX vernal pools, protocol-level wet and dry surveys conducted by HELIX in 2015/2016 determined that three pools totaling 0.19 acre were occupied by non-listed species, and seven pools totaling 0.05 acre were unoccupied. The new 2017 vernal pools totaling 0.14 acre were not surveyed because they did not stay inundated long enough (i.e., less than 7 days) during the 2015/16 wet season for sampling to occur. All pools mapped by HELIX on the NCPWF are described in their report as having vernal pool indicator plant species present (Appendix B, of Appendix C) and therefore are considered City wetlands. The new pools totaling 0.14 acre have indicator species present; therefore, all vernal pools on the NCPWF, a total of 0.38 acre, are considered City wetlands, with potential to be RWQCB jurisdictional. A protocol-level dry season survey was conducted for the 11 additional vernal pools (0.14 acre) in 2017 to confirm that these pools are not occupied by listed fairy shrimp species. Only two pools (VP8 and VP11; 0.05 acre) had fairy shrimp cysts, which were determined to be non-listed species, and the remaining 9 pools (0.09 acre) were unoccupied.

North City Pure Water Pipeline

The design of the North City Pipeline has taken into careful consideration the location of jurisdictional aquatic resources and has been designed to avoid these resources through the use of trenchless construction methods; therefore, no direct impacts would occur to jurisdictional aquatic resources associated with the construction and installation of the North City Pipeline.

³ RWQCB also has the potential to assert jurisdiction over these resources.

The “float-and-sink” method is recommended to install the subaqueous discharge pipeline at the bottom of the Miramar Reservoir. Once constructed, the pipeline will be towed into position along the Miramar Reservoir surface. As the pipe is floated, pre-cast concrete ballast blocks will be connected to the positively buoyant pipeline at regular intervals to hold the pipeline in place. Once the pipe is towed into position at the surface, water is allowed to fill the pipe in a controlled fashion, causing it to sink to the reservoir bottom. It is anticipated that construction of these in-water components will cause temporary displacement of sediment, which would resettle after placement of the pipeline. Since the pipeline would be a structure settled on the reservoir bottom, and no trenching or backfilling, ~~other than at the shoreline and reservoir entry,~~ is anticipated, placement of the pipe is not considered an impact. Shoreline impacts would be avoided by tunneling into the reservoir versus open trenching. In addition, placement of pipes at the bottom of the reservoir will not result in the net loss of aquatic resources function or services, nor would it reduce habitat for wildlife; including invertebrates and micro biota. The pipeline and joints will not result in any measurable change in elevation of reservoir bottom.

Landfill Gas Pipeline

The design of the LFG Pipeline has taken into careful consideration the location of jurisdictional aquatic resources (including vernal pools on MCAS Miramar which are under ACOE and RWQCB jurisdiction as well as City wetlands) and has been designed to avoid these resources through the use of trenchless construction methods; therefore, there are no direct impacts to jurisdictional aquatic resources associated with the construction and installation of the LFG Pipeline footprint.

Metro Biosolids Center Improvements

There are no direct impacts to jurisdictional aquatic resources associated with the MBC footprint.

Miramar Water Treatment Plant Improvements

There are no direct impacts to jurisdictional aquatic resources associated with the Miramar WTP Improvements footprint.

Pure Water Dechlorination Facility

There are no direct impacts to jurisdictional aquatic resources associated with the Dechlorination Facility footprint.

Summary of Direct Impacts

The Miramar Reservoir Alternative would result in direct permanent impacts to a total of 0.38 acre of City wetlands (potentially RWQCB-jurisdictional) and temporary impacts to 0.03 acre of wetlands under ACOE, RWQCB, and CDFW in the Miramar Reservoir Alternative. All 0.38 acre of permanent impacts would be to vernal pools associated with the NCPWF and all temporary impacts would occur to an ephemeral stream channel (developed – concrete channel) associated with the Morena Pipelines. Impacts to jurisdictional aquatic resources within the Miramar Reservoir Alternative are shown on Figures 6.4-1A through 6.4-1P, and Table 6.4-9 provides a summary of these resources under the jurisdiction of the City of San Diego.

**Table 6.4-9
Impacts to Jurisdictional Aquatic Resources in the
Miramar Reservoir Alternative Footprint (Acres)**

Jurisdictional Aquatic Resource	ACOE/RWQCB ¹		CDFW ¹		City of San Diego Wetlands ¹	
	Temp	Perm	Temp	Perm	Temp	Perm
<i>Wetland or Riparian Areas</i>						
Vernal Pool	—	—	—	—	—	0.38 ²
<i>Non-wetland Waters/Streambed</i>						
Ephemeral Stream Channel (Developed – Concrete Channel)	0.03	—	0.03	—	—	—
Total jurisdictional area	0.03	—	0.03	—		0.38

Notes:

- ¹ The acreages listed in the ACOE/RWQCB, CDFW, and City of San Diego Wetlands columns overlap and should not be summed together.
- ² This 0.38 acre of vernal pool is also potentially regulated by the RWQCB.

The vernal pools mapped on the NCPWF site are considered isolated from navigable waters with no federal nexus that would allow these pools to be considered jurisdictional wetlands by the ACOE under the federal Clean Water Act (Appendix B, of Appendix C). The RWQCB may assert jurisdiction over the vernal pools as wetland waters of the state under the Porter-Cologne Act; however, these

pools are small, isolated, and based on 2015/16 and 2017 protocol-level surveys, contain limited biological value given that they do not support listed species (Appendix B, of Appendix C). The vernal pools would be considered City wetlands in accordance with the City's Biology Guidelines (City of San Diego 2012).

There are temporary impacts to 0.03 acre of ephemeral channel under ACOE-, RWQCB-, and CDFW-jurisdiction within the Morena Pipelines footprint. The impact area is within a concrete-lined channel portion of Tecolote Creek, which flows to directly into Mission Bay. This area is not considered a wetland according to the San Diego Municipal Code, Land Development Code—Biology Guidelines (City of San Diego 2012) due to the lack of wetland vegetation present.

There are no direct impacts to wetlands within the Coastal Overlay Zone regulated by the City.

Indirect Impacts

Jurisdictional aquatic resources are typically affected in the short-term by dust, invasive plant species, and increased human presence and in the long-term by changes in the velocity of runoff or volume of flow during and following construction as a result of the removal of vegetation, which could adversely affect the integrity of downstream resources causing erosion and sedimentation. However, as stated above, the City will incorporate methods to control runoff, in accordance with NPDES regulations by incorporating BMPs during construction and designing the project in accordance with City's Storm Water Standards Manual.

Indirect Wetland Buffer Impacts

The City uses the criteria listed in Section 320.4(b)(2) of the ACOE General Regulatory Policies (33 CFR 320–330) to apply an appropriate buffer around wetlands that serves to protect the function and value of the wetland. According to the City's Biology Guidelines, a wetland buffer is an area surrounding a wetland that helps protect the function and value of the adjacent wetland by reducing physical disturbance; provides a transition zone where one habitat phases into another; and acts to slow flood waters for flood and erosion control, sediment filtration, water purification, and groundwater recharge (City of San Diego 2012). The width of the buffer is determined by factors such as type and size of development, sensitivity of the wetland resource to edge effects, topography, and the need for upland transition (City of San Diego 2012).

Additionally, the INRMP states that impacts, including an increase or decrease of water quantity, sediment transport, and change in water quality runoff to a pool basin, or vernal pool watershed should be minimized or avoided (MCAS Miramar INRMP 2011).

The Miramar Reservoir Alternative would have impacts occurring within 100 feet of wetland resources (excluding vernal pools and those within the Coastal Overlay Zone) in three areas associated with the Morena Pipelines, three areas associated with the North City Pipeline, and one area associated with the NCWRP. Impacts to wetland buffers also occur at the NCPWF (vernal pools) but these would be direct impacts and are discussed in the direct impacts section. The three places the Morena Pipelines would have impacts within 100 feet of a wetland resource include: (1) impacts from the pipeline corridor to the buffer surrounding southern coast live oak riparian forest at the corner of Nobel Drive and Towne Center Drive; (2) impacts from the pipeline corridor to the buffer surrounding San Clemente Creek at the intersection of Genesee and the onramp for SR-52; and (3) impacts from the pipeline corridor to the buffer surrounding Rose Canyon at the intersection of Genesee Road and the railroad track. The three places the North City Pipeline would have impacts within 100 feet of a wetland resource include: (1) impacts from the pipeline corridor to the buffer surrounding a non-vegetated channel along Via Pasar; (2) impacts from the staging area to the buffer surrounding Miramar Reservoir; and (3) impacts from the pipeline's work area easement to the buffer surrounding Evan's Pond. However, impacts from the Morena Pipelines and North City Pipeline would occur within existing roadways or in areas that have been graded that do not provide valuable transitional upland habitat that serves in slowing and absorbing flood waters for flood and erosion control, sediment filtration, water purification, or groundwater recharging. Therefore, construction of the Morena Pipelines within Nobel Drive and along Genesee Avenue or construction of the North City Pipeline is not expected to impact the wetland buffer for these resources.

The NCWRP would impact the wetland buffer surrounding mulefat scrub located immediately east of the facility. Although impacts would occur with this wetland buffer, the sensitivity of the wetland resource to edge effects and need for upland transition is examined when considering appropriate wetland buffers. Since the NCWRP removes vegetation along the slope as part of regular maintenance activities, it can be assumed that the mulefat scrub is not affected by a diminished wetland buffer. Additionally, there is a concrete headwall containing a culvert that could be acting as a functional barrier.

Coastal Overlay Zone

There are impacts within 100 feet of a wetland resource (i.e., San Diego River), within the Coastal Overlay Zone, from one overflow pipe that is a part of the Morena Pump Station. The impacts would be entirely within Friars Road, which is adjacent to the San Diego River. However, Friars Road is situated below the San Diego River floodplain and separated from the river by a concrete berm (San Diego River Levee system) with the berm acting as a functional barrier that would prevent any indirect impacts to the San Diego River. Since there is an existing functional buffer that would prevent any impacts to this jurisdictional resource, it would be suitable to reduce the typical buffer from 100 feet to 25 feet with agency (CDFW, USFWS, and ACOE) consultation. The levee is approximately 15 feet away from the outer edge of the proposed work area, and there is an additional 10 feet of disturbed habitat, containing riprap along the backside slope of the levee. Therefore, a total of 25 feet would be an appropriate buffer. Working under the assumption that the proposed 25-foot buffer is approved by the agencies, the Project would no longer indirectly impact the wetland buffer within the Coastal Overlay Zone.

Vernal Pools

Vernal pools deemed both occupied and unoccupied by San Diego fairy shrimp were observed adjacent to ~~three~~ four components: LFG Pipeline, MBC, the San Vicente Pipeline - Repurposed 36-inch Recycled Water Line, and the North City Pipeline. Vernal Pools (pools are unoccupied and not assigned identifiers) considered to be City wetlands, were mapped adjacent to the LFG Pipeline within the Miramar National Cemetery in MCAS Miramar. Direct impacts to these pools would be avoided using trenchless construction methods. However, there would be impacts within the 100-foot wetland buffer of these unoccupied vernal pools from the LFG Pipeline. Although this area contains a topographical barrier (i.e., a slight slope approximately 2 to 3 feet above the impact area) that would prevent direct impacts to the wetland buffer as a result of construction, indirect impacts could occur to the vernal pools.

HELIX mapped 67 vernal pools or road ruts (not assigned identifiers) in MCAS Miramar south of Miramar Road, which contains the proposed North City Pipeline corridor. A portion of the pools are occupied by San Diego fairy shrimp and the remaining pools are unoccupied. Construction of the North City Pipeline would be contained within the developed portion of Miramar Road, and no direct impacts are expected to occur to these pools. However, construction would occur within

100 feet of the vernal pools, and therefore, could potentially result in indirect impacts. Because the roadway is impermeable and does not provide valuable transitional upland habitat that serves in slowing and absorbing flood waters for flood and erosion control, sediment filtration, water purification, or groundwater recharging, disturbance of the roadway would not be expected to directly impact the wetland buffer, indirect impacts could occur to the vernal pools.

There are three basins (VP657, VP1859, and VP2480) located within 100 feet of the LFG Pipeline. The basins are separated from the impact area by a paved road that would prevent direct impacts to the wetland buffer; however, indirect impacts could occur to these basins.

There would be impacts within 100 feet of vernal pool PW8, which occurs outside the MBC and is occupied by non-listed fairy shrimp species. However, all impacts would occur within the existing facility, which does not provide transitional upland habitat; therefore, no direct impacts would occur to PW8; however, indirect impacts could occur.

In 2008, MCAS Miramar mapped 74 vernal pools (the majority are occupied by San Diego fairy shrimp) within the open space area of MCAS Miramar east of the NCWRP and north of Miramar Road. These vernal pools are outside the City's 100-foot wide avoidance buffer and therefore no direct or indirect impacts would occur.

No adverse indirect effects to jurisdictional resources are anticipated.

San Vicente Reservoir Alternative

The direct and indirect impacts to jurisdictional resources described above under the Miramar Reservoir Alternative for the Morena Pump Station, Morena Pipelines, NCWRP Expansion, NCPWF Influent Pump Station, NCPWF, North City Pump Station, LFG Pipeline, and MBC Improvements would also be applicable to this alternative. In addition, impacts associated with following components would occur: San Vicente Pipeline, San Vicente Pipeline – TAT, San Vicente Pipeline – IRAT, San Vicente Pipeline – MAT, and the MTBS.

Direct Impacts

San Vicente Pure Water Pipeline

There are temporary impacts to 0.21 acre of ACOE- and RWQCB-jurisdictional areas and temporary impacts to 0.58 acre of CDFW-jurisdictional areas within the San Vicente Pipeline footprint. Permanent impacts would occur to <0.01 acre of

southern willow scrub, under ACOE, RWQCB, CDFW, and City jurisdiction, from work areas established for improvements to the air and blow-off valves associated with the San Vicente Pipeline - Repurposed 36-inch Recycled Water Line.

San Vicente Pipeline – Tunnel Alternative Terminus

There are permanent impacts to 0.03 acre of ACOE-, RWQCB-, and CDFW-jurisdictional areas within the San Vicente Pipeline – TAT footprint; no temporary impacts would occur. The majority of the jurisdictional aquatic resources are considered wetlands by the City of San Diego.

San Vicente Pipeline – In-Reservoir Alternative Terminus

There are temporary impacts to 0.15 acre of ACOE, RWQCB, CDFW and City jurisdictional areas and permanent impacts to 0.37 acre of ACOE, RWQCB, CDFW, and City jurisdictional areas within the San Vicente Pipeline – IRAT footprint.

San Vicente Pipeline – Marine-Marina Alternative Terminus

There are temporary impacts to 1.51 acres and permanent impacts to 0.15 acre of ACOE-, RWQCB-, and CDFW-jurisdictional areas within the San Vicente Pipeline – MAT footprint; no permanent impacts would occur. All of the jurisdictional aquatic resources are considered wetlands by the City of San Diego.

Mission Trails Booster Station

There are no temporary or permanent direct impacts to jurisdictional aquatic resources associated with the MTBS footprint.

Summary of Direct Impacts

The direct impacts to wetlands and non-wetland waters in the San Vicente Reservoir Alternative footprint under the jurisdiction of ACOE/RWQCB, streambeds and associated riparian areas under CDFW jurisdiction, and/or wetlands regulated by the City of San Diego is 3.02 acres. Jurisdictional aquatic resources, including both wetlands/riparian areas and non-wetland waters/streambeds, mapped in the study area are shown on Figures 6.4-1A through 6.4-1I, and 6.4-1N through 6.4-1AD. Table 6.4-10 provides a summary of these resources under the jurisdiction of the ACOE, RWQCB, CDFW, and/or City of San Diego.

**Table 6.4-10
Impacts to Jurisdictional Aquatic Resources in the
San Vicente Reservoir Alternative Footprint (Acres)**

Jurisdictional Aquatic Resource	ACOE/RWQCB ¹		CDFW ¹		City of San Diego Wetlands ¹	
	Temp	Perm	Temp	Perm	Temp	Perm
<i>Wetland or Riparian Areas</i>						
Southern Arroyo Willow Riparian Forest	—	—	0.11	—	0.11	—
Southern Willow Scrub	0.04	<0.01	0.39	<0.01	0.39	<0.01
Vernal Pool	—	—	—	—	—	0.38 ²
<i>Total Riparian/Wetlands</i>	<i>0.04</i>	<i><0.01</i>	<i>0.50</i>	<i><0.01</i>	<i>0.50</i>	<i>0.38</i>
<i>Non-wetland Waters/Streambed</i>						
Ephemeral Stream Channel (Developed – Concrete Channel)	0.03	—	0.03	—	—	—
Ephemeral Stream Channel (Non-vegetated Channel)	0.19	<0.01	0.14	<0.01	0.10	—
Perennial Stream Channel/Open Water	1.49	0.55	1.49	0.55	1.49	0.55
<i>Total Non-wetland Waters/Streambed</i>	<i>1.71</i>	<i>0.55</i>	<i>1.62</i>	<i>0.55</i>	<i>1.59</i>	<i>0.55</i>
Total jurisdictional area³	1.76	0.56	2.12	0.56	2.09	0.93

Notes:

- ¹ The acreages listed in the ACOE/RWQCB, CDFW, and City of San Diego Wetlands columns overlap and should not be summed together.
- ² This 0.38 acre of vernal pool is also potentially regulated by the RWQCB.
- ³ Acreages may not total due to rounding. Totals include impact acreage from all three San Vicente Pipeline inlet alternatives (0.03 acre from the Tunnel Alternative Terminus; 0.52 acre from the In-Reservoir Alternative Terminus; and 1.66 acres from the Marina Alternative Terminus). The final total will only include acreage from one of these alternatives.

ACOE- and RWQCB-jurisdictional areas within the San Vicente Reservoir Alternative footprint total 2.32 acre to both jurisdictional wetlands and non-wetland stream channels/open water, including 1.76 acre of temporary impacts and 0.56 acre of permanent impacts.

CDFW jurisdiction extends over all areas under ACOE and RWQCB jurisdiction discussed above and includes areas that meet ACOE wetland (i.e., hydrophytic) vegetation criteria but lack wetlands hydrology and/or hydric soils indicators. CDFW-jurisdictional areas within the footprint total 2.68 acres to both riparian

habitat and streambed/open water, including 2.12 acre of temporary impacts and 0.56 acre of permanent impacts.

The majority of the jurisdictional aquatic resources are considered wetlands by the City of San Diego, with the exception of 0.13 acre of ephemeral stream channel (developed – concrete channel and non-vegetated channel) that do not meet the City's criteria for a wetland. There are no direct impacts to wetlands within the Coastal Overlay Zone regulated by the City. Impacts to jurisdictional resources would be considered an adverse effect.

Indirect Impacts

Jurisdictional aquatic resources are typically affected in the short-term by dust, invasive plant species, and increased human presence and in the long-term by changes in the velocity of runoff or volume of flow during and following construction as a result of the removal of vegetation, which could adversely affect the integrity of downstream resources causing erosion and sedimentation. However, as stated above, the City will incorporate methods to control runoff, in accordance with NPDES regulations by incorporating BMPs during construction and designing the project in accordance with City's Storm Water Standards Manual.

The indirect impacts to jurisdictional resources described above under the Miramar Reservoir Alternative for the Morena Pump Station, Morena Pipelines, NCWRP Expansion, NCPWF Influent Pump Station, NCPWF, North City Pump Station, LFG Pipeline, and MBC Improvements would also be applicable to this alternative. In addition, impacts associated with following components would occur: San Vicente Pipeline (including the Repurposed 36-inch Recycled Water Line), San Vicente Pipeline – TAT, San Vicente Pipeline – IRAT, San Vicente Pipeline – MAT, and the MTBS.

Wetland Buffers

Impacts to wetland buffers under the San Vicente Reservoir Alternative would occur within the San Vicente Pipeline footprint, including along the San Vicente Pipeline - Repurposed 36-inch Recycled Water Line. There are other areas within the San Vicente Reservoir Alternative that impact both the wetland and the wetland buffer; however, these are discussed in the direct impact sections. Impacts to wetland buffers also occur from the San Vicente Pipeline – IRAT, MAT, and TAT, but these would be direct impacts and are discussed in the direct impacts section. Impacts to

wetland buffers in the shared components, NCPWF, NCWRP, and the Morena Pipelines, are discussed in the Miramar Reservoir Alternative.

The San Vicente Pipeline would intersect a wetland buffer at the following locations: (1) 0.12 acre of impacts to the buffer surrounding southern cottonwood-willow riparian forest and a non-vegetated channel from a launching and receiving pit adjacent to a trenchless segment on the west side of I-15; and (2) 0.41 acres of impacts from a launching and receiving pit adjacent to a trenchless segment to the buffer surrounding the San Diego River on the southwest side of SR-52. Impacts to the wetland buffer surrounding a non-vegetated channel totaling 0.01 acre would occur from air and blow-off valves along the San Vicente Pipeline - Repurposed 36-inch Recycled Water Line that runs through MCAS Miramar. Additionally, four areas associated with the San Vicente Pipeline would have impacts occurring within 100 feet of wetland resources. However, impacts from the San Vicente Pipeline would occur within existing roadways that do not provide valuable transitional upland habitat that serves in slowing and absorbing flood waters for flood and erosion control, sediment filtration, water purification, or groundwater recharging. Therefore, construction of the San Vicente Pipelines is not expected to impact the wetland buffer for the following resources: (1) impacts from the pipeline corridor to a buffer surrounding a riprap lined channel at the northwest corner of Stoyer Drive and Halberns Boulevard; (2) impacts from the pipeline corridor to a buffer surrounding a concrete-lined channel on the north side of Mast Boulevard; (3) impacts from the pipeline corridor to a buffer surrounding mulefat scrub (including disturbed) and arundo-dominated riparian along Moreno Avenue; and (4) impacts from the pipeline corridor to a buffer surrounding a non-vegetated channel (tributary to San Vicente Creek) along Morena Avenue just south of the San Vicente Reservoir.

Vernal Pool Buffers

Vernal pools (pools are unoccupied and not assigned identifiers) considered to be City wetlands, were mapped within the Miramar National Cemetery in MCAS Miramar. There would be impacts within the 100-foot wetland buffer of these unoccupied vernal pools from air and blow-off valves associated with the San Vicente Pipeline - Repurposed 36-inch Recycled Water Line. This area contains a topographical barrier (i.e., a slight slope approximately 2 to 3 feet above the impact area) that would prevent direct impacts to the wetland buffer; however, indirect impacts could occur to these vernal pools.

MCAS Miramar mapped three OSPFs (VP653, VP654, and VP656) containing the federally endangered species San Diego fairy shrimp within the Level I MA, adjacent to the area mapped as extensive agriculture-field/pasture, row crops along the LFG Pipeline (MCAS Miramar 2016). The 100-foot wetland buffer surrounding the vernal pools adjacent to the LFG Pipeline corridor would be avoided.

MCAS Miramar mapped two OSPFs (VP697 and VP699) containing the federally endangered species San Diego fairy shrimp within the Level V MA along the San Vicente Pipeline - Repurposed 36-inch Recycled Water Line.

There is a potential for indirect impacts within the 100-foot wetland buffer of the two OSPFs from maintenance of air and blow-off valves associated with the San Vicente Pipeline - Repurposed 36-inch Recycled Water Line if the San Vicente Reservoir Alternative is implemented. This area contains a topographical barrier (i.e., a slight slope approximately 2–3 feet above the impact area) that would reduce indirect impacts to these vernal pools.

Indirect impacts to PW36, VP697, and VP699 occur on MCAS Miramar lands and therefore are subject to the INRMP 2011-2015. As described in Appendix A, of Appendix C, permanent indirect impacts to an occupied watershed within the Level I and Level V MAs would include: enhancement of remaining portions of watershed; protection by temporary fencing or other means; enlarge another portion; and monitoring species in pool basin may be necessary to document extent of actual impacts to threatened or endangered species. If impacts documented to threatened or endangered species, then additional action required for indirect impacts to the threatened or endangered species by habitat enhancement, possibly elsewhere. No work may occur around vernal pools during the rainy season or when the ground is wet (about November 1 to June 1). Implementation of the INRMP mitigation measures described in Appendix A, of Appendix C would avoid adverse indirect impacts.

6.4.4.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

No impacts would occur as a result of No Project/No Action Alternative.

Miramar Reservoir Alternative

Direct impacts to 0.38 acre of City regulated wetlands and 0.03 acre of state and federally regulated jurisdictional resources incurred under the Miramar Reservoir Alternative would be **potentially significant** under CEQA.

Indirect impacts to jurisdictional resources would be **potentially significant** under CEQA.

San Vicente Reservoir Alternative

Direct impacts to 3.02 acres of City, state, or federally regulated jurisdictional resources incurred under the San Vicente Reservoir Alternative would be **potentially significant** under CEQA.

Indirect impacts to jurisdictional resources would be **potentially significant** under CEQA. Additionally, permanent indirect impacts to vernal pools PW36, VP697, and VP699, would remain **potentially significant** under CEQA.

6.4.4.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No mitigation is required.

Miramar Reservoir Alternative

Direct permanent impacts to 0.38 acre of vernal pools from construction of the NCPWF will be mitigated through application of mitigation measures MM-BIO-1b and MM-BIO-~~89~~.

MM-BIO-~~89~~ Wetland Permits. The owner/permittee shall provide evidence that all required regulatory permits, such as those required under Section 404 of the federal Clean Water Act, Section 1600 of the California Fish and Game Code, and the Porter-Cologne Water Quality Control Act, has been obtained.

Direct temporary impacts to 0.03 acre of developed – concrete channel from the Morena Pipelines would be mitigated through application of mitigation measures ~~MM-BIO-2~~ and MM-BIO-~~89~~.

Although the North City Pipeline would not result in any direct or indirect impacts to the Miramar Reservoir, placement of the pipeline within the reservoir would require agency permits as stated in mitigation measure MM-BIO-8.

Temporary, indirect impacts to vernal pools would be mitigated through application of mitigation measure MM-BIO-910.

San Vicente Reservoir Alternative

Direct permanent impacts to 0.38 acre of vernal pools from construction of the NCPWF will be mitigated through application of mitigation measures MM-BIO-1b and MM-BIO-89.

Direct permanent impacts to 0.56 acres of City, state, or federally regulated jurisdictional resources (excluding vernal pools) incurred under the San Vicente Reservoir Alternative would require application of mitigation measures MM-BIO-1c and MM-BIO-89.

Direct temporary impacts to 2.09 acres of City, state, or federally regulated jurisdictional resources would be mitigated through application of mitigation measures MM-BIO-2 and MM-BIO-89.

Temporary, indirect impacts to vernal pools would be mitigated through application of mitigation measures MM-BIO-910.

Permanent, indirect impacts to vernal pools PW36, VP697, and VP699 watersheds from the San Vicente Pipeline – Repurposed 36-inch Water Line will be mitigated through application of mitigation measure MM-BIO-78.

MM-BIO-78 Vernal Pool Watershed. There would be permanent indirect impacts within the PW36, VP697, and VP699 watersheds from air and blow-off valves associated with the San Vicente Pipeline - Repurposed 36-inch Recycled Water Line only if the San Vicente Alternative is implemented. As required under the Integrated Natural Resources Management Plan (INRMP), mitigation for permanent indirect impacts from the San Vicente Reservoir Alternative to an occupied watershed (PW36, VP697, and VP699) within the Level I and Level V Management Areas (MAs) would include enhancement of remaining portions of watershed (protection by temporary fencing or other means, enlarge another portion); monitoring of species in the feature

may be necessary to document extent of actual impacts to threatened or endangered species; if impacts are documented to threatened or endangered species, then additional action would be required for indirect impacts to the threatened or endangered species by habitat enhancement, possibly elsewhere; and no work around the vernal pool during the rainy season or when ground is wet (about November 1 to June 1). The City typically applies a 100-foot-wide avoidance buffer surrounding wetland resources; however, the width of the buffer may be determined on a case-by-case basis depending on the need and value. Therefore, no work would occur within a 100-foot buffer around the vernal pool during rainy season or when ground is wet (about November 1 to June 1), unless it is determined that a reduced buffer is more appropriate.

6.4.4.4 Level of Impact After Mitigation

Incorporation of mitigation measures MM-BIO-1b, MM-BIO-1c, MM-BIO-2, and MM-BIO-~~89~~ would reduce potentially significant direct impacts to aquatic resources under the jurisdiction of the ACOE, RWQCB and/or CDFW as well as wetlands under the jurisdiction of the City of San Diego for both alternatives to **less than significant**.

Mitigation measure MM-BIO-~~940~~ would ensure **less-than-significant** indirect impacts to aquatic resources under the jurisdiction of the ACOE, RWQCB and/or CDFW as well as wetlands under the jurisdiction of the City of San Diego for both alternatives. Mitigation measure MM-BIO-~~78~~ would reduce potential permanent impacts to vernal pool watersheds to **less than significant** under the San Vicente Reservoir Alternative.

6.4.5 ISSUE 3 – SENSITIVE SPECIES

Would implementation of the proposed North City Project result in a reduction in the number of any unique, rare, endangered, sensitive, or fully protected species of plants or animals?

6.4.5.1 Impacts

No Project/No Action Alternative

No impact in a reduction in the number of any unique, rare, endangered, sensitive, or fully protected species of plants or animals would occur for No Project/No Action Alternative.

Miramar Reservoir Alternative

Direct Impacts

Morena Pump Station

No sensitive plant species were observed or have a moderate to high potential to occur in the Morena Pump Station footprint. As such, no direct impacts are anticipated to sensitive plant species.

Four sensitive wildlife species have a moderate potential to occur within the San Diego River that overlaps the Morena Pump Station study area, including yellow warbler, least Bell's vireo, southwestern willow flycatcher, and yellow-breasted chat. However, no sensitive wildlife species were observed, nor does suitable habitat occur, within the Morena Pump Station footprint. As such, no direct impacts are anticipated to sensitive wildlife species. No USFWS Critical Habitat occurs within or immediately adjacent to the Morena Pump Station.

Morena Wastewater Forcemain and Brine/Centrates Line

No sensitive plant species were observed in the Morena Pipelines footprint. Although there are several species with a moderate potential to occur within the 100-foot buffer of the Project component, the Project component impacted areas are primarily urban/developed with minimal impacts to native vegetation. Therefore, no sensitive plant species have potential to occur within the Morena Pipelines footprint. As such, no direct impacts are anticipated to sensitive plant species.

Only one sensitive wildlife species, coastal California gnatcatcher, has moderate potential to occur in the Morena Pipelines footprint. The Diegan coastal sage scrub (including disturbed) along the Morena Pipelines was surveyed for coastal California gnatcatchers during the 2016 Dudek focused surveys (Appendix E, of Appendix C). There were no coastal California gnatcatcher observations within this intersection of Rose Canyon and Genesee Avenue. Therefore, direct impacts to coastal California

gnatcatcher at this intersection are not anticipated. As such, no direct impacts are anticipated to sensitive wildlife species. No USFWS Critical Habitat occurs within or immediately adjacent to the Morena Pipelines study area.

Although eucalyptus woodlands provide little native habitat value and foraging opportunities for wildlife, particularly when they occur in densely urban environments such as along the Morena Pipelines, they could provide nesting bird habitat. Therefore, direct impacts to nesting birds could result from construction of the Morena Pipelines.

North City Water Reclamation Plant Expansion, North City Pure Water Facility Influent Pump Station, and North City Renewable Energy Facility

One sensitive plant species was observed within the NCWRP footprint: San Diego County viguiera. All ~~5814~~ individuals were mapped at the southern end of the NCWRP on either side of the entrance driveway. ~~Three~~ All individuals occur within either disturbed habitat or within Diegan coastal sage scrub. Previous mitigation for impacts at the NCWRP has preserved suitable habitat for this species, therefore impacts are not considered significant or adverse. There are no additional sensitive species that have a moderate to high potential to occur in the NCWRP Expansion footprint. No USFWS Critical Habitat occurs within or immediately adjacent to the NCWRP study area.

Two individuals or transient coastal California gnatcatcher were observed adjacent to the eastern boundary of the NCWRP within MCAS Miramar and coastal sage scrub within the MHPA occurs just south of the NCWRP Expansion footprint. Although impacts to Diegan coastal sage scrub within the boundaries of the NCWRP Expansion footprint would occur, the loss of these slivers of habitat is not expected to affect any coastal California gnatcatchers or other nesting birds. Previous mitigation at the NCWRP has preserved suitable habitat for this species.

No other sensitive wildlife species were observed or have a moderate to high potential to occur in the NCWRP Expansion footprint. As such, no direct impacts are anticipated to sensitive wildlife species.

North City Pure Water Facility and North City Pump Station

One sensitive plant species was observed within the NCPWF footprint: graceful tarplant. All ~~99260~~ individuals are located in the ~~southern~~ central portion of the NCPWF within Diegan coastal sage scrub. It should be noted that the number of

individuals observed during surveys conducted in 2017, which was a record rain year, increased from the total individuals observed during the 2016 surveys. Population sizes of this species can vary dramatically from year to year, depending on rainfall patterns. The entire NCPWF site would be developed as part of the North City Project; therefore, graceful tarplant would be directly impacted. There are no other species that have a moderate to high potential to occur in the NCPWF footprint.

There is one sensitive wildlife species occurring within the impact limits of the NCPWF: white-tailed kite. This one individual was observed foraging during multiple surveys conducted by HELIX. The individual was outside of the MCAS Miramar and MHPA. Although the NCPWF does not provide any nesting habitat for white-tailed kite, Excavation excavation and grading of the NCPWF site would impact all foraging habitat for the white-tailed kite and result in a direct impact to the vegetation communities used by the species. No USFWS Critical Habitat occurs within or immediately adjacent to the NCPWF study area.

The Diegan coastal sage scrub (including disturbed) on the NCPWF was surveyed for coastal California gnatcatchers during the 2016 Dudek focused surveys (Appendix E, of Appendix C). There were no coastal California gnatcatcher observations within the NCPWF or within suitable habitat surrounding the NCPWF. Therefore, impacts to coastal California gnatcatcher at the NCPWF are not anticipated.

It should be noted that although impacts would occur to vernal pools within the NCPWF, protocol-level surveys in 2015/2016 and 2017 determined the vernal pools were not occupied by San Diego fairy shrimp or any other listed species.

North City Pure Water Pipeline

No sensitive plant species were observed in the North City Pipeline footprint. One sensitive plant species was observed within the North City Pipeline footprint: San Diego County viguiera. This species would be directly impacted by construction activities associated with the North City Pipeline. One individual was mapped northwest of the intersection of Eastgate Mall and Miramar Road. There are no other species that have a moderate to high potential to occur in the North City Pipeline footprint. As such, no direct impacts are anticipated to sensitive plant species.

Although western pond turtles were observed within the Miramar Reservoir, the subaqueous pipeline would not directly affect basking sites or western pond turtle individuals. The placement of the North City Pipeline in Miramar Reservoir would not directly reduce habitat for wildlife and would not replace any amount

of open water with dry land or result in any direct impacts on Miramar Reservoir fringe vegetation.

No ~~other~~ sensitive wildlife species were observed or have a moderate to high potential to occur in the North City Pipeline footprint. However, 1.38-95 acres of eucalyptus woodland would be ~~temporarily~~ impacted by the North City Pipeline alignment. Eucalyptus woodlands provide little native habitat value or foraging opportunities for wildlife, particularly when they occur in urban environments such as the vegetation occurring within the pipeline impact area. However, this vegetation community could provide nesting bird habitat, and therefore, direct impacts to nesting birds could result from construction of the North City Pipeline.

Landfill Gas Pipeline

There are four sensitive plant species occurring within the impact limits of the LFG Pipeline, all of which are located within MCAS Miramar. Direct impacts from open cut trenches could occur to these species (including Orcutt's brodiaea and wart-stemmed ceanothus, which are considered rare, threatened, or endangered in California) within the LFG Pipeline alignment. It should be noted that Orcutt's brodiaea was not observed in 2017 within the impact limits despite being a better rainfall year when compared to 2016. However, the impact analysis includes the individuals observed during the 2016 surveys within the Project's footprint. The other two species which occur are graceful tarplant and ashy spike-moss (both of which are CRPR 4 species and not considered rare). There are no other species that have a moderate to high potential to occur in the LFG Pipeline impact area.

There are four features (PW36, VP653, VP654, and VP656) containing San Diego fairy shrimp within the LFG Pipeline study area; however, there would be no direct or indirect impacts from the LFG Pipeline to these features due to the use of trenchless construction methods.

A total of six individuals or transients, five nests, and four pairs of coastal California gnatcatcher were observed along the LFG Pipeline within MCAS Miramar. Since this species is capable of movement, no direct impacts to adult coastal California gnatcatchers would occur; however, there would be direct impacts to suitable habitat. Potential impacts could also occur to any active nests or the young of nesting coastal California gnatcatcher through direct grading of suitable habitat within MCAS Miramar.

Vegetation communities along the LFG Pipeline corridor, including coastal sage scrub communities, chaparral, and non-native grassland, could provide nesting

bird habitat, and therefore, direct impacts to nesting birds could result from construction of the LFG Pipeline.

No other sensitive wildlife species have a moderate to high potential to occur in the LFG Pipeline footprint.

Metro Biosolids Center Improvements

There are ~~three~~four sensitive plant species occurring within the impact limits of the MBC. The long-spined spineflower and the graceful tarplant both occurs in one polygon within coastal sage-chaparral transition in the impact limits. The decumbent goldenbush occurs in multiple locations within the impact limits, including within coastal sage-chaparral transition, urban/developed, and disturbed habitat. In addition, ashy spike-moss occurs in multiple polygons within the impact limits, including coastal sage-chaparral transition, and urban/developed. It should be noted that only the graceful tarplant was observed within the impact limits during the 2017 surveys. However, since population sizes can vary dramatically from year to year, species observed within the impact limits in 2016 are included in this analysis. Impacts to the sensitive vegetation communities where these sensitive plant species occur have been adequately addressed and mitigated to offset permanent loss of habitat with the purchase of the Goat Mesa parcel (City of San Diego 1994; City of San Diego 1996). There are no additional species that have a moderate to high potential to occur in the MBC footprint.

A total of two individuals or transients, two nests, and one pair of coastal California gnatcatcher were observed adjacent to the MBC within MCAS Miramar. Although impacts to Diegan coastal sage scrub within the boundaries of the MBC footprint would occur, the loss of these slivers of habitat is not expected to affect any coastal California gnatcatchers. Potential impacts could occur to any active nests or the young of nesting coastal California gnatcatcher through direct grading of suitable habitat within MCAS Miramar. There is no coastal California gnatcatcher occupied habitat within designated MHPA lands.

Additionally, because the MBC supports suitable nesting bird habitat (Diegan coastal sage scrub and coastal sage-chaparral transition), direct impacts to nesting birds could result from impacts within the MBC.

No other sensitive wildlife species were observed or have a moderate to high potential to occur in the MBC footprint. No USFWS Critical Habitat occurs within or immediately adjacent to the MBC study area.

Miramar Water Treatment Plant Improvements

No sensitive plant species were observed or have a moderate to high potential to occur in the Miramar WTP footprint.

No sensitive wildlife species were observed or have a moderate to high potential to occur in the Miramar WTP footprint. While there is Diegan coastal sage scrub within the confines of the treatment plant, the patch of vegetation is in close proximity to the treatment plant, is small and isolated, and would not support coastal California gnatcatcher. However, it could provide nesting bird habitat and therefore, direct impacts to nesting birds could result from improvements at the Miramar WTP.

Approximately 0.27 acre of eucalyptus woodland would be permanently impacted by improvements at Miramar WTP. Eucalyptus woodlands provide little native habitat value or foraging opportunities for wildlife, particularly when they occur in urban environments; however, it could provide nesting bird habitat and therefore, direct impacts to nesting birds could result from improvements at the Miramar WTP.

No USFWS Critical Habitat occurs within or immediately adjacent to the Miramar WTP.

Pure Water Dechlorination Facility

No sensitive plant species were observed or have a moderate to high potential to occur in the Dechlorination Facility footprint.

No sensitive wildlife species were observed or have a moderate to high potential to occur in the Dechlorination Facility footprint. Excavation and grading associated with the construction of the Dechlorination Facility could impact 0.06 acre of eucalyptus woodlands. This vegetation provides little native habitat value or foraging opportunities for wildlife, particularly when they occur in urban environments; however, the eucalyptus woodland could provide nesting bird habitat and therefore, direct impacts to nesting birds could result from construction of the Dechlorination Facility.

No USFWS Critical Habitat occurs within the Dechlorination Facility.

Summary of Direct Impacts

Sensitive Plant Species

There are seven sensitive plant species occurring within the impact limits of the Miramar Reservoir Alternative (Table 6.4-11; Figures 6.4-1A through 6.4-1P). Orcutt's brodiaea, long-spined spineflower, decumbent goldenbush, and wart-stemmed

ceanothus are considered rare, threatened, or endangered in California; therefore impacts to these species would be considered adverse. There are no impacts to sensitive plant species within the Miramar Reservoir Alternative in the MHPA. Table 6.4-12–11 provides the project component where a direct impact on the plant species is expected to occur. The total individuals in Table 6.4-11 includes both mapped points and polygons. The polygons have been clipped to only include the portion that overlaps the impact area, thus giving a more accurate representation of the actual number of plants impacted. No USFWS Critical Habitat for plant species occurs within the Miramar Reservoir Alternative.

Table 6.4-11
Impacts to Sensitive Plant Species within the
Miramar Reservoir Alternative Footprint

Common Name (Scientific Name)	Status (Federal/State/CRPR/MSCP)	Project Component(s)	Total Individuals
San Diego County viguiera (<i>Viguiera laciniata</i>)	None/None/4.2/None	North City Pipeline, North City Water Reclamation Plant	<u>58</u> 12
Orcutt's brodiaea (<i>Brodiaea orcuttii</i>)	None/None/1B.1/ Covered	LFG Pipeline	12 ¹
wart-stemmed ceanothus (<i>Ceanothus verrucosus</i>)	None/None/2B.2/Covered	LFG Pipeline	<u>7</u> 3
long-spined spineflower (<i>Chorizanthe polygonoides var. longispina</i>)	None/None/1B.2/None	Metro Biosolids Center	6 [*]
graceful tarplant (<i>Holocarpha virgata</i> ssp. <i>elongata</i>)	None/None/4.2/None	LFG Pipeline, North City Pure Water Facility, <u>Metro Biosolids Center</u>	<u>9,307</u> 87
decumbent goldenbush (<i>Isocoma menziesii</i> var. <i>decumbens</i>)	None/None/1B.2/None	Metro Biosolids Center	2 [*]
ashy spike-moss (<i>Selaginella cinerascens</i>)	None/None/4.1/None	LFG Pipeline, <u>Metro Biosolids Center</u>	<u>815</u> ^{**}

Note:

* This species was not observed within the impact limits in 2017; however, since it was observed during the 2016 surveys within the impact footprint it is included in the Project's impact analysis.

** This number represents the number of polygons mapped. This species is a fern and grows as a continuous mat, which makes it difficult to provide accurate population counts.

Sensitive Wildlife Species

There are two sensitive wildlife species occurring within the impact limits of the Miramar Reservoir Alternative: white-tailed kite, and coastal California gnatcatcher (Figures 6.4-1A through 6.4-1P). Additionally, one species, San Diego fairy shrimp, occurs within the study area. However, impacts to vernal pools occupied by listed species would be avoided through use of trenchless construction. No direct impacts to individuals are expected, however suitable habitat for these species would occur with project implementation.

One white-tailed kite individual was observed foraging during multiple surveys conducted by HELIX, within non-native grassland on the NCPWF. The individual was outside of MCAS Miramar and MHPA.

Vernal pools deemed either occupied or unoccupied by San Diego fairy shrimp were observed within or adjacent to four components: the North City Pipeline, MBC, LFG Pipeline, and the NCPWF. No direct impacts to vernal pools would occur along the North City Pipeline corridor since all construction would occur within Miramar Road. No impacts would occur to the vernal pool (unoccupied by listed species) adjacent to the MBC. There are four features (PW36, VP653, VP654, and VP656) containing San Diego fairy shrimp within the LFG Pipeline corridor; however, there would be no direct impacts from the LFG Pipeline to these features due to the use of trenchless construction methods. All vernal pools within the NCPWF were surveyed either during 2015/2016 or 2017 and deemed unoccupied by San Diego fairy shrimp. Therefore, no impacts to federally listed fairy shrimp species are anticipated with project implementation.

Coastal California gnatcatchers were observed in areas adjacent to the NCWRP Expansion, LFG Pipeline, and MBC Improvements within MCAS Miramar. Since this species is capable of movement, no direct impacts to adult coastal California gnatcatchers are expected to occur; however, there would be direct impacts to suitable habitat within all three components. Potential impacts could also occur to active nests or the young of nesting coastal California gnatcatcher through direct grading of suitable habitat.

No direct impacts would occur to suitable habitat for southwestern willow flycatcher or least Bell's vireo under the Miramar Reservoir Alternative. The Miramar Reservoir Alternative would impact suitable habitat for burrowing owl, Hermes copper butterfly, and Quino checkerspot butterfly; however, these species

were not observed during focused surveys within the Miramar Reservoir Alternative study area; therefore, no adverse effects are anticipated.

The large majority of the pipelines and facilities associated with the Miramar Reservoir Alternative will be placed within existing roadways and developed areas, with very little habitat being impacted. Three species (Cooper's hawk, yellow warbler, and yellow-breasted chat) were observed or have a moderate potential to occur within the Miramar Reservoir Alternative's study area but are unlikely to occur within the footprint.

There is also a potential for vegetated areas within the Miramar Reservoir Alternative footprint to support nesting bird species. The ~~MBTA~~ California Fish and Game Code prohibits the take of any migratory bird or any part, nest, or eggs of any such bird.

Indirect Impacts

Sensitive Plant Species

Most of the indirect impacts to vegetation communities (see Section 6.4.3.1) can also affect sensitive plants. During construction of the project, indirect effects may include dust, which could disrupt plant vitality in the short term, or construction-related soil erosion and runoff. Long-term edge effects at the NCPWF, which would convert and undeveloped site to a developed state, could include intrusions by humans and domestic pets and possible trampling of individual plants, invasion by exotic plant and wildlife species, exposure to urban pollutants (fertilizers, pesticides, herbicides, and other hazardous materials), soil erosion, litter, fire, and hydrologic changes (e.g., surface and groundwater level and quality).

Sensitive Wildlife Species

Most of the indirect impacts to vegetation communities (see Section 6.4.3.1) and sensitive plants (see above) previously described can also affect sensitive wildlife. All pipeline construction areas that contain steep-walled trenches or excavations left open overnight could entrap wildlife moving through the site. Additionally, construction-related nighttime lighting could affect nocturnal species by interfering with their hunting or movement.

Wildlife may also be indirectly affected in the short-term by construction-related noise—which can disrupt normal activities and subject wildlife to higher predation risks—and adverse edge effects (which could occur at facilities located adjacent to

open space) can cause degradation of habitat quality through the invasion of pest species. Breeding birds can be affected by short-term construction-related noise, which can result in the disruption of foraging, nesting, and reproductive activities. Construction or operational noise levels exceeding a 60 decibels [db(A)] hourly-average within 500 feet of adjacent suitable habitat for least Bell's vireo, southern willow flycatcher, or burrowing owl, during nesting bird season (excluding coastal California gnatcatcher if construction occurs outside the MHPA). Miramar Reservoir Alternative construction noise levels would range from approximately 49 dBA L_{eq} to 82 dBA L_{eq} . The loudest construction noise levels would occur along the North City Pipeline and Morena Pipelines. Some construction work along pipeline alignments is also anticipated to occur during the nighttime in order to reduce temporary traffic congestion. Although most of the impacts associated with the North City Project are within developed areas or existing roads, there is suitable habitat within the study area that could provide nesting habitat for raptors and songbirds. Indirect impacts from construction-related noise may occur to breeding wildlife if construction occurs during the breeding season (i.e., February 1 through September 15) and would be considered an adverse effect.

~~Regarding potential construction impacts to western pond turtle, as required by Appendix A of the City's MSCP Subarea Plan for MSCP Covered Species, the Project must maintain and manage a 1,500-foot area around known locations within the preserve lands for this species. Although the Miramar Reservoir Alternative would not have direct impacts to western pond turtle habitat (including basking sites) resulting from construction, placement of the North City Pipeline would occur within 1,500 feet of known locations within the MSCP.~~

Miramar Reservoir Limnology

~~The presence of non-native species (i.e., red-eared sliders that compete for resources, and American bullfrogs and largemouth bass that prey on the hatchlings), quagga mussels that affect the existing trophic regime, human presence that could affect the use of basking sites and refuge sites, on-going recreational fishing activities, and the isolated nature of the reservoir contribute to unfavorable conditions for western pond turtle within the Miramar Reservoir. Improvements to water quality resulting from Project operation and potential modifications to phytoplankton and zooplankton communities within the Miramar Reservoir may potentially result in less food availability for some higher consumers, including western pond turtles (see Section 5.4.2.5 for more information on limnology). Since red-eared sliders typically outcompete western pond turtles for~~

~~available food resources (as well as basking sites), reduced food availability is likely to have a greater effect on western pond turtle than on red-eared sliders.~~

~~Although this species utilizes a broad variety of terrestrial and aquatic food sources (omnivorous), a large portion of its diet is aquatic-based invertebrates and vertebrates. Even though the dominant items in the diet of western pond turtles may vary from area to area depending on local conditions, the majority of the diet is composed of small aquatic invertebrates, including crustaceans (cladocerans, and native and introduced crayfish), insects (the larvae of midges, dragonflies, beetles, stoneflies, caddisflies) and occasionally annelids. Hatchlings prey primarily on nekton and the larvae of small aquatic insects such as mosquitoes, and other small invertebrates (Holland 1994). Intermediate effects could include a decrease in overall health of the individuals within the population, decreased bodyweight, disease, and/or reduced hatchling survival.~~

~~Additionally, the~~The change in water input could potentially affect aquatic species and food webs in Miramar Reservoir. However, based on a synthesis of available literature and reservoir comparative data (provided in Section 4.6.6-5 of Appendix C), a functioning aquatic community will continue to exist in the reservoir following the implementation of the project, albeit at likely a reduced level of productivity. See Section 4.6.6-5 of Appendix C for a more detailed discussion of potential changes to limnology as a result of the Miramar Reservoir Alternative. In addition, see Section 6.11.4.1 of the EIR/EIS for a water quality analysis related to limnology and Section 6.18.5.1 for an analysis of potential recreational fishery impacts.

San Vicente Reservoir Alternative

The direct and indirect impacts to sensitive plants and wildlife species described above under the Miramar Reservoir Alternative for the Morena Pump Station, Morena Pipelines, NCWRP Expansion, NCPWF Influent Pump Station, NCPWF, North City Pump Station, LFG Pipeline, and MBC Improvements would also be applicable to this alternative. In addition, impacts associated with following components would occur: San Vicente Pipeline, San Vicente Pipeline – TAT, San Vicente Pipeline – IRAT, San Vicente Pipeline – MAT, and the MTBS.

Direct Impacts

San Vicente Pure Water Pipeline

There are ~~three~~four sensitive plant species occurring within the impact limits of the San Vicente Pipeline, including impacts to one sensitive plant species within

the San Vicente Pipeline in the MHPA. San Diego County viguiera occurs in multiple locations within the impact limits, including urban/developed, Diegan coastal sage scrub (including disturbed), and disturbed habitat. Two polygons of ashy spike-moss occur along the San Vicente Pipeline - Repurposed 36-inch Recycled Water Line within MCAS Miramar. San Diego barrel cactus occurs in one location within disturbed Diegan coastal sage scrub. Robinson's pepper-grass occurs in multiple polygons all located within disturbed Diegan coastal sage scrub. San Diego barrel cactus is considered rare, threatened, or endangered in California; ~~other species~~ San Diego County viguiera, Robinson's pepper-grass, and ashy spike-moss occurring within the impact limits of the San Vicente Pipeline are of low sensitivity.

The San Vicente Pipeline would temporarily impact 0.47 acre of Critical Habitat for San Diego ambrosia. Impacts would occur within non-native grassland adjacent to the San Diego River, where the pipeline crosses under SR-52. Although impacts would occur to Critical Habitat, focused sensitive plant surveys conducted in this area concluded that San Diego ambrosia does not occur along the pipeline corridor and would be further avoided by using trenchless construction methods. Additionally, the impacts are temporary and would not result in a permanent structure or change in habitat type within the Critical Habitat area.

There are two sensitive wildlife species occurring within the impact limits of the San Vicente Pipeline: least Bell's vireo and California gnatcatcher. The least Bell's vireo was observed within southern willow scrub east of I-15 and south of Clairemont Mesa Boulevard. This species occurs in the MHPA. Impacts to suitable habitat for this species total approximately 0.5 acre.

There were 43 coastal California gnatcatcher individuals, including pairs and pairs with juveniles, observed within designated MHPA lands around the San Vicente Pipeline, with the highest concentration occurring in the Diegan coastal sage scrub along Mission Gorge Road through Mission Trails Regional Park. Although direct impacts are not expected to this species there would be direct impacts to suitable habitat. Potential impacts could also occur to active nests or the young of nesting coastal California gnatcatcher through direct grading of suitable habitat within designated MHPA lands.

The San Vicente Pipeline would result in ~~approximately 0.9 acre of temporary~~ impacts to native and non-native vegetation, such as eucalyptus woodland, which could provide nesting bird habitat.

The San Vicente Pipeline would temporarily impact 6.15 acres of Critical Habitat for least Bell's vireo. The majority of impacts would occur within 5.35 acres of developed land due to the Critical Habitat overlapping a residential area. The remaining impacts are within Diegan coastal sage scrub, <0.01 acre; non-native grassland, 0.51 acre; southern arroyo willow riparian forest, 0.11 acre; southern willow scrub, 0.04 acre; and non-native woodland, 0.15 acre. This Critical Habitat area is located within the San Diego River, where the pipeline crosses under SR-52. Although impacts would occur within Critical Habitat and two observations of least Bell's vireo were made within this area, the pipeline is not expected to directly affect this species and would be further minimized by using trenchless construction methods. Additionally, the impacts are temporary and would not result in a permanent structure or change in habitat type within the Critical Habitat area.

San Vicente Pipeline – Tunnel Alternative Terminus

No sensitive plant species were observed or have a moderate to high potential to occur in the San Vicente Pipeline – TAT footprint.

No sensitive wildlife species were observed or have a moderate to high potential to occur in the San Vicente Pipeline – TAT footprint. Coast live oak woodland and southern mixed chaparral within the alignment could provide nesting bird habitat. No USFWS Critical Habitat occurs within or immediately adjacent to the San Vicente Pipeline – TAT.

San Vicente Pipeline – In-Reservoir Alternative Terminus

There are four sensitive plant species occurring within the impact limits of the San Vicente Pipeline – IRAT. All four sensitive plant species within the San Vicente Pipeline – IRAT occur in the MHPA. San Diego sagewort occurs in one location within coast live oak woodland in the impact limit. San Diego County viguiera occurs in multiple polygons with the impact limit, including in urban/developed, Diegan coastal sage scrub, and non-native grassland. White rabbit-tobacco occurs in one polygon located within Diegan coastal sage scrub and urban/developed in the impact limit. Ashy spike-moss occurs in one polygon located within southern mixed chaparral in the impact limit. Only the white rabbit-tobacco is considered rare, threatened, or endangered in California.

One juvenile coastal California gnatcatcher was observed within designated MHPA lands around the San Vicente Pipeline – IRAT inlet alternative. Although direct impacts are not expected to this species there would be direct impacts to suitable habitat. Potential impacts could also occur to active nests or the young of nesting

coastal California gnatcatcher through direct grading of suitable habitat within designated MHPA lands.

No other sensitive wildlife species were observed or have a moderate to high potential to occur in the San Vicente Pipeline – IRAT footprint. Coast live oak woodland and Diegan coastal sage scrub within the alignment could provide nesting bird habitat. No USFWS Critical Habitat occurs within or immediately adjacent to the San Vicente Pipeline – IRAT Alternative.

San Vicente Pipeline – Marine-Marina Alternative Terminus

There are four sensitive plant species occurring within the impact limits of the San Vicente Pipeline – MAT. All four sensitive plant species within the San Vicente Pipeline – MAT occur in the MHPA. San Diego County viguiera occurs in multiple polygons with the impact limit, including in urban/developed, Diegan coastal sage scrub, and non-native grassland. Robinson’s pepper-grass occurs in multiple polygons all located within restored Diegan coastal sage scrub. White rabbit-tobacco occurs in one polygon located within Diegan coastal sage scrub and urban/developed in the impact limit. Ashy spike-moss occurs in multiple polygons all located within restored Diegan coastal sage scrub. Only white rabbit-tobacco is considered rare, threatened, or endangered in California.

One juvenile coastal California gnatcatcher (the same as described above for the San Vicente Pipeline – IRAT inlet alternative) was observed within designated MHPA lands around the San Vicente Pipeline – MAT inlet alternative. Although direct impacts are not expected to this species there would be direct impacts to suitable habitat. Potential impacts could also occur to active nests or the young of nesting coastal California gnatcatcher through direct grading of suitable habitat within designated MHPA lands.

No other sensitive wildlife species were observed or have a moderate to high potential to occur in the San Vicente Pipeline – MAT footprint. Diegan coastal sage scrub and southern mixed chaparral within the alignment could provide nesting bird habitat. No USFWS Critical Habitat occurs within or immediately adjacent to the San Vicente Pipeline – MAT.

Mission Trails Booster Station

There is one location of San Diego County viguiera individuals, totaling 200 individuals, within the impact limits of the MTBS. These plants are located within disturbed Diegan coastal sage scrub and are outside of the MHPA. This species is

not considered rare (i.e., CRPR 4 species are not considered “rare” from a statewide perspective).

No sensitive wildlife species were observed or have a moderate to high potential to occur in the MTBS footprint. Diegan coastal sage scrub within the MTBS could provide nesting bird habitat. No USFWS Critical Habitat, or MHPA occurs within or immediately adjacent to the MTBS study area.

Summary of Direct Impacts

Sensitive Plant Species

There are 11 sensitive plant species occurring within the impact limits of the San Vicente Reservoir Alternative (Table 6.4-12; Figures 6.4-1A through 6.4.1I, and Figures 6.4-1N through 6.4-1AD). Orcutt’s brodiaea, wart-stemmed ceanothus, San Diego barrel cactus, long-spined spineflower, decumbent goldenbush, and white rabbit-tobacco are considered rare, threatened, or endangered in California. There are impacts to five sensitive plant species within the San Vicente Reservoir Alternative in the MHPA. Table 6.4-12 identifies the Project component that would have a direct impact on the plant species. The total individuals in Table 6.4-12 includes both mapped points and polygons. The polygons have been clipped to only include the portion that overlaps the impact area, thus giving a more accurate representation of the number of plants expected to be impacted with project implementation. There are areas of Critical Habitat within the impact limits of the San Vicente Reservoir Alternative, including within the study areas of the San Vicente Pipeline.

Table 6.4-12
Impacts to Sensitive Plant Species within the
San Vicente Reservoir Alternative

Common Name (Scientific Name)	Status (Federal/State/CRPR/MSCP)	Project Component	Total Individuals
San Diego sagewort (<i>Artemisia palmeri</i>)	None/None/4.2/None	San Vicente Pipeline - IRAT	10
San Diego County viguiera (<i>Viguiera laciniata</i>)	None/None/4.2/None	San Vicente Pure Water Pipeline, San Vicente Pipeline - IRAT and - MAT, Mission Trails Booster Station, North City Water Reclamation Plant	<u>972925</u>

**Table 6.4-12
Impacts to Sensitive Plant Species within the
San Vicente Reservoir Alternative**

Common Name (Scientific Name)	Status (Federal/State/CRPR/MSCP)	Project Component	Total Individuals
Orcutt's brodiaea (<i>Brodiaea orcuttii</i>)	None/None/1B.1/Covered	LFG Pipeline	12*
wart-stemmed ceanothus (<i>Ceanothus verrucosus</i>)	None/None/2B.2/Covered	LFG Pipeline	73
long-spined spineflower (<i>Chorizanthe polygonoides</i> var. <i>longispina</i>)	None/None/1B.2/None	Metro Biosolids Center	6*
San Diego barrel cactus (<i>Ferocactus viridescens</i>)	None/None/2B.1/Covered	San Vicente Pure Water Pipeline	6
graceful tarplant (<i>Holocarpha virgata</i> ssp. <i>elongata</i>)	None/None/4.2/None	LFG Pipeline, North City Pure Water Facility, <u>Metro Biosolids Center</u>	9,307 87
Decumbent goldenbush (<i>Isocoma menziesii</i> var. <i>decumbens</i>)	None/None/1B.2/None	Metro Biosolids Center	2*
Robinson's pepper-grass (<i>Lepidium virginicum</i> var. <i>robinsonii</i>)	None/None/4.3/None	San Vicente Pure Water Pipeline, San Vicente Pipeline - MAT	4,606
white rabbit-tobacco (<i>Pseudognaphalium leucocephalum</i>)	None/None/2B.2/None	San Vicente Pipeline - IRAT and - Mat	213
ashy spike-moss (<i>Selaginella cinerascens</i>)	None/None/4.1/None	San Vicente Pipeline - IRAT and - MAT, <u>San Vicente Pipeline - Repurposed 36-inch Recycled Water Line</u> , LFG Pipeline, Metro Biosolids Center	1120 **

Note:

- * This species was not observed within the impact limits in 2017; however, since it was observed during the 2016 surveys within the impact footprint it is included in the Project's impact analysis.
- * This number represents the number of polygons mapped. This species is a fern and grows as a continuous mat, which makes it difficult to know exact numbers.

Sensitive Wildlife Species

There are three sensitive wildlife species occurring within the impact limits of the San Vicente Reservoir Alternative: white-tailed kite, coastal California gnatcatcher, and least Bell's vireo (Figures 6.4-1A through 6.4-1I, and Figures 6.4-1N through 6.4-1AD). Additionally, one species, San Diego fairy shrimp, occurs within the Project area. However, impacts to vernal pools occupied by listed species would be avoided through use of trenchless construction. No direct impacts to individuals is expected; however, impacts to suitable habitat for these species would occur with project implementation.

The white-tailed kite was observed foraging during multiple surveys conducted by HELIX, within non-native grassland on the NCPWF. The individual was outside of the MCAS Miramar and MHPA. The NCPWF does not contain any nesting habitat for white-tailed kites. The least Bell's vireo individual was observed during focused surveys within southern willow scrub. The individual was observed along the San Vicente Pipeline, just east of where the pipeline crosses I-15 and south of Clairemont Mesa Boulevard. This area is located within the MHPA (Figures 6.4-1A through 6.4-1I, and Figures 6.4-1N through 6.4-1AD).

There are four features (PW36, VP653, VP654, and VP656) containing San Diego fairy shrimp along the LFG Pipeline corridor; however, there would be no direct or indirect impacts from the LFG Pipeline to these features due to the use of trenchless construction methods under the San Vicente Reservoir Alternative.

Coastal California gnatcatcher were observed in areas adjacent to Project components, including within MCAS Miramar. Since this species is capable of movement, no direct impacts to adult coastal California gnatcatchers are expected to occur; however, there would be direct impacts to suitable habitat. Potential impacts could also occur to active nests or the young of nesting coastal California gnatcatcher through direct grading of suitable habitat.

The San Vicente Reservoir Alternative would impact suitable habitat for burrowing owl, southwestern willow flycatcher, Hermes copper butterfly, and Quino checkerspot butterfly; however, these species were not observed during focused surveys within the San Vicente Reservoir Alternative study area; therefore, no adverse effects are anticipated.

The large majority of the pipelines and facilities associated with the San Vicente Reservoir Alternative will be placed within existing roadways and developed areas,

with very little habitat being impacted. Eleven species (Cooper’s hawk, yellow warbler, yellow-breasted chat, orangethroat whiptail, San Diegan tiger whiptail, western pond turtle, two-striped gartersnake, willow flycatcher, southern California rufous-crowed sparrow, western bluebird, and mule deer) were observed within the San Vicente Reservoir Alternative’s study area but are unlikely to occur within the footprint. However, direct impacts to suitable habitat for these species would occur.

There is also a potential for vegetated areas within the San Vicente Reservoir Alternative footprint to support nesting bird species. The California Fish and Game Code prohibits the take of any migratory bird or any part, nest, or eggs of any such bird. There are areas of Critical Habitat within the impact limits of the San Vicente Reservoir Alternative, including the study areas of the NCWRP Expansion and NCPWF Influent Pump Station, LFG Pipeline, and San Vicente Pipeline.

Indirect Impacts

Sensitive Plant Species

Similar to the Miramar Reservoir Alternative, indirect effects during construction of the San Vicente Reservoir Alternative may include dust, which could disrupt plant vitality in the short term, or construction-related soil erosion and runoff. Long-term edge effects could include intrusions by humans and domestic pets and possible trampling of individual plants, invasion by exotic plant and wildlife species, exposure to urban pollutants (fertilizers, pesticides, herbicides, and other hazardous materials), soil erosion, litter, fire, and hydrologic changes (e.g., surface and groundwater level and quality).

Sensitive Wildlife Species

Indirect impacts to sensitive wildlife under the San Vicente Reservoir Alternative would be similar to those described under the Miramar Reservoir Alternative and would include noise impacts, edge effects, and nighttime lighting. Breeding birds can be affected by short-term construction-related noise, which can result in the disruption of foraging, nesting, and reproductive activities. Construction or operational noise levels could exceed a 60 decibel [dB(A)] hourly-average within 500 feet of adjacent suitable habitat for coastal California gnatcatcher, least Bell’s vireo, southern willow flycatcher, or burrowing owl, during nesting bird season (excluding coastal California gnatcatcher if construction occurs outside the MHPA). San Vicente Reservoir Alternative construction noise levels would range from approximately 49 dBA L_{eq} to 92 dBA L_{eq} .

The loudest construction noise levels would occur at the Mission Trails Booster Station and along the San Vicente Pipeline and Morena Pipelines. Some construction work along pipeline alignments is also anticipated to occur during the nighttime in order to reduce temporary traffic congestion. Although most of the impacts associated with the North City Project are within developed areas or existing roads, there is suitable habitat within the study area that could provide nesting habitat for raptors and songbirds. Indirect impacts from construction-related noise may occur to breeding wildlife if construction occurs during the breeding season (i.e., February 1 through September 15) and would be considered an adverse impact.

The San Vicente Reservoir has a moderate potential for western pond turtle; however, the addition of purified water in to the reservoir Alternative is not expected to have ~~the same~~ limnological effects or potential effects on western pond turtle ~~as the Miramar Reservoir Alternative~~, due to the comparatively small amount of purified water being added to the San Vicente Reservoir when compared to the San Vicente Reservoir itself.

6.4.5.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

No impacts would occur as a result of No Project/No Action Alternative.

Miramar Reservoir Alternative

Sensitive Plant Species

Direct impacts to CRPR 1B.1 and 2B.2 species, including Orcutt's brodiaea, long-spined spineflower, decumbent goldenbush, and wart-stemmed ceanothus, would be considered **potentially significant** under CEQA because these species are considered rare, threatened, or endangered in California.

Direct impacts to CRPR 4 species, including San Diego County viguiera, graceful tarplant, and ashy spike-moss, would be **less than significant** under CEQA because these species are of low sensitivity, and the on-site populations are not significant in terms of the ability for this species to persist (i.e., it is a CRPR 4 species and therefore not considered rare). In addition, the species do not occur within the impact area in a population that is considered regionally significant and/or are common in the study area.

Indirect impacts to sensitive plant species would **potentially significant** under CEQA.

Implementation of the Miramar Reservoir Alternative would have **no impacts** on plant species listed or proposed as federally threatened or endangered.

Sensitive Wildlife Species

Two sensitive wildlife species (white-tailed kite and coastal California gnatcatcher) were observed within the Miramar Reservoir Alternative footprint, and one species, San Diego fairy shrimp, occurs within the Project area. Since the NCPWF does not contain any nesting habitat for white-tailed kites, no direct impacts are expected to this species. However, direct impacts to vegetation communities used by the white-tailed kite for foraging would be **potentially significant** under CEQA. No direct impacts are expected to coastal California gnatcatcher, however direct impacts to suitable nesting habitat for coastal California gnatcatcher would be **potentially significant** under CEQA. Implementation of the Miramar Reservoir Alternative would have **no impacts** on San Diego fairy shrimp.

The Miramar Reservoir Alternative would impact suitable habitat for burrowing owl, Hermes copper butterfly, and Quino checkerspot butterfly; however, since these species were not observed during focused surveys within the Miramar Reservoir Alternative study area, impacts would be **less than significant** under CEQA.

No impacts to suitable habitat for yellow warbler, and yellow-breasted chat would occur under the Miramar Reservoir Alternative. There is a potential for vegetated areas within the Miramar Reservoir Alternative footprint to support nesting bird species (including Cooper's hawk); therefore, impacts to any active nests or the young of nesting bird species through direct grading would be **potentially significant** under CEQA.

Indirect impacts to sensitive wildlife species, including indirect impacts to breeding birds (southwestern willow flycatcher, least Bell's vireo, and coastal California gnatcatcher) would be **potentially significant** under CEQA.

~~Miramar Reservoir is maintained and operated as a domestic drinking water supply for the City of San Diego. Although the Miramar Reservoir Alternative would not have direct impacts to western pond turtle habitat (including basking sites) from construction, placement of the North City Pipeline would occur within 1,500 feet of known locations within the MSCP, therefore, a **potentially significant** impact would result. Similarly, indirect impacts to this species resulting from Project~~

operation and its resultant changes to water chemistry and effects to pond turtle would be **potentially significant**.

San Vicente Reservoir Alternative

Sensitive Plant Species

Direct impacts to CRPR 1B.1 and 2B.2 species, including Orcutt's brodiaea, wart-stemmed ceanothus, San Diego barrel cactus, long-spined spineflower, decumbent goldenbush, and white rabbit-tobacco would under CEQA be **potentially significant** because these species are considered rare, threatened, or endangered in California.

Direct impacts to CRPR 4 species, including San Diego sagewort, San Diego County viguiera, graceful tarplant, Robinson's pepper-grass, and ashy spike-moss would under CEQA be **less than significant** because these species are of low sensitivity, and the on-site populations are not significant in terms of the ability for this species to persist (i.e., it is a CRPR 4 species and therefore not considered rare). In addition, the species do not occur within the impact area in a population that is considered regionally significant and/or are common in the study area.

Indirect impacts to sensitive plant species would be **potentially significant** under CEQA. Implementation of the San Vicente Reservoir Alternative would have **no impacts** on species listed or proposed as federally threatened or endangered.

Sensitive Wildlife Species

Since the NCPWF does not contain any nesting habitat for white-tailed kite, no direct impacts are expected to this species. However, direct impacts to vegetation communities used by the white-tailed kite for foraging would be **potentially significant** under CEQA. Direct impacts to suitable habitat for least Bell's vireo would be **potentially significant** under CEQA. No direct impacts to adult coastal California gnatcatchers are expected to occur; however, there would be direct permanent and temporary impacts to suitable nesting habitat, which would be **potentially significant** under CEQA. Implementation of the San Vicente Reservoir Alternative would have **no direct impacts** on San Diego fairy shrimp.

The San Vicente Reservoir Alternative would impact suitable habitat for burrowing owl, southwestern willow flycatcher, Hermes copper butterfly, and Quino checkerspot butterfly; however, since these species were not observed during focused surveys within the San Vicente Reservoir Alternative study area, impacts

would be **less than significant** under CEQA. Direct impacts to suitable habitat for these species would be **potentially significant** under CEQA.

Direct impacts to suitable habitat for Cooper’s hawk, yellow warbler, yellow-breasted chat, orangethroat whiptail, San Diegan tiger whiptail, western pond turtle, two-striped gartersnake, willow flycatcher, southern California rufous-crowed sparrow, western bluebird, and mule deer would be **potentially significant** under CEQA. There is also a potential for vegetated areas within the San Vicente Reservoir Alternative footprint to support nesting bird species; therefore, impacts to any active nests or the young of nesting bird species through direct grading would be **potentially significant** under CEQA.

Indirect impacts to sensitive wildlife species, including indirect impacts to San Diego fairy shrimp and breeding birds, would be **potentially significant** under CEQA. Implementation of San Vicente Reservoir Alternative would have **no impacts** on species listed or proposed as federally threatened or endangered.

6.4.5.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No impact would occur under the No Project/No Action Alternative, and no mitigation measures would be required.

Miramar Reservoir Alternative

Sensitive Plant Species

Implementation of MM-BIO-1a and MM-BIO-2 would conserve or restore suitable habitat for CRPR 1B.1 and 2B.2 plant species, including Orcutt’s brodiaea, long-spined spineflower, decumbent goldenbush, and wart-stemmed ceanothus. Mitigation measure MM-BIO-~~910~~ would reduce indirect impacts to sensitive ~~wildlife~~ plant species.

Sensitive Wildlife Species

In addition to MM-BIO-1a, MM-BIO-1b, and MM-BIO-2, which would reduce direct impacts to suitable habitat for sensitive wildlife species, and MM-BIO-~~910~~, which would reduce indirect impacts to sensitive wildlife species, the following mitigation measures are provided below to reduce direct and indirect impacts to sensitive wildlife species.

Special consideration should be given to the timing of construction work. Wildlife is more susceptible to damage or harassment during their growing or breeding season. To minimize impacts to wildlife during active growing and breeding seasons, Section 6.2.2.2 of the INRMP emphasizes the importance of planning construction to avoid performing work during breeding or growing seasons. For vernal pool species the growing/breeding season occurs when soil is wet which depends on annual rainfall typically occurring November through May. For other threatened and endangered species, the growing/breeding season is generally February 15 through August 31. If possible, construction should be planned to avoid the growing/breeding season. Construction-related direct and indirect noise impacts may occur to breeding wildlife, including the federally threatened coastal California gnatcatcher, least Bell's vireo and the MSCP covered species Cooper's hawk, yellow warbler, yellow-breasted chat, and other avian species if construction occurs during the breeding season (i.e., March 1 through August 15 for coastal California gnatcatcher, March 1 through August 31 for Cooper's hawk, March 15 through September 15 for least Bell's Vireo, and February 1 through September 15 for other breeding species).

MM-BIO-3 Nesting Birds. To avoid any direct impacts 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 CDFW or USFWS, removal of habitat that supports active nests in the proposed area of disturbance should occur outside of the breeding season for these species (February 1 to September 15). If removal of habitat in the proposed area of disturbance must occur during the breeding season, the Qualified Biologist shall conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey shall be conducted within 10 calendar days prior to the start of construction activities (including removal of vegetation). The applicant shall submit the results of the pre-construction survey to the City's Development Services Department for review and approval prior to initiating any construction activities. If nesting birds are detected, a letter report or mitigation plan in conformance with the City's Biology Guidelines and applicable State and Federal Law (i.e. appropriate follow up surveys, monitoring schedules, and construction barriers/buffers, etc.) shall be prepared and include proposed measures to be implemented to ensure that take of birds or eggs is avoided. The report or mitigation plan shall

be submitted to the City for review and approval and implemented to the satisfaction of the City. The City's MMC Section and Biologist shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction.

Potential impacts to any active nests or the young of nesting coastal California gnatcatcher through direct grading of suitable habitat within designated MHPA lands or within MCAS Miramar would be mitigated through MM-BIO-4a or MM-BIO-4b, which requires preconstruction surveys for coastal California gnatcatcher. Mitigation requirements outlined in the Section 6.2.2.3 of the INRMP, for construction noise on MCAS Miramar, would be satisfied through implementation of MM-BIO-4b (Appendix A, of Appendix C).

MM-BIO-4a Coastal California Gnatcatcher. Prior to the preconstruction meeting, the Assistant Deputy Director (ADD) or MMC shall verify that the MHPA boundaries and the project requirements regarding the coastal California gnatcatcher, as specified below, are shown on the construction plans.

No clearing, grubbing, grading, or other construction activities shall occur during the coastal California gnatcatcher breeding season (March 1 to August 15), until the following requirements have been met to the satisfaction of the ADD/MMC:

1. A Qualified Biologist (possessing a valid Endangered Species Act Section 10(a)(1)(a) Recovery Permit) shall survey those habitat areas within the MHPA that would be subject to construction noise levels exceeding 60 decibels [dB(A)] hourly average for the presence of the coastal California gnatcatcher. Surveys for coastal California gnatcatcher shall be conducted pursuant to the protocol survey guidelines established by the USFWS within the breeding season prior to the commencement of any construction. If coastal California gnatcatchers are present, then the following conditions must be met:
 - a. Between March 1 and August 15, no clearing, grubbing, or grading of occupied coastal California gnatcatcher habitat shall be permitted. Areas restricted from such activities shall be staked or fenced under the supervision of a Qualified Biologist; and
 - b. Between March 1 and August 15, no construction activities shall occur within any portion of the site where construction activities

would result in noise levels exceeding 60 dB(A) hourly average at the edge of occupied coastal California gnatcatcher habitat. An analysis showing that noise generated by construction activities would not exceed 60 dB(A) hourly average at the edge of occupied habitat must be completed by a Qualified Acoustician (possessing current noise engineer license or registration with monitoring noise level experience with listed animal species) and approved by the ADD/MMC at least 2 weeks prior to the commencement of construction activities. Prior to the commencement of construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under the supervision of a Qualified Biologist; or

- c. At least 2 weeks prior to the commencement of construction activities, under the direction of a Qualified Acoustician, noise attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities would not exceed 60 dB(A) hourly average at the edge of habitat occupied by the coastal California gnatcatcher. Concurrent with the commencement of construction activities and the construction of necessary noise attenuation facilities, noise monitoring shall be conducted at the edge of the occupied habitat area to ensure that noise levels do not exceed 60 dB(A) hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the Qualified Acoustician or Biologist, then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (August 16). Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. If not, other measures shall be implemented in consultation with the biologist and the ADD/MMC, as necessary, to reduce noise levels to below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

2. If coastal California gnatcatchers are not detected during the protocol survey, the Qualified Biologist shall submit substantial evidence to the ADD/MMC and applicable resource agencies which demonstrates whether or not mitigation measures such as noise walls are necessary between March 1 and August 15 as follows:
 - a. If this evidence indicates that the potential is high for coastal California gnatcatcher to be present based on historical records or site conditions, then Condition 1(a) shall be adhered to as specified above.
 - b. If this evidence concludes that no impacts to this species are anticipated, no mitigation measures would be necessary.

MM-BIO-4b Coastal California Gnatcatcher. Ambient noise levels on MCAS Miramar, in particular in the vicinity of the airfield, exceed typical construction noise level. On MCAS Miramar, construction noise levels are not anticipated to exceed ambient noise levels. Potential impacts associated with construction activities on MCAS Miramar would be mitigated through the following:

1. Qualified Biologist (possessing a valid federal Endangered Species Act (FESA) Section 10(a)(1)(a) Recovery Permit) shall conduct a pre-construction survey within suitable habitat. Between February 15 and August 31, no clearing, grubbing, or grading of occupied coastal California gnatcatcher habitat shall be permitted. Areas restricted from such activities shall be staked or fenced under the supervision of a Qualified Biologist; and
2. For potential impacts associated with construction noise, presence or absence of coastal California gnatcatcher would be determined by pre-construction surveys conducted by a Qualified Biologist adjacent to the Project area. Coastal sage scrub outside of the impact area would be flagged to protect it from construction equipment as directed by the Project Biologist. Between February 15 and August 31, no noise-generating construction activities that exceed ambient noise levels would occur in close proximity to occupied habitat. If necessary, other measures shall be implemented in consultation with the Project Biologist as necessary, to reduce noise levels. Measures may include, but are

not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

MM-BIO-5 Burrowing Owl. Species Specific Mitigation (required to meet MSCP Subarea Plan Conditions of Coverage) for Potential Impacts to Burrowing Owl and Associated Habitat located outside the MHPA (burrowing owl and associated habitat impacts within the MHPA must be avoided).

Prior to Permit or Notice to Proceed Issuance:

1. As this project has been determined to have burrowing owl occupation potential, the Permit Holder shall submit evidence to the Assistant Deputy Director of the City's Entitlements verifying that a Biologist possessing qualifications pursuant to the "Staff Report on Burrowing Owl Mitigation, State of California Natural Resources Agency, California Department of Fish and Game" (hereafter referred as CDFG 2012, Staff Report), has been retained to implement a burrowing owl construction impact avoidance program.
2. The Qualified Biologist shall attend the pre-construction meeting to inform construction personnel about the City's burrowing owl requirements and subsequent survey schedule.

Prior to Start of Construction:

1. The Permit Holder and Qualified Biologist must ensure that initial pre-construction/take avoidance surveys of the Project "site" are completed between 14 and 30 days before initial construction activities, including brushing, clearing, grubbing, or grading of the Project site; regardless of the time of the year. "Site" means the Project site and the area within a radius of 450 feet of the Project site. A report detailing the results of the surveys shall be submitted and approved by the Wildlife Agencies and/or City MSCP staff prior to construction or burrowing owl eviction(s) and shall include maps of the Project site and burrowing owl locations on aerial photos.
2. The pre-construction survey shall follow the methods described in CDFG 2012, Staff Report, Appendix D (please note, in 2013, CDFG became California Department of Fish and Wildlife or CDFW).

3. 24 hours prior to commencement of ground disturbing activities, the Qualified Biologist shall ~~verify~~ update and report results of preconstruction/take avoidance surveys. Verification shall be provided to the City's MMC Section. If results of the preconstruction surveys have changed and burrowing owl are present in areas not previously identified, immediate notification to the City and Wildlife Agencies shall be provided prior to ground disturbing activities.

During Construction:

1. Best Management Practices shall be employed as burrowing owls are known to use open pipes, culverts, excavated holes, and other burrow-like structures at construction sites. Legally permitted active construction projects which are burrowing owl occupied and have followed all protocol in this mitigation section, or sites within 450 feet of occupied burrowing owl areas, should undertake measures to discourage burrowing owls from recolonizing previously occupied areas or colonizing new portions of the site. Such measures include, but are not limited to, ensuring that the ends of all pipes and culverts are covered when they are not being worked on, and covering rubble piles, dirt piles, ditches, and berms.
2. Ongoing burrowing owl detection—If burrowing owls or active burrows are not detected during the pre-construction surveys, Section “a” below shall be followed. If burrowing owls or burrows are detected during the pre-construction surveys, Section “b” shall be followed. Neither the MSCP Subarea Plan nor this mitigation section allows for any burrowing owls to be injured or killed outside or within the MHPA; in addition, impacts to burrowing owls within the MHPA must be avoided.
 - a. Post Survey Follow Up if Burrowing Owls and/or Signs of Active Natural or Artificial Burrows Are Not Detected During the Initial Preconstruction Survey. Monitoring the site for new burrows is required using the protocol in Appendix D of the Burrowing Owl Staff Report (CDFG 2012) for the period following the initial pre-construction survey, until construction is scheduled to be complete and is complete. (NOTE: Using a projected completion date (that is amended if needed) will allow development of a

monitoring schedule which adheres to the required number of surveys in the detection protocol)

- i. If no active burrows are found but burrowing owls are observed to occasionally (1-3 sightings) use the site for roosting or foraging, they should be allowed to do so with no changes in the construction or construction schedule.
 - ii. If no active burrows are found but burrowing owls are observed during follow up monitoring to repeatedly (4 or more sightings), using the site for roosting or foraging, the City's MMC Section shall be notified and any portion of the site where owls have been sighted and that has not been graded or otherwise disturbed shall be avoided until further notice.
 - iii. If a burrowing owl begins using a burrow on the site at any time after the initial pre-construction survey, procedures described in Section b must be followed.
 - iv. Any actions other than these require the approval of the City and the Wildlife Agencies.
- b. Post-Survey Follow Up if Burrowing Owls and/or Active Natural or Artificial Burrows are detected during the Initial Pre-Construction Survey. Monitoring the site for new burrows is required using the protocol in Appendix D of the Burrowing Owl Staff Report (CDFG 2012) for the period following the initial pre-construction survey, until construction is scheduled to be complete and is complete. (NOTE: Using a projected completion date (that is amended if needed) will allow development of a monitoring schedule which adheres to the required number of surveys in the detection protocol.)
- i. This section (b) applies only to sites (including biologically defined territory) wholly outside of the MHPA; all direct and indirect impacts to burrowing owls within the MHPA SHALL be avoided.
 - ii. If one or more burrowing owls are using any burrows (including pipes, culverts, debris piles etc.) on or within 300 feet of the proposed construction area, the City's MMC Section shall be contacted. The City's MMC Section shall contact the Wildlife Agencies regarding eviction/collapsing

burrows and enlist the appropriate City biologist for on-going coordination with the Wildlife Agencies and the qualified consulting burrowing owl biologist. No construction shall occur within 300 feet of an active burrow without written concurrence from the Wildlife Agencies. This distance may increase or decrease, depending on the burrow's location in relation to the site's topography, and other physical and biological characteristics.

1. Outside the Breeding Season: If the burrowing owl is using a burrow on site outside the breeding season (i.e. September 1 – January 31), the burrowing owl may be evicted after the qualified burrowing owl biologist has determined via fiber optic camera or other appropriate device, that no eggs, young, or adults are in the burrow and written concurrence from the Wildlife Agencies for eviction is obtained prior to implementation.
2. During Breeding Season: If a burrowing owl is using a burrow on-site during the breeding season (February 1 to August 31), construction shall not occur within 300 feet of the burrow until the young have fledged and are no longer dependent on the burrow, at which time the burrowing owls can be evicted. Eviction requires written concurrence from the Wildlife Agencies prior to implementation.
3. Survey Reporting During Construction: Details of construction surveys and evictions (if applicable) carried out shall be immediately (within 5 working days or sooner) reported to the City's MMC Section and the Wildlife Agencies and must be provided in writing (as by e-mail) and acknowledged to have been received by the required Wildlife Agencies and Development Services Department Staff member(s).

Post Construction:

1. Details of all the surveys and actions undertaken on-site with respect to burrowing owls (i.e., occupation, eviction, locations etc.) shall be reported to the City's MMC Section and the Wildlife Agencies within 21 days post-construction and prior to the release of any grading bonds. This report must include summaries of all previous reports

for the site; and maps of the Project site and burrowing owl locations on aerial photos.

Project construction within 500 feet of the San Diego River, Rose Creek, San Clemente Creek and any other sensitive riparian areas may have adverse indirect impacts on least Bell's vireo and southwestern willow flycatcher if construction occurs during the breeding season from March 15 through September 15 for least Bell's vireo and May 1 through September 1 for southern willow flycatcher and the species are determined to be present.

MM-BIO-6 Riparian Birds. Prior to the preconstruction meeting, the Assistant Deputy Director (ADD) or MMC shall verify that MHPA boundaries and the Project requirements regarding the least Bell's vireo and southwestern willow flycatcher, as specified below, are shown on the construction plans.

No clearing, grubbing, grading, or other construction activities shall occur during the least Bell's vireo breeding season (March 15 to September 15) and southwestern willow flycatcher breeding season (May 1 to September 1), until the following requirements have been met to the satisfaction of the ADD/MMC:

1. A Qualified Biologist (possessing a valid Endangered Species Act Section 10(a)(1)(a) Recovery Permit) shall survey those habitat areas within the MHPA that would be subject to construction noise levels exceeding 60 decibels [dB(A)] hourly average for the presence of the least Bell's vireo and southwestern willow flycatcher. Surveys for least Bell's vireo and southwestern willow flycatcher shall be conducted pursuant to the protocol survey guidelines established by the USFWS within the breeding season prior to the commencement of any construction. If least Bell's vireo, and/or southwestern willow flycatcher are present, then the following conditions must be met:
 - a. Between March 15 to September 15 for least Bell's vireo and May 1 to September 1 for southwestern willow flycatcher, no clearing, grubbing, or grading of occupied habitat shall be permitted. Areas restricted from such activities shall be staked or fenced under the supervision of a Qualified Biologist; and

- b. Between March 15 to September 15 for least Bell's vireo and/or May 1 to September 1 for southwestern willow flycatcher no construction activities shall occur within any portion of the site where construction activities would result in noise levels exceeding 60 dB(A) hourly average at the edge of occupied habitat. An analysis showing that noise generated by construction activities would not exceed 60 dB(A) hourly average at the edge of occupied habitat must be completed by a Qualified Acoustician (possessing current noise engineer license or registration with monitoring noise level experience with listed animal species) and approved by the ADD/MMC at least 2 weeks prior to the commencement of construction activities. Prior to the commencement of construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under the supervision of a Qualified Biologist; or
- c. At least 2 weeks prior to the commencement of construction activities, under the direction of a Qualified Acoustician, attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities would not exceed 60 dB(A) hourly average at the edge of habitat occupied by the least Bell's vireo, and/or southwestern willow flycatcher. Concurrent with the commencement of construction activities and the construction of necessary noise attenuation facilities, noise monitoring shall be conducted at the edge of the occupied habitat area to ensure that levels do not exceed 60 dB(A) hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the Qualified Acoustician or Biologist, then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (August 16). Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. If not, other measures shall be implemented in consultation with the biologist and the ADD/MMC, as necessary, to reduce noise levels to below 60 dB(A)

hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

2. If least Bell's vireo and/or southwestern willow flycatcher are not detected during the protocol survey, the Qualified Biologist shall submit substantial evidence to the ADD/MMC and applicable resource agencies which demonstrates whether or not mitigation measures such as noise walls are necessary between March 15 to September 15 for least Bell's vireo and/or May 1 to September 1 for southwestern willow flycatcher adherence to the following is required:
 - a. If this evidence indicates that the potential is high for least Bell's vireo and/or southwestern willow flycatcher to be present based on historical records or site conditions, then Condition 1(a) shall be adhered to as specified above.
 - b. If this evidence concludes that no impacts to this species are anticipated, no mitigation measures would be necessary.

~~A monitoring and adaptive management plan within the reservoir would be contradictory to the drinking water reservoir goals, objectives and mandates, warm water fishery maintenance, and other human related recreational objectives; therefore, a trapping and relocation plan is proposed for this already threatened and apparent non-natural pond turtle population. Trapping and relocation is proposed to avoid potentially adverse indirect effects to western pond turtle populations. The USGS-advocated trapping and relocation program, which can successfully establish new populations or maintain extant populations (Harmsworth Associates & Goodman 2002, 2003), would help increase and expand western pond turtle populations into areas that have higher habitat quality than the Miramar Reservoir, which has high human access and is an artificial reservoir within a park setting (USGS 2005).~~

MM-BIO-7 Western Pond Turtle. ~~Since the Miramar Reservoir is maintained and operated as a drinking water reservoir which creates conditions that provide less than optimal habitat for western pond turtles and because an adaptive management program for this species would be contradictory to water quality benefits, the City prepared a conceptual trapping and relocation plan for this species (Appendix U,~~

~~of Appendix C). Relocation would be conducted in accordance with the plan and in consultation with the California Department of Fish and Wildlife (CDFW) with input from the U.S. Geological Survey and approved by the Development Services Department and by MSCP Planning. The relocation plan provides the methods for the trapping of western pond turtles and relocation to the most proximate suitable habitat that would not be affected by the proposed project.~~

~~Specific trapping timing and methodology/recurrence intervals would be in consultation with CDFW and would be performed by a Qualified Biologist operating under an active California State Scientific Collecting Permit. However, trapping would be performed in late April through early August to remove egg-laying females from the reservoir prior to egg deposition, thus eliminating the potential for stranding of eggs or hatchlings.~~

Area-Specific Management Directives

In addition to project-specific mitigation, the project is required to implement the area-specific management directives (ASMDs), as stated in Appendix A of the City's MSCP Subarea for MSCP Covered Species, for each covered species proposed to be impacted. The project must demonstrate how ASMDs (or Conditions of Coverage) would be implemented in order for the species to be considered "covered" by the MSCP and issue take authority under the City Incidental Take Permit. Table 6.4-13 provides the ASMDs for each covered species that has a potential to be impacted by the Miramar Reserve Alternative and outlines the project compliance with the applicable ASMDs.

According to Appendix A (City of San Diego 1997), the ASMD for wart-stemmed ceanothus states:

Revegetation efforts within appropriate habitats must include restoration of this species. Area specific management directives for the protected populations must include specific measures to increase populations. Area specific management directives must include specific management measures to address the autecology and natural history of the species and to reduce the risk of catastrophic fire. Management measures to accomplish this may include prescribed fire. Any newly found populations should be evaluated for inclusion in the preserve strategy through acquisition, like exchange, etc.

These ASMDs are specifically related to the management of preserved populations and therefore do not apply to the North City Project. The ASMDs for Orcutt's brodiaea states, "The San Vicente population is identified as a critical population in the County's Subarea Plan and must be 100 percent conserved. ASMDs must include specific measures to protect against detrimental edge effects." Mitigation measure MM-BIO-940 (biological monitoring, construction fencing, environmental awareness training, BMP implementation, and hazardous material storage) would be implemented to reduce the potential impacts of edge effects. No impacts to Orcutt's brodiaea would occur to the San Vicente population with implementation of the North City Project; therefore, this ASMD does not apply.

Table 6.4-13
Compliance with ASMD for Impacts to Covered Wildlife Species

Covered Species	ASMD	Project Compliance
Least Bell's vireo (<i>Vireo bellii pusillus</i>)	Jurisdictions will require survey (using appropriate protocols) during the CEQA review process in suitable habitat proposed to be impacted and incorporate mitigation measures consistent with the 404(b)1 guidelines into the project. Participating jurisdictions guidelines and ordinances, and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands. Jurisdictions must require new developments adjacent to preserve areas that create conditions attractive to brown-headed cowbirds to monitor and control cowbirds. Area specific management directives must include measures to provide appropriate successional habitat, upland buffers for all known populations, cowbird control, and specific measures to protect against detrimental edge effects to this species. Any clearing of occupied habitat must occur between September 15 and March 15 (i.e., outside of the nesting period).	<p>Protocol surveys were conducted in all areas of suitable habitat and no least Bell's vireo were observed within the Miramar Reservoir Alternative. However, preconstruction surveys would be conducted within suitable habitat prior to Project construction to ensure that indirect impacts to this species would be avoided (MM-BIO-6). If the species is observed, noise restrictions would be implemented.</p> <p>The proposed Project is not anticipated to create conditions to attract brown-headed cowbirds (<i>Molothrus ater</i>). Mitigation measure MM-BIO-940 would be implemented to reduce the potential impacts of edge effects.</p> <p>No clearing of suitable habitat will occur under the Miramar Reservoir Alternative.</p>

**Table 6.4-13
Compliance with ASMD for Impacts to Covered Wildlife Species**

Covered Species	ASMD	Project Compliance
<p>Burrowing owl <i>(Athene cunicularia)</i></p>	<p>During the environmental analysis of proposed projects, burrowing owl surveys (using appropriate protocols) must be conducted in suitable habitat to determine if this species is present and the location of active burrows. If burrowing owls are detected, the following mitigation measures must be implemented: within the MHPA, impacts must be avoided; outside of the MHPA, impacts to the species must be avoided to the maximum extent practicable; any impacted individuals must be relocated out of the impact area using passive or active methodologies approved by the wildlife agencies; mitigation for impacts to occupied habitat (at the Subarea Plan specified ratio) must be through the conservation of occupied burrowing owl habitat or conservation of lands appropriate for restoration, management and enhancement of burrowing owl nesting and foraging requirements. Management plans/directives must include: enhancement of know, historical and potential burrowing owl habitat; and management for ground squirrels (the primary excavator of burrowing owl burrows). Enhancement measures may include creation of artificial burrows and vegetation management to enhance foraging habitat. Management plans must also include: monitoring of burrowing owl nest sites to determine use and nesting success; predator control; establishing a 300 foot-wide impact avoidance area (within the</p>	<p>Burrowing owl surveys were conducted in areas of suitable habitat and no observations were recorded. However, since there is habitat within the Project area that has burrowing owl occupation potential, a burrowing owl construction impact avoidance program will be implemented in accordance with MM-BIO-5. If burrowing owls are identified within the Project area and have a potential to be impacted, the measures outlined in this ASMD will be applied.</p>

**Table 6.4-13
Compliance with ASMD for Impacts to Covered Wildlife Species**

Covered Species	ASMD	Project Compliance
	<p>preserve) around occupied burrows. Eight known burrowing owl locations occur within major amendment areas of the South County Segment of the County Subarea Plan and the conservation of occupied burrowing owl habitat must be one of the primary factors preserve design during the permit amendment process.</p>	
<p>Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)</p>	<p>Jurisdictions must require surveys (using appropriate protocols) during the CEQA review process in suitable habitat proposed to be impacted and incorporate mitigation measures consistent with the 404(b)1 guidelines into the project. Participating jurisdictions' guidelines and ordinances, and state and federal wetlands regulations will provide additional habitat protection resulting in no net loss of wetlands. For new developments adjacent to preserve areas that create conditions attractive to brown-headed cowbirds, jurisdictions must require monitoring and control of cowbirds. Area specific management directives must include measures to provide appropriate successional habitat, upland buffers for all known populations, cowbird control, and specific measures to protect against detrimental edge effects to this species. Any clearing of occupied habitat must occur between September 1 and May 1 (i.e., outside of the nesting period).</p>	<p>Protocol surveys were conducted in all areas of suitable habitat. In addition, preconstruction surveys will be conducted prior to Project construction to ensure that direct impacts to this species would be avoided (MM-BIO-6). If the species is observed, noise restrictions would be implemented.</p> <p>The proposed Project is not anticipated to create conditions to attract brown-headed cowbirds. Mitigation measure MM-BIO-910 would be implemented to reduce the potential impacts of edge effects.</p> <p>No clearing of suitable habitat will occur under the Miramar Reservoir Alternative.</p>

**Table 6.4-13
Compliance with ASMD for Impacts to Covered Wildlife Species**

Covered Species	ASMD	Project Compliance
western pond turtle (<i>Actinemys marmorata</i>)	Maintain and manage a 1,500-foot area around known locations within the preserve lands for the species. Within this impact avoidance area, human impacts will be minimized, non-native species detrimental to pond turtles controlled/removed and habitat restoration/enhancement measures implemented.	Focused <u>trapping</u> surveys for this species were conducted, and species was no western pond turtles were detected <u>observed</u> within the Miramar Reservoir. <u>No other direct or indirect impacts are anticipated to this species within preserve lands; therefore, this ASMD is not applicable.</u> A trapping and relocation plan for this species would be applied, as outlined in MM-BIO-7, since an adaptive management program cannot be implemented as it would be contradictory to the water quality benefits.
Cooper's hawk (<i>Accipiter cooperii</i>)	In the design of future projects within the Metro-Lakeside-Jamul segment, design of preserve areas shall conserve patches of oak woodland and oak riparian forest of adequate size for nesting and foraging habitat. Area specific management directives must include 300-foot impact avoidance areas around the active nests, and minimization of disturbance in oak woodlands and oak riparian forests.	The proposed project will not result in the design of preserve areas. Active nests, if detected during nesting bird surveys, will be subject to a 300-foot buffer (MM-BIO-3).
western bluebird (<i>Sialia mexicana</i>)	None	Not applicable
southern California rufous-crowned sparrow (<i>Aimophila ruficeps canescens</i>)	Area specific management directives must include maintenance of dynamic processes, such as fire, to perpetuate some open phases of coastal sage scrub with herbaceous components.	This ASMD is directed at preserve management and does not apply to the proposed project.
mule deer (<i>Odocoileus hemionus</i>)	None	Not applicable

**Table 6.4-13
Compliance with ASMD for Impacts to Covered Wildlife Species**

Covered Species	ASMD	Project Compliance
orangethroat whiptail <i>(Aspidoscelis hyperythra)</i>	Area specific management directives must address edge effects.	All temporary construction areas in native habitat would require revegetation following the completion of construction (MM-BIO-2). Habitat restoration and erosion control treatments will be installed within temporary disturbance areas in native habitat, in accordance with the City's <u>Biology Guidelines and Landscape Regulations</u> (City of San Diego 2012) and the City's <u>Landscape Standards</u> (City of San Diego 2016c). The <u>Habitat Conceptual Revegetation Plan</u> was prepared by a Restoration Specialist. Habitat restoration will feature native species that are typical of the area, and erosion control features will include silt fence and straw fiber rolls, where appropriate. In addition, mitigation measure MM-BIO- 910 would be implemented to reduce the potential impacts of edge effects.

San Vicente Reservoir Alternative

Sensitive Plant Species

Direct and indirect impacts to CRPR 1B.1, 1B.2, 2B.1, and 2B.2 species, including Orcutt's brodiaea, wart-stemmed ceanothus, San Diego barrel cactus, long-spined spineflower, decumbent goldenbush, and white rabbit-tobacco would be reduced with implementation of MM-BIO-1a-c, and MM-BIO-2, which would conserve or restore suitable habitat for these species. Indirect impacts to sensitive plant species would be reduced with implementation of MM-BIO-~~910~~.

Sensitive Wildlife Species

Mitigation measures MM-BIO-1a, MM-BIO-1c, MM-BIO-2, MM-BIO-3, MM-BIO-4a, MM-BIO-4b, MM-BIO-5, and MM-BIO-6 would also be applicable to the San Vicente Reservoir Alternative. In addition, MM-BIO-7~~8~~ would reduce indirect impacts to San Diego fairy shrimp, and MM-BIO-9~~10~~ would reduce general indirect impacts to sensitive wildlife species.

Area-Specific Management Directives

In addition to project-specific mitigation, the project is required to implement the area-specific management directives (ASMDs), as stated in Appendix A of the City's MSCP Subarea for MSCP Covered Species, for each covered species proposed to be impacted. The project must demonstrate how ASMDs (or Conditions of Coverage) would be implemented in order for the species to be considered "covered" by the MSCP and issue take authority under the City Incidental Take Permit. Table 6.4-14 provides the ASMDs for each covered species that has a potential to be impacted by the San Vicente Reserve Alternative and outlines the project compliance with the applicable ASMDs.

According to Appendix A (City of San Diego 1997), the ASMD for wart-stemmed ceanothus states:

Revegetation efforts within appropriate habitats must include restoration of this species. Area specific management directives for the protected populations must include specific measures to increase populations. Area specific management directives must include specific management measures to address the autecology and natural history of the species and to reduce the risk of catastrophic fire. Management measures to accomplish this may include prescribed fire. Any newly found populations should be evaluated for inclusion in the preserve strategy through acquisition, like exchange, etc.

These ASMDs are specifically related to the management of preserved populations and therefore do not apply to the North City Project. The ASMDs for San Diego barrel cactus include "measures to protect this species from edge effects, unauthorized collection, and include appropriate fire management/control practices to protect against a too frequent fire cycle." Mitigation measure MM-BIO-9~~10~~ (biological monitoring, construction fencing, environmental awareness training, BMP implementation, and hazardous material storage) would be

implemented to reduce the potential impacts of edge effects. Unauthorized collecting is not anticipated to occur as a result of the North City Project, and fire management is a preserve- specific ASMD that does not apply to the Project. The ASMDs for Orcutt’s brodiaea states, “The San Vicente population is identified as a critical population in the County’s Subarea Plan and must be 100 percent conserved. ASMDs must include specific measures to protect against detrimental edge effects.” Mitigation measure MM-BIO-910 (biological monitoring, construction fencing, environmental awareness training, BMP implementation, and hazardous material storage) would be implemented to reduce the potential impacts of edge effects. No impacts to Orcutt’s brodiaea would occur to the San Vicente population with implementation of the North City Project so this ASMD does not apply.

Table 6.4-14
Compliance with ASMD for Impacts to Covered Wildlife Species

Covered Species	ASMD	Project Compliance
Least Bell’s vireo (<i>Vireo bellii pusillus</i>)	Jurisdictions will require survey (using appropriate protocols) during the CEQA review process in suitable habitat proposed to be impacted and incorporate mitigation measures consistent with the 404(b)1 guidelines into the project. Participating jurisdictions guidelines and ordinances, and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands. Jurisdictions must require new developments adjacent to preserve areas that create conditions attractive to brown-headed cowbirds to monitor and control cowbirds. Area specific management directives must include measures to provide appropriate successional habitat, upland buffers for all known populations, cowbird control, and specific measures to protect against detrimental edge effects to this species. Any clearing of occupied habitat must	Protocol surveys were conducted in all areas of suitable habitat. In addition, preconstruction surveys will be conducted prior to project construction to ensure that direct impacts to this species would be avoided (MM-BIO-6). If the species is observed, noise restrictions would be implemented. Impacts to suitable habitat would be mitigated through allocation of credit at an existing or future approved mitigation site or through the assignment of credits at the City’s Marron Valley Cornerstone Lands Bank impacts. The proposed project is not anticipated to create conditions to attract brown-headed cowbirds. Mitigation measure MM-BIO-910 would be implemented to reduce the potential impacts of edge effects. All clearing of suitable habitat will be

**Table 6.4-14
Compliance with ASMD for Impacts to Covered Wildlife Species**

Covered Species	ASMD	Project Compliance
	occur between September 15 and March 15 (i.e. outside of the nesting period).	outside of the nesting period as identified in the ASMD.
Burrowing owl (Athene cunicularia)	During the environmental analysis of proposed projects, burrowing owl surveys (using appropriate protocols) must be conducted in suitable habitat to determine if this species is present and the location of active burrows. If burrowing owls are detected, the following mitigation measures must be implemented: within the MHPA, impacts must be avoided; outside of the MHPA, impacts to the species must be avoided to the maximum extent practicable; any impacted individuals must be relocated out of the impact area using passive or active methodologies approved by the wildlife agencies; mitigation for impacts to occupied habitat (at the Subarea Plan specified ratio) must be through the conservation of occupied burrowing owl habitat or conservation of lands appropriate for restoration, management and enhancement of burrowing owl nesting and foraging requirements. Management plans/directives must include: enhancement of know, historical and potential burrowing owl habitat; and management for ground squirrels (the primary excavator of burrowing owl burrows). Enhancement measures may include creation of artificial burrows and vegetation management to enhance foraging habitat. Management plans must also include: monitoring of burrowing owl nest sites to determine	Burrowing owl surveys were conducted in areas of suitable habitat and no observations were recorded. However, since there is habitat within the Project area that has burrowing owl occupation potential, a burrowing owl construction impact avoidance program will be implemented in accordance with MM-BIO-5. If burrowing owls are identified within the Project area and have a potential to be impacted, the measures outlined in this ASMD will be applied.

**Table 6.4-14
Compliance with ASMD for Impacts to Covered Wildlife Species**

Covered Species	ASMD	Project Compliance
	<p>use and nesting success; predator control; establishing a 300 foot-wide impact avoidance area (within the preserve) around occupied burrows. Eight known burrowing owl locations occur within major amendment areas of the South County Segment of the County Subarea Plan and the conservation of occupied burrowing owl habitat must be one of the primary factors preserve design during the permit amendment process.</p>	
<p>Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)</p>	<p>Jurisdictions must require surveys (using appropriate protocols) during the CEQA review process in suitable habitat proposed to be impacted and incorporate mitigation measures consistent with the 404(b)1 guidelines into the project. Participating jurisdictions' guidelines and ordinances, and state and federal wetlands regulations will provide additional habitat protection resulting in no net loss of wetlands. For new developments adjacent to preserve areas that create conditions attractive to brown-headed cowbirds, jurisdictions must require monitoring and control of cowbirds. Area specific management directives must include measures to provide appropriate successional habitat, upland buffers for all known populations, cowbird control, and specific measures to protect against detrimental edge effects to this species. Any clearing of occupied habitat must occur between September 1 and May 1 (i.e., outside of the nesting period).</p>	<p>Protocol surveys were conducted in all areas of suitable habitat. In addition, preconstruction surveys will be conducted prior to project construction to ensure that direct impacts to this species would be avoided (MM-BIO-6). If the species is observed, noise restrictions would be implemented.</p> <p>Impacts to suitable habitat would be mitigated through allocation of credit at an existing or future approved mitigation site or through the assignment of credits at the City's Marron Valley Cornerstone Lands Bank impacts.</p> <p>The proposed project is not anticipated to create conditions to attract brown-headed cowbirds. Mitigation measure MM-BIO-940 would be implemented to reduce the potential impacts of edge effects.</p> <p>All clearing of suitable habitat will be outside of the nesting period as identified in the ASMD.</p>

**Table 6.4-14
Compliance with ASMD for Impacts to Covered Wildlife Species**

Covered Species	ASMD	Project Compliance
western pond turtle (<i>Actinemys marmorata</i>)	Maintain and manage a 1,500-foot area around known locations within the preserve lands for the species. Within this impact avoidance area, human impacts will be minimized, non-native species detrimental to pond turtles controlled/removed and habitat restoration/enhancement measures implemented.	Focused surveys for this species were conducted and none were recorded within the San Vicente Reservoir. <u>No other direct or indirect impacts are anticipated to this species within preserve lands; therefore, this ASMD is not applicable.</u> Therefore, this ASMD does not apply.
Cooper's hawk (<i>Accipiter cooperii</i>)	In the design of future projects within the Metro-Lakeside-Jamul segment, design of preserve areas shall conserve patches of oak woodland and oak riparian forest of adequate size for nesting and foraging habitat. Area specific management directives must include 300-foot impact avoidance areas around the active nests, and minimization of disturbance in oak woodlands and oak riparian forests.	The proposed project will not result in the design of preserve areas. Active nests, if detected during nesting bird surveys, will be subject to a 300-foot buffer (MM-BIO-3).
western bluebird (<i>Sialia mexicana</i>)	None	Not applicable
southern California rufous-crowned sparrow (<i>Aimophila ruficeps canescens</i>)	Area specific management directives must include maintenance of dynamic processes, such as fire, to perpetuate some open phases of coastal sage scrub with herbaceous components.	This ASMD is directed at preserve management and does not apply to the proposed project.
mule deer (<i>Odocoileus hemionus</i>)	None	Not applicable
orangethroat whiptail (<i>Aspidoscelis hyperythra</i>)	Area specific management directives must address edge effects.	All temporary construction areas in native habitat would require revegetation following the completion of construction (MM-BIO-2). Habitat restoration and erosion control treatments will be installed within temporary disturbance areas in native

**Table 6.4-14
Compliance with ASMD for Impacts to Covered Wildlife Species**

Covered Species	ASMD	Project Compliance
		habitat, in accordance with the City's Biology Guidelines and Landscape Regulations (City of San Diego 2012) and Landscape Standards (City of San Diego 2016c). The Conceptual Revegetation Plan was prepared by a Restoration Specialist. Habitat restoration will feature native species that are typical of the area, and erosion control features will include silt fence and straw fiber rolls, where appropriate. In addition, mitigation measure MM-BIO-910 would be implemented to reduce the potential impacts of edge effects.

6.4.5.4 Level of Impact After Mitigation

Direct impacts to sensitive plant species under the Miramar Reservoir Alternative would be reduced to **less than significant** with incorporation of mitigation measures MM-BIO-1a, MM-BIO-1b, and MM-BIO-2 and under the San Vicente Reservoir Alternative would be reduced to **less than significant** with incorporation of mitigation measures MM-BIO-1a-c and MM-BIO-2.

Indirect impacts to sensitive plants species under both Alternatives would be reduced to **less than significant** with incorporation of mitigation measure MM-BIO-910.

Direct impacts to sensitive wildlife species under both Alternatives would be reduced to **less than significant** with incorporation of mitigation measures MM-BIO-1a-c and MM-BIO-2 through MM-BIO-6.

Indirect impacts to sensitive wildlife species under the Miramar Reservoir Alternative would be reduced to **less than significant** with incorporation of mitigation measure MM-BIO-4 through MM-BIO-67 and MM-BIO-910.

Indirect impacts to sensitive wildlife species under the San Vicente Reservoir Alternative would be **less than significant** with the incorporation of mitigation measures MM-BIO-4 through MM-BIO-6, MM-BIO-78, and MM-BIO-940.

Impacts to wildlife species listed or proposed as federally threatened or endangered would not occur with implementation of mitigation measures.

6.4.6 ISSUE 4 – HABITAT LINKAGES/WILDLIFE CORRIDORS

Would the proposed North City Project result in interference with the movement of any native resident or migratory wildlife through linkages or wildlife corridors?

6.4.6.1 Impacts

No Project/No Action Alternative

No interference with the movement of any native resident or migratory wildlife through linkages or wildlife corridors would occur under the No Project/No Action Alternative.

Miramar Reservoir Alternative

As stated in Section 5.4, project components associated with the Miramar Reservoir Alternative are located within Biological Core Area 15 as identified on Figure 5.4-3, Multi-Habitat Planning Area, and Figure 5.4-2, Core Areas and Habitat Linkages. Additionally, wildlife corridor areas that are applicable to the Miramar Reservoir Alternative components within MCAS Miramar are identified on Figure 4.5a of the INRMP (MCAS Miramar INRMP 2011).

Biological Core Area 15

The Morena Pipelines cross Marian Bear Memorial Park (San Clemente Canyon) and Rose Canyon Open Space Park, which are a part of Biological Core Area 15. The majority of the Morena Pipelines would be placed within existing roadways with very little habitat being impacted. There would be temporary impacts from the Morena Pipelines to disturbed habitat within San Clemente Canyon, just south of the SR-52 and east of Genesee Avenue. The Morena Pipelines would temporarily impact ~~0.28~~ 0.31 acre of Diegan coastal sage scrub (including disturbed) at the intersection of Genesee Road and Rose Canyon, just north of the railroad. Trenchless construction below Genesee Road and the railroad was not possible in this area due to engineering constraints. All impacts along the Morena Pipelines are

temporary and entirely underground, and therefore, no aboveground structures would impede existing wildlife movement within the area.

The NCWRP Expansion, MBC and Miramar WTP Improvements would occur entirely within existing facility footprints, and therefore, would not result in a change in impacts to wildlife movement.

The NCPWF and North City Pump Station, which are located just north of the NCWRP, would impact native habitat within Biological Core Area 15. This area is highly constrained by surrounding development such as I-805, a small substation, commercial facilities, and the existing NCWRP. The entire site is currently fenced, creating a barrier for wildlife movement. Therefore, the site currently only supports limited movement and live-in habitat for smaller wildlife species. Habitat in open space areas to the north of the proposed NCPWF would remain available for wildlife movement. The area immediately south of the NCPWF site, within MCAS Miramar, would still be accessible after the development of the NCPWF through the use of the utility corridor to the east of the NCPWF. However, the Veteran’s Administration (VA) Miramar National Cemetery currently contains an 8-foot-tall chain-link fence topped with barbed wire along Miramar Road, preventing connectivity to the NCPWF site. Therefore, construction of the NCPWF would not result in any changes to the existing corridor usage of Biological Core Area 15. Furthermore, the core and linkages map was established by the San Diego County MSCP and as stated in Section 2.2 of the County MSCP:

The core and linkages map was developed as an analytical tool to assist in testing preserve design criteria and levels of species conservation. It is not a regulatory map ... While the entire acreage within a core area may not be important for preservation, the core and linkage configuration assists in visualizing a framework for a regional preserve network. Jurisdictions and other agencies prepared subarea plans with specific preserve boundaries by maximizing inclusion of unfragmented core resource areas and linkages in their preserve designs, given other parameters and objectives ... Although this map was used to identify important biological areas and linkages, the habitat evaluation map is not intended to replace site-specific field survey data and evaluations.

Therefore, since the City of San Diego has developed the City Subarea Plan with specific preserve boundaries and the NCPWF site is outside these MHPA preserve areas, and construction of the NCPWF would not result in any changes to the existing corridor

usage, no significant impacts to Biological Core Area 15 are expected from the development of the NCPWF.

The LFG Pipeline, which is proposed to run north from the landfill compressor station at Miramar Landfill to the NCWRP, traverses open space areas on MCAS Miramar and the Miramar National Cemetery. The LFG Pipeline crosses over Rose Canyon as it runs through MCAS Miramar. The LFG Pipeline would be entirely underground and would primarily follow the existing City utility corridor. Impacts to native habitat are temporary, and no structures would be placed within the footprint of the pipeline. Trenchless construction methods would be used in areas containing jurisdictional resources, such as Rose Canyon. Since the large majority of the LFG Pipeline would be underground, the LFG Pipeline is not expected to impact wildlife movement within Biological Core Area 15.

No adverse effects to wildlife movement is anticipated.

Habitat Linkage C

In addition, a small portion of the Project, an overflow pipeline associated with the Morena Pump Station, is within Habitat Linkage C, which is associated with the San Diego River. This portion of the Project is located entirely within roadway ROW and would not result in impacts to this habitat linkage.

San Vicente Reservoir Alternative

Project components associated with the San Vicente Reservoir Alternative are located within Biological Core Area 10 (Mission Trails Regional Park), 11 (San Vicente Reservoir), 15 (Rose and San Clemente Canyons) and Habitat Linkage C (San Diego River) (Figure 5.4-2). In addition to impacts discussed above under the Miramar Reservoir Alternative, this Alternative would result in impacts related to the San Vicente Pipeline, alternative San Vicente Pipeline terminals within the San Vicente Reservoir, and the MTBS. The majority of the San Vicente Pipeline is located within roadway ROW within urban and developed areas. Once constructed, the entire San Vicente Pipeline would be underground, and therefore, would not result in impacts to Biological Core Area 10, 11, 15 or Habitat Linkage C. The MTBS is located on a small undeveloped parcel, surrounded on all sides by residential development or existing roadways, and would not interfere with wildlife movement.

Biological Core Area 15

Rose Canyon

There would be permanent impacts to <0.01 acre of coastal sage scrub: baccharis-dominated on the slope above the portion of Rose Canyon within Level I MA, from an air and blow-off valve along the San Vicente Pipeline - Repurposed 36-inch Recycled Water Line, that would only occur if the San Vicente Reservoir Alternative was implemented. These impacts are minimal and would not affect wildlife movement through the canyon.

San Clemente Canyon

There would be permanent impacts to <0.01 acre of southern willow scrub within San Clemente Canyon (Level II MA) from an air and blow-off valve that would only occur if the San Vicente Reservoir Alternative was implemented. These impacts are minimal and would not affect wildlife movement through the canyon.

No adverse effects to wildlife movement is anticipated.

6.4.6.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

No impacts would occur as a result of No Project/No Action Alternative.

Miramar Reservoir Alternative

Impacts to habitat linages and wildlife corridors would be **less than significant** under CEQA for the Miramar Reservoir Alternative.

San Vicente Reservoir Alternative

Impacts to habitat linages and wildlife corridors would be **less than significant** under CEQA for the San Vicente Reservoir Alternative.

6.4.6.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No mitigation is required.

Miramar Reservoir Alternative

No mitigation is required.

San Vicente Reservoir Alternative

No mitigation is required.

6.4.7 ISSUE 5 – MHPA

Would the North City Project conflict with provisions of adopted local habitat conservation plans or policies protecting biological resources?

6.4.7.1 Impacts

No Project/No Action Alternative

The No Project/No Action Alternative would not conflict with the provisions of adopted local habitat conservation plans or policies protecting biological resources.

North City Project Alternatives

The City's Subarea Plan contributes to the regional MSCP for preservation and mitigation for impacts to sensitive biological resources within southwestern San Diego County. The Subarea Plan is intended to provide cumulative mitigation for impacts to covered biological resource within the City's jurisdiction and to ensure sufficient resources are preserved to avoid jeopardizing the continued presence of Covered Species under the MSCP.

The Miramar Reservoir Alternative is located in the Northern and Urban areas of the Subarea Plan as well as MCAS Miramar and Cornerstone lands. The majority of the Project components associated with the Miramar Reservoir Alternative are located outside of the MHPA of the City's Subarea Plan. There is 0.05 acre of impacts to lands located within the MHPA boundary; however, impacts would be located within an existing roadway (0.01 acre of urban/developed from the Morena Pipelines) or have been previously mitigated (0.04 acre of disturbed Diegan coastal sage scrub at the Miramar WTP). Therefore, no adverse effects or conflicts with an applicable conservation plan are anticipated.

The San Vicente Reservoir Alternative is located in the Urban and Eastern areas of the Subarea Plan as well as MCAS Miramar and Cornerstone lands. The majority

of the project is located outside of the MHPA of the city's Subarea Plan. However, portions of the Project area are within or immediately adjacent to the MHPA. The San Vicente Reservoir Alternative would result in 18.60 acres of temporary impacts within the MHPA and 0.02 acre of permanent impacts within the MHPA (Table 6.4-3). Portions of the project that do occur within or adjacent to the MHPA would result in the long-term loss of wetlands and Tier I through IV communities within the MHPA (Table 6.4-3). As such, adverse effects related to the potential for the San Vicente Reservoir Alternative to conflict with an applicable conservation plan are anticipated.

Based on the North City Project design and implementation of mitigation measures contained within this section, the North City Project is consistent with the requirements of the City of San Diego MSCP Subarea Plan and San Diego Municipal Code, Land Development Code—Biology Guidelines (City of San Diego 2012) (see Table 6.4-15). As an Essential Public Project, the North City Project is considered compatible with the biological objectives of the MSCP and thus would be allowed within the City's MHPA.

Placement of utility lines within the City of San Diego's MHPA must be in compliance with the policies identified in Section 1.4.2 and 1.5.2 of the City of San Diego's Subarea Plan (see Table 6.4-15). These policies are listed below.

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. Roads in the MHPA will be limited to those identified in Community Plan Circulation Elements, collector streets essential for area circulation, and necessary maintenance/emergency access roads. Local streets should not cross the MHPA except where needed to access isolated development areas.
6. Development of roads in canyon bottoms should be avoided whenever feasible. If an alternative location outside the MHPA is not feasible, then the road must be designed to cross the shortest length possible of the MHPA in order to minimize impacts and fragmentation of sensitive species and habitat. If roads cross the MHPA, they should provide for fully functional wildlife movement capability. Bridges are the preferred method of providing for movement, although culverts in selected locations may be acceptable. Fencing, grading, and plant cover should be provided where needed to protect and shield animals, and guide them away from roads to appropriate crossings.
7. Where possible, roads within the MHPA should be narrowed from existing design standards to minimize habitat fragmentation and disruption of wildlife movement and breeding areas. Roads must be located in lower quality habitat or disturbed areas to the extent possible.
8. For the most part, existing roads and utility lines are considered a compatible use within the MHPA and therefore would 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.
9. Fencing or other barriers will be used where it is determined to be the best method to achieve conservation goals and adjacent to land uses incompatible with the MHPA. For example, use chain link or cattle wire to direct wildlife to appropriate corridor crossings, natural rocks/boulders or split rail fencing to direct public access to appropriate locations, and chain link to provide added protection of certain sensitive species or habitats (e.g., vernal pools).
10. Lighting shall be designed to avoid intrusion into the MHPA and effects on wildlife. Lighting in areas of wildlife crossings should be of low-sodium or

similar lighting. Signage will be limited to access and litter control and educational purposes.

11. Prohibit storage of materials (e.g. hazardous or toxic chemicals, equipment, etc.) within the MHPA and ensure appropriate storage per applicable regulations in any areas that may impact the MHPA, especially due to potential leakage.

Table 6.4-15
Multiple Species Conservation Program Consistency Analysis

Siting Criteria		Analysis
1	Minimize intrusion into the MHPA	Both alternatives have been designed to follow existing developed and disturbed areas and the existing City utility corridor in order to minimize intrusion into the MHPA to the greatest extent possible. Impacts to MHPA areas largely occur along slivers of the alignment from the San Vicente Reservoir Alternative and would not result in large losses of habitat. Impacts to MHPA from the Miramar Reservoir Alternative include 0.01 acre of an existing developed roadway, and 0.04 acre of previously mitigated disturbed coastal sage scrub, both of which do not require mitigation.
2	Minimize environmental impacts (avoid MSCP covered species and wetlands)	Both alternatives have been designed to follow existing developed and disturbed areas and the existing City utility corridor but would result in impacts to wetland resources. Wetlands would be avoided, to the extent practical, during construction by using trenchless construction methods such as auger boring/auger jack and bore, micro-tunneling, or horizontal directional drilling. Standard best management practices (BMPs) specifically related to reducing impacts from dust, erosion, and runoff generated by construction activities would be implemented MM-BIO-940(j). The Miramar Reservoir Alternative would result in impacts to 3-7 wart-stemmed ceanothus individuals, and 12 Orcutt's brodiaea individuals while the San Vicente Reservoir Alternative would result in impacts to those same populations as well as 6 barrel cactus.
3	Avoid disturbance of existing habitat	Both alternatives have been designed to follow existing developed and disturbed areas and the existing City utility corridor in order to minimize intrusion into the MHPA to the greatest extent possible. Impacts to MHPA areas largely occur along slivers of the alignment from the San Vicente Reservoir Alternative and would not result in large losses of habitat. Impacts to MHPA from the Miramar Reservoir Alternative include 0.01 acre of an existing developed roadway, and therefore would not disturb existing habitat and 0.04 acre of disturbed coastal sage scrub, which has been previously mitigated. In areas where there are temporary impacts, habitat restoration and erosion control treatments will be installed in

**Table 6.4-15
Multiple Species Conservation Program Consistency Analysis**

Siting Criteria		Analysis
		accordance with the City's Biology Guidelines and Landscape Regulations (City of San Diego 2012) and the City's Landscape Standards (City of San Diego 2016c) (MM-BIO-4b2).
4	Avoid significant disruption of corridor usage	Since both alternatives consist largely of long linear features which would for the most part be placed underground, neither alternative is expected to disrupt corridor usages over the long-term. Short-term construction related impacts would occur on a minor scale, and would mostly affect smaller wildlife, and the appropriate measures would be taken to reduce those impacts. Biological monitoring would include verifying that the contractor has covered all steep-walled trenches or excavations over night or after shift or installed ramps (as a means of escape) to prevent entrapment of wildlife (e.g., reptiles and mammals) (MM-BIO-940(h)). In addition, the biological monitor would provide training to construction personnel to increase awareness of the possible presence of wildlife beneath vehicles and equipment and to use best judgment to avoid killing or injuring wildlife (MM-BIO-940(f)).
5	Roads in the MHPA will be limited to those identified in Community Plan Circulation Elements, collector streets essential for area circulation, and necessary maintenance/ emergency access roads	Not applicable
6	Avoid development of roads in canyon bottoms	Not applicable
7	Road widths are narrowed and in lower quality habitat	Not applicable
8	Maintenance of existing roads/utility line	Not applicable

**Table 6.4-15
Multiple Species Conservation Program Consistency Analysis**

Siting Criteria		Analysis
9	Appropriate fencing or barriers	Prior to construction activities, the Qualified Biologist shall supervise the placement of orange construction fencing or equivalent along the limits of disturbance adjacent to sensitive biological habitats and verify compliance with any other project conditions as shown on the Biological Construction Mitigation/Monitoring Exhibit (BCME). This phase shall include flagging plant specimens and delineating buffers to protect sensitive biological resources (e.g., habitats/flora & fauna species, including nesting birds) during construction. Appropriate steps/care should be taken to minimize attraction of nest predators to the site (MM-BIO-940(e)).
10	Minimize intrusive lighting into the MHPA	To reduce impacts to nocturnal species in those areas where they have a potential to occur, nighttime construction activity within undeveloped areas containing sensitive biological resources would be minimized whenever feasible and shielded lights would be utilized when necessary. Construction nighttime lighting would be subject to City Outdoor Lighting Regulations per LDC Section 142.0740 (MM-BIO-940(i)).
11	Prohibit storage of materials within the MHPA	During construction activities, the Qualified Biologist shall verify in writing on the Consultant Site Visit Record Forms' (CSVs) that no trash stockpiling or oil dumping, fueling of equipment, storage of hazardous wastes or construction equipment/material, parking or other construction related activities shall occur adjacent to sensitive habitat. These activities shall occur only within the designated staging area located outside the area defined as biological sensitive area (MM-BIO-940(k)).

The North City Project is a compatible land use within the MHPA and follows the siting criteria outlined in Subsection 1.4.2 of the MSCP.

6.4.7.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

No impacts would occur for No Project/No Action Alternative.

Miramar Reservoir Alternative

The Miramar Reservoir Alternative would not conflict with provisions of adopted local habitat conservation plans or policies protecting biological resources; therefore, impacts would be **less than significant** under CEQA.

San Vicente Reservoir Alternative

The San Vicente Reservoir Alternative would impact 18.62 acres of land within MHPA; 15.67 acres would be to urban/developed land (Tier IV). Therefore, conflicts with an adopted local habitat conservation plans or policies protecting biological resources would be **potentially significant** under CEQA.

6.4.7.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No mitigation is required.

Miramar Reservoir Alternative

No mitigation is required.

San Vicente Reservoir Alternative

Direct impacts to vegetation communities within the MHPA would be reduced through implementation of mitigation measure MM-BIO-1a and MM-BIO-1c.

6.4.7.4 Level of Impact After Mitigation

The Miramar Reservoir Alternative would result in **less than significant** impacts related to conflicts with adopted local habitat conservation plans or policies protecting biological resources; no mitigation is required.

The San Vicente Reservoir Alternative would result in **less than significant** impacts related to conflicts with adopted local habitat conservation plans or policies protecting biological resources with incorporation of mitigation measure MM-BIO-1a and MM-BIO-1c.

6.4.8 ISSUE 6 – LAND ADJACENCY USES

Would the North City Project introduce land uses within or adjacent to the MHPA that would result in adverse edge effects?

6.4.8.1 Impacts

No Project/No Action Alternative

The No Project/No Action Alternative would result in no impact to land uses within or adjacent to the MHPA, and therefore, would not result in adverse edge effects.

North City Project Alternatives

The Miramar Reservoir Alternative would impact 0.04 acre of Diegan coastal sage scrub, and 0.01 acre of urban/developed land cover within MHPA. The San Vicente Reservoir Alternative would impact 18.62 acres of MHPA. Construction of the Project components adjacent to MHPA may result in adverse edge effects, including intrusions by humans and domestic pets and possible trampling of individual plants, invasion by exotic plant and wildlife species, exposure to urban pollutants (fertilizers, pesticides, herbicides, and other hazardous materials), soil erosion, litter, fire, and hydrologic changes (e.g., surface and groundwater level and quality). Other adverse edge effects could include erosion, sedimentation, habitat conversion caused during and following construction both adjacent and downstream from the Project area.

Although minimal, because only a portion of the Project occurs within the MHPA, the Project is required to document compliance with the MSCP Land Use Adjacency Guidelines. A matrix has been prepared documenting the Project’s compliance with the MSCP Land Use Adjacency Guidelines (Table 6.4-16).

**Table 6.4-16
Project Consistency Determination with MSCP Land Use Adjacency Guidelines**

MHPA Adjacency Guidelines Section 1.4.3 of the MSCP Subarea Plan	Applicability	Implementation
Drainage: All new and proposed parking lots and developed areas in and adjacent to the preserve must not drain directly into the MHPA. All developed and paved areas must prevent the release of toxins, chemicals, petroleum products, exotic plant materials and other elements that	Ground disturbance for the Project would largely consist of utility trenching, which would create no runoff potential.	The MHPA boundary and the limits of ground disturbance shall be clearly delineated on the construction documents and surveyed by the

**Table 6.4-16
Project Consistency Determination with MSCP Land Use Adjacency Guidelines**

MHPA Adjacency Guidelines Section 1.4.3 of the MSCP Subarea Plan	Applicability	Implementation
might degrade or harm the natural environment or ecosystem processes within the MHPA.	Consistent with the City Storm Water Standards, existing previously legal drainage which flows toward the MHPA shall be minimized.	contractor (MM-BIO-149). At the conclusion of the Project, the existing grade would be restored, and the current drainage patterns would be unchanged.
Toxics: Land uses, such as recreation and agriculture, that use chemicals or generate by-products such as manure, that are potentially toxic or impactful to wildlife, sensitive species, habitat, or water quality need to incorporate measures to reduce impacts caused by the application and/or drainage of such materials into the MHPA.	No hazardous construction materials storage would be allowed that could impact the adjacent MHPA (including fuel or sediment) and any drainage from the construction site must be clear of such materials. Consistent with the City Storm Water Standards, existing previously legal drainage that flows toward the MHPA shall be minimized.	The contractor shall ensure all areas for staging, storage of equipment and materials, trash, equipment maintenance, and other construction related activities are within the limits of the Project Area of Potential Effect (MM-BIO-940(k)).
Lighting: Lighting of all developed areas adjacent to the MHPA should be directed away from the MHPA. Where necessary, development should provide adequate shielding with non-invasive plant materials (preferably native), berming, and/or other methods to protect the MHPA and sensitive species from night lighting.	No additional permanent lighting is proposed for this Project. If night work is required adjacent to the MHPA, all lighting would be shielded away from the preserve.	If night work is required adjacent to the MHPA, all lighting would be shielded away from the preserve (MM-BIO-940(d) and MM-BIO-940(i)).
Noise: Uses in or adjacent to the MHPA should be designed to minimize noise impacts. Berms or walls should be constructed adjacent to commercial areas, recreational areas, and any other use that may introduce noises that could impact or interfere with wildlife utilization of the MHPA. Excessively noisy uses or activities	Construction within and adjacent to suitable habitat for coastal California gnatcatcher, least Bell's vireo and southwestern willow flycatcher during the breeding season would be	Protocol surveys may be required for potential impacts to certain avian species during their breeding season: Coastal California Gnatcatcher (March 1

**Table 6.4-16
Project Consistency Determination with MSCP Land Use Adjacency Guidelines**

MHPA Adjacency Guidelines Section 1.4.3 of the MSCP Subarea Plan	Applicability	Implementation
adjacent to breeding areas must incorporate noise reduction measures and be curtailed during the breeding season of sensitive species. Adequate noise reduction measures should also be incorporated for the remainder of the year.	avoided to the extent feasible. However, should construction need to occur during the breeding season, noise monitoring would be conducted and if necessary, temporary sound walls or other sound attenuating devices or techniques would be erected in areas of concern in order to reduce noise related impacts.	through August 15) Least Bell's vireo (March 15 through September 15) Southwestern Willow Flycatcher (May 1 through August 30) (MM-BIO- 910 (d), MM-BIO- 24a , MM-BIO- 1c6 , and MM-BIO-3)
Barriers: New development adjacent to the MHPA may be required to provide barriers (e.g., non-invasive vegetation, rocks/boulders, fences, walls, and/or signage) along the MHPA boundaries to direct public access to appropriate locations and reduce domestic animal predation.	The North City Project primarily involves the extension of a new utility pipeline in developed and undeveloped areas with minor impacts occurring in native habitat. However, the pipeline would be installed below ground and all areas temporarily disturbed by construction would be restored to pre-construction contours and conditions. No permanent barriers are required or proposed.	N/A
Invasives: No invasive non-native plant species shall be introduced into areas adjacent to the MHPA.	Plant species within 100 feet of the MHPA shall comply with the Landscape Regulations (LDC142.0400 and per table 142-04F, Revegetation and	The contractor shall permanently revegetate all graded, disturbed, or eroded <u>native habitat</u> areas that would not be permanently paved or covered by structures

**Table 6.4-16
Project Consistency Determination with MSCP Land Use Adjacency Guidelines**

MHPA Adjacency Guidelines Section 1.4.3 of the MSCP Subarea Plan	Applicability	Implementation
	Irrigation Requirements) and be non- invasive.	(MM-BIO-1b).
Brush Management: New residential development located adjacent to and topographically above the MHPA (e.g., along canyon edges) must be set back from slope edges to incorporate Zone 1 brush management areas on the development pad and outside of the MHPA.	The project is not a residential development and would not create any new brush management zones.	N/A
Grading/Land Development: Manufactured slopes associated with site development shall be included within the development footprint for projects within or adjacent to the MHPA.	No manufactures slopes are associated with the North City Project.	N/A

In addition, each Project component must comply with the General Management Directives (Table 6.4-17) outlined in Section 1.5.2 of the MSCP Subarea Plan.

**Table 6.4-17
Project Consistency Determination with
MSCP General Management Directives**

General Management Directives Section 1.5.2 of the MSCP Subarea Plan	Applicability	Implementation
Mitigation: Mitigation, when required as part of project approvals, shall be performed in accordance with the City of San Diego Environmentally Sensitive Lands Ordinance and Biology Guidelines.	Mitigation is required for impacts to sensitive vegetation, sensitive species and jurisdictional aquatic resources. Direct and indirect impacts to these resources are described in detail in Sections 6.4.3, 6.4.4, and 6.4.5.	Section 6.4 describes potential mitigation measures that would mitigate adverse impacts to biological resources resulting from proposed North City Project. With implementation of the proposed mitigation, the identified impacts would be reduced to less than significant.

**Table 6.4-17
Project Consistency Determination with
MSCP General Management Directives**

General Management Directives Section 1.5.2 of the MSCP Subarea Plan	Applicability	Implementation
<p>Restoration: Restoration or revegetation undertaken in the MHPA shall be performed in a manner acceptable to the City. Where covered species status identifies the need for reintroduction and/or increasing the population, the covered species will be included in restoration/revegetation plans, as appropriate. Restoration or revegetation proposals will be required to prepare a plan that includes elements addressing financial responsibility, site preparation, planting specifications, maintenance, monitoring and success criteria, and remediation and contingency measures. Wetland restoration/revegetation proposals are subject to permit authorization by federal and state agencies.</p>	<p>All temporary construction areas in native habitat would require revegetation following the completion of construction. Construction may result in the recruitment of non-native plant species within the temporary disturbance areas and the removal of native plant species.</p>	<p>In areas where there are temporary impacts, habitat restoration and erosion control treatments will be installed in accordance with the City's Biology Guidelines and Landscape Regulations (City of San Diego 2012) <u>and the City's Landscape Standards (City of San Diego 2016)</u>. The Conceptual Revegetation Plan was prepared by a Restoration Specialist. (MM-BIO-2).</p>
<p>Public Access, Trails, and Recreation</p>	<p>N/A</p>	<p>N/A</p>
<p>Litter/Trash and Materials Storage - Priority 1.3: Prohibit permanent storage of materials (e.g., hazardous and toxic chemicals, equipment, etc.) within the MHPA and ensure appropriate storage per applicable regulations in any areas that may impact the MHPA, due to potential leakage.</p>	<p>No hazardous construction materials storage would be allowed which could impact the adjacent MHPA (including fuel or sediment) and any drainage from the construction site must be clear of such materials.</p>	<p>The contractor shall ensure all areas for staging, storage of equipment and materials, trash, equipment maintenance, and other construction related activities are within the limits of the Project Area of Potential Effect. Typical BMPs, such as having trash containers on site, a demarcated limit of work, and contractor education, will limit the potential for trash and other human disturbance (MM-BIO-910(e) and MM-BIO-910(f)). During construction activities, the</p>

**Table 6.4-17
Project Consistency Determination with
MSCP General Management Directives**

General Management Directives Section 1.5.2 of the MSCP Subarea Plan	Applicability	Implementation
		Qualified Biologist shall verify in writing on the Consultant Site Visit Record Forms (CSVRs) that no trash stockpiling or oil dumping, fueling of equipment, storage of hazardous wastes or construction equipment/material, parking or other construction related activities shall occur adjacent to sensitive habitat. These activities shall occur only within the designated staging area located outside the area defined as biological sensitive area (MM-BIO-919(k)).
Adjacency Management Issues	N/A	N/A
Invasive Exotics Control and Removal: Do not introduce invasive non-native species into the MHPA. Provide information on invasive plants and animals harmful to the MHPA, and prevention methods, to visitors and adjacent residents. Encourage residents to voluntarily remove invasive exotics from their landscaping.	Plant species within 100 feet of the MHPA shall comply with the Landscape Regulations (LDC142.0400 and per table 142-04F, Revegetation and Irrigation Requirements) and be non- invasive.	The contractor shall permanently revegetate all graded, disturbed, or eroded <u>native habitat</u> areas that would not be permanently paved or covered by structures (MM-BIO-2).
Flood Control	N/A	N/A

As shown in Tables 6.4-16 and 6.4-17, the North City Project would be consistent with the MSCP Land Use Adjacency Guidelines and the MSCP General Management Directives, and would not result in adverse effects.

Essential Public Project

The North City Project meets the definition of an Essential Public Project as identified in Section IV of the City's Biology Guidelines, in that it is a utility project which will serve the community at large and is not just a single development project or property. The North City Project is a covered project under the VPHCP, which was adopted in January 2018. In association with the adoption of the VPHCP, an ordinance amending the City of San Diego's Land Development Code, Environmentally Sensitive Lands (ESL) regulation was approved. The amended ESL regulation states: "Outside the Coastal Overlay Zone, encroachment into a vernal pool is allowed outside of the MHPA where the development is consistent with the Biology Guidelines of the Land Development Manual and VPHCP." Such development does not require a deviation to the wetland regulations. Since the vernal pools on the NCPWF are outside the MHPA and will be mitigated in accordance with the City's Biology Guidelines and VPHCP requirements, the North City Project meets the requirements for impacts and mitigation to vernal pools under the VPHCP. Because the proposed Project is an Essential Public Project, deviations from the wetland requirements in the Environmentally Sensitive Lands Regulations will be considered only if all of the criteria listed within Section III (page 22) of the City's Biology Guidelines are met.

This report identifies two potential alternatives to the North City Project that will be included within the CEQA document, along with a No Project Alternative. ~~The other criteria for the deviation is a wetlands avoidance alternative. This has been accomplished, to the extent possible, within the Miramar Reservoir Alternative. Impacts to wetlands are minimal under this alternative and only occur in one place: vernal pools at NCPWF.~~ The NCPWF site was chosen for the following reasons: greater efficiency is achieved by locating the facility adjacent to the NCWRP (for example, less energy is required to pump recycled water to the facility); the site contains less-sensitive resources than all other adjacent parcels (there are two other City-owned parcels—Pueblo Central and Pueblo South—that are less disturbed and contain more sensitive resources); and all other adjacent parcels are either currently developed, privately owned, or within MCAS Miramar.

The North City Project has been designed to occur primarily within developed or previously disturbed areas with each component location given careful consideration. Each pipeline alignment has undergone an extensive alternatives analysis to determine the best possible route, with special considerations given to avoiding environmentally sensitive resources. In order to avoid and/or minimize

impacts to sensitive biological resources, particularly wetlands, to the furthest extent possible, facility footprints were refined to avoid overlapping those resources. In areas where pipeline alignments cross sensitive resources, the pipeline will be constructed using trenchless construction methods such as auger boring/auger jack and bore, micro-tunneling, or horizontal directional drilling, where feasible. Any remaining impacts will be mitigated in accordance with Table 2A of the City's Biology Guidelines and as such, the Project shall not have a significant adverse impact to the MSCP.

6.4.8.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

No impacts would occur under the No Project/No Action alternative.

Miramar Reservoir Alternative

Adverse edge effects as a result of construction and operation of the Miramar Reservoir Alternative would be **potentially significant** under CEQA.

San Vicente Reservoir Alternative

Adverse edge effects as a result of construction and operation of the San Vicente Reservoir Alternative would be **potentially significant** under CEQA.

6.4.8.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No mitigation is required.

Miramar Reservoir Alternative

The North City Project Revegetation Plan will establish a native plant community within temporarily disturbed sensitive habitats, thus minimizing the potential for invasive plant species (MM-BIO-2). Standard BMPs specifically related to reducing impacts from dust, erosion, and runoff generated by construction activities will minimize adverse edge effects (MM-BIO-940(j)).

San Vicente Reservoir Alternative

The North City Project Revegetation Plan will establish a native plant community within temporarily disturbed sensitive habitats, thus minimizing the potential for invasive plant species (MM-BIO-2). Standard BMPs specifically related to reducing impacts from dust, erosion, and runoff generated by construction activities will minimize adverse edge effects (MM-BIO-940(j)).

6.4.8.4 Level of Impact After Mitigation

Adverse edge effects would be reduced to **less than significant** for both Project Alternatives with incorporation of mitigation measures MM-BIO-2 and MM-BIO-940.

6.4.9 ISSUE 7 – INVASIVE SPECIES

Would the North City Project introduce invasive species into natural open space areas?

6.4.9.1 Impacts

No Project/No Action Alternative

The No Project/No Action Alternative would not result in the introduction of invasive species to natural open space areas.

Miramar Reservoir Alternative

The Miramar Reservoir Alternative may introduce invasive species into natural open space areas within temporary construction areas where pipelines cross through native habitat or where facilities are constructed adjacent to native habitat. Construction may result in the recruitment of non-native plant species within temporary disturbance areas and the removal of native plant species, thereby resulting in a potentially adverse effect.

San Vicente Reservoir Alternative

The San Vicente Reservoir Alternative may introduce invasive species into natural open space areas within temporary construction areas where pipelines cross through native habitat or where facilities are constructed adjacent to native habitat. Construction may result in the recruitment of non-native plant species within

temporary disturbance areas and the removal of native plant species, thereby resulting in a potentially adverse effect.

6.4.9.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

No impacts would occur for No Project/No Action Alternative.

Miramar Reservoir Alternative

The Miramar Reservoir Alternative could introduce invasive species to natural open space areas; therefore, impacts would be **potentially significant** under CEQA.

San Vicente Reservoir Alternative

The San Vicente Reservoir Alternative could introduce invasive species to natural open space areas; therefore, impacts would be **potentially significant** under CEQA.

6.4.9.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No mitigation is required.

Miramar Reservoir Alternative

Implementation of MM-BIO-2, Conceptual Revegetation Plan, would reduce potential impacts related to invasive species.

San Vicente Reservoir Alternative

Implementation of MM-BIO-2, Conceptual Revegetation Plan, would reduce potential impacts related to invasive species.

6.4.9.4 Level of Impact After Mitigation

Invasive species impacts would be reduced to **less than significant** for both Project Alternatives with incorporation of mitigation measure MM-BIO-2.

6.4.10 LEVEL OF IMPACT AFTER MITIGATION

Table 6.4-18 summarizes the impacted resource within each component and the proposed mitigation measure to reduce that impact.

**Table 6.4-18
Mitigation Measures
Applicable to North City Project Components**

Component	Impacted Resource and Proposed Mitigation			
	Vegetation	Plants	Wildlife	Jurisdictional Aquatic Resources
<i>Components Common to both Alternatives</i>				
Morena Pump Station	X ^{9-15,18,19} X ^{10-16,19,20}		X ^{6,9-15,18} X ^{6,10-16,19,20}	X ^{9-15,18,19} X ^{10-16,19,20}
Morena Pipelines	X ^{2,9-19} X ^{2,10-20}	X ⁹⁻¹⁹ X ¹⁰⁻²⁰	X ^{3,4a,6,9-19} X ^{3,4,6,10-20}	X ⁸⁻¹⁹ X ^{2,9-20}
NCWRP Expansion (includes NCPWF Influent Pump Station and North City Renewable Energy Facility)	X ^{*9-15,18,19} X ^{*10-16,19,20}		X ^{3,4a,4b,9-15,18,19} X ^{3,4,10-16,19,20}	X ^{9-15,18,19} X ^{10-16,19,20}
NCPWF (includes the North City Pure Water Pump Station)	X ^{1a,1b,8-15,18} X ^{1a,1b,2,9-16,19}	X ^{1a,1b,9-15,18} X ^{1a,1b,2,10-16,19}	X ^{1a,3,9-15,18} X ^{1a,3,10-16,19}	X ^{1b,8-15,18} X ^{1b,9-16,19}
LFG Pipeline	X ^{2,9-16,18,19} X ^{2,10-17,19,20}	X ^{2,9-16,18,19} X ^{2,10-17,19,20}	X ^{2-4b,6,9-16,18,19} X ^{3,4,6,10-17,19,20}	X ^{9-16,18-25} X ^{10-17,19,20}
MBC Improvements	X ^{*9-15,18,19} X ^{*10-16,19,20}		X ^{3,4b,6,9-15,18,19} X ^{3,4,6,10-16,19,20}	No impacts to sensitive resources. X ²⁰⁻²⁵
<i>Miramar Reservoir Alternative</i>				
North City Pipeline	X ^{2,9-19} X ^{2,10-20}	X ^{2,9-19} X ^{2,10-20}	X ^{3,4,9-19} X ^{3,4,7,10-20}	X ⁸⁻²⁵ X ¹⁰⁻²⁰
Miramar WTP	X ^{*9-15,18,19} X ^{*10-16,19,20}		X ^{3,9-15,18,19} X ^{3,10-16,19,20}	No impacts to sensitive resources.
Dechlorination Facility	No impacts to sensitive resources.		X ^{3,11,12,18} X ^{3,12,13,19}	No impacts to sensitive resources.
<i>San Vicente Reservoir Alternative</i>				
San Vicente Pipeline	X ^{2,8-19} X ^{2,9-20}	X ^{2,9-19} X ^{2,10-20}	X ^{2-6,9-19} X ^{2-6,10-20}	X ^{2,8-19} X ^{2,9-20}
San Vicente Pipeline – TAT	X ^{1a,1c,8-16,18,19} X ^{1a,1c,9-17,19,20}	X ^{9-16,18,19} X ^{10-17,19,20}	X ^{3,9-16,18,19} X ^{3,10-17,19,20}	X ^{1c,8-16,18,19} X ^{1c,9-17,19,20}

**Table 6.4-18
Mitigation Measures
Applicable to North City Project Components**

Component	Impacted Resource and Proposed Mitigation			
	Vegetation	Plants	Wildlife	Jurisdictional Aquatic Resources
San Vicente Pipeline – IRAT	X ^{1a,1c,2,8-16,18,19} X ^{1a,1c,2,9-17,19,20}	X ^{2,9-16,18,19} X ^{2,10-17,19,20}	X ^{3,4,9-16,18,19} X ^{3,4,10-17,19,20}	X ^{1c,2,8-16,18,19} X ^{1c,2,9-17,19,20}
San Vicente Pipeline – MAT	X ^{1a,1c,2,8-16,18,19} X ^{1a,1c,2,9-17,19,20}	X ^{2,9-16,18,19} X ^{2,10-17,19,20}	X ^{3,4,9-16,18,19} X ^{3,4,10-17,19,20}	X ^{1c,2,8-16,18,19} X ^{1c,2,9-17,19,20}
MTBS	X ^{1a,9-15,18,19} X ^{1a,10-16,19,20}	X ^{1a,9-15,18,19} X ^{1a,10-16,19,20}	X ^{3,9-15,18,19} X ^{3,10-16,19,20}	No impacts to sensitive resources.
San Vicente Pipeline – Repurposed 36-inch Recycled Water Line (impacts from air and blow-off valves)	X ^{1a,1c,8-16,18,19} X ^{1a,1c,9-17,19,20}	X ^{9-16,18,19} X ^{10-17,19,20}	X ^{3,4,6,9-16,18,19} X ^{3,4,6,10-17,19,20}	X ^{1c,7-16,18-25} X ^{1c,8-17,19,20}
<i>Components Common to both Alternatives</i>				
Morena Pump Station	X ^{9-15,18,19}		X ^{6,9-15,18,19}	X ^{9-15,18,19}
Morena Pipelines	X ^{2,9-19}	X ⁹⁻¹⁹	X ^{3,4a,6,9-19}	X ⁸⁻¹⁹
NCWRP Expansion (includes NCPWF Influent Pump Station and North City Renewable Energy Facility)	X ^{*9-15,18,19}		X ^{3,4a,4b,9-15,18,19}	X ^{9-15,18,19}
NCPWF (includes the North City Pump Station)	X ^{1a,1b,8-15,18}	X ^{1a,1b,9-15,18}	X ^{1a,3,9-15,18}	X ^{1b,8-15,18}
LFG Pipeline	X ^{2,9-16,18,19}	X ^{2,9-16,18,19}	X ^{2-4b,6,9-16,18,19}	X ^{9-16,18-25}
MBC	X ^{*9-15,18,19}		X ^{3,4b,6,9-15,18,19}	X ²⁰⁻²⁵
<i>Miramar Reservoir Alternative</i>				
North City Pipeline	X ^{2,9-19}	X ^{2,9-19}	X ^{3,4,9-19}	X ⁸⁻²⁵
Miramar WTP	X ^{*9-15,18,19}		X ^{3,9-15,18,19}	No impacts to sensitive resources.
Dechlorination Facility	No impacts to sensitive resources.		X ^{3,11,12,18}	No impacts to sensitive resources.
<i>San Vicente Reservoir Alternative</i>				
San Vicente Pipeline	X ^{2,8-19}	X ^{2,9-19}	X ^{2-6,9-19}	X ^{2,8-19}

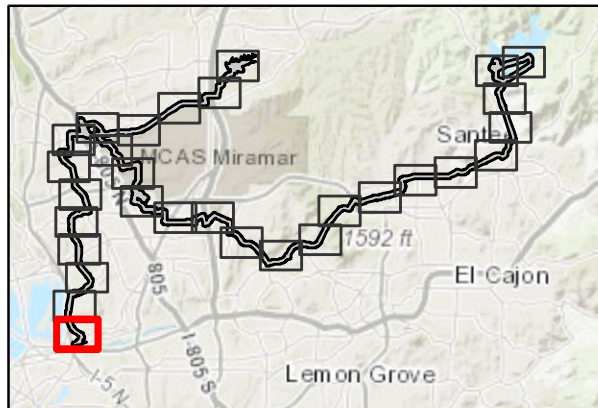
**Table 6.4-18
Mitigation Measures
Applicable to North City Project Components**

Component	Impacted Resource and Proposed Mitigation			
	Vegetation	Plants	Wildlife	Jurisdictional Aquatic Resources
San Vicente Pipeline – TAT	X ^{1a,1c,8-16,18,19}	X ^{9-16,18,19}	X ^{3,9-16,18,19}	X ^{1c,8-16,18,19}
San Vicente Pipeline – IRAT	X ^{1a,1c,2,8-16,18,19}	X ^{2,9-16,18,19}	X ^{3,4,9-16,18,19}	X ^{1c,2,8-16,18,19}
San Vicente Pipeline – MAT	X ^{1a,1c,2,8-16,18,19}	X ^{2,9-16,18,19}	X ^{3,4,9-16,18,19}	X ^{1c,2,8-16,18,19}
MTBS	X ^{1a,9-15,18,19}	X ^{1a,9-15,18,19}	X ^{3,9-15,18,19}	No impacts to sensitive resources.
San Vicente Pipeline - Repurposed 36-inch Recycled Water Line (impacts from air and blow-off valves)	X ^{1a,1c,8-16,18,19}	X ^{9-16,18,19}	X ^{3,4,6,9-16,18-25}	X ^{1c, 7-16,18-25}

* Direct impacts to upland vegetation communities at the NCWRP, MBC, and Miramar WTP have been adequately addressed and mitigated to offset permanent loss of habitat (See Sections 4.3.3.1, 4.3.10.1, and 4.3.11.1).

Proposed Mitigation:

- | | |
|--|---|
| <p>^{1a} MM-BIO-1a (Mitigation for Upland Impacts)</p> <p>^{1b} MM-BIO-1b (Mitigation for Vernal Pools)</p> <p>^{1c} MM-BIO-1c (Mitigation for Wetlands)</p> <p>² MM-BIO-2 (Habitat Revegetation)</p> <p>³ MM-BIO-3 (Nesting Bird)</p> <p>⁴ MM-BIO-4a, b (Coastal California Gnatcatcher)</p> <p>⁵ MM-BIO-5 (Burrowing Owl)</p> <p>⁶ MM-BIO-6 (Riparian Bird)</p> <p>⁷ MM-BIO-7 (Western Pond Turtle)</p> <p>^{78} MM-BIO-78 (Vernal Pool Watershed)</p> <p>^{89} MM-BIO-89 (Wetland Permits)</p> <p>^{910} MM-BIO-910(a) (Qualified Biologist)</p> <p>^{1011} MM-BIO-910(b) (Preconstruction Meeting)</p> <p>^{1112} MM-BIO-910(c) (Biologist Documentation)</p> | <p>^{1213} MM-BIO-910(d) (BCME)</p> <p>^{1314} MM-BIO-910(e) (Construction Fencing)</p> <p>^{1415} MM-BIO-910(f) (On-site Education)</p> <p>^{1516} MM-BIO-910(g) (Biological Monitoring)</p> <p>^{1617} MM-BIO-910(h) (Cover Trenches)</p> <p>^{1718} MM-BIO-910(i) (Nighttime Construction)</p> <p>^{1819} MM-BIO-910(j) (BMPs)</p> <p>^{1920} MM-BIO-910(k) (Toxins/Staging Areas)</p> <p>²⁰ MM-BIO-9(l) (Silt Fencing)</p> <p>²¹ MM-BIO-9(m) (Dust)</p> <p>²² MM-BIO-9(n) (Vernal Pool Biologist)</p> <p>²³ MM-BIO-9(o) (Limits of Work)</p> <p>²⁴ MM-BIO-9(p) (Equipment Staging)</p> <p>²⁵ MM-BIO-9(q) (Grading Activities)</p> |
|--|---|



LEGEND

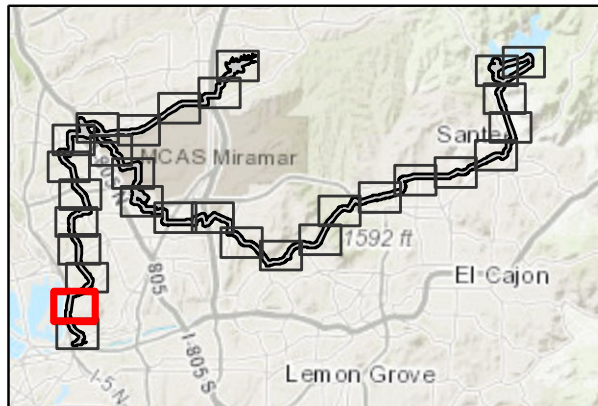
- Project Study Area
- Direct Impact Area
- Coastal Zone Boundary
- Project Pipeline Alternatives**
- Morena Wastewater Forcemain and Brine/Centrate Line
- Morena Pump Station - Influent Diversion Sewers
- Morena Pump Station - Overflow Pipes
- Project Facilities**
- Morena Pump Station
- Sensitive Plants**
- Juncus acutus ssp. leopoldii*
- Jurisdictional Aquatic Resources**
- Non-wetland Waters (ACOE/RWQCB/CDFW)
- Wetland or Riparian Area (ACOE/RWQCB/CDFW)
- Vegetation Communities/Land Covers**
- ARU, Arundo-Dominated Riparian
- CAM, Cismontane Alkali Marsh
- DEV, Urban/Developed
- DEV-CC, Developed - Concrete Channel
- DH, Disturbed Habitat
- DW, Disturbed Wetland
- EUC, Eucalyptus Woodland
- FWM, Coastal and Valley Freshwater Marsh
- HW, Herbaceous Wetland
- MFS, Mulefat Scrub
- NNV, Non-native Vegetation
- NVC, Non-vegetated Channel or Floodway
- OW, Open Water
- SWS, Southern Willow Scrub
- dSWS, disturbed Southern Willow Scrub
- Multi-Habitat Planning Area



SOURCE: City of San Diego 2016, 2017; SANDAG, 2016

FIGURE 6.4-1A
Biological Resources - Miramar Reservoir and San Vicente Reservoir Alternatives

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- LEGEND**
- Project Study Area
 - Direct Impact Area
 - Coastal Zone Boundary
 - Project Pipeline Alternatives**
 - Morena Wastewater Forcemain and Brine/Centrate Line
 - Vegetation Communities/Land Covers**
 - DEV, Urban/Developed
 - DH, Disturbed Habitat
 - EUC, Eucalyptus Woodland
 - NNV, Non-native Vegetation
 - dFWM, disturbed Coastal and Valley Freshwater Marsh
 - Multi-Habitat Planning Area

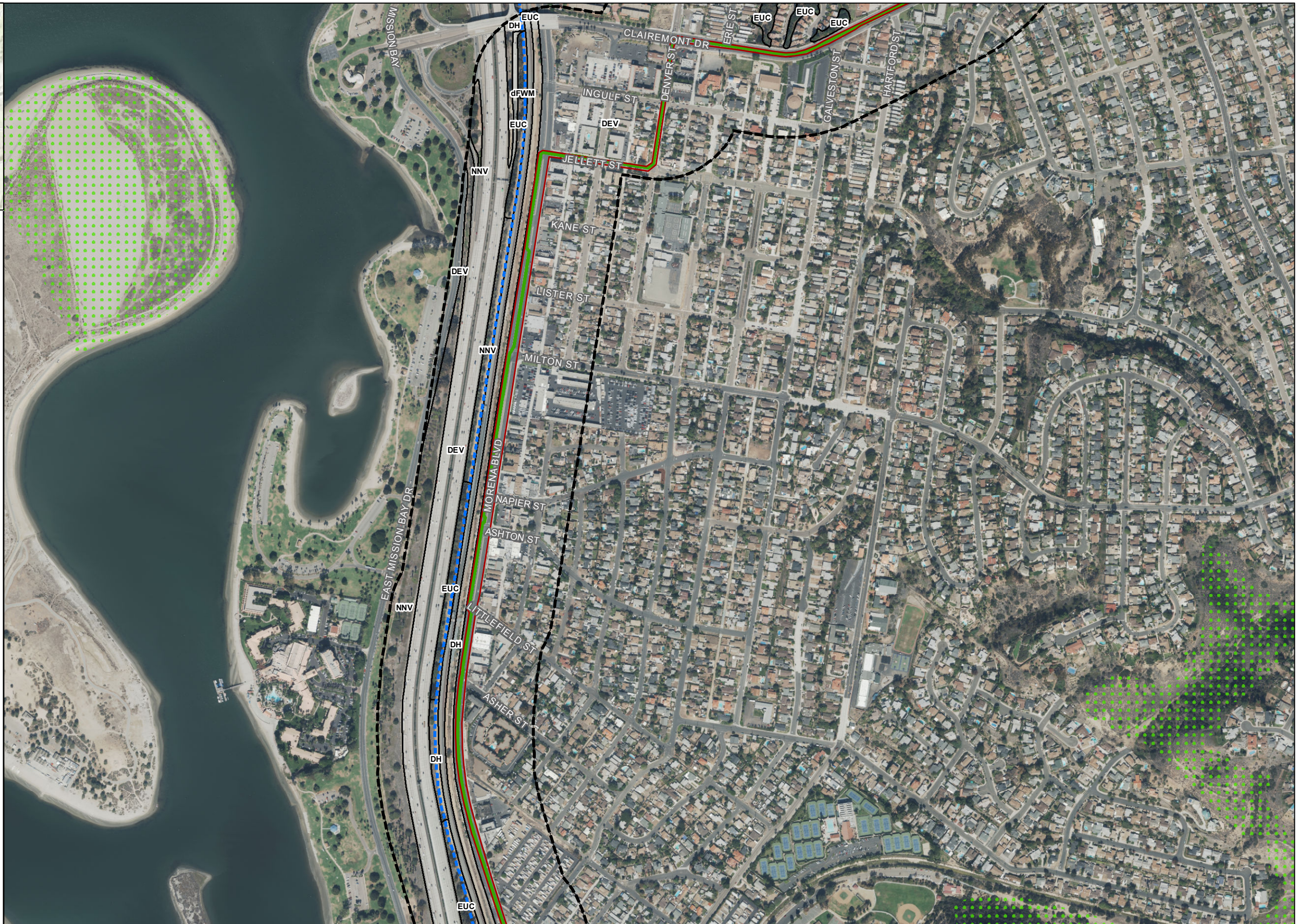
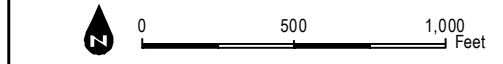
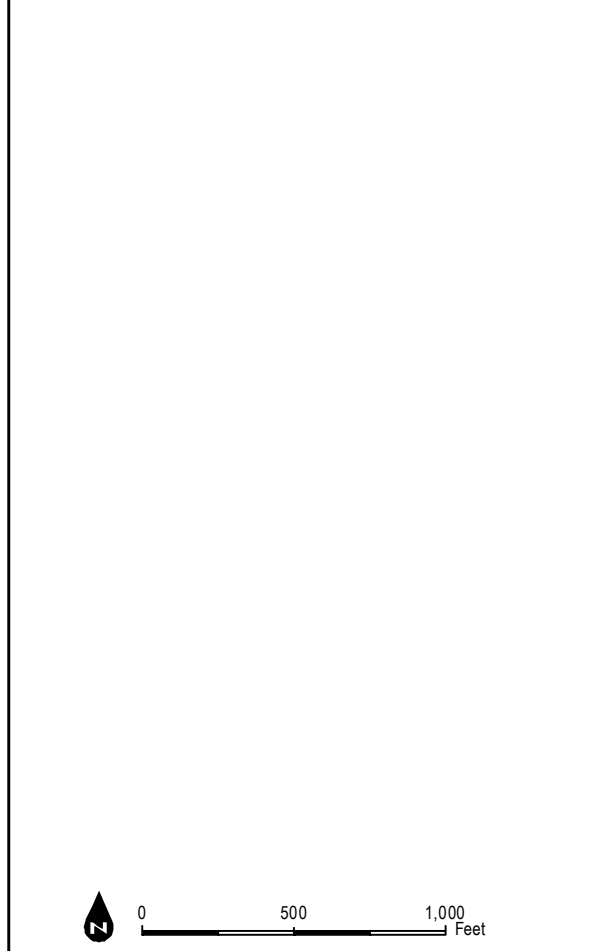
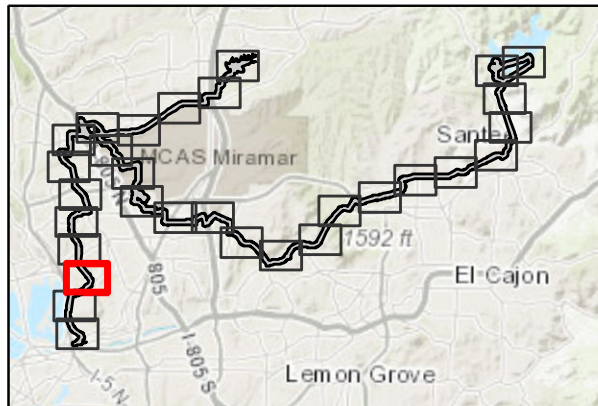


FIGURE 6.4-1B
Biological Resources - Miramar Reservoir and San Vicente Reservoir Alternatives

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LEGEND

- Project Study Area
- Direct Impact Area
- Coastal Zone Boundary
- Project Pipeline Alternatives**
- Morena Wastewater Forcemain and Brine/Centrate Line
- Vegetation Communities/Land Covers**
- CSS, Diegan Coastal Sage Scrub
- DEV, Urban/Developed
- DH, Disturbed Habitat
- EUC, Eucalyptus Woodland
- NNV, Non-native Vegetation
- Multi-Habitat Planning Area



SOURCE: City of San Diego 2016, 2017; SANDAG, 2016

FIGURE 6.4-1C
Biological Resources - Miramar Reservoir and San Vicente Reservoir Alternatives

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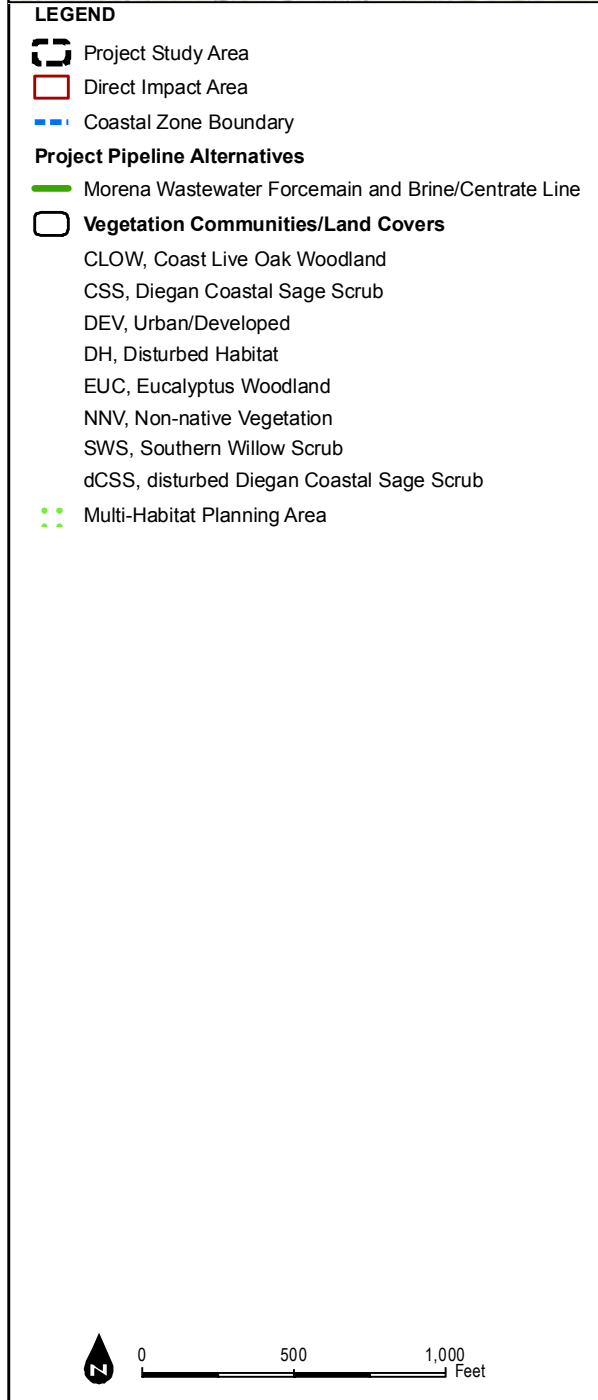
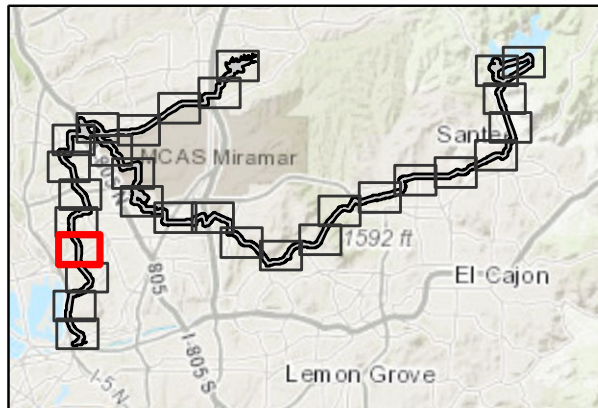


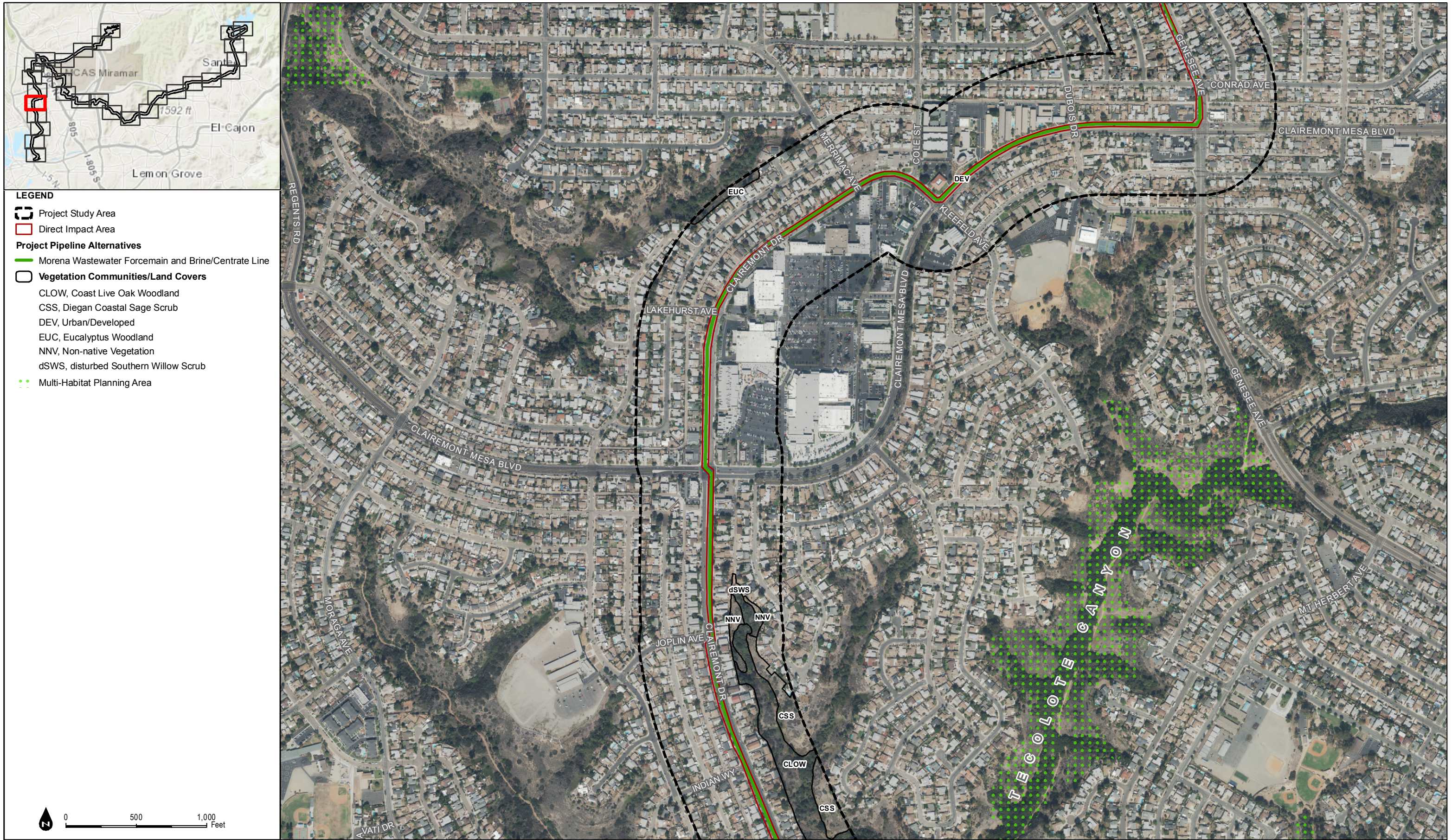
FIGURE 6.4-1D

Biological Resources - Miramar Reservoir and San Vicente Reservoir Alternatives

SOURCE: City of San Diego 2016, 2017; SANDAG, 2016



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- LEGEND**
- Project Study Area
 - Direct Impact Area
 - Project Pipeline Alternatives**
 - Morena Wastewater Forcemain and Brine/Centrate Line
 - Vegetation Communities/Land Covers**
 - CLOW, Coast Live Oak Woodland
 - CSS, Diegan Coastal Sage Scrub
 - DEV, Urban/Developed
 - EUC, Eucalyptus Woodland
 - NNV, Non-native Vegetation
 - dSWS, disturbed Southern Willow Scrub
 - Multi-Habitat Planning Area

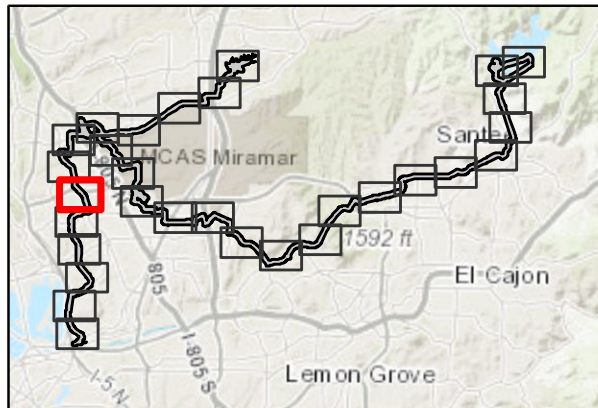
SOURCE: City of San Diego 2016, 2017; SANDAG, 2016

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Pure Water San Diego Program North City Project EIR/EIS

FIGURE 6.4-1E
Biological Resources - Miramar Reservoir and San Vicente Reservoir Alternatives

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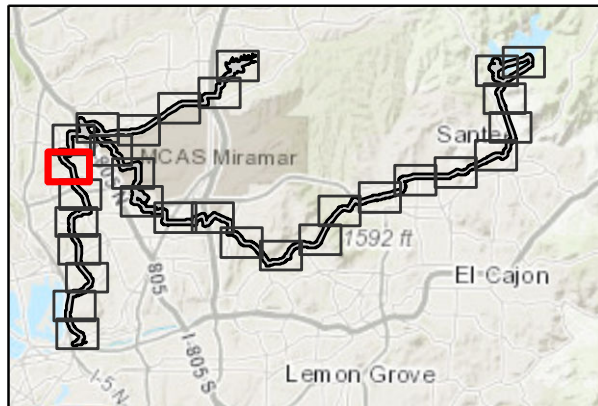


- LEGEND**
- Project Study Area
 - Direct Impact Area
 - Project Pipeline Alternatives**
 - Morena Wastewater Forcmain and Brine/Centrate Line
 - Trenchless Segments of Alignment
 - Special Status Species**
 - coastal California gnatcatcher
 - western pond turtle
 - Sensitive Plants**
 - Artemisia palmeri*
 - Jurisdictional Aquatic Resources**
 - Non-wetland Waters (ACOE/RWQCB/CDFW)
 - Wetland or Riparian Area (CDFW Only)
 - Non-wetland Water (ACOE/RWCQB)/Riparian Area (CDFW)
 - Vegetation Communities/Land Covers**
 - CLOW, Coast Live Oak Woodland
 - CSS, Diegan Coastal Sage Scrub
 - CSSB, Diegan Coastal Sage Scrub: Baccharis-dominated
 - DEV, Urban/Developed
 - DH, Disturbed Habitat
 - EUC, Eucalyptus Woodland
 - MFS, Mulefat Scrub
 - NNG, Non-native Grassland
 - NNV, Non-native Vegetation
 - NVC, Non-vegetated Channel or Floodway
 - SCLO, Southern Coast Live Oak Riparian Forest
 - SRF, Southern Riparian Forest
 - SWRF, Southern Arroyo Willow Riparian Forest
 - dCLOW, disturbed Coast Live Oak Woodland
 - dCSS, disturbed Diegan Coastal Sage Scrub
 - dSRF, disturbed Southern Riparian Forest
 - Multi-Habitat Planning Area

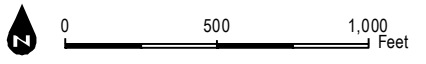


SOURCE: City of San Diego 2016, 2017; SANDAG, 2016

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- LEGEND**
- Project Study Area
 - Direct Impact Area
 - Project Pipeline Alternatives**
 - Morena Wastewater Forcemain and Brine/Centrate Line
 - Trenchless Segments of Alignment
 - Special Status Species**
 - Cooper's hawk
 - yellow warbler
 - Sensitive Plants**
 - Ceanothus verrucosus*
 - Iva hayesiana*
 - Romneya coulteri*
 - Vegetation Communities/Land Covers**
 - CSS, Diegan Coastal Sage Scrub
 - DEV, Urban/Developed
 - DH, Disturbed Habitat
 - EUC, Eucalyptus Woodland
 - FWM, Coastal and Valley Freshwater Marsh
 - NNV, Non-native Vegetation
 - SCLO, Southern Coast Live Oak Riparian Forest
 - SWRF, Southern Arroyo Willow Riparian Forest
 - SWS, Southern Willow Scrub
 - dCSS, disturbed Diegan Coastal Sage Scrub
 - Multi-Habitat Planning Area



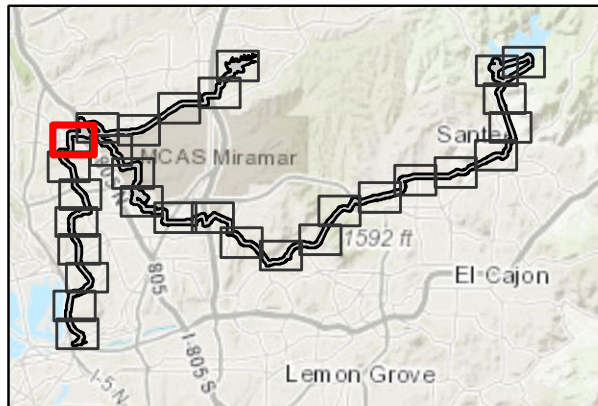
SOURCE: City of San Diego 2016, 2017; SANDAG, 2016



Pure Water San Diego Program North City Project EIR/EIS

FIGURE 6.4-1G
Biological Resources - Miramar Reservoir and San Vicente Reservoir Alternatives

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- LEGEND**
- Project Study Area
 - Direct Impact Area
 - Project Pipeline Alternatives**
 - North City Pure Water Pipeline
 - Morena Wastewater Forcemain and Brine/Centrates Line
 - Landfill Gas Pipeline
 - Trenchless Segments of Alignment
 - Air Valve and Blow-Off Valve Work Areas (10'x10') - For San Vicente Reservoir Alternative
 - Project Facilities**
 - North City Pure Water Facility
 - North City Water Reclamation Plant Expansion
 - North City Pure Water Renewable Energy Facility
 - North City Pure Water Facility Influent Pump Station
 - Special Status Species**
 - Cooper's hawk
 - coastal California gnatcatcher
 - Sensitive Plants**
 - Holocarpha virgata ssp. elongata*
 - Iva hayesiana*
 - Quercus dumosa*
 - Selaginella cinerascens*
 - Viguiera laciniata*
 - Basin Data**
 - Vernal pool
 - Basin (SDFS present)
 - Basin
 - MCAS Mapped Watershed
 - Jurisdictional Aquatic Resources**
 - Wetland or Riparian Area (CDFW Only)
 - Vegetation Communities/Land Covers**
 - CSS, Diegan Coastal Sage Scrub
 - DEV, Urban/Developed
 - DH, Disturbed Habitat
 - EUC, Eucalyptus Woodland
 - FWM, Coastal and Valley Freshwater Marsh
 - MFS, Mulefat Scrub
 - NNG, Non-native Grassland
 - NNV, Non-native Vegetation
 - SCLO, Southern Coast Live Oak Riparian Forest
 - VP, Vernal Pool
 - dCSS, disturbed Diegan Coastal Sage Scrub
 - Multi-Habitat Planning Area
 - INRMP Zones**
 - Management Zone 1
 - Management Zone 2
 - Management Zone 3
 - Management Zone 5



FIGURE 6.4-1H
Biological Resources - Miramar Reservoir and San Vicente Reservoir Alternatives

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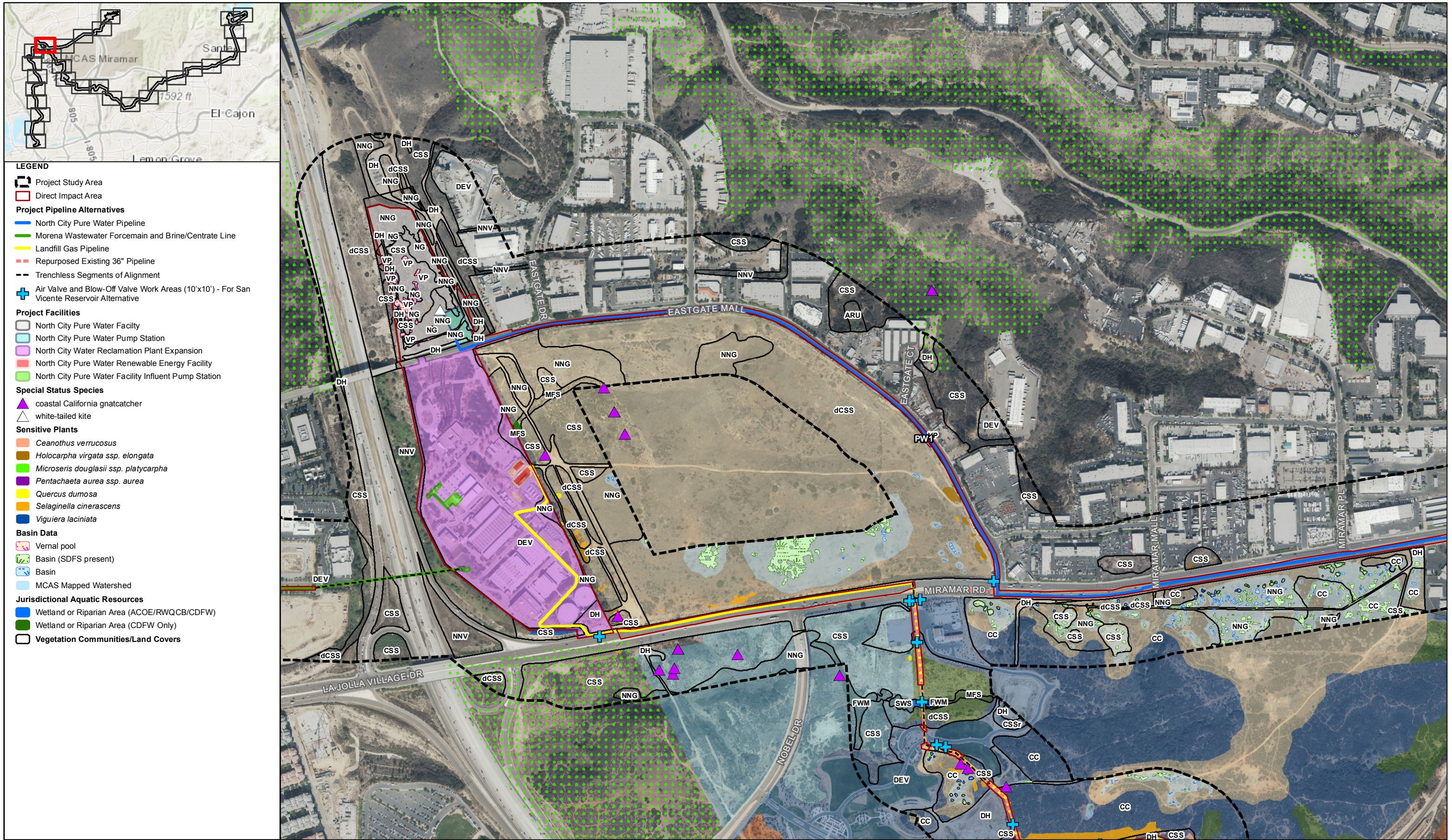
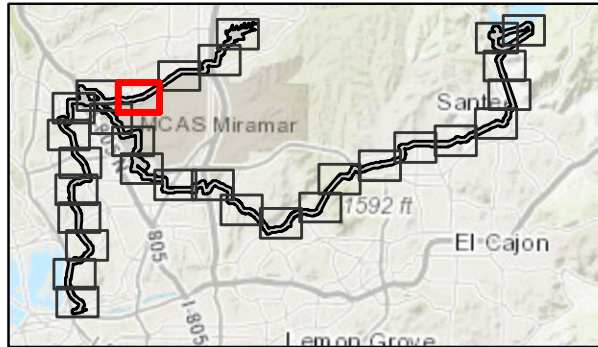


FIGURE 6.4-11

Biological Resources - Miramar Reservoir and San Vicente Reservoir Alternatives

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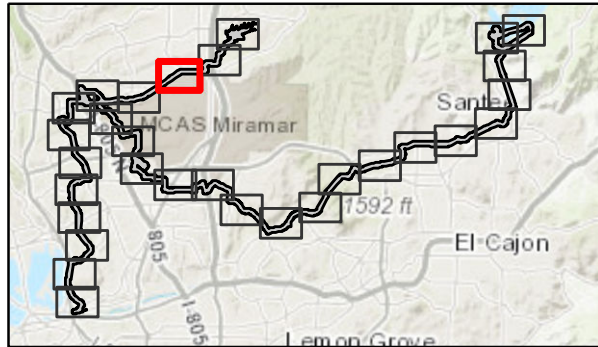
LEGEND

- Project Study Area
- Direct Impact Area
- Project Pipeline Alternatives**
- North City Pure Water Pipeline
- Trenchless Segments of Alignment
- Special Status Species**
- coastal California gnatcatcher
- Sensitive Plants**
- Iva hayesiana*
- Basin Data**
- Basin (SDFS present)
- Basin
- MCAS Mapped Watershed
- Vegetation Communities/Land Covers**
- CC, Chamise Chaparral
- CSS, Diegan Coastal Sage Scrub
- DEV, Urban/Developed
- DH, Disturbed Habitat
- EUC, Eucalyptus Woodland
- NNG, Non-native Grassland
- NNV, Non-native Vegetation
- SMX, Southern Mixed Chaparral
- dCSS, disturbed Diegan Coastal Sage Scrub
- Multi-Habitat Planning Area
- INRMP Zones**
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Management Zone 4
- Management Zone 5

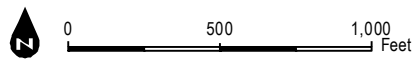


SOURCE: City of San Diego 2016, 2017; SANDAG, 2016

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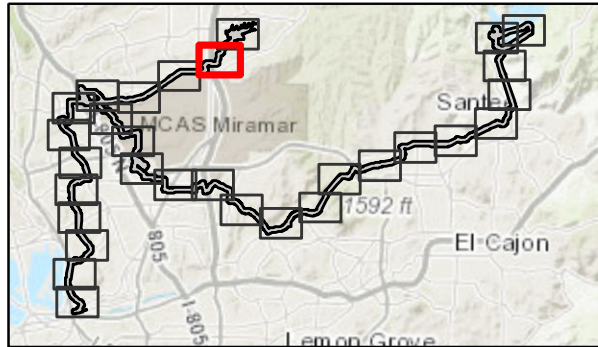


- LEGEND**
- Project Study Area
 - Direct Impact Area
 - Project Pipeline Alternatives**
 - North City Pure Water Pipeline
 - Vegetation Communities/Land Covers**
 - CSSB, Diegan Coastal Sage Scrub: Baccharis-dominated
 - DEV, Urban/Developed
 - DH, Disturbed Habitat
 - EUC, Eucalyptus Woodland
 - NNG, Non-native Grassland
 - SWS, Southern Willow Scrub

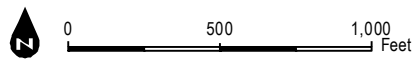
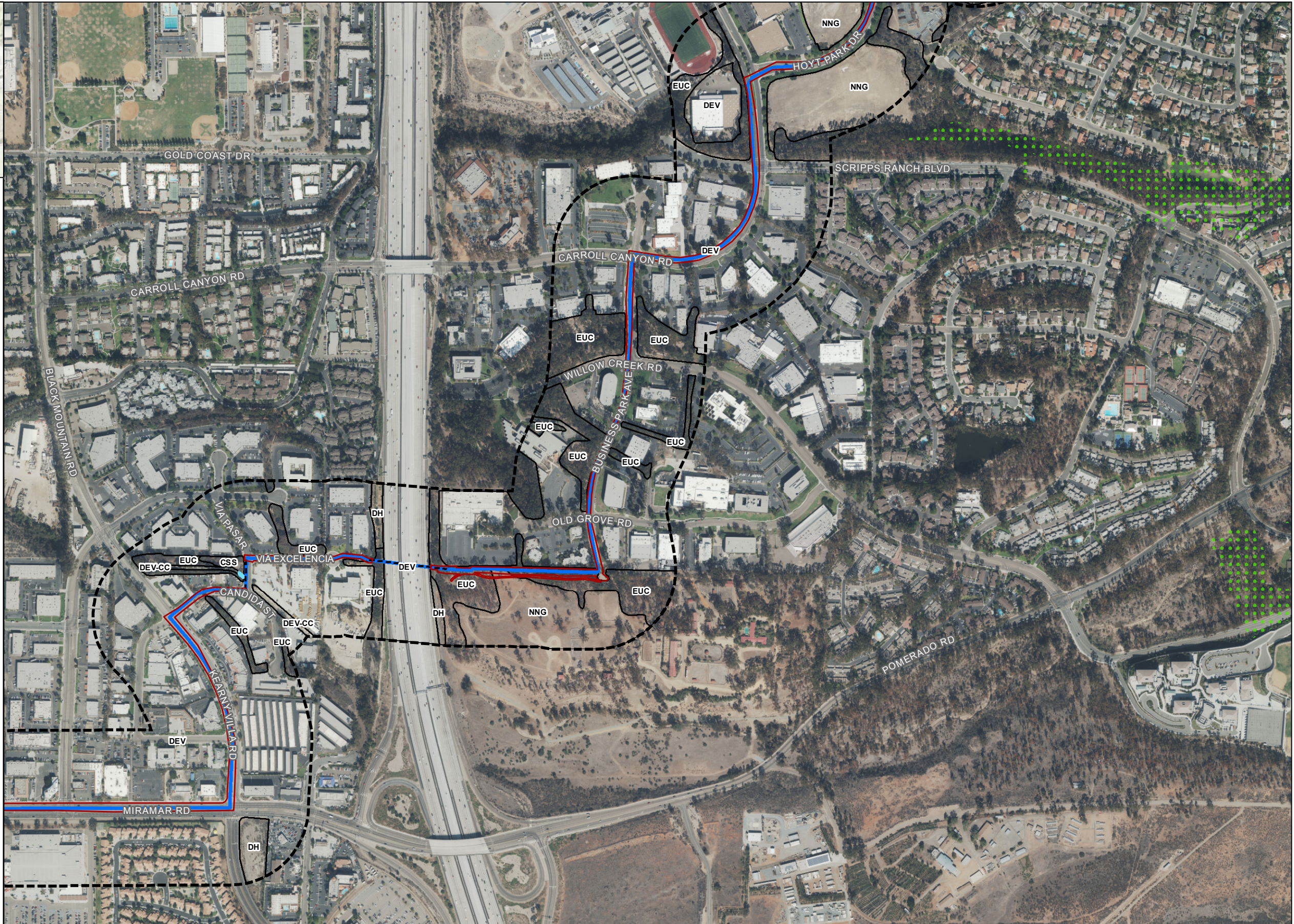


SOURCE: City of San Diego 2016, 2017; SANDAG, 2016

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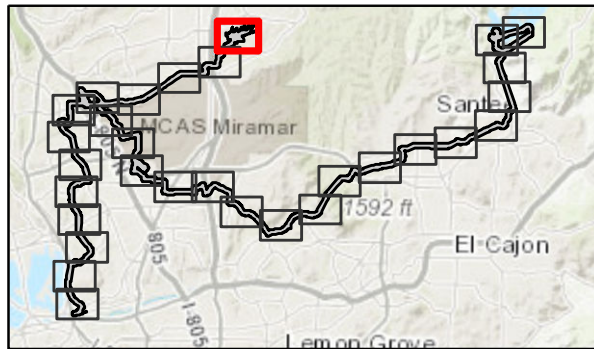
- LEGEND**
- Project Study Area
 - Direct Impact Area
 - Project Pipeline Alternatives**
 - North City Pure Water Pipeline
 - Trenchless Segments of Alignment
 - Jurisdictional Aquatic Resources**
 - Non-wetland Waters (ACOE/RWQCB/CDFW)
 - Vegetation Communities/Land Covers**
 - CSS, Diegan Coastal Sage Scrub
 - DEV, Urban/Developed
 - DEV-CC, Developed - Concrete Channel
 - DH, Disturbed Habitat
 - EUC, Eucalyptus Woodland
 - NNG, Non-native Grassland
 - Multi-Habitat Planning Area



SOURCE: City of San Diego 2016, 2017; SANDAG, 2016

FIGURE 6.4-1L
Biological Resources Impacts - Miramar Reservoir Alternative

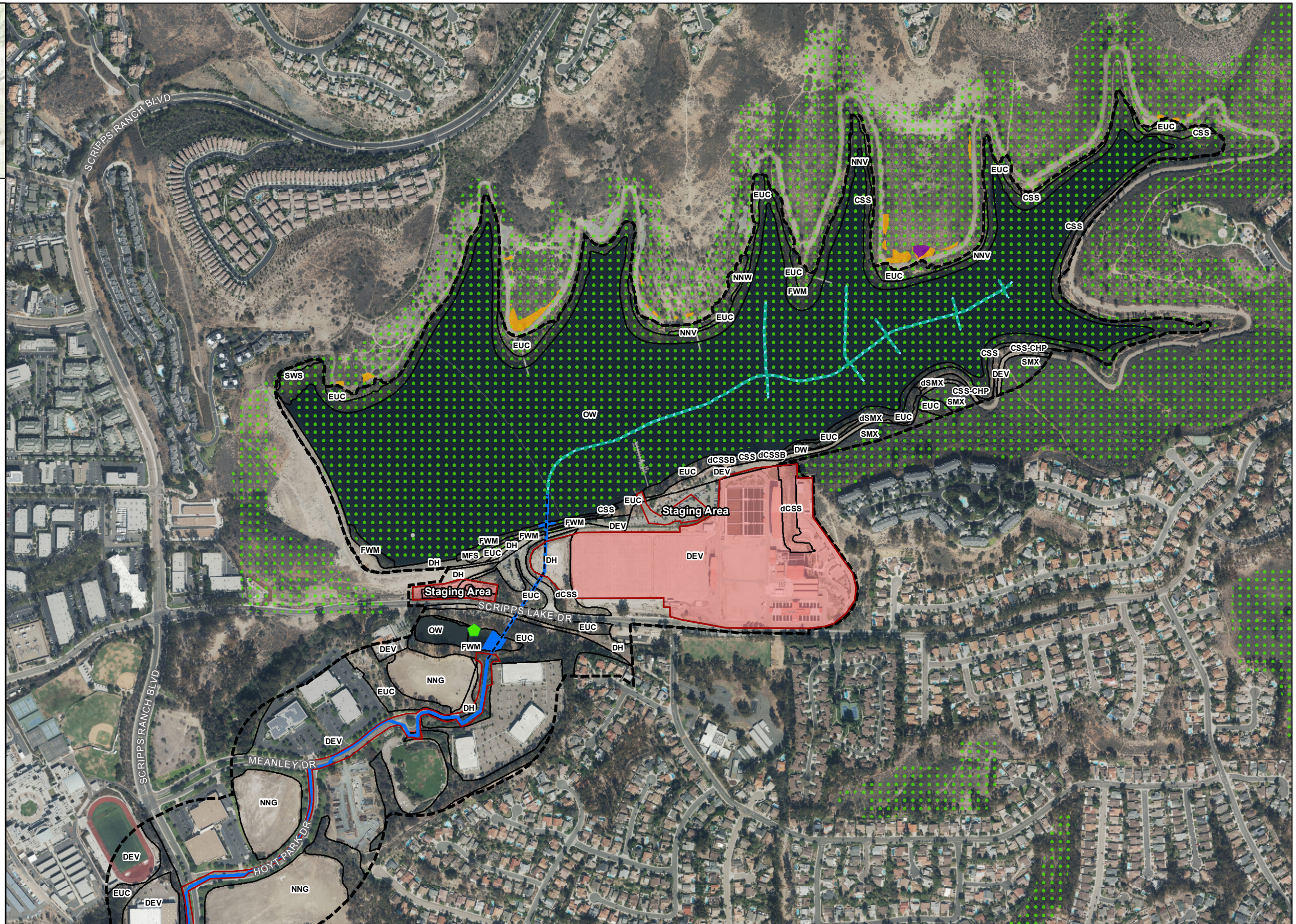
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LEGEND

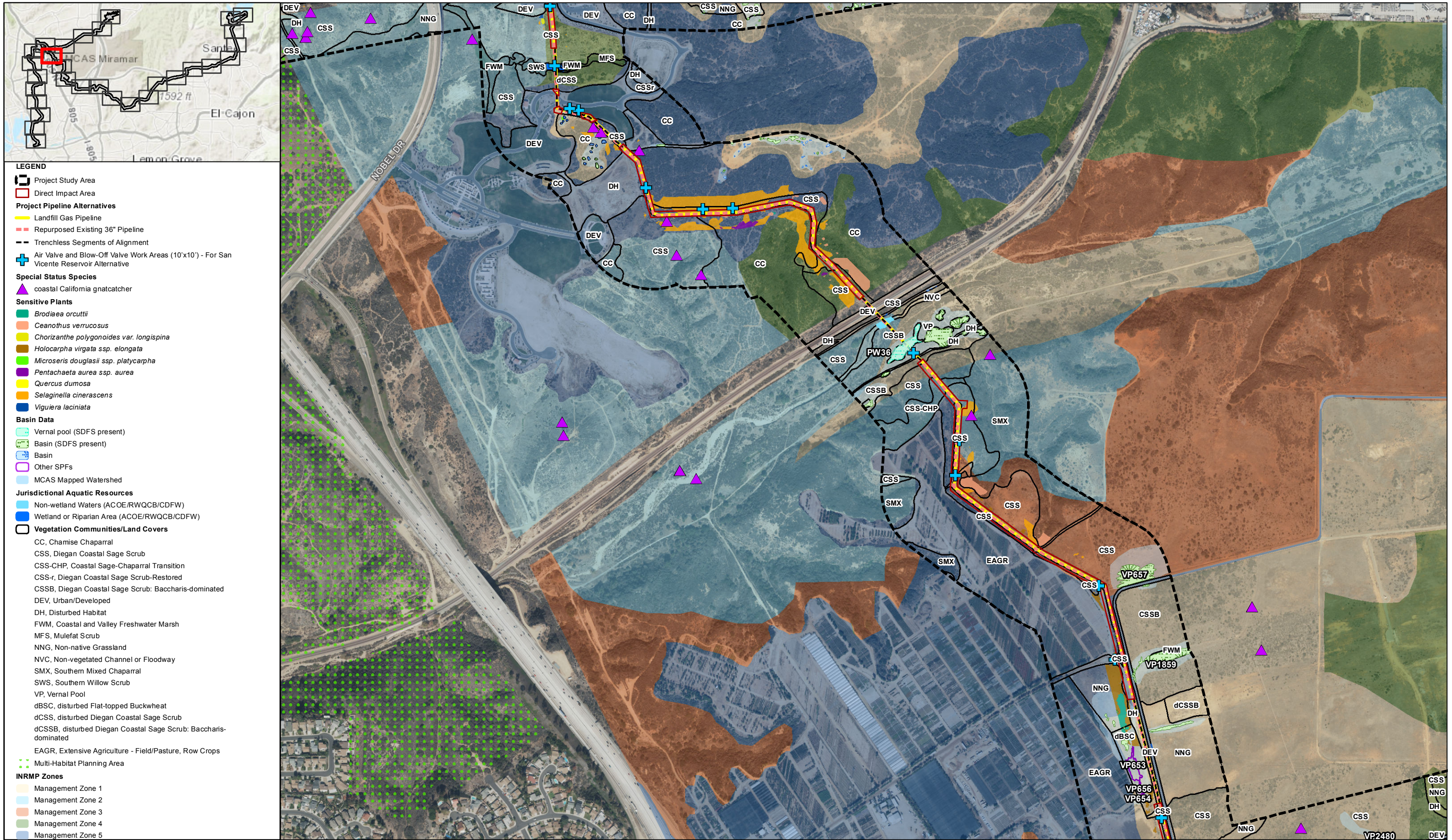
- Project Study Area
- Direct Impact Area
- Project Pipeline Alternatives**
 - North City Pure Water Pipeline
 - North City Pure Water Pipeline - Subaqueous Pipeline
 - Trenchless Segments of Alignment
- Project Facilities**
 - Pure Water Dechlorination Facility
 - Miramar Water Treatment Plant Improvements and Pump Station
- Special Status Species**
 - western pond turtle
- Sensitive Plants**
 - Adolphia californica*
 - Ferocactus viridescens*
 - Pentachaeta aurea ssp. aurea*
 - Quercus dumosa*
 - Selaginella cinerascens*
- Jurisdictional Aquatic Resources**
 - Non-wetland Waters (ACOE/RWQCB/CDFW)
 - Wetland or Riparian Area (ACOE/RWQCB/CDFW)
- Vegetation Communities/Land Covers**
 - CSS, Diegan Coastal Sage Scrub
 - CSS-CHP, Coastal Sage-Chaparral Transition
 - DEV, Urban/Developed
 - DH, Disturbed Habitat
 - DW, Disturbed Wetland
 - EUC, Eucalyptus Woodland
 - FWM, Coastal and Valley Freshwater Marsh
 - MFS, Mulefat Scrub
 - NNG, Non-native Grassland
 - NNV, Non-native Vegetation
 - NNW, Non-native Woodland
 - OW, Open Water
 - SMX, Southern Mixed Chaparral
 - SWS, Southern Willow Scrub
 - dCSS, disturbed Diegan Coastal Sage Scrub
 - dCSSB, disturbed Diegan Coastal Sage Scrub: Baccharis-dominated
 - dSMX, disturbed Southern Mixed Chaparral
 - Multi-Habitat Planning Area

0 500 1,000 Feet



SOURCE: City of San Diego 2016, 2017; SANDAG, 2016

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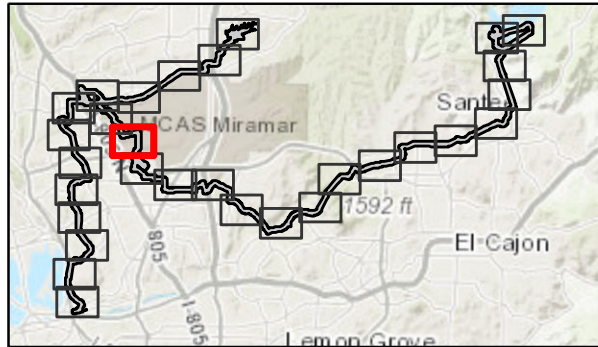
LEGEND

- Project Study Area
- Direct Impact Area
- Project Pipeline Alternatives**
 - Landfill Gas Pipeline
 - Repurposed Existing 36" Pipeline
 - Trenchless Segments of Alignment
 - Air Valve and Blow-Off Valve Work Areas (10'x10') - For San Vicente Reservoir Alternative
- Special Status Species**
 - coastal California gnatcatcher
- Sensitive Plants**
 - Brodiaea orcuttii*
 - Ceanothus verrucosus*
 - Chorizanthe polygonoides* var. *longispina*
 - Holocarpha virgata* ssp. *elongata*
 - Microseris douglasii* ssp. *platycarpa*
 - Pentachaeta aurea* ssp. *aurea*
 - Quercus dumosa*
 - Selaginella cinerascens*
 - Viguiera laciniata*
- Basin Data**
 - Vernal pool (SDFS present)
 - Basin (SDFS present)
 - Basin
 - Other SPFs
 - MCAS Mapped Watershed
- Jurisdictional Aquatic Resources**
 - Non-wetland Waters (ACOE/RWQCB/CDFW)
 - Wetland or Riparian Area (ACOE/RWQCB/CDFW)
- Vegetation Communities/Land Covers**
 - CC, Chamise Chaparral
 - CSS, Diegan Coastal Sage Scrub
 - CSS-CHP, Coastal Sage-Chaparral Transition
 - CSS-r, Diegan Coastal Sage Scrub-Restored
 - CSSB, Diegan Coastal Sage Scrub: Baccharis-dominated
 - DEV, Urban/Developed
 - DH, Disturbed Habitat
 - FWM, Coastal and Valley Freshwater Marsh
 - MFS, Mulefat Scrub
 - NNG, Non-native Grassland
 - NVC, Non-vegetated Channel or Floodway
 - SMX, Southern Mixed Chaparral
 - SWS, Southern Willow Scrub
 - VP, Vernal Pool
 - dBSC, disturbed Flat-topped Buckwheat
 - dCSS, disturbed Diegan Coastal Sage Scrub
 - dCSSB, disturbed Diegan Coastal Sage Scrub: Baccharis-dominated
 - EAGR, Extensive Agriculture - Field/Pasture, Row Crops
 - Multi-Habitat Planning Area
- INRMP Zones**
 - Management Zone 1
 - Management Zone 2
 - Management Zone 3
 - Management Zone 4
 - Management Zone 5

0 500 1,000 Feet
 SOURCE: City of San Diego 2016, 2017; SANDAG, 2016

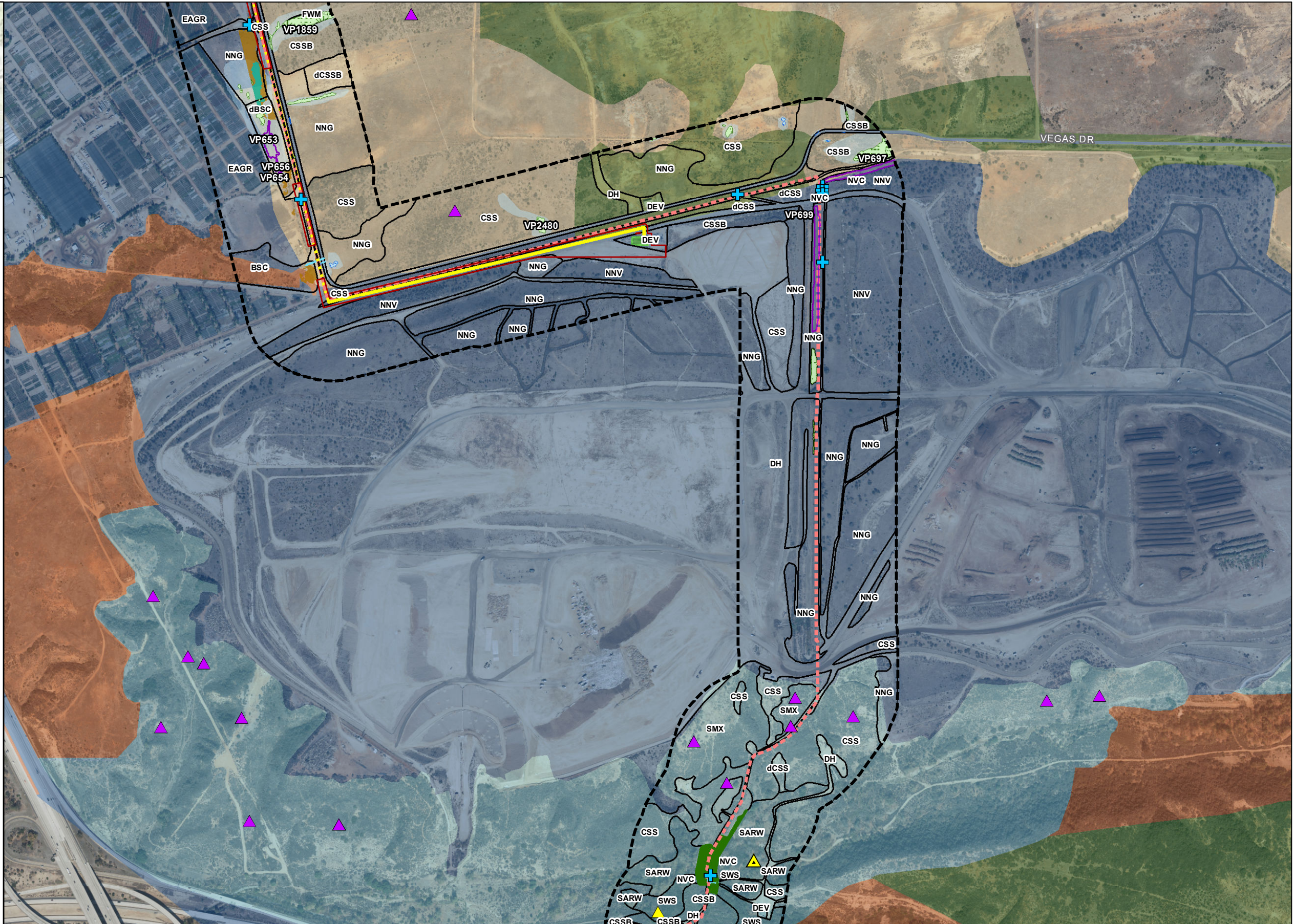
FIGURE 6.4-1N
 Biological Resources - Miramar Reservoir and San Vicente Reservoir Alternatives

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LEGEND

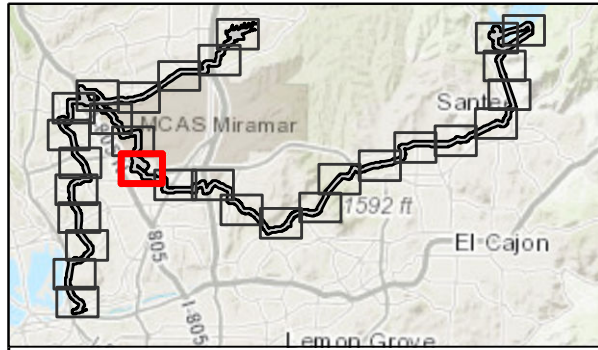
- Project Study Area
- Direct Impact Area
- Project Pipeline Alternatives**
 - Landfill Gas Pipeline
 - Repurposed Existing 36" Pipeline
 - Trenchless Segments of Alignment
- Air Valve and Blow-Off Valve Work Areas (10'x10') - For San Vicente Reservoir Alternative
- Project Facilities**
 - Landfill Gas Pipeline Compressor Station
- Special Status Species**
 - coastal California gnatcatcher
 - yellow warbler
 - yellow-breasted chat
- Sensitive Plants**
 - Brodiaea orcuttii*
 - Holocarpha virgata ssp. elongata*
 - Selaginella cinerascens*
- Basin Data**
 - Basin (SDFS present)
 - Basin
 - Other SPFs
 - MCAS Mapped Watershed
- Jurisdictional Aquatic Resources**
 - Non-wetland Waters (ACOE/RWQCB/CDFW)
 - Wetland or Riparian Area (CDFW Only)
- Vegetation Communities/Land Covers**
 - BSC, Flat-topped Buckwheat
 - CSS, Diegan Coastal Sage Scrub
 - CSSB, Diegan Coastal Sage Scrub: Baccharis-dominated
 - DEV, Urban/Developed
 - DH, Disturbed Habitat
 - FWM, Coastal and Valley Freshwater Marsh
 - NNG, Non-native Grassland
 - NNV, Non-native Vegetation
 - NVC, Non-vegetated Channel or Floodway
 - SARW, Southern Sycamore-Alder Riparian Woodland
 - SMX, Southern Mixed Chaparral
 - SWS, Southern Willow Scrub
 - dBSC, disturbed Flat-topped Buckwheat
 - dCSS, disturbed Diegan Coastal Sage Scrub
 - dCSSB, disturbed Diegan Coastal Sage Scrub: Baccharis-dominated
 - EAGR, Extensive Agriculture - Field/Pasture, Row Crops
- INRMP Zones**
 - Management Zone 1
 - Management Zone 2
 - Management Zone 3
 - Management Zone 4
 - Management Zone 5



DUDEK

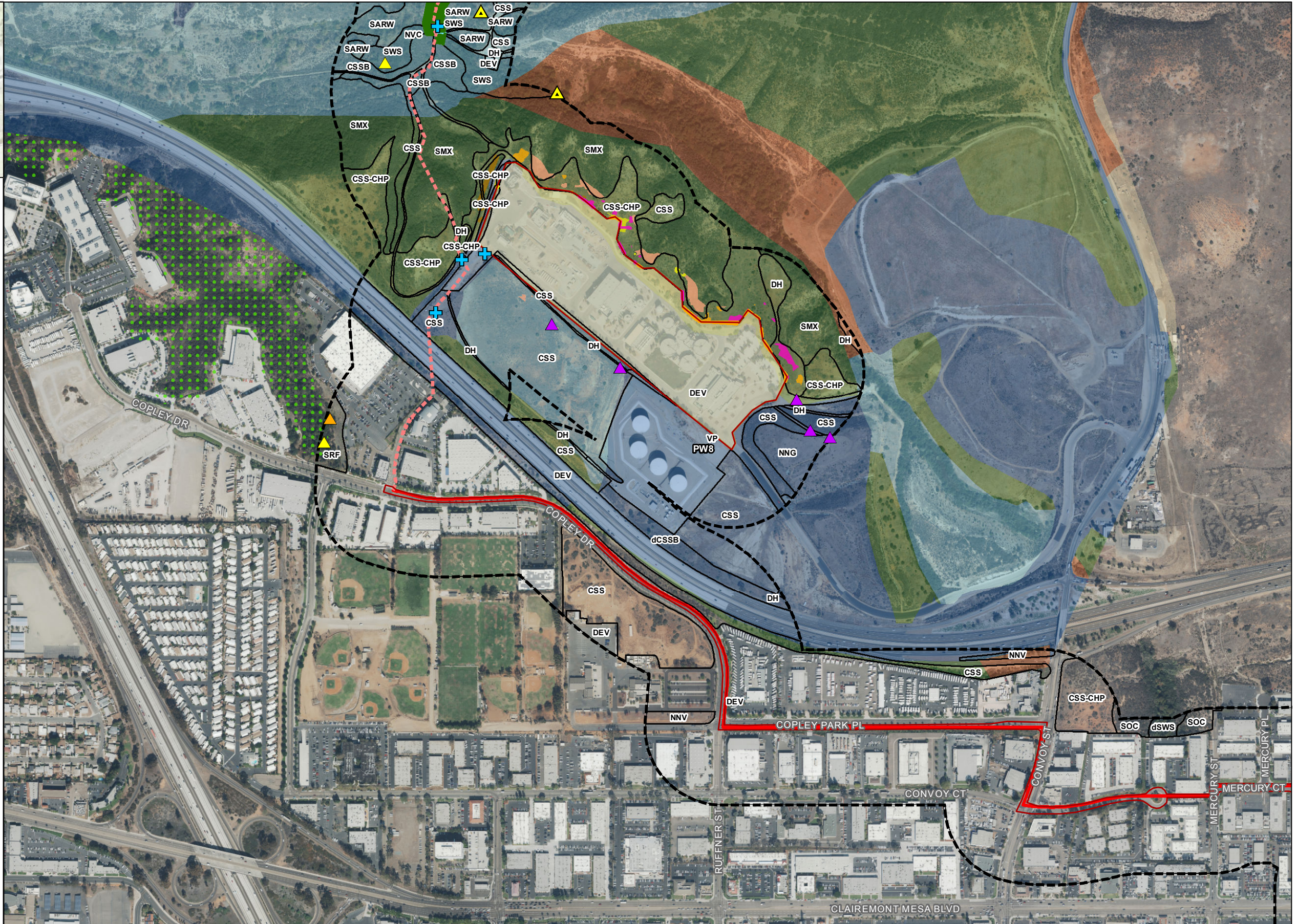
FIGURE 6.4-10
Biological Resources - Miramar Reservoir and San Vicente Reservoir Alternatives

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LEGEND

- Project Study Area
- Direct Impact Area
- Project Pipeline Alternatives**
 - San Vicente Pure Water Pipeline
 - Repurposed Existing 36" Pipeline
 - Air Valve and Blow-Off Valve Work Areas (10'x10') - For San Vicente Reservoir Alternative
- Project Facilities**
 - Metro Biosolids Center Improvements
- Special Status Species**
 - coastal California gnatcatcher
 - willow flycatcher
 - yellow warbler
 - yellow-breasted chat
- Sensitive Plants**
 - Ceanothus verrucosus*
 - Chorizanthe polygonoides* var. *longispina*
 - Holocarpha virgata* ssp. *elongata*
 - Isocoma menziesii* var. *decumbens*
 - Quercus dumosa*
 - Selaginella cinerascens*
- Basin Data**
 - Vernal pool (SDFS present)
- Jurisdictional Aquatic Resources**
 - Non-wetland Waters (ACOE/RWQCB/CDFW)
 - Wetland or Riparian Area (CDFW Only)
- Vegetation Communities/Land Covers**
 - CSS, Diegan Coastal Sage Scrub
 - CSS-CHP, Coastal Sage-Chaparral Transition
 - CSSB, Diegan Coastal Sage Scrub: Baccharis-dominated
 - DEV, Urban/Developed
 - DH, Disturbed Habitat
 - NNG, Non-native Grassland
 - NNV, Non-native Vegetation
 - NVC, Non-vegetated Channel or Floodway
 - SARW, Southern Sycamore-Alder Riparian Woodland
 - SMX, Southern Mixed Chaparral
 - SOC, Scrub Oak Chaparral
 - SRF, Southern Riparian Forest
 - SWS, Southern Willow Scrub
 - VP, Vernal Pool
 - dCSSB, disturbed Diegan Coastal Sage Scrub: Baccharis-dominated
 - dSWS, disturbed Southern Willow Scrub
 - Multi-Habitat Planning Area
- INRMP Zones**
 - Management Zone 1
 - Management Zone 2
 - Management Zone 3
 - Management Zone 4
 - Management Zone 5

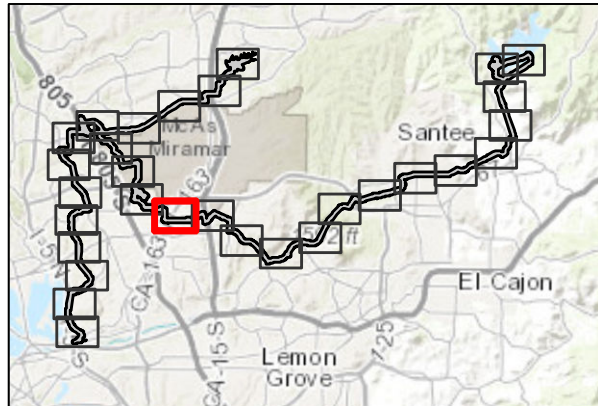


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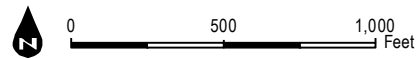
FIGURE 6.4-1P
Biological Resources Impacts - Miramar Reservoir and San Vicente Reservoir Alternatives

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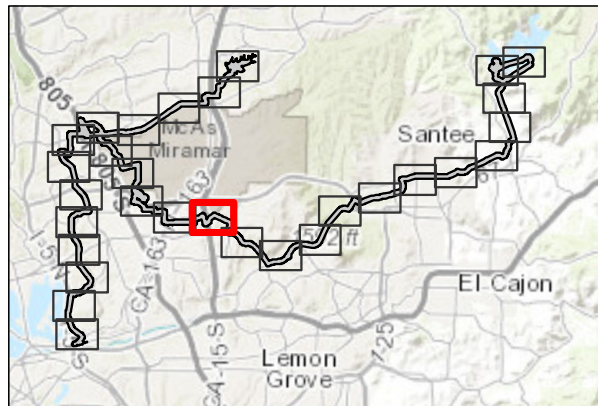
LEGEND

- Project Study Area
- Direct Impact Area
- Project Pipeline Alternatives**
- San Vicente Pure Water Pipeline
- Trenchless Segments of Alignment
- Vegetation Communities/Land Covers**
- CSS, Diegan Coastal Sage Scrub
- CSS-CHP, Coastal Sage-Chaparral Transition
- DEV, Urban/Developed
- EUC, Eucalyptus Woodland
- FWM, Coastal and Valley Freshwater Marsh
- NNV, Non-native Vegetation
- SOC, Scrub Oak Chaparral
- dSWS, disturbed Southern Willow Scrub
- Multi-Habitat Planning Area
- INRMP Zones**
- Management Zone 2
- Management Zone 3
- Management Zone 4
- Management Zone 5



SOURCE: City of San Diego 2016, 2017; SANDAG, 2016

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LEGEND

- Project Study Area
- Direct Impact Area
- Trenchless Segments of Alignment

Special Status Species

- coastal California gnatcatcher
- least Bell's vireo
- yellow warbler

Sensitive Plants

- Ferocactus viridescens*
- Viguiera laciniata*

Jurisdictional Aquatic Resources

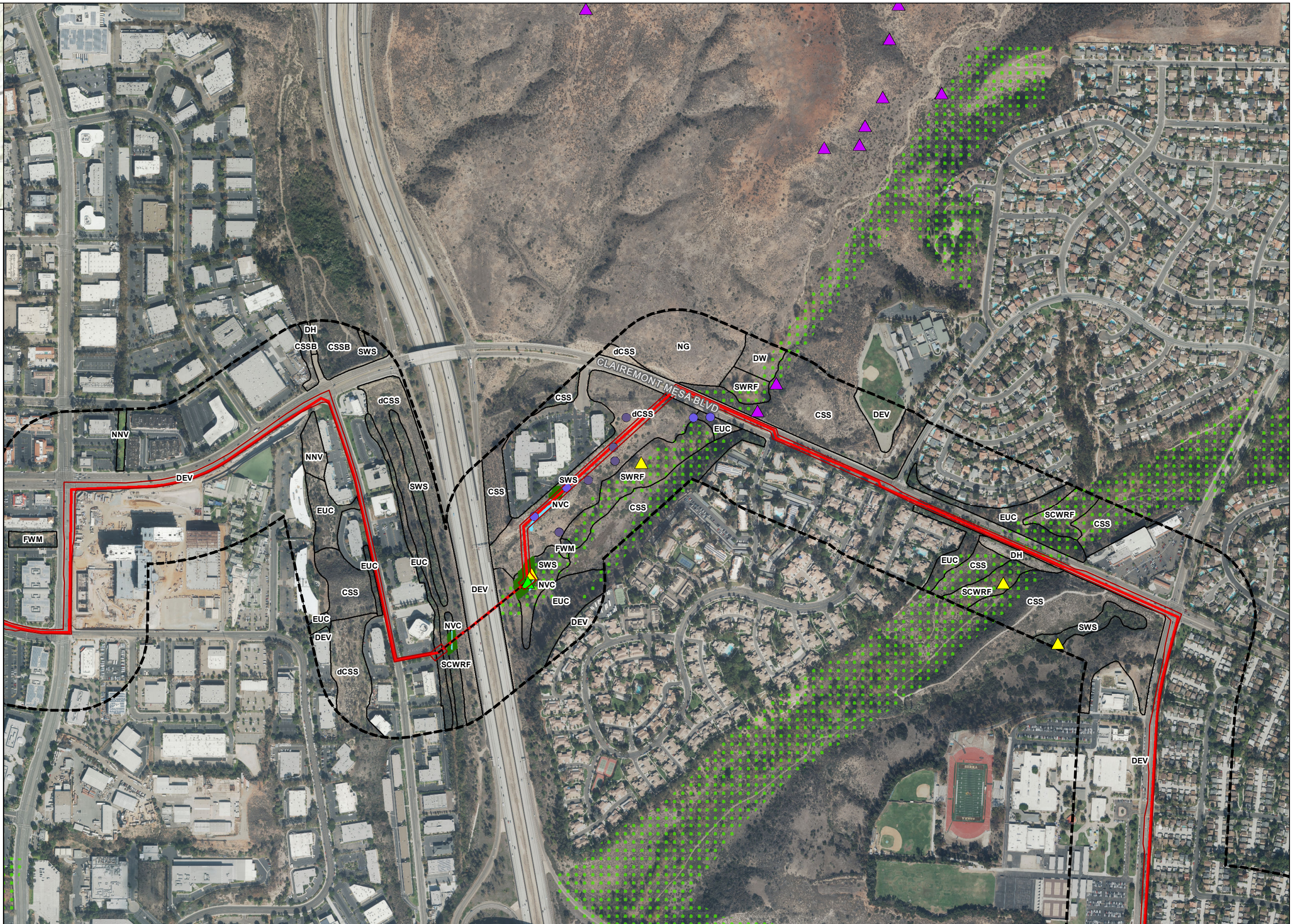
- Non-wetland Waters (ACOE/RWQCB/CDFW)
- Wetland or Riparian Area (CDFW Only)

Vegetation Communities/Land Covers

- CSS, Diegan Coastal Sage Scrub
- CSSB, Diegan Coastal Sage Scrub: Baccharis-dominated
- DEV, Urban/Developed
- DH, Disturbed Habitat
- DW, Disturbed Wetland
- EUC, Eucalyptus Woodland
- FWM, Coastal and Valley Freshwater Marsh
- NG, Native Grassland
- NNV, Non-native Vegetation
- NVC, Non-vegetated Channel or Floodway
- SCWRF, Southern Cottonwood-Willow Riparian Forest
- SWRF, Southern Arroyo Willow Riparian Forest
- SWS, Southern Willow Scrub
- dCSS, disturbed Diegan Coastal Sage Scrub

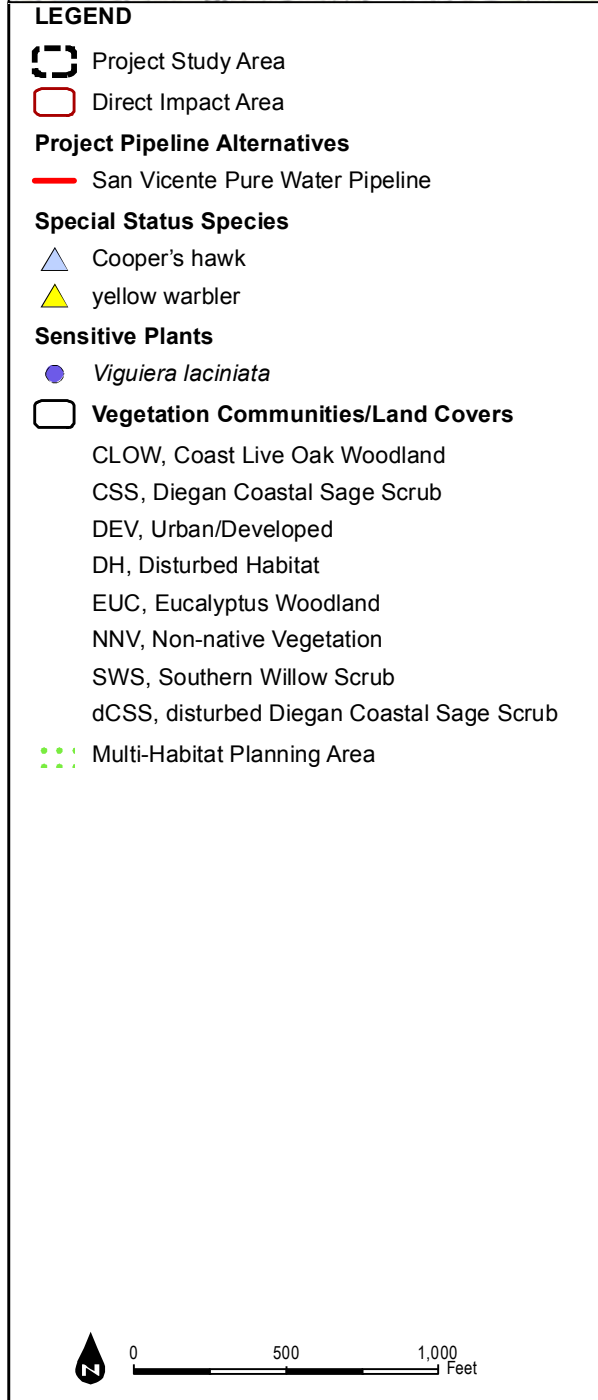
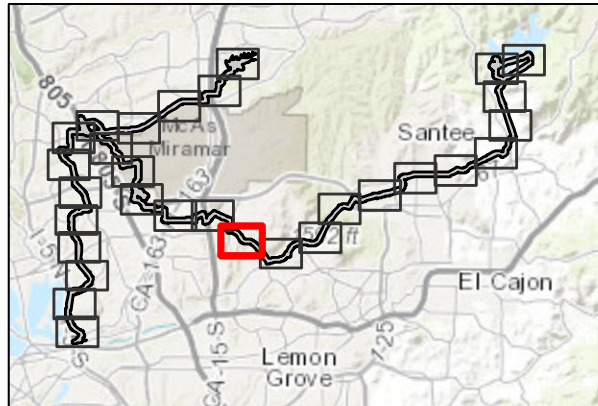
Multi-Habitat Planning Area

0 500 1,000 Feet



SOURCE: City of San Diego 2016, 2017; SANDAG, 2016

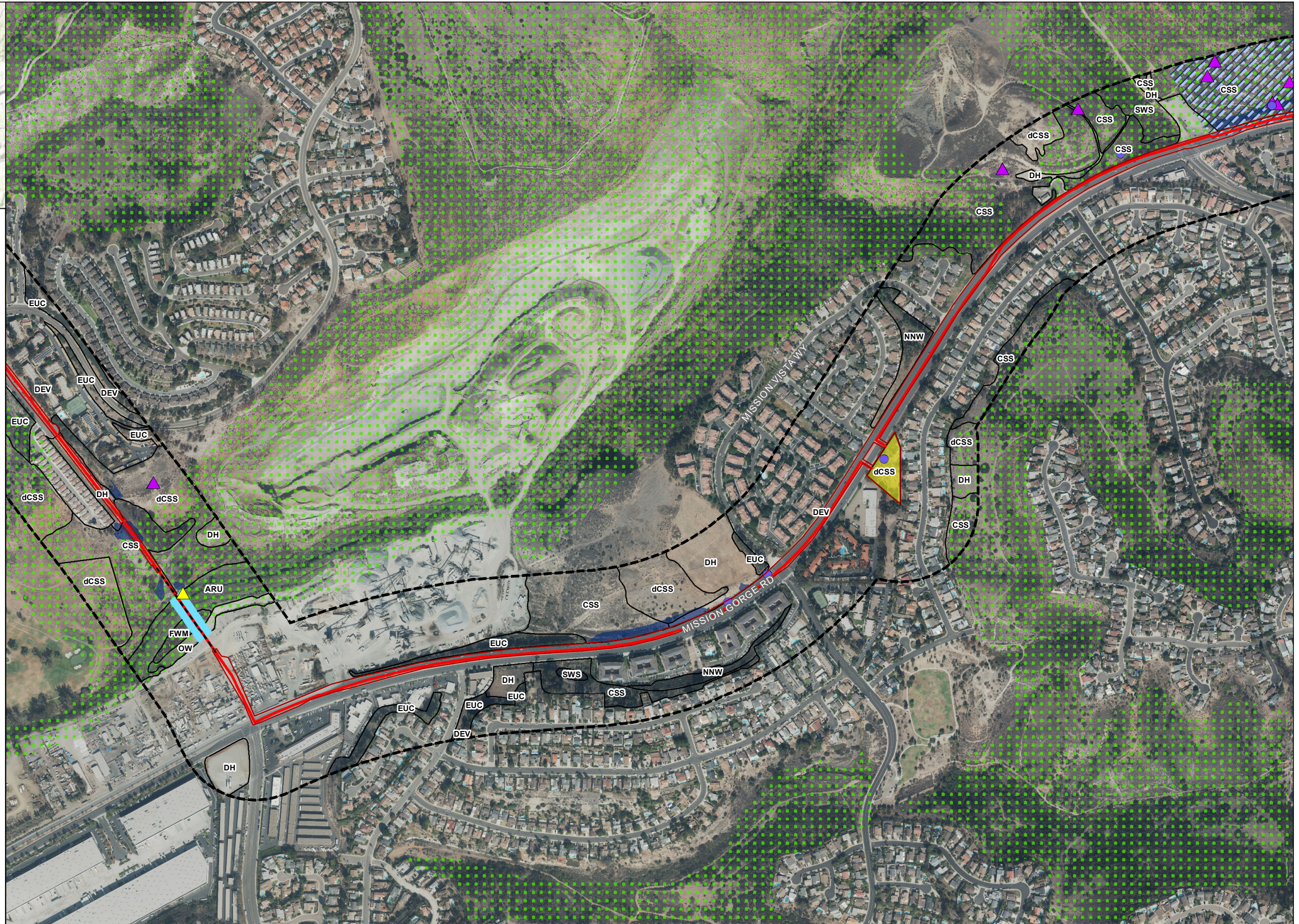
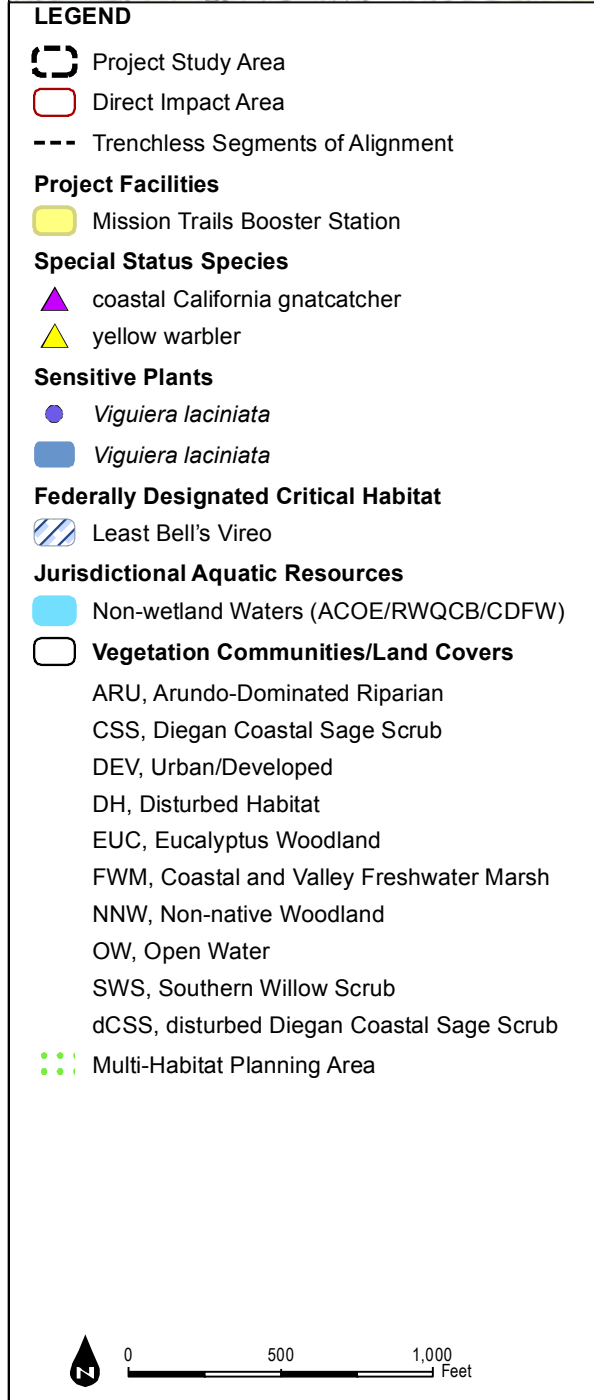
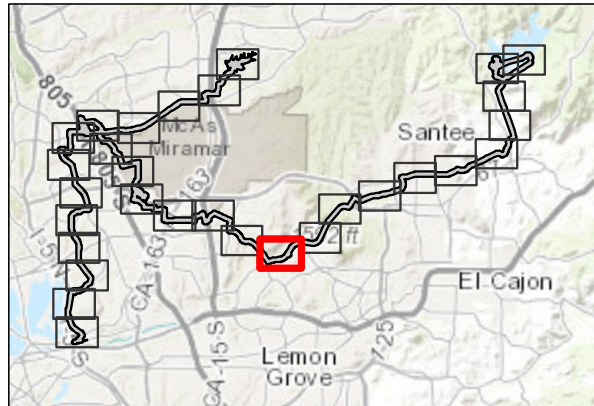
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SOURCE: City of San Diego 2016, 2017; SANDAG, 2016

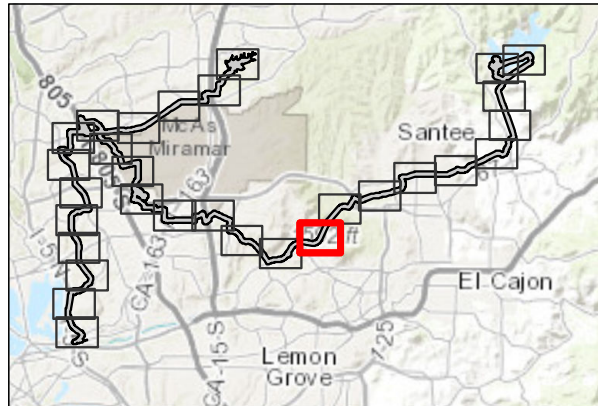
FIGURE 6.4-1S
Biological Resources Impacts - San Vicente Reservoir Alternative

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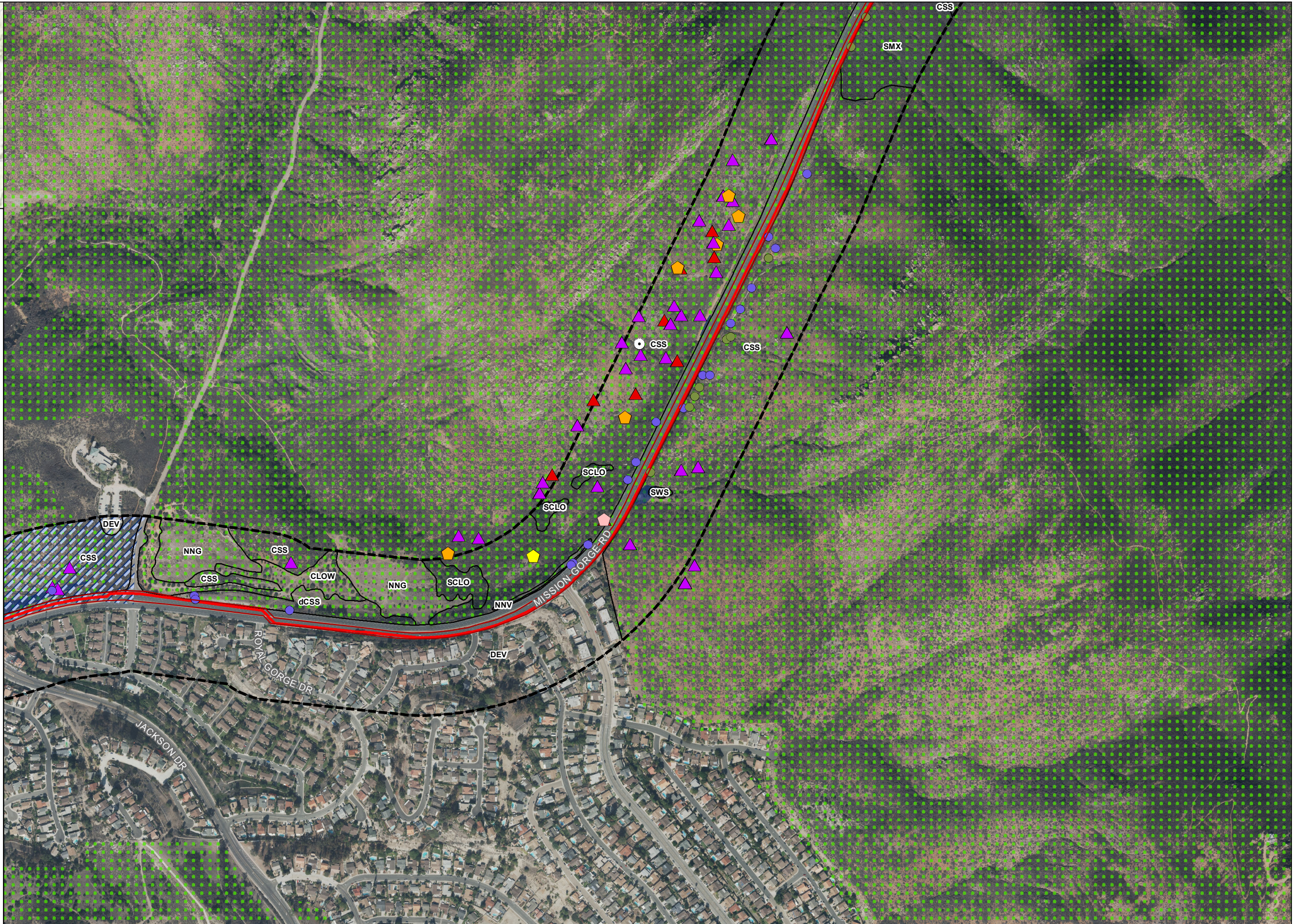
SOURCE: City of San Diego 2016, 2017; SANDAG, 2016

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LEGEND

- Project Study Area
- Direct Impact Area
- Special Status Species**
 - coastal California gnatcatcher
 - mule deer
 - orangethroat whiptail
 - rosy boa
 - southern California rufous-crowned sparrow
 - two-striped gartersnake
- Sensitive Plants**
 - Lepidium virginicum* var. *robinsonii*
 - Viguiera laciniata*
 - Selaginella cinerascens*
 - Viguiera laciniata*
- Federally Designated Critical Habitat**
 - Least Bell's Vireo
- Vegetation Communities/Land Covers**
 - CLOW, Coast Live Oak Woodland
 - CSS, Diegan Coastal Sage Scrub
 - DEV, Urban/Developed
 - NNG, Non-native Grassland
 - NNV, Non-native Vegetation
 - SCLO, Southern Coast Live Oak Riparian Forest
 - SMX, Southern Mixed Chaparral
 - SWS, Southern Willow Scrub
 - dCSS, disturbed Diegan Coastal Sage Scrub
- Multi-Habitat Planning Area



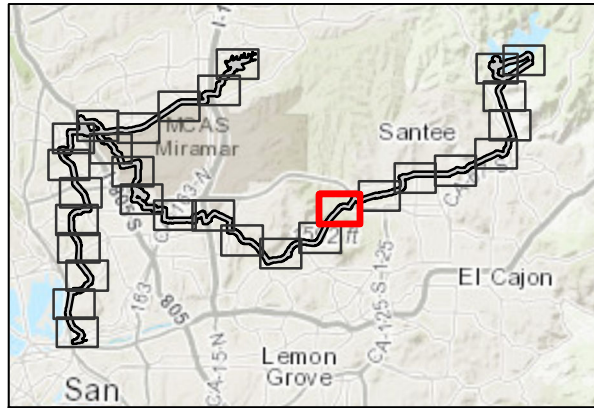
SOURCE: City of San Diego 2016, 2017; SANDAG, 2016



Pure Water San Diego Program North City Project EIR/EIS

FIGURE 6.4-1U
Biological Resources Impacts - San Vicente Reservoir Alternative

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LEGEND

- Project Study Area
- Direct Impact Area
- Trenchless Segments of Alignment

Special Status Species

- Cooper's hawk
- least Bell's vireo
- mule deer
- orangethroat whiptail
- southern California rufous-crowned sparrow
- yellow warbler
- yellow-breasted chat

Sensitive Plants

- Juglans californica*
- Lepidium virginicum* var. *robinsonii*
- Viguiera laciniata*
- Viguiera laciniata*

Federally Designated Critical Habitat

- Least Bell's Vireo
- San Diego Ambrosia

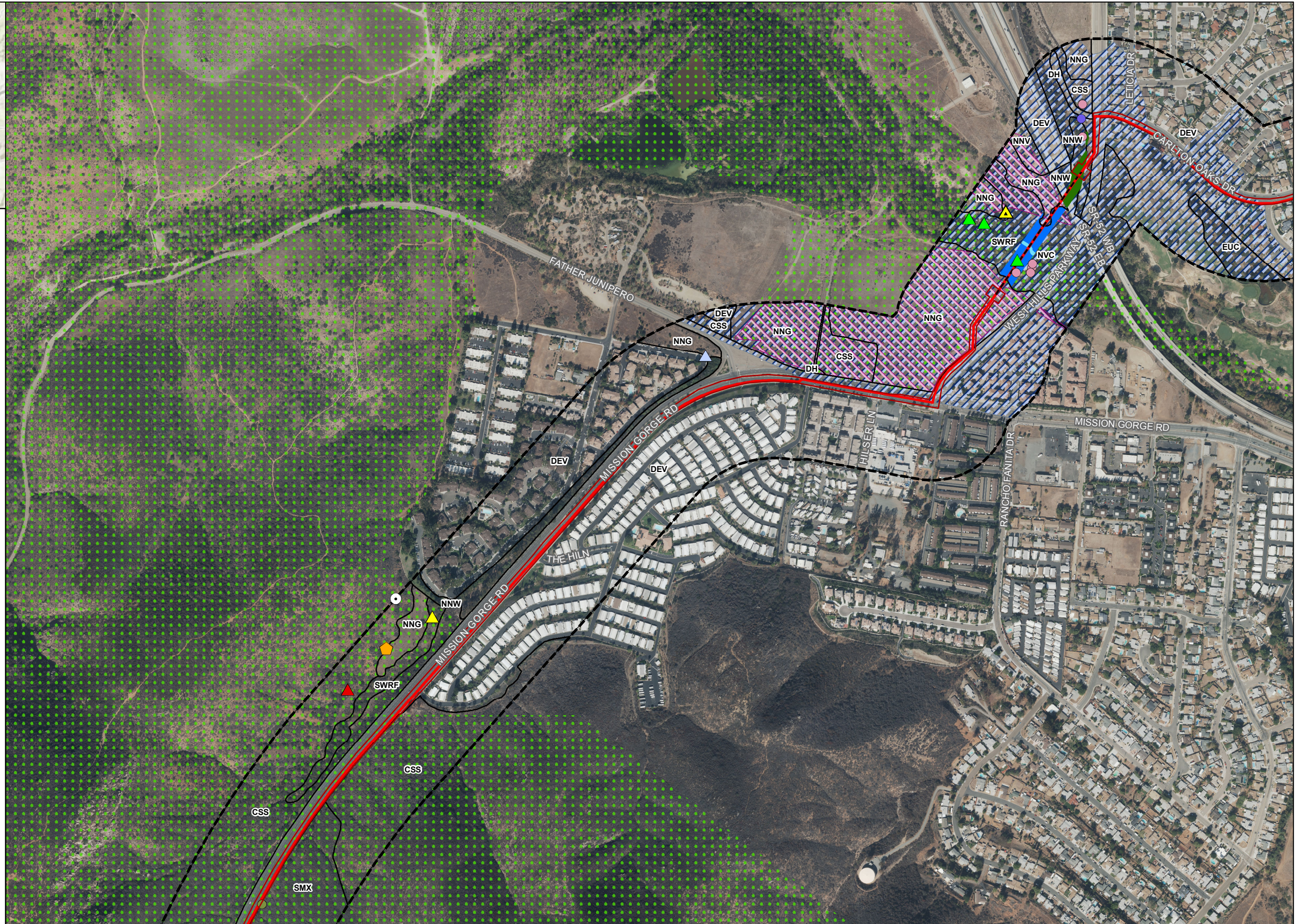
Jurisdictional Aquatic Resources

- Non-wetland Waters (ACOE/RWQCB/CDFW)
- Wetland or Riparian Area (ACOE/RWQCB/CDFW)
- Wetland or Riparian Area (CDFW Only)

Vegetation Communities/Land Covers

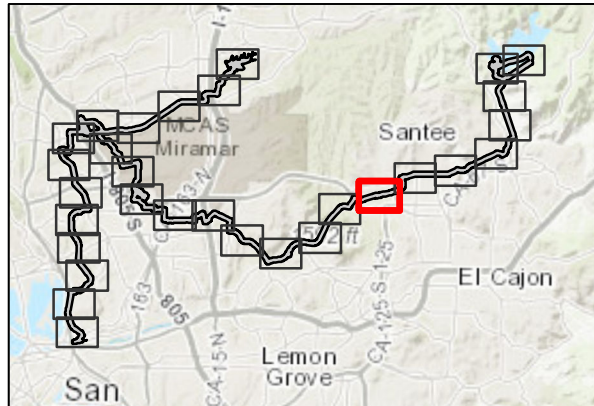
- CSS, Diegan Coastal Sage Scrub
- DEV, Urban/Developed
- DH, Disturbed Habitat
- EUC, Eucalyptus Woodland
- NNG, Non-native Grassland
- NNV, Non-native Vegetation
- NNW, Non-native Woodland
- NVC, Non-vegetated Channel or Floodway
- SMX, Southern Mixed Chaparral
- SWRF, Southern Arroyo Willow Riparian Forest
- Multi-Habitat Planning Area

0 500 1,000 Feet

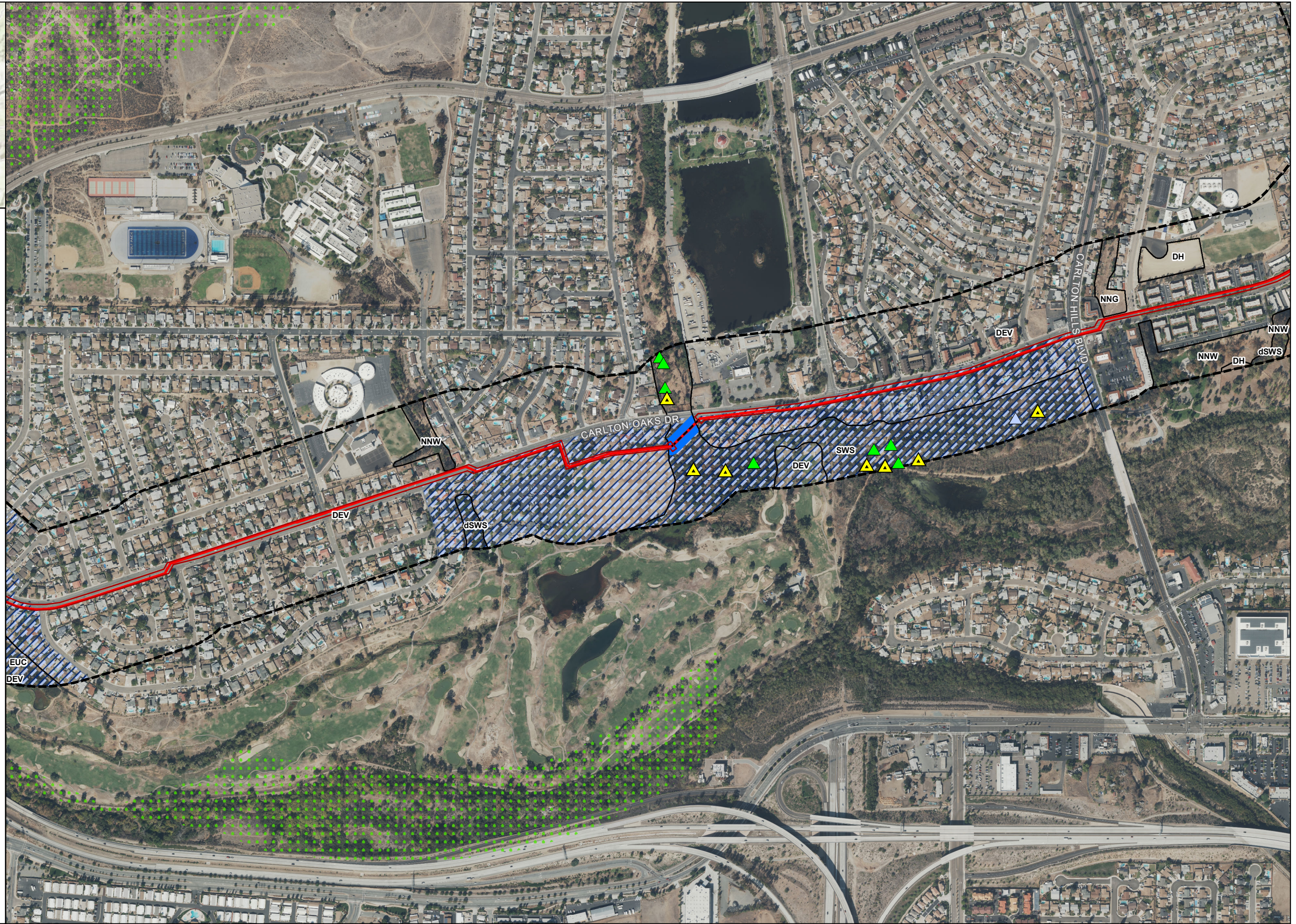


SOURCE: City of San Diego 2016, 2017; SANDAG, 2016

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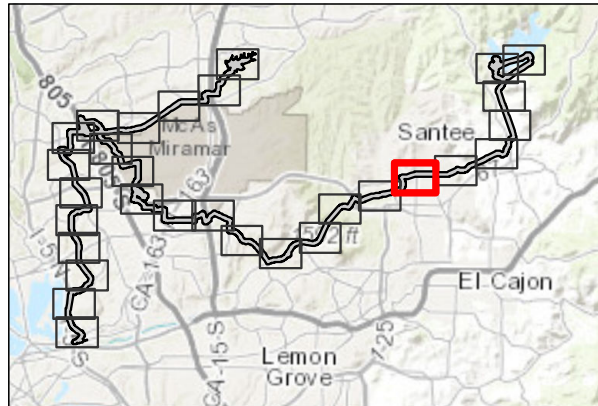


- LEGEND**
- Project Study Area
 - Direct Impact Area
 - Trenchless Segments of Alignment
 - Special Status Species**
 - Cooper's hawk
 - least Bell's vireo
 - yellow-breasted chat
 - Federally Designated Critical Habitat**
 - Least Bell's Vireo
 - Jurisdictional Aquatic Resources**
 - Wetland or Riparian Area (ACOE/RWQCB/CDFW)
 - Vegetation Communities/Land Covers**
 - DEV, Urban/Developed
 - DH, Disturbed Habitat
 - EUC, Eucalyptus Woodland
 - NNG, Non-native Grassland
 - NNW, Non-native Woodland
 - SWS, Southern Willow Scrub
 - dSWS, disturbed Southern Willow Scrub
 - Multi-Habitat Planning Area



SOURCE: City of San Diego 2016, 2017; SANDAG, 2016

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LEGEND

- Project Study Area
- Direct Impact Area
- Project Pipeline Alternatives**
- San Vicente Pure Water Pipeline
- Special Status Species**
- least Bell's vireo
- yellow warbler
- Federally Designated Critical Habitat**
- Coastal California Gnatcatcher
- Jurisdictional Aquatic Resources**
- Non-wetland Waters (ACOE/RWQCB/CDFW)
- Vegetation Communities/Land Covers**
- CSS, Diegan Coastal Sage Scrub
- DEV, Urban/Developed
- DEV-CC, Developed - Concrete Channel
- DH, Disturbed Habitat
- EUC, Eucalyptus Woodland
- NNG, Non-native Grassland
- NNW, Non-native Woodland
- NVC, Non-vegetated Channel or Floodway
- SWS, Southern Willow Scrub
- dSWS, disturbed Southern Willow Scrub

0 500 1,000 Feet



MAGNOLIA AVE

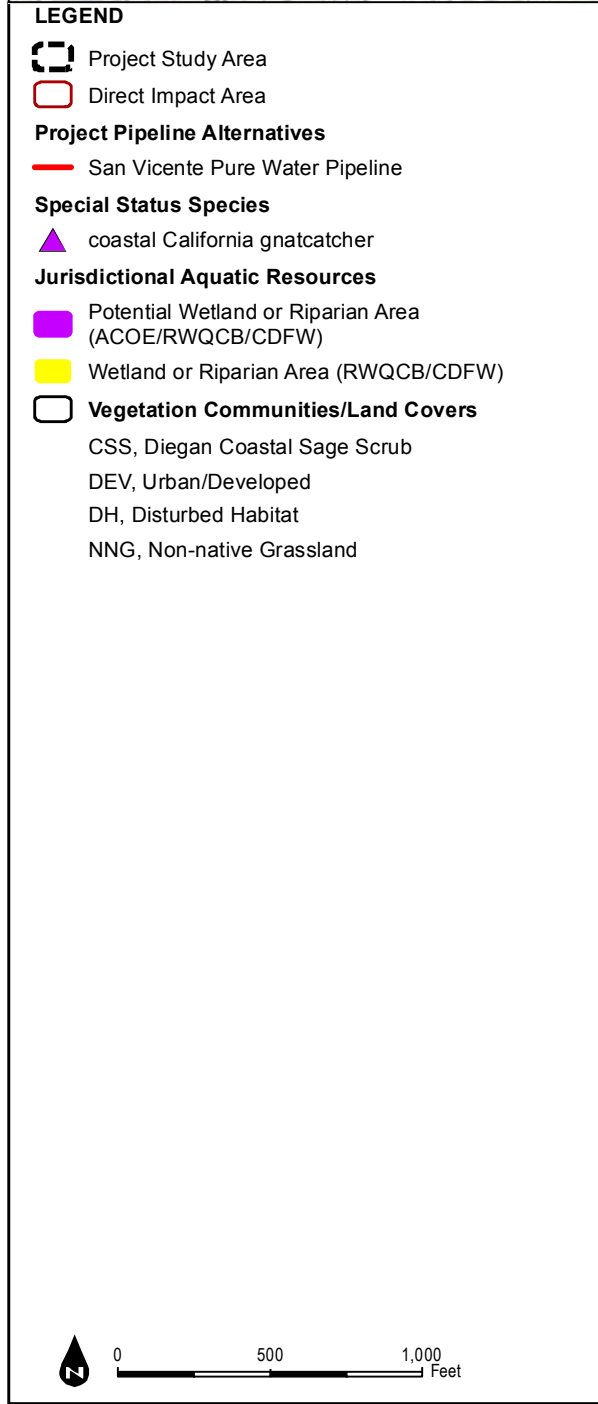
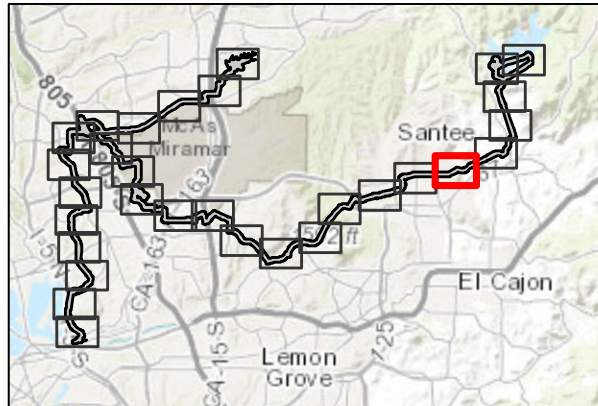
SOURCE: City of San Diego 2016, 2017; SANDAG, 2016



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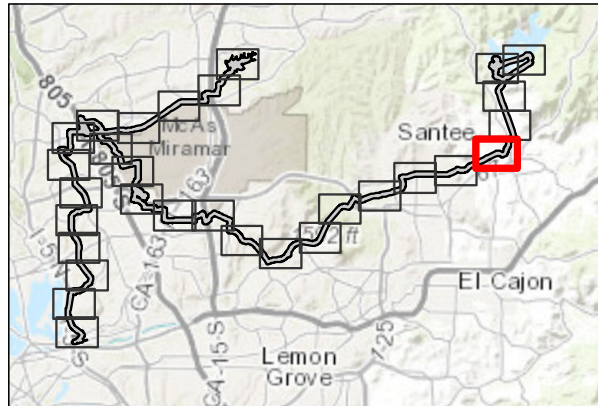
FIGURE 6.4-1X
Biological Resources Impacts - San Vicente Reservoir Alternative

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SOURCE: City of San Diego 2016, 2017; SANDAG, 2016

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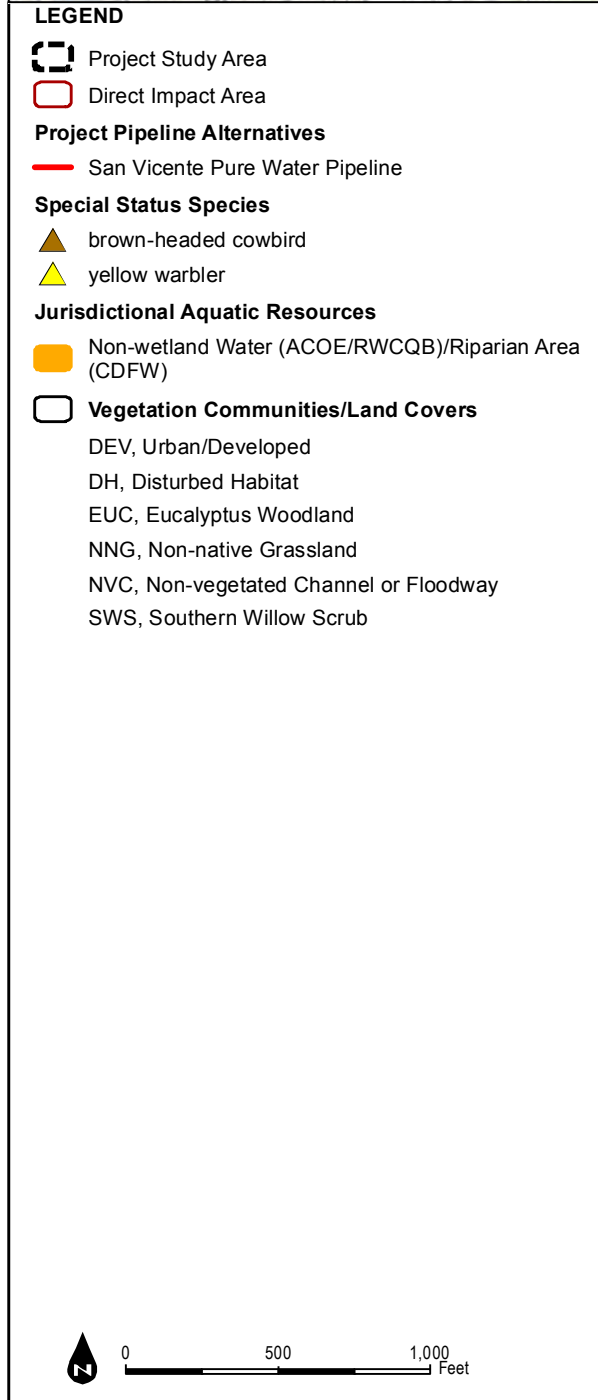
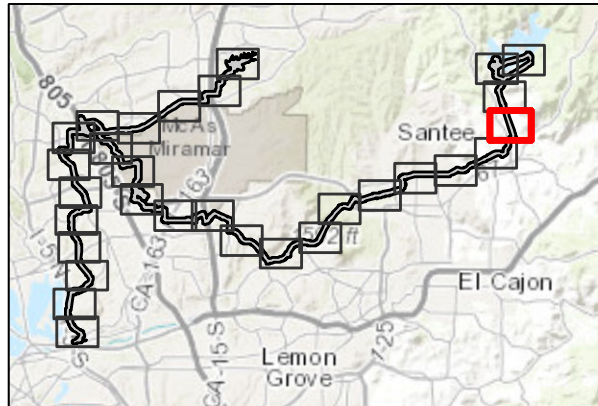
LEGEND

- Project Study Area
- Direct Impact Area
- Special Status Species**
 - Cooper's hawk
 - Western bluebird
 - brown-headed cowbird
 - coastal California gnatcatcher
 - least Bell's vireo
 - yellow warbler
 - yellow-breasted chat
- Sensitive Plants**
 - Viguiera laciniata*
 - Viguiera laciniata*
- Vegetation Communities/Land Covers**
 - CSS, Diegan Coastal Sage Scrub
 - DEV, Urban/Developed
 - DH, Disturbed Habitat
 - NNG, Non-native Grassland
 - NVC, Non-vegetated Channel or Floodway
 - OW, Open Water
 - SCWRF, Southern Cottonwood-Willow Riparian Forest
 - SWRF, Southern Arroyo Willow Riparian Forest
 - SWS, Southern Willow Scrub



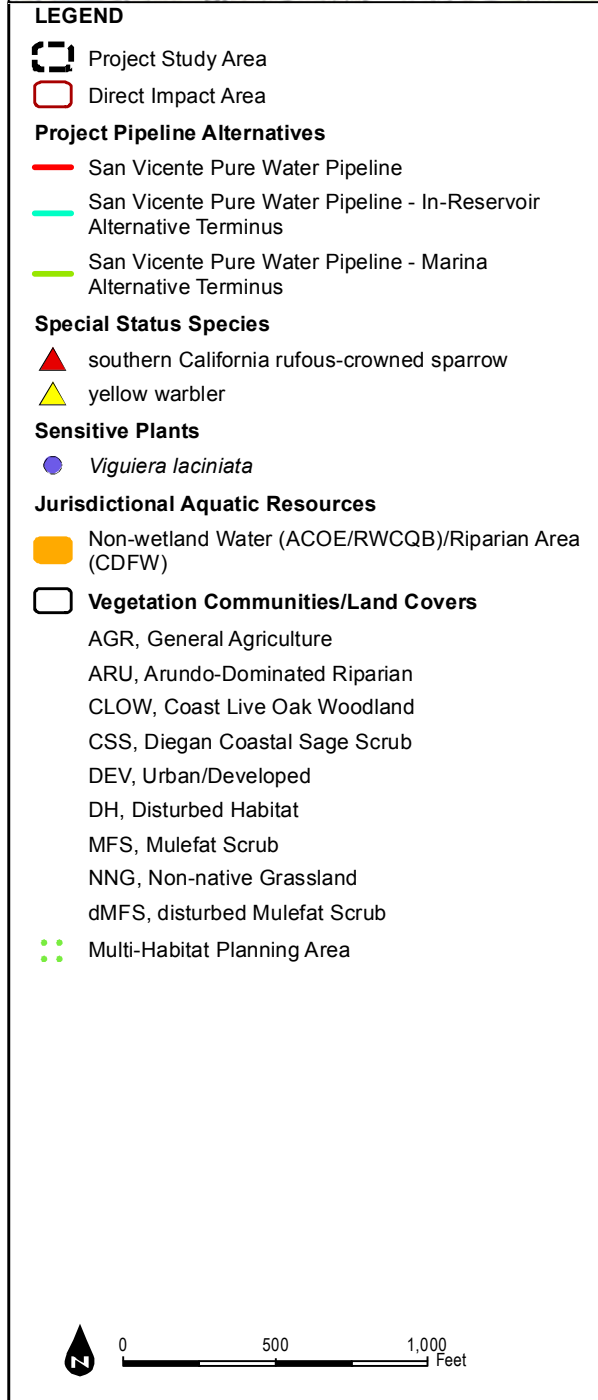
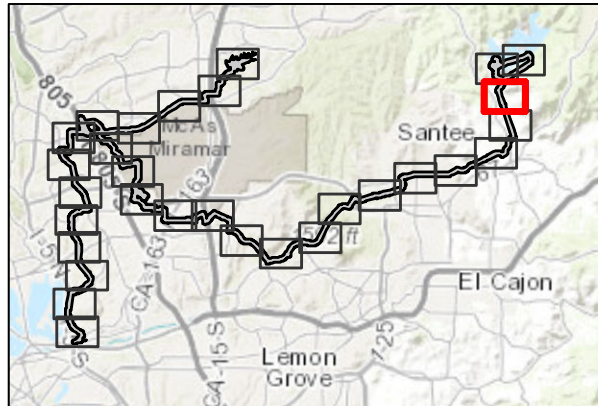
SOURCE: City of San Diego 2016, 2017; SANDAG, 2016

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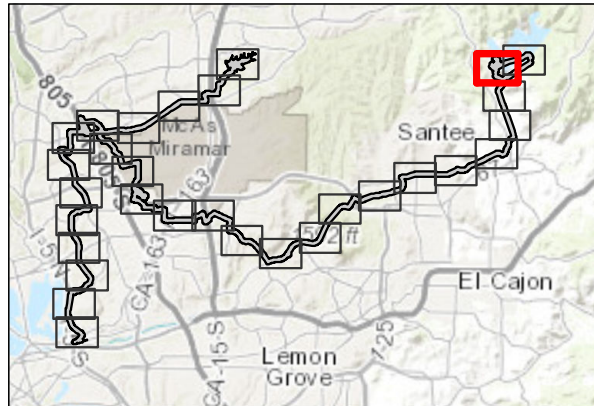
SOURCE: City of San Diego 2016, 2017; SANDAG, 2016

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SOURCE: City of San Diego 2016, 2017; SANDAG, 2016

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LEGEND

- Project Study Area
- Direct Impact Area
- Project Pipeline Alternatives**
 - San Vicente Pure Water Pipeline - In-Reservoir Alternative Terminus
 - San Vicente Pure Water Pipeline - Tunnel Alternative Terminus
 - San Vicente Pure Water Pipeline - Marina Alternative Terminus
 - Trenchless Segments of Alignment
- Special Status Species**
 - coastal California gnatcatcher
 - southern California rufous-crowned sparrow
- Sensitive Plants**
 - Clarkia delicata*
 - Lepidium virginicum* var. *robinsonii*
 - Pseudognaphalium leucocephalum*
 - Viguiera laciniata*
 - Lepidium virginicum* var. *robinsonii*
 - Pseudognaphalium leucocephalum*
 - Selaginella cinerascens*
 - Viguiera laciniata*
- Jurisdictional Aquatic Resources**
 - Non-wetland Waters (ACOE/RWQCB/CDFW)
- Vegetation Communities/Land Covers**
 - CLOW, Coast Live Oak Woodland
 - CSS, Diegan Coastal Sage Scrub
 - CSS-r, Diegan Coastal Sage Scrub-Restored
 - DEV, Urban/Developed
 - DH, Disturbed Habitat
 - NNG, Non-native Grassland
 - NVC, Non-vegetated Channel or Floodway
 - OW, Open Water
 - SMX, Southern Mixed Chaparral
 - Multi-Habitat Planning Area

0 500 1,000 Feet

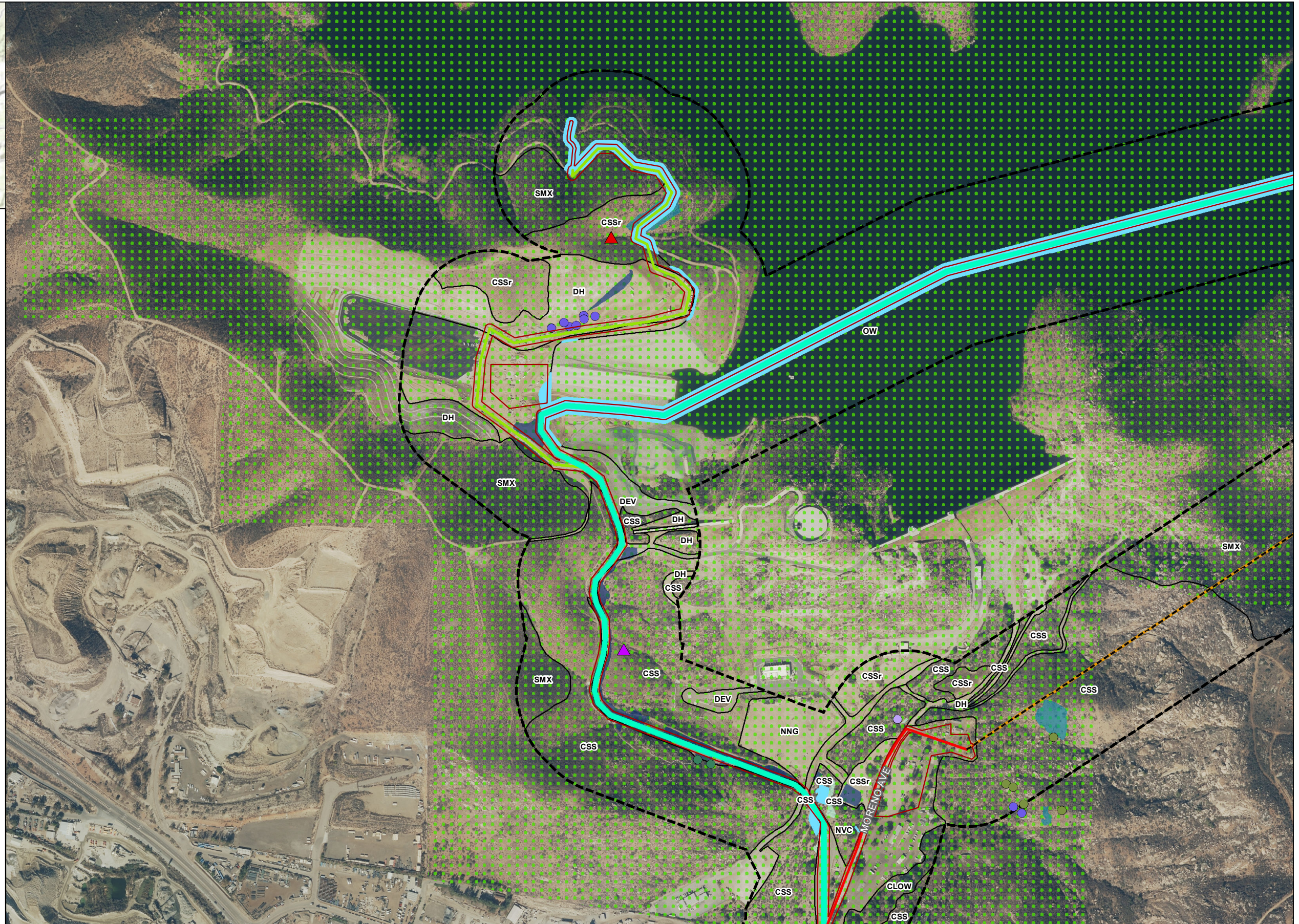


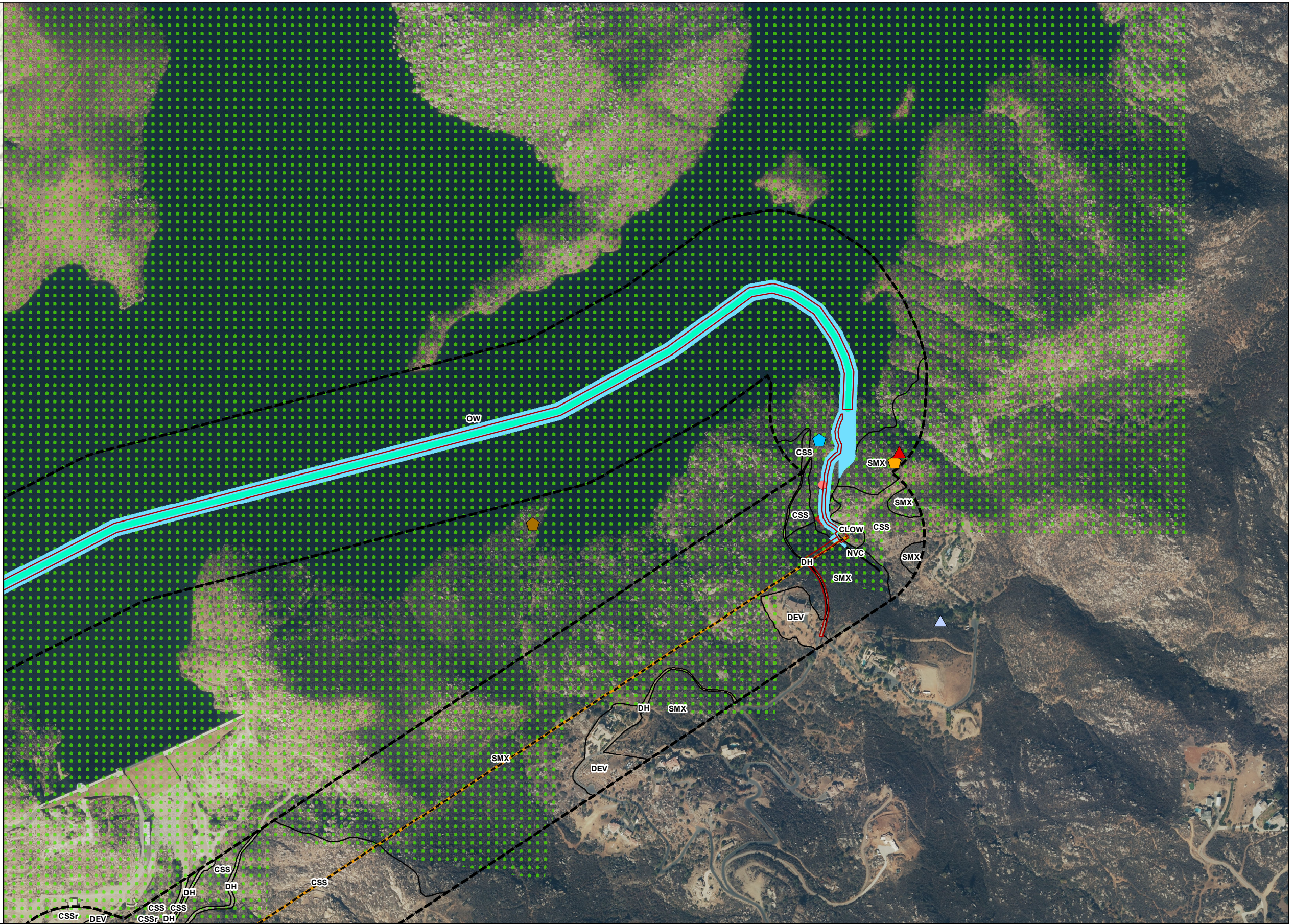
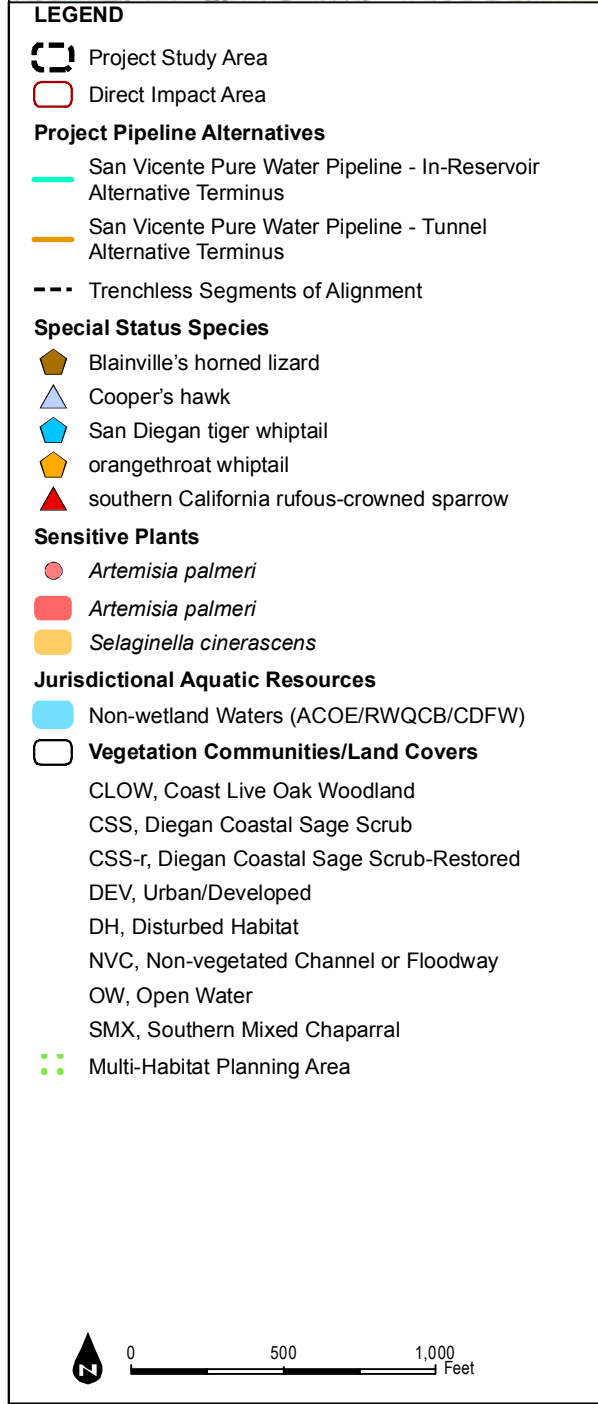
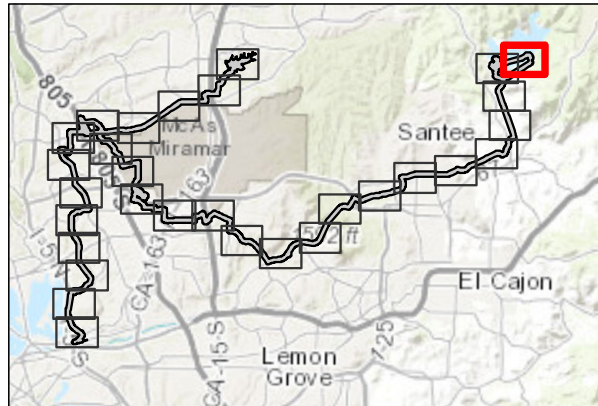
FIGURE 6.4-1AC

Biological Resources Impacts - San Vicente Reservoir Alternative

SOURCE: City of San Diego 2016, 2017; SANDAG, 2016



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SOURCE: City of San Diego 2016, 2017; SANDAG, 2016



FIGURE 6.4-1AD
Biological Resources Impacts - San Vicente Reservoir Alternative

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6.5 ENVIRONMENTAL JUSTICE

6.5.1 INTRODUCTION

This section describes the potential impacts related to environmental justice that would result from the North City Project.

6.5.2 CEQA THRESHOLDS OF SIGNIFICANCE

Consistent with the requirements set forth in California Environmental Quality Act (CEQA) Guidelines Sections 15064 and 15131, environmental justice effects are not treated as significant impacts on the environment, and no CEQA significance thresholds or conclusions are presented for such effects.

As discussed in Section 5.5 of this Environmental Impact Report/Environmental Impact Statement (EIR/EIS), Executive Order 12898 requires federal actions to address disproportionately high adverse effects on minority and low-income populations. More specifically, an environmental justice effect would occur from the North City Project if:

- More groups are affected of racial minority status within the Project area than in the San Diego region as a whole.
- More high-poverty/low-income minority status groups are affected within the Project area than in the San Diego region as a whole.

To determine if the North City Project will result in disproportionately high adverse effects on minority and/or low-income populations, a five-step method is used based on guidance provided by the Council on Environmental Quality, the U.S. Environmental Protection Agency, and the Federal Highway Administration (FHWA; FHWA Order 6640.23). Steps 1 through 4 determine the characteristics of the affected population. Step 5 determines the criteria utilized to determine if the affected populations will be disproportionately affected. The five steps are as follows:

1. Identify Potential Effects: A broad range of project-related potential environmental and human health effects have been evaluated. These include effects related to air quality, biological resources, historical resources, geology/soils, etc.
2. Determine the Affected Geographical Area: The geographical area potentially affected by the short-term construction of the North City Project includes

census tracts that intersect the facilities and corridors that are part of the Project Alternatives. The geographical area potentially affected by the long-term operation of the Project Alternatives includes census tracts within the Miramar Water Treatment Plant (WTP) and Alvarado WTP service areas.

3. Determine the Demographic Character of the Affected Geographic Area: For the affected geographic area, the demographic characteristics are determined. These include the following:
 - a. Total population
 - b. Percent of population of racial minority status in the affected area (environmental justice study area)
 - c. Percent of population of racial minority status in comparison geography (San Diego region)
 - d. Percent of low-income status in the affected area (environmental justice study area)
 - e. Percent of population of low-income status (San Diego region)
4. Determine if the Affected Populations Include Communities of Concern: The affected populations are those populations within the affected geographic area. A community of concern is identified if any of the following conditions apply:
 - a. At least one-half of the population is of racial minority status.
 - b. The percentage of the population that is of racial minority status is at least 10 percentage points higher than that for the San Diego region.
 - c. At least one-half of the households are of low-income minority status.
 - d. The percentage of the households that are of low-income status is at least 10 percentage points higher than that for the San Diego region.
5. Determine Whether the Adverse Effects of the Project Alternatives Would Disproportionately Affect Communities of Concern: An environmental justice impact will occur if a significant and adverse effect accrues disproportionately to an environmental justice population. Disproportionality is determined in those instances when an adverse and significant effect is predominately borne, more severe, or is of greater magnitude in areas with environmental justice populations than in other areas.

6.5.3 ISSUE 1

Would environmental effects be disproportionately borne by a minority or low-income population?

6.5.3.1 Impacts

No Project/No Action Alternative

Short-Term Construction Effects

Under the No Project/No Action Alternative, the North City Pure Water Facility and ancillary facilities, pipelines, and other features would not be constructed. Therefore, short-term construction effects such as visual impacts, air emissions, noise and vibration, traffic impacts, or other community disruptions would not occur. As such, no environmental justice effects would occur.

Permanent Operational Effects

Under the No Project/No Action Alternative, communities serviced by the WTPs, which are supplied by the reservoirs proposed for augmentation under the Project Alternatives, would not receive advanced treated water as a source of potable drinking water. All City of San Diego residents would continue to receive potable water sourced from a mix of local and imported supplies. As such, no environmental justice effects would occur.

Miramar Reservoir Alternative

Short-Term Construction Effects

The Miramar Reservoir Alternative would construct treatment facilities, pipelines, and other facilities throughout the northern area of the City of San Diego, and in particular the Mission Valley, Linda Vista, Clairemont Mesa, University, Mira Mesa, and Scripps Miramar Ranch communities; the North City Pure Water Pipeline would occur partially on the Marine Corps Air Station (MCAS) Miramar. The Miramar Reservoir Alternative would result in short-term construction impacts for the following topics: air quality; biological resources, health and safety, historical resources, noise, paleontological resources; public utilities; and transportation, circulation, and parking. After mitigation, adverse/significant impacts would remain for noise impacts related to nighttime construction work.

As described in Section 5.5, less than one-half of the households in the project area are of low-income minority status, and there are fewer low-income minority households than in the San Diego region as a whole (there are 32% low-income minority households in the Miramar Reservoir Alternative project area, as opposed to 36% in the San Diego region). Therefore, the Miramar Reservoir Alternative Project area would not be considered an environmental justice community, and adverse short-term construction effects would not be borne disproportionately by a minority or low-income population.

Permanent Operational Effects

The Miramar Reservoir Alternative has been determined to result in potentially significant or adverse permanent operational impacts for the following resource areas: biological resources and health and safety. However, all permanent operational impacts would be mitigated to less than significant/no adverse effect.

Under the Miramar Reservoir Alternative, customers within the Miramar WTP service area would continue to receive potable water treated by the Miramar WTP. As described in more detail in Chapter 2, Environmental Setting, the North City Project has been designed to produce purified water that meets all water quality standards, and it is anticipated that no changes would occur to the quality of the potable water produced at the Miramar WTP.

As discussed in Section 5.5, less than one-half of the households in the Miramar WTP service area are of low-income minority status, and there are fewer low-income minority households than in the San Diego region as a whole (there are 26% low-income minority households in the Miramar WTP service area, as opposed to 36% in the San Diego region) (SANDAG 2016). Therefore, the Miramar WTP service area is not considered an environmental justice community, and adverse effects related to operations would not be borne disproportionately by a minority or low-income population.

San Vicente Reservoir Alternative

Short-Term Construction Effects

The San Vicente Reservoir Alternative would construct treatment facilities, pipelines, and other facilities throughout the northern and central area of the City of San Diego, and in particular the Mission Valley, Linda Vista, Clairemont Mesa, University, Kearny Mesa, Navajo, Tierra Santa, and East Elliot communities; the City

of Santee; MCAS Miramar; and the unincorporated community of Lakeside in County of San Diego. The San Vicente Reservoir Alternative would result in short-term construction impacts for the following topics: aesthetics/visual effects and neighborhood character; air quality; biological resources; health and safety; historical resources; noise; paleontological resources; public utilities; and transportation, circulation, and parking. After mitigation, adverse/significant impacts would remain for aesthetics impacts related to the substantial alteration of natural topography during construction of the Mission Trails Booster Station, air quality impacts related to NO_x emissions during construction, and noise impacts related to nighttime construction work.

As described in Section 5.5, less than one-half of the households in the Project area are of low-income minority status and there are fewer low-income minority households than in the San Diego region as a whole (there are 25% low-income minority households in the San Vicente Reservoir Alternative Project area, as opposed to 36% in the San Diego region) (SANDAG 2016). Therefore, the San Vicente Reservoir Alternative Project area would not be considered an environmental justice community, and adverse short-term construction effects would not be borne disproportionately by a minority or low-income population.

Permanent Operational Effects

The San Vicente Reservoir Alternative has been determined to result in potentially significant or adverse permanent operational impacts for the following resource areas: biological resources and health and safety. However, all permanent operational impacts would be mitigated to less than significant/no adverse effect.

Under the San Vicente Reservoir Alternative, customers within the Alvarado WTP service area would continue to receive potable water treated by the Alvarado WTP. As described in more detail in Chapter 2, Environmental Setting, the North City Project has been designed to produce purified water that meets all water quality standards, and it is anticipated that no changes would occur to the quality of the potable water produced at the Alvarado WTP.

As described in Section 5.5, less than one-half of the households in the Alvarado WTP service area are of low-income minority status. However, there are more low-income minority households than in the San Diego region as a whole (there are 41% low-income minority households in the Alvarado WTP service area, as opposed to 36% in the San Diego region) (SANDAG 2016). Therefore, the Alvarado WTP

service area is considered an environmental justice community. However, there are **no adverse effects** related to the operation of the San Vicente Reservoir Alternative that would be realized by this environmental justice community; therefore, effects would not be borne disproportionately by a minority or low-income population.

6.5.3.2 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No mitigation is required.

Miramar Reservoir Alternative

Short-term construction effects and long-term operational effects would not be borne disproportionately by a minority or low-income population, and no mitigation is required.

San Vicente Reservoir Alternative

Short-term construction effects and long-term operational effects would not be borne disproportionately by a minority or low-income population, and no mitigation is required.

6.5.4 LEVEL OF IMPACT AFTER MITIGATION

No adverse effects would be borne disproportionately by a minority or low-income population related to short-term construction effects or long-term operational effects for either Project Alternative since neither Project area is considered an environmental justice community.

The Miramar WTP service area is also not considered an environmental justice community, and no adverse effects would occur as a result of implementation of the Miramar Reservoir Alternative. The Alvarado WTP service area is considered an environmental justice community; however, no adverse effects would occur to this community as a result of implementation of the San Vicente Reservoir Alternative.

6.6 ENERGY

6.6.1 INTRODUCTION

The California Environmental Quality Act (CEQA) Guidelines, Section 15126.4, and Appendix F, Energy Conservation, require that environmental impact reports (EIRs) include a discussion of the potential energy impacts of projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (14 CCR 15000 et seq.).

The following section examines the impacts of the North City Project on energy consumption, including electricity, natural gas, and petroleum. This section presents a summary of the North City Project's anticipated energy needs and compares the energy use estimates of the project to those of the regional and local supply and demand under existing conditions, and to regional and local supply and demand that has been forecasted for the future.

In addition to generating demand for energy consumption, the North City Project would construct and operate a new source of energy in the form of a Renewable Energy Facility at the North City Water Reclamation Plant (NCWRP). The physical environmental impacts associated with the construction and operation of this facility have been evaluated throughout Chapter 6 of this Environmental Impact Report/Environmental Impact Statement (EIR/EIS).

Information provided in this section is based on data gathered from the project applicant, statewide and local utility data, and best engineering judgment. Additional information is incorporated from the Air Quality Technical Report for the North City Project, City of San Diego, and the Greenhouse Gas Emissions Technical Report for the North City Project, City of San Diego, both prepared by Dudek (September 2017/February 2018) and included as Appendices B and E, respectively.

6.6.2 CEQA THRESHOLDS OF SIGNIFICANCE

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 under CEQA 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.

6.6.3 ISSUE 1

Would the construction and operation of the North City Project facilities result in the use of excessive amounts of electrical power or use excess amounts of fuel?

6.6.3.1 Impacts

No Project/No Action Alternative

Under the No Project/No Action Alternative, the North City Project would not be built. There would be no anticipated electrical power or other fuels used over existing conditions under the No Project/No Action Alternative.

Miramar Reservoir Alternative

Implementation of the Miramar Reservoir Alternative would increase the demand for electricity and natural gas at the project site and gasoline consumption in the project area during construction and operation relative to existing uses.

Electricity

Construction Use

Temporary electric power for as-necessary lighting and electronic equipment such as computers inside temporary construction trailers would be provided by San Diego Gas & Electric (SDG&E). The electricity used for such activities would be temporary and negligible and would not have an adverse effect.

Operational Use

The Miramar Reservoir Alternative'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 project.

Annual electricity required for the City's water supply, treatment, and conveyance was estimated based on the National Resource Defense Center's Energy Down the

Drain, The Hidden Costs of California’s Water Supply (NRDC 2004) and includes importing one-third from the state water project and two-thirds from the Colorado River. Annual electricity for the North City Project was provided by the City. Table 6.6-1 shows the estimated electricity consumption for components included in the Miramar Reservoir Alternative. For components that are not completely new but being expanded, the net energy associated with the expansion was included.

Table 6.6-1
Estimated Electricity Consumption for Miramar Reservoir Alternative

Water Use Process	Estimated Energy Use (kWh/year)
Morena Pump Station	25,458,000
North City Water Reclamation Plant Expansion	32,498,000
North City Water Reclamation Plant Renewable Energy Building Usage	2,628,000
North City Pure Water Facility Influent Pump Station	3,942,000
North City Pure Water Facility–Miramar Reservoir	42,209,000
North City Pump Station	19,230,000
Metro Biosolids Center Upgrades	15,884,000
Dechlorination Facility	44,000
Reduction in Collection System and Wastewater Treatment	(15,598,000)
Total Miramar Reservoir Alternative	126,295,000

Note: kWh/year = kilowatt hours per year

City of San Diego data on purified water operations reports that energy required for the production of purified water would be approximately 126,295,000 kWh per year. The Project also includes a 1-megawatt (MW) solar photovoltaic system that will offset the grid demand for the improvements at the Miramar Water Treatment Plant. The project is expected to process up to 30 MGD, so the estimated energy use per MG would be 11,534 kWh. The North City Renewable Energy Facility is expected to generate up to 15.4 MW and up to 134,904,000 kWh per year of renewable energy, which would completely cover the demand for the Miramar Reservoir Alternative. Therefore, there would be no electricity demand from the local grid and no adverse effects would occur.

Natural Gas

Construction Use

Natural gas is not anticipated to be required during construction of the North City Project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed under the “petroleum” subsection below. Any minor amounts of natural gas that may be consumed as a result of project construction would be temporary and negligible, and would not have an adverse effect.

Operational Use

Natural gas would be directly consumed throughout operations of the Miramar Reservoir Alternative, primarily through the generation of electricity at the North City Renewable Energy Facility. The North City Renewable Energy Facility is designed to generate up to 15.4 MW of electricity through five generators operating on primarily landfill gas. The proposed engines are flexible and are designed to operate on either landfill gas or natural gas if the landfill gas is not sufficient. Three of the five generators will exclusively be operated on landfill gas while the other two generators may operate on a combination of landfill gas and natural gas. Although the facility is designed to utilize as much landfill gas as available, as a conservative measure, it was assumed for this analysis that the three flexible generators would operate on 70% landfill gas and 30% natural gas. Each generator is estimated to require 1,060 standard cubic feet (SCF) per minute of feed gas at full load. This would result in an annual demand of 2,284.26 million SCF of landfill gas and 501.42 million SCF of natural gas. This would result in the overall North City Renewable Energy Facility using 82% landfill gas and 18% natural gas.

In 2015, SDG&E supplied 464.51 million therms of natural gas to San Diego County customers (CEC 2016a). The Miramar Reservoir Alternative’s estimated natural gas use for the North City Renewable Energy Facility would be up to 5.01 million therms, or 1.1% of the total. This demand would not impact the local utility, and no adverse impact would occur.

Petroleum

Construction Use

Petroleum would be consumed throughout construction and operation of the project. Fuel consumed by construction equipment would be the primary energy

resource expended over the course of construction, while vehicle miles traveled (VMT) associated with the transportation of construction materials and construction worker commutes would also account for petroleum consumption. Heavy-duty construction equipment associated with construction activities would rely on diesel fuel, as would haul trucks involved in removing the materials from demolition and excavation. Construction workers would travel to and from the project site throughout the duration of construction. It is assumed in this analysis that construction workers would travel to and from the site in gasoline-powered passenger vehicles.

The equipment used for construction would be required to conform to the California Air Resources Board (CARB) regulations and state emissions standards and would provide evidence of related fuel efficiencies. There are no unusual project 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).

Heavy-duty construction equipment of various types would be used during each phase of construction. The California Emissions Estimator Model (CalEEMod) analysis discussed in Sections 6.3 and 6.8 and included in Appendices B and E lists the assumed equipment usage for each phase of construction. Based on that analysis, over all phases of construction, diesel-fueled construction equipment would run for an estimated 348,088 hours as summarized in Table 6.6-2.

Table 6.6-2
Miramar Reservoir Alternative Hours of Operation
for Construction Equipment

Project Component/ Construction Phase	Equipment	Hours of Equipment Use
Morena Pump Station	concrete saws, dumpers, excavators, dozers, plate compactors, cement mixers, cranes, pumps, tractors, welders, pavers, rollers, and air compressors	13,768
Morena Wastewater Forcemain and Brine/Centrates Line (Morena Pipelines)	excavators, graders, scrapers, crushing equipment, dozers, tractors, trenchers, cranes, forklifts, pavers, and rollers	50,600

**Table 6.6-2
Miramar Reservoir Alternative Hours of Operation
for Construction Equipment**

Project Component/ Construction Phase	Equipment	Hours of Equipment Use
North City Water Reclamation Plant Expansion	concrete saws, dumpers, excavators, dozers, excavators, plate compactors, cement mixers, cranes, pumps, welders, pavers, rollers, air compressors, and cranes	32,024
North City Pure Water Facility Influent Pump Station	concrete saws, dumpers, excavators, dozers, plate compactors, cement mixers, cranes, pumps, tractors, welders, pavers, rollers, and air compressors	18,152
North City Pure Water Facility Pump Station (North City Pump Station)	excavators, dozers, loaders, concrete saws, excavators, off-highway trucks, welders, aerial lifts, cranes, forklifts, rollers, and pavers	21,440
North City Renewable Energy Facility	concrete saws, dozers, tractors, cranes, forklifts, cement mixers, pavers, and rollers	13,200
Landfill Gas Pipeline	graders, scrapers, tractors, crushing equipment, excavators, dozers, cranes, forklifts, pavers, rollers, and trenchers	36,280
Metro Biosolids Center Improvements	concrete saws, dumpers, excavators, dozers, plate compactors, cement mixers, cranes, pumps, tractors, welders, pavers, and rollers)	10,208
North City Pure Water Facility Pipeline (North City Pipeline)	concrete saws, excavators, graders, scrapers, trenchers, off-highway trucks, rollers, tractors, welders, drill rigs, cranes, crushing equipment, generators, welders, forklifts, pavers, and rollers	64,000
Pure Water Dechlorination Facility	dumpers, excavators, plate compactors, cement mixers, cranes, pumps, tractors, welders, pavers, and rollers	6,648
Miramar Water Treatment Plant Improvement	concrete saws, dozers, tractors, aerial lifts, cranes, forklifts, rollers, and welders	3,200
North City Pure Water Facility-MR	excavators, graders, off-highway trucks, plate compactors, dozers, scrapers, tractors, aerial lifts, cranes, forklifts, rollers, welders, crushing equipment, and pavers	78,568
Total		348,088

Sources: Appendices B and E.

Fuel consumption from construction equipment was estimated by converting the total carbon dioxide (CO₂) emissions from each construction phase to gallons using the

conversion factors for CO₂ to gallons of gasoline or diesel. Construction is estimated to occur in the years 2018–2022 based on the construction phasing schedule. The conversion factor for gasoline is 9.13 kilograms per metric ton CO₂ per gallon (kg/MT CO₂/gallon) and the conversion factor for diesel is 10.35 kg/MT CO₂/gallon (The Climate Registry 2016). The estimated diesel fuel usage from construction equipment is shown in Table 6.6-3.

Table 6.6-3
Construction Equipment Diesel Demand

Phase	Pieces of Equipment	Equipment CO ₂ (MT)	kg/CO ₂ /Gallon	Gallons
Morena Pump Station	21	241.99	10.35	23,380.68
Morena Wastewater Forcemain and Brine/Centrates Line (Morena Pipelines)	36	1,256.59	10.35	121,409.66
North City Water Reclamation Plant Expansion	20	1,100.69	10.35	106,346.86
North City Pure Water Facility Influent Pump Station	22	317.02	10.35	30,629.75
North City Pump Station	31	354.52	10.35	34,252.95
North City Renewable Energy Facility	20	222.03	10.35	21,452.17
Landfill Gas Pipeline	36	901.24	10.35	87,076.33
Metro Biosolids Center Improvements	19	192.39	10.35	18,588.23
North City Pure Water Facility	43	1,440.57	10.35	139,185.51
North City Pure Water Facility Pipeline	47	1,816.94	10.35	175,549.72
Pure Water Dechlorination Facility	14	107.49	10.35	10,385.52
Miramar WTP Improvements	10	53.58	10.35	5,176.68
Total				773,434.05

Sources: Pieces of equipment and equipment CO₂ (Appendices B and E); kg/CO₂/Gallon (The Climate Registry 2016)

Notes: CO₂ = carbon dioxide; MT = metric ton; kg = kilogram

Fuel consumption from worker and vendor trips are estimated by converting the total CO₂ emissions from each construction phase to gallons using the conversion factors for CO₂ to gallons of gasoline or diesel. Worker vehicles are assumed to be gasoline and vendor/hauling vehicles are assumed to be diesel.

Calculations for total worker, vendor, and hauler fuel consumption are provided in Table 6.6-4, Construction Worker Gasoline Demand; Table 6.6-5, Construction Vendor Diesel Demand; and Table 6.6-6, Construction Hauler Diesel Demand.

**Table 6.6-4
Construction Worker Gasoline Demand**

Phase	Trips	Vehicle CO ₂ (MT)	kg/CO ₂ / Gallon	Gallons
Morena Pump Station	5,188	19.16	9.13	2,098.58
Morena Wastewater Forcemain and Brine/Centrates Line (Morena Pipelines)	18,860	110.87	9.13	12,143.48
North City Water Reclamation Plant Expansion	51,620	186.90	9.13	20,470.97
North City Pure Water Facility Influent Pump Station	28,704	162.94	9.13	17,846.18
North City Pump Station	7,580	27.95	9.13	3,060.88
North City Renewable Energy Facility	2,780	9.95	9.13	1,089.81
Landfill Gas Pipeline	20,952	114.86	9.13	12,580.50
Metro Biosolids Center Improvements	3,776	14.09	9.13	1,543.33
North City Pure Water Facility	84,930	302.09	9.13	33,087.62
North City Pure Water Facility Pipeline	20,200	113.95	9.13	12,480.80
Pure Water Dechlorination Facility	10,072	37.69	9.13	4,128.62
Miramar Water Treatment Plant Improvements	3,100	11.24	9.13	1,230.61
Total				121,761.39

Sources: Pieces of equipment and equipment CO₂ (Appendices B and E); kg/CO₂/Gallon (The Climate Registry 2016)

Notes: CO₂ = carbon dioxide; MT = metric ton; kg = kilogram

**Table 6.6-5
Construction Vendor Diesel Demand**

Phase	Trips	Vehicle CO ₂ (MT)	kg/CO ₂ / Gallon	Gallons
Morena Pump Station	360	4.76	10.35	459.90
Morena Wastewater Forcemain and Brine/Centrates Line (Morena Pipelines)	780	9.49	10.35	916.91
North City Water Reclamation Plant Expansion	16,000	225.65	10.35	21,801.93
North City Pure Water Facility Influent Pump Station	1,560	19.07	10.35	1,842.45
North City Pump Station	460	6.09	10.35	588.04
North City Renewable Energy Facility	400	15.78	10.35	1,524.64
Landfill Gas Pipeline	308	7.07	10.35	683.09
Metro Biosolids Center Improvements	400	5.30	10.35	512.17
North City Pure Water Facility	21,600	398.34	10.35	38,486.96
North City Pure Water Facility Pipeline	200	2.44	10.35	235.37
Pure Water Dechlorination Facility	900	11.96	10.35	1,155.12

**Table 6.6-5
Construction Vendor Diesel Demand**

Phase	Trips	Vehicle CO ₂ (MT)	kg/CO ₂ /Gallon	Gallons
Miramar Water Treatment Plant Improvements	600	7.92	10.35	764.81
Total				68,971.40

Sources: Pieces of equipment and equipment CO₂ (Appendices B and E); kg/CO₂/Gallon (The Climate Registry 2016)

Notes: CO₂ = carbon dioxide; MT = metric ton; kg = kilogram

**Table 6.6-6
Construction Haul Diesel Demand**

Phase	Trips	Vehicle CO ₂ (MT)	kg/CO ₂ /Gallon	Gallons
Morena Pump Station	400	15.59	10.35	1,506.28
Morena Wastewater Forcemain and Brine/Centrates Line (Morena Pipelines)	5,154	200.86	10.35	19,406.76
North City Water Reclamation Plant Expansion	1,009	39.33	10.35	3,800.05
North City Pure Water Facility Influent Pump Station	63	2.46	10.35	237.27
North City Pump Station	0	0.00	10.35	0.00
North City Renewable Energy Facility	14	0.54	10.35	52.16
Landfill Gas Pipeline	50	1.93	10.35	186.29
Metro Biosolids Center Improvements	0	0.00	10.35	0.00
North City Pure Water Facility	2,250	87.57	10.35	8,461.08
North City Pure Water Facility Pipeline	2,537	99.07	10.35	9,572.32
Pure Water Dechlorination Facility	0	0.00	10.35	0.00
Miramar Water Treatment Plant Improvements	0	0.00	10.35	0.00
Total				43,222.40

Sources: Pieces of equipment and equipment CO₂ (Appendices B and E); kg/CO₂/Gallon (The Climate Registry 2016)

Notes: CO₂ = carbon dioxide; MT = metric ton; kg = kilogram

In summary, the Miramar Reservoir Alternative is conservatively anticipated to consume 1,007,389 gallons of petroleum during the construction phase, which would last approximately 40 months (extending approximately from 2018 to 2022). By comparison, California’s consumption of petroleum is approximately 52.9 MGD (CEC 2016b). Based on these assumptions, approximately 64 billion gallons of petroleum would be consumed in California over the course of the construction period. Construction of the Miramar Reservoir Alternative would equate to 0.002%

of the total amount of petroleum that would be used statewide during the course of the construction period. Therefore, because petroleum use during construction would be temporary and negligible, no substantial adverse effects would occur.

Operational Use

During operations, the majority of fuel consumption resulting from the Miramar Reservoir Alternative would involve the use of motor vehicles traveling to and from the project site, as well as fuels used for alternative modes of transportation that may be used by employees, visitors, and guests.

Petroleum fuel consumption associated with motor vehicles traveling to and from the project site is a function of the VMT as a result of project operation. As shown in Appendices B and E (CalEEMod outputs), the annual VMT attributable to the proposed project is expected to be 555,986 VMT. Similar to the construction worker and vendor trips, fuel consumption from worker and vendor trips are estimated by converting the total CO₂ emissions from each land use type to gallons using the conversion factors for CO₂ to gallons of gasoline or diesel. Based on the annual fleet mix provided in CalEEMod, 92.5% of the fleet range from light-duty to medium-duty vehicles and motorcycles are assumed to run on gasoline. The remaining 7.5% of vehicles represent medium-heavy duty to heavy-duty vehicles and buses/RVs, and are assumed to run on diesel.

Calculations for annual mobile source fuel consumption are provided in Table 6.6-7, Mobile Source Gasoline Demand, and Table 6.6-8, Mobile Source Diesel Demand. Estimated gasoline and diesel fuel use for on-site vehicle testing is shown in Table 6.6-9, Mobile Source Fuel Consumption.

**Table 6.6-7
Mobile Source Gasoline Demand**

Project Phase	Vehicle MT CO ₂	kg/CO ₂ /Gallon	Gallons
North City Water Reclamation Plant Expansion	52.61	9.13	5,762.61
North City Pure Water Facility	148.41	9.13	16,255.64
Total			22,018.25

Sources: Pieces of equipment and equipment CO₂ (Appendices B and E); kg/CO₂/Gallon (The Climate Registry 2016)

Notes: CO₂ = carbon dioxide; MT = metric ton; kg = kilogram

**Table 6.6-8
Mobile Source Diesel Demand**

Project Phase	Vehicle MT CO ₂	kg/CO ₂ /Gallon	Gallons
North City Water Reclamation Plant Expansion	4.28	10.35	413.27
North City Pure Water Facility	12.07	10.35	1,165.80
Total			1,579.07

Sources: Pieces of equipment and equipment CO₂ (Appendices B and E); kg/CO₂/Gallon (The Climate Registry 2016)

Notes: CO₂ = carbon dioxide; MT = metric ton; kg = kilogram

**Table 6.6-9
Mobile Source Fuel Consumption**

Fuel	Gallons
Gasoline	22,018.25
Diesel	1,579.07
Total	23,597.32

Mobile sources from the proposed project will require a net increase in approximately 22,018 gallons of gasoline per year and 1,579 gallons of diesel per year beginning in 2022. By comparison, California as a whole consumes approximately 19.3 billion gallons of petroleum per year (CEC 2016b). The anticipated increase in consumption associated with one year of project operation is 0.0001% of the statewide use.

It should be noted that over the lifetime of the Miramar Reservoir Alternative, the fuel efficiency of the vehicles being used by the visitors, employees, and guests is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the project site during operation would decrease over time. There are numerous regulations in place that require and encourage increased fuel efficiency. For example, CARB has adopted a new approach to passenger vehicles by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. The new approach also includes efforts to support and accelerate the numbers of plug-in hybrids and zero-emissions vehicles in California (CARB 2013). Additionally, in response to Senate Bill 375, CARB has adopted the goal of reducing per-capita greenhouse gas (GHG) emissions from 2005 levels by 8% by the year 2020 and 13% by the year 2035 for light-duty passenger vehicles in the San Diego Association of

Governments planning area. This reduction would occur by reducing VMT through the integration of land use planning and transportation (SANDAG 2015). As such, operation of the Miramar Reservoir Alternative is expected to use decreasing amounts of petroleum over time, due to advances in fuel economy.

In summary, although the Miramar Reservoir Alternative would see an increase in petroleum use during construction and operation, the use is a small fraction of the statewide use, and due to efficiency increases will diminish over time. Given these considerations, the petroleum consumption associated with the Miramar Reservoir Alternative would not be considered inefficient or wasteful, and no substantial adverse effects would occur.

San Vicente Reservoir Alternative

Electricity

Construction Use

Temporary electric power for as-necessary lighting and electronic equipment such as computers inside temporary construction trailers would be provided by SDG&E. The electricity used for such activities would be temporary and negligible and therefore would not have an adverse effect.

Operational Use

The San Vicente Reservoir Alternative’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 project.

Table 6.6-10 shows the estimated electricity consumption for the components included in the San Vicente Reservoir Alternative. For components that are being expanded and not constructed new, only the net electricity consumption for the expansion is included.

**Table 6.6-10
Estimated Electricity Consumption for San Vicente Reservoir Alternative**

Water Use Process	Estimated Energy Use (kWh/year)
Morena Pump Station	25,458,000
North City Water Reclamation Plant Expansion	32,498,000

**Table 6.6-10
Estimated Electricity Consumption for San Vicente Reservoir Alternative**

Water Use Process	Estimated Energy Use (kWh/year)
North City Pure Water Facility Influent Pump Station	13,065,000
North City Pump Station and Mission Trails Booster Station	40,371,000
Metro Biosolids Center Upgrades	15,884,000
North City Renewable Energy Facility (Building Usage)	2,628,000
North City Pure Water Facility–San Vicente Reservoir	30,598,000
Reduction in Collection System and Wastewater Treatment	(15,598,000)
Total San Vicente Reservoir Alternative	144,904,000

Note: kWh/year = kilowatt hours per year

City of San Diego data on purified water operations reports that energy required for the production of purified water would be approximately 144,904,000 kWh per year. The project is expected to process up to 30 MGD, so the estimated energy use per million gallons would be 15,219 kWh. The Renewable Energy Facility is expected to generate up to 15.4 MW and up to 134,904,000 kWh per year of renewable energy. The San Vicente Reservoir Alternative would require 10,000,000 kWh of electricity per year from SDG&E. In 2015, SDG&E supplied 12,436 million gigawatt-hours of electricity to non-residential customers (CEC 2016a). The San Vicente Reservoir electrical demand from SDG&E would represent 0.0000008% of the non-residential electricity supplied in 2015. Therefore, there would be a small electricity demand from the local grid, and no adverse effects would occur.

Natural Gas

Construction Use

Natural gas is not anticipated to be required during construction of the North City Project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed under the “petroleum” subsection below. Any minor amounts of natural gas that may be consumed as a result of project construction would be temporary and negligible and therefore would not have an adverse effect.

Operational Use

Natural gas would be directly consumed throughout operations of the San Vicente Reservoir Alternative, primarily through the generation of electricity at the Renewable Energy Facility. This would result in an annual demand of 2,284.26 million SCF of

landfill gas and 501.42 million SCF of natural gas. This would result in the overall North City Renewable Energy Facility using 82% landfill gas and 18% natural gas.

In 2015, SDG&E supplied 464.51 million therms of natural gas to San Diego County customers (CEC 2016a). The Miramar Reservoir Alternative’s estimated natural gas use for the North City Renewable Energy Facility would be up to 5.01 million therms, or 1.1% of the total. This demand would not impact the local utility, and no adverse impact would occur.

Petroleum

Construction Use

Heavy-duty construction equipment of various types would be used during each phase of construction. The CalEEMod analysis discussed in Sections 6.3 and 6.8 and included in Appendices B and E lists the assumed equipment usage for each phase of construction. Based on that analysis, over all phases of construction, diesel-fueled construction equipment would run for an estimated ~~350,760~~283,372 hours as summarized in Table 6.6-11.

Table 6.6-11
San Vicente Reservoir Alternative Hours of Operation
for Construction Equipment

Project Component/ Construction Phase	Equipment)	Hours of Equipment Use
Morena Pump Station	concrete saws, dumpers, excavators, dozers, plate compactors, cement mixers, cranes, pumps, tractors, welders, pavers, rollers, and air compressors	13,768
Morena Wastewater Forcemain and Brine/Centrates Line (Morena Pipelines)	excavators, graders, scrapers, crushing equipment, dozers, tractors, trenchers, cranes, forklifts, pavers, and rollers	50,600
North City Water Reclamation Plant Expansion	concrete saws, dumpers, excavators, dozers, excavators, plate compactors, cement mixers, cranes, pumps, welders, pavers, rollers, air compressors, and cranes	32,024
North City Pure Water Facility Influent Pump Station	concrete saws, dumpers, excavators, dozers, plate compactors, cement mixers, cranes, pumps, tractors, welders, pavers, rollers, and air compressors	18,152

**Table 6.6-11
San Vicente Reservoir Alternative Hours of Operation
for Construction Equipment**

Project Component/ Construction Phase	Equipment)	Hours of Equipment Use
North City Pure Water Facility Pump Station (North City Pump Station)	excavators, dozers, loaders, concrete saws, excavators, off-highway trucks, welders, aerial lifts, cranes, forklifts, rollers, and pavers	21,440
North City Renewable Energy Facility	concrete saws, dozers, tractors, cranes, forklifts, cement mixers, pavers, and rollers	13,200
Landfill Gas Pipeline	graders, scrapers, tractors, crushing equipment, excavators, dozers, cranes, forklifts, pavers, rollers, and trenchers	36,280
Metro Biosolids Center Improvements	concrete saws, dumpers, excavators, dozers, plate compactors, cement mixers, cranes, pumps, tractors, welders, pavers, and rollers	10,208
San Vicente Reservoir Pure Water Pipeline	excavators, dozers, tractors, trenchers, pavers, rollers, cranes, generator sets, loaders, and welders	52,800
Mission Trails Booster Station	graders, off-highway trucks, plate compactors, dozers, scrapers, tractors, concrete saws, excavators, rollers, welders, aerial lifts, cranes, forklifts, and pavers	23,720 980
North City Pure Water Facility	excavators, graders, off-highway trucks, plate compactors, dozers, scrapers, tractors, aerial lifts, cranes, forklifts, rollers, welders, crushing equipment, and pavers	78,568
Total		<u>350,760</u>283,372

Sources: Appendices B and E.

Fuel consumption from construction equipment was estimated by converting the total CO₂ emissions from each construction phase to gallons using the conversion factors for CO₂ to gallons of gasoline or diesel. Construction is estimated to occur in the years 2018–2022 based on the construction phasing schedule. The conversion factor for gasoline is 9.13 kg/MT CO₂/gallon, and the conversion factor for diesel is 10.35 kg/MT CO₂/gallon (The Climate Registry 2016). The estimated diesel fuel usage from construction equipment is shown in Table 6.6-12.

**Table 6.6-12
Construction Equipment Diesel Demand**

Phase	Pieces of Equipment	Equipment CO ₂ (MT)	kg/CO ₂ /Gallon	Gallons
Morena Pump Station	21	241.99	10.35	23,380.68
Morena Wastewater Forcemain and Brine/Centrates Line (Morena Pipelines)	36	1,256.59	10.35	121,409.66
North City Water Reclamation Plant Expansion	20	1,100.69	10.35	106,346.86
North City Pure Water Facility Influent Pump Station	22	317.02	10.35	30,629.75
North City Pump Station	31	354.52	10.35	34,252.95
North City Renewable Energy Facility	20	222.03	10.35	21,452.17
Landfill Gas Pipeline	36	901.24	10.35	87,076.33
Metro Biosolids Center Improvements	19	192.39	10.35	18,588.23
Mission Trails Booster Station	2738	173.38484.41	10.35/10.35	16,751.8746, 802.47
North City Pure Water Facility	43	1,440.57	10.35	139,185.51
San Vicente Pipeline	33	1,322.04	10.35	127,733.51
Total				726,807.527 56,858.12

Sources: Pieces of equipment and equipment CO₂ (Appendix B and E); kg/CO₂/Gallon (The Climate Registry 2016)

Notes: CO₂ = carbon dioxide; MT = metric ton; kg = kilogram

Fuel consumption from worker and vendor trips are estimated by converting the total CO₂ emissions from each construction phase to gallons using the conversion factors for CO₂ to gallons of gasoline or diesel. Worker vehicles are assumed to be gasoline and vendor/hauling vehicles are assumed to be diesel.

Calculations for total worker, vendor, and hauler fuel consumption are provided in Table 6.6-13, Construction Worker Gasoline Demand; Table 6.6-14, Construction Vendor Diesel Demand; and Table 6.6-15, Construction Hauler Diesel Demand.

**Table 6.6-13
Construction Worker Gasoline Demand**

Phase	Trips	Vehicle CO ₂ (MT)	kg/CO ₂ /Gallon	Gallons
Morena Pump Station	5,188	19.16	9.13	2,098.58
Morena Wastewater Forcemain and Brine/Centrates Line (Morena Pipelines)	18,860	110.87	9.13	12,143.48

**Table 6.6-13
Construction Worker Gasoline Demand**

Phase	Trips	Vehicle CO ₂ (MT)	kg/CO ₂ /Gallon	Gallons
North City Water Reclamation Plant Expansion	51,620	186.90	9.13	20,470.97
North City Pure Water Facility Influent Pump Station	28,704	162.94	9.13	17,846.18
North City Pump Station	7,580	27.95	9.13	3,060.88
North City Renewable Energy Facility	2,780	9.95	9.13	1,089.81
Landfill Gas Pipeline	20,952	114.86	9.13	12,580.50
Metro Biosolids Center Improvements	3,776	14.09	9.13	1,543.33
North City Pure Water Facility	84,930	302.09	9.13	33,087.62
San Vicente Pipeline	19,600	111.75	9.13	12,240.09
Mission Trails Booster Station	5,970	33.98	9.13	3,721.47
Total				119,882.91

Sources: Pieces of equipment and equipment CO₂ (Appendices B and E); kg/CO₂/Gallon (The Climate Registry 2016)

Notes: CO₂ = carbon dioxide; MT = metric ton; kg = kilogram

**Table 6.6-14
Construction Vendor Diesel Demand**

Phase	Trips	Vehicle CO ₂ (MT)	kg/CO ₂ /Gallon	Gallons
Morena Pump Station	360	4.76	10.35	459.90
Morena Wastewater Forcemain and Brine/Centrates Line (Morena Pipelines)	780	9.49	10.35	916.91
North City Water Reclamation Plant Expansion	16,000	225.65	10.35	21,801.93
North City Pure Water Facility Influent Pump Station	1,560	19.07	10.35	1,842.45
North City Pump Station	460	6.09	10.35	588.04
North City Renewable Energy Facility	400	15.78	10.35	1,524.64
Landfill Gas Pipeline	308	7.07	10.35	683.09
Metro Biosolids Center Improvements	400	5.30	10.35	512.17
North City Pure Water Facility	21,600	398.34	10.35	38,486.96
San Vicente Pipeline	1,200	14.66	10.35	1,416.10
Mission Trails Booster Station	460	5.62	10.35	542.75
Total				68,774.95

Sources: Pieces of equipment and equipment CO₂ (Appendices B and E); kg/CO₂/Gallon (The Climate Registry 2016)

Notes: CO₂ = carbon dioxide; MT = metric ton; kg = kilogram

**Table 6.6-15
Construction Haul Diesel Demand**

Phase	Trips	Vehicle CO ₂ (MT)	kg/CO ₂ / Gallon	Gallons
Morena Pump Station	400	15.59	10.35	1,506.28
Morena Wastewater Forcemain and Brine/Centrates Line (Morena Pipelines)	5,154	200.86	10.35	19,406.76
North City Water Reclamation Plant Expansion	1,009	39.33	10.35	3,800.05
North City Pure Water Facility Influent Pump Station	63	2.46	10.35	237.27
North City Pump Station	0	0.00	10.35	0.00
North City Renewable Energy Facility	14	0.54	10.35	52.16
Landfill Gas Pipeline	50	1.93	10.35	186.47
Metro Biosolids Center Improvements	0	0.00	10.35	0.00
North City Pure Water Facility	2,250	87.70	10.35	8,461.08
San Vicente Pipeline	13,073	510.16	10.35	49,290.94
Mission Trails Booster Station	36,750	1,432.51	10.35	138,406.28
Total				221,347.29

Sources: Pieces of equipment and equipment CO₂ (Appendices B and E); kg/CO₂/Gallon (The Climate Registry 2016)

Notes: CO₂ = carbon dioxide; MT = metric ton; kg = kilogram

In summary, the San Vicente Reservoir Alternative is conservatively estimated to consume 1,466,136,863–813 gallons of petroleum during the construction phase, which would last approximately 40 months (extending approximately from 2018 to 2022). By comparison, California’s consumption of petroleum is approximately 52.9 MGD (CEC 2016b). Based on these assumptions, approximately 64 billion gallons of petroleum would be consumed in California over the course of the construction period. Construction of the San Vicente Reservoir Alternative would equate to 0.002% of the total amount of petroleum that would be used statewide during the course of the construction period, and therefore, no adverse effects would occur.

Operational Use

During operations, the majority of fuel consumption resulting from the San Vicente Reservoir Alternative would involve the use of motor vehicles traveling to and from the project site, as well as fuels used for alternative modes of transportation that may be used by employees, visitors, and guests.

Petroleum fuel consumption associated with motor vehicles traveling to and from the project site is a function of the VMT as a result of project operation. As shown in Appendices B and E (CalEEMod outputs), the annual VMT attributable to the proposed project is expected to be 555,986 VMT. Similar to the construction worker and vendor trips, fuel consumption from worker and vendor trips are estimated by converting the total CO₂ emissions from each land use type to gallons using the conversion factors for CO₂ to gallons of gasoline or diesel. Based on the annual fleet mix provided in CalEEMod, 92.5% of the fleet range from light-duty to medium-duty vehicles and motorcycles are assumed to run on gasoline. The remaining 7.5% of vehicles represent medium-heavy duty to heavy-duty vehicles and buses/RVs and are assumed to run on diesel.

Calculations for annual mobile source fuel consumption are provided in Table 6.6-16, Mobile Source Gasoline Demand, and Table 6.6-17, Mobile Source Diesel Demand. Estimated gasoline and diesel fuel use for on-site vehicle testing is shown in Table 6.6-18, Vehicle Testing Fuel Consumption.

Table 6.6-16
Mobile Source Gasoline Demand

Project Phase	Vehicle MT CO₂	kg/CO₂/Gallon	Gallons
North City Water Reclamation Plant Expansion	52.61	9.13	5,762.61
North City Pure Water Facility	148.41	9.13	16,255.64
Total			22,018.25

Sources: Pieces of equipment and equipment CO₂ (Appendices B and E); kg/CO₂/Gallon (The Climate Registry 2016)

Notes: CO₂ = carbon dioxide; MT = metric ton; kg = kilogram

Table 6.6-17
Mobile Source Diesel Demand

Project Phase	Vehicle MT CO₂	kg/CO₂/Gallon	Gallons
North City Water Reclamation Plant Expansion	4.28	10.35	413.27
North City Pure Water Facility	12.07	10.35	1,165.80
Total			1,579.07

Sources: Pieces of equipment and equipment CO₂ (Appendices B and E); kg/CO₂/Gallon (The Climate Registry 2016)

Notes: CO₂ = carbon dioxide; MT = metric ton; kg = kilogram

**Table 6.6-18
Mobile Source Fuel Consumption**

Fuel	Gallons
Gasoline	22,018.25
Diesel	1,579.07
Total	23,597.32

Mobile sources from the proposed project will require a net increase in approximately 22,018 gallons of gasoline per year and 1,579 gallons of diesel per year beginning in 2022. By comparison, California as a whole consumes approximately 19.3 billion gallons of petroleum per year (CEC 2016b). The anticipated increase in consumption associated with one year of project operation is 0.0001% of the statewide use.

In summary, although the San Vicente Reservoir Alternative would see an increase in petroleum use during construction and operation, the use is a small fraction of the statewide use and due to efficiency increases will diminish over time. Given these considerations, the petroleum consumption associated with the San Vicente Reservoir Alternative would not be considered inefficient or wasteful, and therefore no substantial adverse effects would occur.

6.6.3.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

Because there is no anticipated energy use over existing conditions under the No Project/No Action Alternative, impacts to energy resources under CEQA would be **less than significant**.

Miramar Reservoir Alternative

Although electricity, natural gas, and petroleum consumption would increase due to the implementation of the Miramar Reservoir Alternative, the project 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 project would replace the supply and conveyance component associated with typical urban water systems. The project would also not place any demand for electricity on the local grid with

implementation of the North City Renewable Energy Facility. Therefore, electricity and natural gas consumption would not be considered excessive, and impacts would be **less than significant** under CEQA.

San Vicente Reservoir Alternative

Although electricity, natural gas, and petroleum consumption would increase due to the implementation of the San Vicente Reservoir Alternative, the project 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 project would replace the supply and conveyance component associated with typical urban water systems. Therefore, electricity and natural gas consumption would not be considered excessive, and impacts would be **less than significant** under CEQA.

6.6.3.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

Energy-related impacts associated with implementation of the No Project/No Action Alternative would be less than significant under CEQA; therefore, no mitigation is required.

Miramar Reservoir Alternative

Energy-related impacts associated with implementation of the Miramar Reservoir Alternative would be less than significant under CEQA; therefore, no mitigation is required.

San Vicente Reservoir Alternative

Energy-related impacts associated with implementation of the San Vicente Reservoir Alternative would be less than significant under CEQA; therefore, no mitigation is required.

6.6.4 LEVEL OF IMPACT AFTER MITIGATION

Energy-related impacts would not be adverse and would be **less than significant**.

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6.7 GEOLOGY AND SOILS

6.7.1 INTRODUCTION

The following section examines the impacts of the North City Project relative to geology and soils and provides mitigation as necessary. The analysis in this section is based on the technical information included in geotechnical studies (Appendices D1–D5).

6.7.2 CEQA THRESHOLDS OF SIGNIFICANCE

The City of San Diego’s (City’s) California Environmental Quality Act Significance Determination Thresholds (City of San Diego 2016a) and Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.) contain significance guidelines related to geologic conditions. Significance of geologic conditions is determined on a case-by-case basis in conjunction with preparation of geotechnical reports. Standard construction practices recommended in a geologic report would not typically be considered mitigation.

6.7.3 ISSUE 1

Would the North City Project expose people or property to geologic hazards such as earthquakes, landslides, mudslides, liquefaction, ground failure, or similar hazards?

6.7.3.1 Impacts

No Project/No Action Alternative

Under the No Project/No Action Alternative, there would be no potential for adverse effects due to geologic hazards because construction of the North City Pure Water Facility (NCPWF), pipelines, North City Renewable Energy Facility, the Landfill Gas (LFG) Pipeline, and associated improvements at other facilities would not occur.

Miramar Reservoir Alternative

Morena Pump Station and Morena Wastewater Forcemain and Brine/Centrates Line

Earthquakes and Faulting

All Project components are subject to adverse effects associated with moderate to severe ground shaking in response to a major earthquake occurring on one of the

major regional active faults. The closest active regional faults to the Project components are the Rose Canyon, Coronado Bank, the San Miguel–Vallecitos, La Nacion, and the Elsinore fault zones. Other more distant, active regional faults that are considered potential sources of seismic activity include the San Diego Trough and San Clemente fault zones, located offshore, and some of the faults in Imperial Valley, which include the San Jacinto and San Andreas fault zones.

The Morena Pump Station and the southern portion of the Morena Wastewater Forcemain and Brine/Centrated Line (Morena Pipelines) alignment lie within the Rose Canyon Fault Zone (Appendix D1). Active faults and potentially active faults are present in the vicinity of the Morena Pump Station and Morena Pipelines (Appendix D1). The Morena Pipelines alignment generally parallels and crosses the active Rose Canyon Fault Zone along east Mission Bay, and therefore, fault rupture may pose a hazard at pipeline fault crossings (Appendix D1). Locations of active strands of the Rose Canyon Fault Zone are known near Balboa Avenue, at Buenos Avenue, and at Old Town (Appendix D1). Other active faults in the southern portion of the Morena Pipelines and near the Morena Pump Station are generally mapped as suspected or “concealed” (i.e., not well located) on geologic and fault maps by the City of San Diego (Appendix D1).

Seismic design parameters, per the 2016 California Building Code (CBC), as described in the Morena Pump Station-specific geotechnical report (Appendix D1) are included in Project design. Seismic design in accordance with building codes and associated standards would reduce the potential adverse effects of earthquake ground shaking on buildings to an acceptable level of risk. Such seismic design parameters would minimize risk due to earthquakes and faulting, and no adverse effects would occur. Additionally, per Appendix D1, modifying soil conditions and pipeline physical characteristics of the Morena Pipelines to reduce the level of earthquake hazard and increase the pipeline resistance would be implemented during construction such that no adverse effects would occur. Furthermore, the Morena Pump Station has several features incorporated into Project design to minimize risk from earthquakes and faulting. Such features include vibratory alarms to trigger pump station shut down when sensing excessive vibrations, flexible connections between the Morena Pump Station and the Morena Wastewater Forcemain and Brine/Centrated Line (Morena Pipelines) in the event of differential settlement, pump station shut down in the event of a break in the pipeline, and structural setbacks outside of the fault zone. Specifically, a forcemain break or blockage triggers the shutdown of the Morena Pump Station, and a break in the brine/centrated line triggers the shutdown of the NCPWF. As noted in the Project’s geotechnical report for fault investigation, these design measures would

stop flow and would allow for investigations of pipeline integrity following a seismic event, minimizing potential hazards from fault rupture (Appendix D1). These operational design measures to minimize risk from fault rupture have been incorporated into the design of the Morena Pump Station and Pipelines, and no adverse effects would occur.

In the event that fault rupture does occur and the Morena Pipelines structural integrity is compromised, flows would cease due to automatic shutdown of the Morena Pump Station and/or the NCPWF, as described above. However, there is potential for spills of residual wastewater remaining within the Morena Pipelines, resulting in possible adverse effects to the environment. The City has in place a Sewer Overflow Response and Tracking Plan (described in Section 5.9, Health and Safety/Hazards), in the event of sanitary sewer overflow or spills. The Sewer Overflow Response and Tracking Plan documents the processes and procedures that ensure that all sanitary sewer overflows/spill are identified, responded to, investigated, and reported in an effective and timely manner (City of San Diego 2014). Implementation of this established Sewer Overflow Response and Tracking Plan would minimize risk of spills in the event of fault rupture affecting the Morena Pipelines such that no adverse effects would occur.

Landslides and Mudslides

Slopes within and around the Morena Pump Station and Morena Pipelines alignment are generally flat (Appendix D1). The Morena Pump Station site and Morena Pipelines alignment would be located within developed areas and paved roadways, where unstable slopes would not present a hazard. Landslides and mudslides do not present a substantial geologic hazard to the Morena Pump Station or Morena Pipelines, and no adverse effects would occur.

Liquefaction and Ground Failure

A potential for liquefaction exists at the Morena Pump Station site within the alluvial sand and silt layers present below the groundwater table (about 9 feet below ground surface). The recent borings were used to evaluate liquefaction potential at the Morena Pump Station site and are detailed in Appendix D1.

Surface effects of liquefaction is generally considered to occur as a result of liquefaction within soil layers present within about 50 feet of the ground surface. Analysis of borings around the Morena Pump Station perimeter suggest that

surface expression of liquefaction could result in ground surface settlements ranging from about 5 to 11 inches (Appendix D1).

The below-grade portions of some of the planned structures within the Morena Pump Station site would extend through the upper granular layer where much of the liquefaction would be expected to occur (Appendix D1). The excavation for the Morena Pump Station building is expected to extend to a depth of about 50 feet (Appendix D1). However, some of the subsurface explorations around the site perimeter indicate that the sand layer that is present below about 50 feet is sufficiently loose and has a relatively low fines content, such that liquefaction could also occur in the soil at this depth (Appendix D1).

A potential for liquefaction also exists within the fill and alluvium present along the southern portion of the Morena Pipelines alignment, and potentially within some of the canyon crossings (Appendix D1). Specifically, areas with liquefaction potential along the alignment include the southern portion from the Morena Pump Station to Ingulf Street and crossing Tecolote Creek (Appendix D1). For the trenching portions of the southern Morena Pipeline alignments, dewatering and shoring would be required (Appendix D1). ~~For portions of the Morena Pipeline that would be constructed using trenchless methods, liquefaction potential exists at the Tecolote Creek crossing; however, pipelines and tunnel access shafts could be susceptible to liquefaction. However, the tunnel would be in the Bay Point Formation, which would likely not be susceptible to liquefaction due to its relative density and geologic age (Appendix D1). For the other trenchless canyon crossings, liquefaction potential is considered low (Appendix D1).~~

The site-specific geotechnical report for the Morena Pump Station (Appendix D1), includes several options for design recommendations to minimize risk due to liquefaction. Liquefaction minimization parameters are incorporated into the design of the Morena Pump Station. The installation of stone columns would densify the subsurface soils across the Morena Pump Station site, minimizing the potential for liquefaction, lateral spreading, and settlement; the potential settlements are estimated to be less than 2 inches, which is within the tolerable limits for the proposed structures (Appendix D1). Specifically, mat foundations below the groundwater level are recommended to be designed for a Modulus of Vertical Subgrade Reaction of 125 pounds per cubic inch and mat foundations above the groundwater level are recommended to be designed for a Modulus of Vertical Subgrade Reaction of 150 pounds per cubic inch (Appendix D1). With the

incorporation of liquefaction-specific design parameters, liquefaction hazard at the Morena Pump Station would be minimized, and no adverse effects would occur.

Soils

Other soil-related geologic hazards such as expansive or collapsible soils are not expected to present a substantial geologic risk to the Morena Pump Station or Morena Pipelines (Appendix D1), and no adverse effects would occur.

North City Water Reclamation Plant Expansion, North City Pure Water Facility Influent Pump Station, and North City Renewable Energy Facility

As noted in Section 5.7, the North City Pure Water Facility (NCPWF) Influent Pump Station and North City Renewable Energy Facility would be located within the existing North City Water Reclamation Plan (NCWRP) site, along with the proposed NCWRP expansion.

Earthquakes and Faulting

Similar to the Morena Pump Station and Morena Pipelines described above, the NCWRP Expansion, NCPWF Influent Pump Station, and North City Renewable Energy Facility would be subject to earthquakes and seismic activity. There are no known active or potentially active faults that occur beneath the NCWRP site (Appendix D2). The nearest known fault is a Torrey Pines fault strand approximately 600 feet northeast (Appendix D2). The probability of fault rupture hazard is considered low (Appendix D2). Seismic design parameters, per the 2016 CBC, as described in Appendix D2 are included in Project design. Seismic design in accordance with building codes and associated standards would reduce the potential adverse effects of earthquake ground shaking on buildings to an acceptable level of risk. Such seismic design parameters would minimize risk due to earthquakes and faulting, and no adverse effects would occur.

Landslides and Mudslides

No landslides have been mapped on the NCWRP site, and previous site reconnaissance resulted in similar findings (Appendix D2). The existing NCWRP site has been substantially graded and is generally flat with gently sloping terrain; the site is in an area identified as having minimal to moderate risk of slope failure (Appendix D2). Standard construction practices for slope stability, including retaining walls, would minimize risk associated with changes in topography

required for development of the NCWRP Expansion, NCPWF Influent Pump Station, and North City Renewable Energy Facility (Appendix D2), and no adverse effects would occur.

Liquefaction and Ground Failure

The NCWRP site is generally underlain by weakly to moderately cemented siltstones and sandstone at depth (Appendix D2). Overlying the natural formational materials are fills that could be in excess of 40 feet deep that were placed during the construction of the existing NCWRP (Appendix D2). Because groundwater was not encountered during previous geotechnical investigations and is estimated as being in excess of 100 feet below the surface, materials are weakly to moderately cemented, the fills are assumed to have been placed as required by previous geotechnical reports, and any loose fills would be removed during construction, liquefaction at the NCWRP site is not considered a substantial geologic hazards (Appendix D2). No adverse effects would occur.

Soils

Existing fills containing soils from the underlying Scripps Formation are not considered suitable for heavily loaded structures due to its potential for settlement and expansion (Appendix D2). Additionally, design of biofiltration basins would occur based on the recommendations provided in the site-specific geotechnical report for partial infiltration at the NCWRP site (Appendix D2). Biofiltration basins are recommended to be fully or partially lined to prevent or allow for infiltration; this determination is based on differences in infiltration rates and other characteristics of underlying soils (Appendix D2). Removal of unsuitable soils and compaction of fill materials on site would occur during construction, per standard construction practices, the 2016 CBC, and earthwork recommendations contained in the NCWRP and NCPWF Influent Pump Station geotechnical report (Appendix D2), and no adverse effects would occur.

North City Pure Water Facility–Miramar Reservoir and Pump Station

As described in the Section 5.7, the North City Pure Water Pump Station would be located within the NCPWF site.

Earthquakes and Faulting

Similar to the previously discussed earthquake and faulting analysis above, the NCPWF-MR would be subject to earthquakes and seismic activity. The NCPWF-MR site is not within a currently established Alquist–Priolo Earthquake Fault Zone for fault rupture hazard (Appendix D5); no active faults are known to occur beneath the NCPWF-MR site (Appendix D5). According to the City of San Diego Seismic Study Map No. 34, a strand of the Torrey Pines Fault crosses the NCPWF-MR site in a northeast-southwest direction (Appendix D5). During site reconnaissance, sheared and fractured sediments of the Scripps Formation were observed in the west facing slope above the I-805; this shear zone, located approximately 500 feet north of Eastgate Mall may represent the Torrey Pines Fault (Appendix D5). This fault is not to be considered active therefore it appears that there is a low probability of surface rupture due to faulting beneath the NCPWF-MR site (Appendix D5). Seismic design parameters, per the 2016 CBC, as described in Appendix D5 are included in Project design. Seismic design in accordance with building codes and associated standards would reduce the potential adverse effects of earthquake ground shaking on buildings to an acceptable level of risk. Such seismic design parameters would minimize risk due to earthquakes and faulting and no adverse effects would occur.

Landslides and Mudslides

The NCPWF-MR site is on generally flat to gently sloping terrain that is encompassed by areas that have been identified as having minimal to moderate risk for slope failure (Appendix D5). Although deeper landslides have low potential to occur, shallow/surface movement (i.e., erosion) has a potential to occur in these areas of the NCPWF-MR site along the western boundary (Appendix D5). Standard erosion control measures during construction would minimize potential for surficial slope failure (Appendix D5), and no adverse effects would occur.

Liquefaction and Ground Failure

The NCPWF-MR site is underlain by stiff to hard siltstone and dense to very dense sandstone (Appendix D5). Groundwater or water seepage was not observed in exploratory borings, nor was it reported within the exploratory borings from previous geotechnical studies (Appendix D5). Based on the density of the underlying materials and the absence of shallow groundwater, liquefaction potential does not present a substantial geologic hazard (Appendix D5). Similarly,

seismically induced settlement or subsidence is not expected to occur within the NCPWF-MR site (Appendix D5), and no adverse effects would occur.

Soils

The on-site soils at the NCPWF site have a medium to high expansion potential (Appendix D5). As such, the on-site soils are not considered suitable for use as retaining wall backfill or for support of foundations, floor slabs, or pavements, and would adversely affect project components at the NCPWF-MR site (Appendix D5). Removal of unsuitable soils and compaction of fill materials on site would occur during construction, per standard construction practices, the 2016 CBC, and earthwork recommendations contained in the NCPWF-MR geotechnical report (Appendix D5). No adverse effects would occur.

North City Pipeline, Dechlorination Facility, and Miramar Water Treatment Plant Improvements

The Dechlorination Facility and the Miramar Water Treatment Plant Improvements would be located along the easternmost portion of the North City Pipeline alignment. The Miramar Water Treatment Plant Improvements would be located within the existing Miramar Water Treatment Plant.

Earthquakes and Faulting

Similar to the previously discussed earthquake and faulting analysis, the North City Pipeline, Dechlorination Facility, and Miramar Water Treatment Plant Improvements would be subject to earthquakes and seismic activity. The North City Pipeline alignment crosses a strand of the Torrey Pines Fault at two locations along Eastgate Mall and Miramar Road (Appendix D3). Specifically, the North City Pipeline crosses the Torrey Pines Fault at approximately 60 feet southeast of the intersection of Eastgate Mall and Autoport Mall, and approximately 300 feet east of the Miramar Road/Eastgate Mall intersection (Appendix D3). An unnamed fault is also shown to extend northeast from the Torrey Pines Fault to cross the North City Pipeline alignment in proximity of this location (Appendix D3). Both faults are classified as potentially active (Appendix D3). Due to the known history of these and similar faults, the potential for ground displacement along the on-site faults and other similar faults in the areas along the North City Pipeline alignment is considered to be very low (Appendix D3). Seismic design parameters, per the 2016 CBC, are included in Project design. Seismic design in accordance with building codes and associated standards would reduce the potential adverse effects of

earthquake ground shaking on buildings to an acceptable level of risk. Such seismic design parameters would minimize risk due to earthquakes and faulting, and no adverse effects would occur.

Landslides and Mudslides

Site observations and review of geologic literature and aerial photographs provided no indication that areas along or adjacent to the proposed North City Pipeline alignment are underlain by landslides (Appendix D3). The geologic formations underlying the North City Pipeline alignment area are generally not considered to be prone to landsliding, and no adverse effects would occur.

Liquefaction and Ground Failure

Subsurface explorations along the North City Pipeline alignment suggests that the underlying soils are primarily medium dense to very dense, silty to clayey sands and gravels (Appendix D3). In addition, a shallow groundwater table was not indicated to be present along the North City Pipeline alignment (Appendix D3). Therefore, the potential for liquefaction or seismically-induced settlement for the vast majority of the subsurface soils along the North City Pipeline alignment is considered low (Appendix D3). Alluvial soils that exist in a loose condition beneath fill, such as in shallow, filled drainages along the alignment, may have a potential for liquefaction if saturated and subjected to strong seismic shaking (Appendix D3). However, standard construction design parameters per recommendations within the North City Pipeline geotechnical report (Appendix D3) would minimize risk from liquefaction potential, and no adverse effects would occur.

Soils

Portions of the North City Pipeline alignment are comprised of clayey soils and are anticipated to have moderate expansion potential (Appendix D3). However, as these soils are covered by pavements throughout much of the alignment, and soil moistures are expected to remain relatively constant, reducing changes in soil volumes. Thus, for the North City Pipeline alignment, expansion potential is considered low (Appendix D3).

Subsurface conditions at the Dechlorination Facility site consist of fill soils used to infill that buried drainage, with portions of the proposed pad located in Stadium Conglomerate (Appendix D3). On-site borings suggest moderate expansivity

(Appendix D3). Materials generated by the grading operations will be clayey in nature and contain a fair amount of oversized materials. As such, the on-site materials in their as-is condition are generally unsuitable for use as retaining wall backfill, and more suitable backfill material should be used for the wall backfill as provided as design recommendations in Appendix D3. Such site preparation and design recommendations included in Appendix D3 would be incorporated into Project design prior to final design and would minimize risk associated with expansive soils. No adverse effects would occur.

Landfill Gas Pipeline and Metro Biosolids Center Improvements

The LFG Pipeline would generally be located underground along an existing utility corridor that has been previously excavated and filled. The improvements to the Metro Biosolids Center (MBC) would be located within the previously developed footprint of the existing facility. The site has been heavily graded, and underlying fill at varying depths would likely be present. For both the LFG Pipeline and the MBC Improvements, standard construction design practices and adherence to structural design codes would minimize risk from geologic hazards, and no adverse effects would occur.

San Vicente Reservoir Alternative

For components common to both Project Alternatives (Morena Pump Station and Pipelines, NCWRP Expansion, NCPWF Influent Pump Station, North City Pure Water Pump Station (North City Pump Station), North City Renewable Energy Facility, LFG Pipeline, and MBC Improvements), potential geologic hazards under the San Vicente Reservoir Alternative are the same as those discussed under the Miramar Reservoir Alternative. Although the NCPWF-San Vicente Reservoir (SVR) would require different components than the NCPWF-MR, they are located on the same site. Therefore, the potential geologic hazards and adverse effects associated with the NCPWF-SVR under the San Vicente Reservoir Alternative are similar to those discussed for the NCPWF-MR under the Miramar Reservoir Alternative. These components are not discussed below.

San Vicente Pipeline and Mission Trails Booster Station

The Mission Trails Booster Station would be located along the San Vicente Pipeline alignment.

Earthquakes and Faulting

The San Vicente Pure Water Pipeline (San Vicente Pipeline) is subject to adverse effects associated with presence of fault crossings. The San Vicente Pipeline alignment crosses or nearly crosses two faults at three locations along Eastgate Mall. One fault crosses Eastgate Mall at a location immediately north of Miramar Road, and again near the intersection with Eastgate Drive. The other fault is located adjacent to Eastgate Mall at Eastgate Court (Appendix D4). Both faults are shown as concealed lineaments and classified as potentially active on the City of San Diego Seismic Safety Study map (1995) (Appendix D4).

Additionally, a short fault identified as the Left Abutment Fault underlies the left abutment of San Vicente Dam, extending in a general northwest-to-southeasterly direction. To the northwest the fault is hidden below San Vicente Reservoir, and to the southeast the fault becomes concealed on a steep hillside in open space (Appendix D4).

Seismic design parameters, per the 2016 CBC, as described in Appendix D4 are included in Project design. Seismic design in accordance with building codes and associated standards would reduce the potential adverse effects of earthquake ground shaking on buildings to an acceptable level of risk. Such seismic design parameters would minimize risk due to earthquakes and faulting, and no adverse effects would occur.

Landslides and Mudslides

Several landslides have been mapped along the San Vicente Pipeline alignment. These landslides, as described in Appendix D4, are generally located in the following areas: (1) north of Tierrasanta Boulevard between Rueda Drive and Tambor Road, (2) between Tierrasanta Boulevard and Pendiente Court, (3) on the southeast side of Mission Gorge Road and west of Jackson Drive, and (4) at Mission Gorge Road near El Banquero Place. Additionally, numerous mapped landslides are located within the vicinity of the San Vicente Pipeline and Mission Trails Booster Station. For all landslides mapped along the San Vicente Pipeline, residential and recreational land uses have since been developed on the mapped locations (Appendix D4). Therefore, landslides would not be considered a substantial geologic hazard and no adverse effects would occur.

Liquefaction and Ground Failure

Young alluvial deposits located within the San Diego River Basin along the San Vicente Pipeline alignment present high liquefaction potential (Appendix D4). Portions of the

Friars Formation that underlie the San Vicente Pipeline alignment present a moderate to high expansion potential and therefore subject to adverse effects due to expansion (Appendix D4). However, standard construction design parameters and removal of unsuitable soils per recommendations within the San Vicente Pipeline geotechnical report (Appendix D4) would minimize risk from liquefaction, expansion and ground failure potential, and no adverse effects would occur.

Soils

The underlying soils comprising the Friars Formation are typically moderately to highly expansive (Appendix D4). Additionally, loose and potentially compressible soils are anticipated to occur in areas underlain by undocumented fills and young alluvial deposits (Appendix D4). However, standard construction design parameters, such as compaction or removal of soils, per recommendations within the San Vicente Pipeline geotechnical report (Appendix D4) would minimize risk from expansion and compression potential, and no adverse effects would occur.

6.7.3.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

No impact due to geologic hazards would occur under the No Project/No Action Alternative.

Miramar Reservoir Alternative

For the Miramar Reservoir Alternative, compliance with the most recent California Building Code and other applicable standards with regard to seismicity and site-specific geologic conditions, as well as site preparation and design recommendations of each component-specific geotechnical report (Appendices D1–D5), would ensure that impacts associated with geologic hazards would be **less than significant** under CEQA.

San Vicente Reservoir Alternative

For the San Vicente Reservoir Alternative, compliance with the most recent CBC and other applicable standards with regards to seismicity and site-specific geologic conditions, as well as site preparation and design recommendations of each component-specific geotechnical report (Appendices D1–D5), would ensure that impacts associated with geologic hazards would be **less than significant** under CEQA.

6.7.3.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No impact due to geologic hazards would occur under the No Project/No Action Alternative, and no mitigation measures would be required.

Miramar Reservoir Alternative

Impacts due to geologic hazards would be less than significant under the Miramar Reservoir Alternative, and no mitigation measures would be required.

San Vicente Reservoir Alternative

Impacts due to geologic hazards would be less than significant under the San Vicente Reservoir Alternative, and no mitigation measures would be required.

6.7.4 ISSUE 2

Would the North City Project increase the potential for erosion of soils on- or off-site?

6.7.4.1 Impacts

No Project/No Action Alternative

Under the No Project/No Action Alternative, there would be no potential for increase in erosion on or off site because construction of the NCPWF, pipelines, North City Renewable Energy Facility, LFG Pipeline, and associated improvements at other facilities would not occur. Therefore, no adverse effects would occur.

Miramar Reservoir Alternative

Construction

Construction of the NCPWF, pipelines, North City Renewable Energy Facility, LFG Pipeline, and associated improvement at other facilities would temporarily expose soils to wind and water erosion. Construction would be required to comply with the State Water Quality Control Board's Construction General Permit, which requires the preparation and implementation of a stormwater pollution prevention plan (SWPPP) or Water Pollution Control Plan (WPCP) depending on the size of construction. The SWPPP or WPCP is required to include standard construction best management practices (BMPs) such as installation of silt fences, fiber rolls, sandbags, storm drain

inlet protection, and regular watering of the construction site for dust/erosion control. The implementation of a SWPPP or WPCP and construction BMPs for erosion control would minimize the potential for the increase of erosion of soils on or off site and therefore no substantial adverse effects would occur.

Operation

Upon completion of construction of the pipelines, all excavated areas for trenching and trenchless installation pits would be returned to existing conditions; access roads to pipelines would be retained post-construction which do not present substantial erosion potential. All pipelines and the LFG Pipeline would be located underground and would not have the potential to alter erosion during operation.

The NCWRP Expansion, North City Renewable Energy Facility, NCPWF Influent Pump Station, MBC Improvements, and the Miramar Water Treatment Plant Improvements would be located on previously developed sites. These improvements would be discrete within existing facilities that contain standard existing erosion and sedimentation control BMPs such as landscaping and desilting basins. The improvements at these existing facilities would not substantially increase erosion on or off site.

The Morena Pump Station would be located on a parcel with existing development (to be demolished). Upon completion of demolition and construction, the site would be fully developed with drainage and runoff similar to the existing developed conditions. The Morena Pump Station would include drainage and erosion control features consistent with the City's Storm Water Standards: BMP Design Manual and other City Storm Water Standards (City of San Diego 2016b; ~~and City of San Diego 2017~~) to minimize increase in erosion on or off site.

The NCPWF-MR and the North City Pump Station would be located on vacant land. A stormwater quality management plan has been prepared for the NCPWF-MR and North City Pump Station site in accordance with the most recent City Storm Water Standards (City of San Diego 2016b; ~~and City of San Diego 2017~~) and has been incorporated into site design. Runoff and erosion control would be managed with storm pipe systems, biofiltration basins, and landscaped areas to minimize erosion potential. Implementation of the stormwater quality management plan in accordance with the City's Storm Water Standards would minimize the potential for an increase in erosion on or off site. Therefore, no substantial adverse effects would occur.

Additionally, discussion regarding drainage and stormwater impacts can be found in Section 6.11, Hydrology and Water Quality, of this EIR/EIS.

San Vicente Reservoir Alternative

Construction

The San Vicente Reservoir Alternative would have potential for an increase in erosion during construction similar to that described for the Miramar Reservoir Alternative, and therefore no substantial adverse effects would occur.

Operation

The San Vicente Reservoir Alternative would have potential for an increase in erosion during operation of the Morena Pump Station, NCWRP Expansion, NCPWF Influent Pump Station, North City Pump Station, North City Renewable Energy Facility, and MBC Improvements similar to that described for the Miramar Reservoir Alternative.

The NCPWF-SVR site also has a stormwater quality management plan that has been prepared in accordance with the most recent City Storm Water Standards (2016) and has been incorporated into site design. The NCPWF-SVR under the San Vicente Reservoir Alternative would have potential to increase erosion similar to that described for the NCPWF-MR under the Miramar Reservoir Alternative.

The Mission Trails Booster Station would be located on vacant land. Site design would include drainage and erosion control features consistent with the City's Storm Water Standards: BMP Design Manual and other City Storm Water Standards (City of San Diego 2016b) to minimize increase in erosion on or off site. Therefore, no substantial adverse effects would occur.

Additionally, discussion regarding drainage and stormwater impacts can be found in Section 6.11, Hydrology and Water Quality, of this EIR/EIS.

6.7.4.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

No impact to erosion would occur under the No Project/No Action Alternative.

Miramar Reservoir Alternative

Construction of the Miramar Reservoir Alternative would comply with the State Water Quality Control Board's Construction General Permit, which requires the preparation and implementation of a SWPPP or WPCP to minimize erosion potential. Implementation of the BMPs and SWPPP or WPCP as discussed previously would ensure that impacts due to erosion would be less than significant under CEQA.

The pipelines and the LFG Pipeline would be located underground and would not affect erosion potential. Operation of the new facilities or improvements to existing facilities would not substantially increase erosion potential due to existing and proposed post-construction drainage and erosion control features incorporated into site design as required by the most recent City Storm Water Standards (City of San Diego 2016b). Therefore, impacts due to erosion under the Miramar Reservoir Alternative would be less than significant under CEQA.

San Vicente Reservoir Alternative

Construction of the San Vicente Reservoir Alternative would comply with the State Water Quality Control Board's Construction General Permit, which requires the preparation and implementation of a SWPPP or WPCP to minimize erosion potential. Implementation of the BMPs and SWPPP or WPCP as discussed previously would ensure that impacts due to erosion would be less than significant under CEQA.

The pipelines and the LFG Pipeline would be located underground and would not affect erosion potential. Operation of the new facilities or improvements to existing facilities would not substantially increase erosion potential due to existing and proposed post-construction drainage and erosion control features incorporated into site design as required by the most recent City Storm Water Standards (City of San Diego 2016b). Therefore, impacts due to erosion under the San Vicente Reservoir Alternative would be less than significant under CEQA.

6.7.4.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No impact to erosion would occur under the No Project/No Action Alternative and no mitigation measures would be required.

Miramar Reservoir Alternative

No mitigation measures would be required.

San Vicente Reservoir Alternative

No mitigation measures would be required.

6.7.5 ISSUE 3

Would the North City Project 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?

6.7.5.1 Impacts

No Project/No Action Alternative

Under the No Project/No Action Alternative, there would be no potential for impacts related to unstable geologic units because construction of the NCPWF, pipelines, North City Renewable Energy Facility, LFG Pipeline, and associated improvements at other facilities would not occur. No adverse effects would occur.

Miramar Reservoir Alternative

Components of the Miramar Reservoir Alternative would be located on geologic units and soils that could become potentially unstable as a result of faulting, landslide, liquefaction, expansion, compression, and settlement, as discussed in Section 6.7.3.

San Vicente Reservoir Alternative

Components of the San Vicente Reservoir Alternative would be located on geologic units and soils that could become potentially unstable as a result of faulting, landslide, liquefaction, expansion, compression, and settlement, as discussed in Section 6.7.3.

6.7.5.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

No impact to unstable geologic units would occur under the No Project/No Action Alternative.

Miramar Reservoir Alternative

As described in Section 6.7.3, the Miramar Reservoir Alternative would be subject to geologic risks. Compliance with the most recent CBC and other applicable standards with regard to seismicity and site-specific geologic conditions, as well as site preparation and design recommendations of each component-specific geotechnical report (Appendices D1–D5) would ensure that impacts associated with geologic hazards would be **less than significant** under CEQA.

San Vicente Reservoir Alternative

As described in Section 6.7.3, the San Vicente Reservoir Alternative would be subject to geologic risks. Compliance with the most recent CBC and other applicable standards with regard to seismicity and site-specific geologic conditions, as well as site preparation and design recommendations of each component-specific geotechnical report (Appendices D1–D5) would ensure that impacts associated with geologic hazards would be **less than significant** under CEQA.

6.7.5.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No impact to unstable geologic units would occur under the No Project/No Action Alternative, and no mitigation measures would be required.

Miramar Reservoir Alternative

Impacts due to geologic hazards would be less than significant under the Miramar Reservoir Alternative, and no mitigation measures would be required.

San Vicente Reservoir Alternative

Impacts due to geologic hazards would be less than significant under the San Vicente Reservoir Alternative, and no mitigation measures would be required.

6.7.6 LEVEL OF IMPACT AFTER MITIGATION

Under CEQA, impacts related to geology and soils for all Alternatives would be less than significant, and no mitigation is required.

6.8 GREENHOUSE GAS EMISSIONS

6.8.1 INTRODUCTION

The purpose of this section is to estimate and evaluate the potential greenhouse gas (GHG) emissions and climate change impacts associated with implementation of the North City Project. The following analysis is based on the Greenhouse Gas Emissions Technical Report for the North City Project, City of San Diego, California prepared by Dudek, dated ~~July 2017~~ February 2018 (provided as Appendix E).

6.8.2 CEQA THRESHOLDS OF SIGNIFICANCE

The California Natural Resources Agency (CNRA), through its December 2009 amendments to the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.), and the City of San Diego (City), 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 Project components. The City's latest update to the CEQA Significance Determination Thresholds document in July 2016 added a GHG emissions threshold section. Pursuant to CEQA Guidelines Sections 15183.5(b), 15064(h)(3), and 15130(d), the City may determine that a project's incremental contribution to a cumulative GHG effect is not cumulatively considerable if the project complies with the requirements of a previously adopted GHG emissions reduction plan.

The City has identified the following specific significance criteria to be addressed in the Environmental Impact Report/Environmental Impact Statement (EIR/EIS), as outlined in the Public Notice of Preparation for the Pure Water San Diego Program, North City Project (City of San Diego 2016a).

1. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
2. Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emission of GHGs?

In regards to addressing Issue 1, neither the State of California nor the San Diego Air Pollution Control District has adopted emission-based thresholds for GHG emissions under CEQA. The Office of Planning and Research's Technical Advisory titled CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act 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.”

To address Issue 2, per the Public Notice of Preparation for the Pure Water San Diego Program, North City Project (City of San Diego 2016a), the GHG emissions impact analysis shall include a discussion of the North City Project’s compatibility with the City’s Climate Action Plan (CAP). Under the City’s CEQA Thresholds, the method for determining significance for project-level environmental documents is through the CAP Consistency Checklist (City of San Diego 2016b). The CAP Consistency Checklist, adopted July 12, 2016, is the primary document used by the City to ensure project-by-project consistency with the underlying assumptions in the CAP and that the City would achieve its emission reduction targets identified in the CAP. The CAP Checklist includes a three-step process to determine project consistency.

Step 1 consists of an evaluation to determine a project’s consistency with existing General Plan, Community Plan, and zoning designations for the site. If the project is able to answer “yes” to Step 1 and demonstrate the project would be consistent with existing General Plan, Community Plan, and zoning designations for the site, or the project can demonstrate consistency with existing land uses by comparing the proposed project’s GHG emissions with those that would be generated under existing land uses, then the project may proceed to Step 2. If the project must answer “no” to Step 1, then the project would be deemed inconsistent with the CAP, and GHG impacts as identified under CEQA would be considered significant and unavoidable.

Step 2 includes the list of measures each project would be required to implement. Regardless of whether the project would answer “yes” or “no” to Step 1, implementation of the measures listed in Step 2 would be required for all projects, if applicable.

Step 3 would only be applicable for projects that would not be consistent with existing land use designations, and would not be consistent with planned site land use GHG emissions, but that would be located in a Transit Priority Area as defined by the City’s Development Services Department. In accordance with Senate Bill 743,

Transit Priority Areas are defined as “an area within one-half mile of a major transit stop that is existing or planned, if the planned stop is scheduled to be completed within the planning horizon included in a Transportation Improvement Program adopted pursuant to Section 450.216 or 450.322 of Title 23 of the Code of Federal Regulations (City of San Diego 2016b). Appendix B of the CAP includes a map of Transit Priority Areas as designated by the City (see Appendix B, “Transit Priority Areas per SB 743”). The Transit Priority Areas map is based on the adopted San Diego Association of Governments’ San Diego Forward Regional Plan.

If the project is determined to be consistent with CAP, as determined through the use of the CAP Consistency Checklist, it may rely on the CAP for the cumulative impacts analysis of GHG emissions. If the project is determined not to be consistent with the CAP, preparation of a comprehensive project-specific analysis of GHG emissions, including quantification of existing and projected GHG emissions and incorporation of the measures as detailed within the checklist to the extent feasible, shall be provided. Cumulative GHG impacts would be significant for any project that is not consistent with the CAP (City of San Diego 2016b).

6.8.3 ISSUE 1

Would the North City Project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

6.8.3.1 Impacts

No Project/No Action Alternative

Under the No Project/No Action Alternative, the treatment plants, pipelines, and pump stations would not be built, and no GHG emission associated with construction or operation impacts would occur. No climate change impacts over existing conditions would occur.

Construction Emissions Approach and Methodology

GHG emissions would be associated with the construction phase of the Project components through use of construction equipment and vehicle trips. GHG emissions were estimated using the California Emissions Estimator Model (CalEEMod), Version 2016.3.1, available online (www.caleemod.com). For the purposes of modeling, it was assumed that construction of Project components

would occur from November 2018 through March 2022. The North City Project is anticipated to produce 30 million gallons per day (MGD) of purified water.

Table 6.8-1 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. Construction phasing and assumptions are intended to represent a schedule of anticipated activities for use in estimating potential project-generated construction emissions.

Table 6.8-1
North City Project Construction Phasing Assumptions

Project Component	Construction Start Date	Construction End Date
<i>Project Components Common to Alternatives</i>		
NCWRP Expansion	10/2018	12/2021
NCPWF Influent Pump Station	1/2019	10/2021
Morena Pump Station and Pipelines	4/2019	10/2021
MBC Improvements	4/2019	10/2021
NCPWF	10/2018	11/2021
North City Pump Station	5/2019	11/2021
North City Renewable Energy Facility	3/2020	12/2021
Landfill Gas Pipeline	3/2020	10/2021
<i>Miramar Reservoir Alternative</i>		
North City Pure Water Pipeline (North City Pipeline)	11/2018	10/2021
Pure Water Dechlorination Facility	1/2019	10/2021
Miramar WTP Improvements	7/2020	9/2021
<i>San Vicente Reservoir Alternative</i>		
San Vicente Pure Water Pipeline (San Vicente Pipeline)	12/2018	5/2021
Mission Trails Booster Station	5/2019	9/2021

Notes: NCWRP = North City Water Reclamation Plant; NCPWF = North City Pure Water Facility; Morena Pump Station and Pipelines = Morena Pump Station, Wastewater Forcemain, and Brine/Centrates Line; MBC = Metro Biosolids Center; NCPWF = North City Pure Water Facility; Miramar WTP = Miramar Water Treatment Plant.

Equipment mix for construction of the North City Project was provided by the City. The equipment mix assumptions were based on project design documents, review of related projects conducted in the Southern California area, 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.

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 75 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 150 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.¹ 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

¹ Linear feet per day assumptions based on typical construction practices for pipeline construction.

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, would occur for approximately 2 weeks every 6 months for duration of pipeline construction.
- Final paving would occur for 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 shown in Appendix E, or similar equipment, would be employed. 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, are provided in Appendix E. Due to the length of the alignment, it was assumed that two contractors would potentially be required for construction of the Miramar Reservoir Alternative.

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 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 Appendix E, or similar equipment, would be employed.

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 and Treatment Facilities

For the purposes of estimating emissions, construction timelines vary based on the type of feature and are summarized in Appendix E.

Construction Impacts

Miramar Reservoir Alternative

Table 6.8-2 shows the estimated annual GHG construction emissions associated with the Miramar Reservoir Alternative Project components, as well as the annualized construction emissions over a 30-year “Project life.”

**Table 6.8-2
Estimated Construction GHG Emissions**

Project Component	MT CO ₂	MT CH ₄	MT N ₂ O	MT CO ₂ E
<i>Miramar Reservoir Alternative – 2018</i>				
North City Pipeline	132.39	0.03	0.00	133.21
<i>Miramar Reservoir Alternative – 2019</i>				
Morena Pump Station and Pipelines	1,032.70	0.24	0.00	1,038.73
NCWRP Expansion	383.55	0.07	0.00	385.20
NCPWF Influent Pump Station	283.64	0.05	0.00	284.79
MBC Improvements	147.43	0.03	0.00	148.18
North City Pump Station	233.43	0.06	0.00	234.97
NCPWF	559.52	0.15	0.00	563.18
North City Pipeline	898.73	0.21	0.00	904.03
Pure Water Dechlorination Facility	157.14	0.03	0.00	157.81
Total 2019	3,696.14	0.83	0.00	3,716.90
<i>Miramar Reservoir Alternative – 2020</i>				
North City Pump Station	155.12	0.04	0.00	156.14
Morena Pump Station and Pipelines	595.09	0.15	0.00	598.88
MBC Improvements	64.24	0.01	0.00	64.55
Landfill Gas Pipeline	211.01	0.06	0.00	212.47
NCPWF Influent Pump Station	217.84	0.03	0.00	218.67
NCWRP Expansion	483.65	0.06	0.00	485.05
NCPWF	703.64	0.14	0.00	707.01
North City Pipeline	591.84	0.15	0.00	595.51
North City Renewable Energy Facility	167.34	0.05	0.00	168.54
Miramar WTP Improvements	72.73	0.02	0.00	73.14
Total 2020	3,628.56	0.80	0.00	3,648.56
<i>Miramar Reservoir Alternative – 2021</i>				
Morena Pipelines	231.53	0.06	0.00	233.13
Landfill Gas Pipeline	286.42	0.07	0.00	288.20
NCWRP Expansion	198.77	0.03	0.00	199.57
NCPWF	348.46	0.07	0.00	350.14
North City Pipeline	409.44	0.11	0.00	412.11
North City Renewable Energy Facility	80.97	0.02	0.00	81.56
Total 2021	1,717.17	0.41	0.00	1,727.39
<i>Total Project construction GHG emissions</i>	9,174.26	2.07	0.00	9,226.05
Amortized construction GHG emissions				307.54

Source: See Appendix E for complete results.

Notes: Totals may not sum due to rounding.

NCWRP = North City Water Reclamation Plant; NCPWF = North City Pure Water Facility; Morena Pump Station and Pipelines = Morena Pump Station, Wastewater Forcemain, and Brine/Centrate Line; MBC =

Metro Biosolids Center; NCPWF = North City Pure Water Facility; Miramar WTP = Miramar Water Treatment Plant.

MT CO₂ = metric tons of carbon dioxide; MT CH₄ = metric tons of methane; MT N₂O = metric tons of nitrous oxide; MT CO₂E = metric tons of carbon dioxide equivalent.

As shown in Table 6.8-2, the total construction GHG emissions from the Miramar Reservoir Alternative would be 9,226 metric tons of carbon dioxide equivalent (MT CO₂E) over the construction period and 307.54 MT CO₂E per year amortized over the 30-year project life.

As further discussed in Sections 6.8.3 and 6.8.4, the Miramar Reservoir Alternative would be consistent with the City of San Diego’s CAP. In addition, the North City Project 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. Therefore, no substantial adverse effects would occur due to GHG emissions.

San Vicente Reservoir Alternative

Table 6.8-3 shows the estimated annual GHG construction emissions associated with the San Vicente Reservoir Alternative Project components, as well as the annualized construction emissions over a 30-year “Project life.”

Table 6.8-3
Estimated Construction GHG Emissions

Project Component	MT CO₂	MT CH₄	MT N₂O	MT CO₂E
<i>San Vicente Reservoir Alternative – 2018</i>				
San Vicente Pipeline	149.92	0.03	0.00	150.74
<i>San Vicente Reservoir Alternative – 2019</i>				
Morena Pump Station and Pipelines	1,032.70	0.24	0.00	1,038.73
NCWRP Expansion	383.55	0.07	0.00	385.20
NCPWF Influent Pump Station	283.64	0.05	0.00	284.79
MBC Improvements	147.43	0.03	0.00	148.18
North City Pump Station	233.43	0.06	0.00	234.97
NCPWF	559.52	0.15	0.00	563.18
San Vicente Pipeline	1,396.01	0.31	0.00	1,403.75
Mission Trails Booster Station	1,568.22 794.52	0.16 0.23	0.00 0.00	1,572.30 800.28
Total 2019	5,604.51 5,830.81	1.06 1.13	0.00 0.00	5,631.10 5,859.09

**Table 6.8-3
Estimated Construction GHG Emissions**

Project Component	MT CO ₂	MT CH ₄	MT N ₂ O	MT CO ₂ E
<i>San Vicente Reservoir Alternative – 2020</i>				
North City Pump Station	155.12	0.04	0.00	156.14
Morena Pump Station and Pipelines	595.09	0.15	0.00	598.88
MBC Improvements	64.24	0.01	0.00	64.55
Landfill Gas Pipeline	211.01	0.06	0.00	212.47
NCPWF Influent Pump Station	217.84	0.03	0.00	218.67
NCWRP Expansion	483.65	0.06	0.00	485.05
NCPWF	703.64	0.14	0.00	707.01
North City Renewable Energy Facility	167.34	0.05	0.00	168.54
Mission Trails Booster Station	77.26 161.98	0.02 0.04	0.00 0.00	77.73 163.05
San Vicente Pipeline	351.79	0.09	0.00	354.02
Total 2020	3,393.04 3,477.76	0.740.77 0.740.77	0.00 0.00	3,411.66 3,496.97
<i>San Vicente Reservoir Alternative – 2021</i>				
Morena Pipelines	231.53	0.06	0.00	233.13
Landfill Gas Pipeline	286.42	0.07	0.00	288.20
NCWRP Expansion	198.77	0.03	0.00	199.57
NCPWF	348.46	0.07	0.00	350.14
San Vicente Pipeline	60.90	0.02	0.00	61.35
North City Renewable Energy Facility	80.97	0.02	0.00	81.56
Total 2021	1,368.62	0.32	0.00	1,376.63
<i>Total Project construction GHG emissions</i>	<u>10,516.09</u> <u>10,827.11</u>	<u>2,162.25</u> <u>2,162.25</u>	<u>0.00</u> <u>0.00</u>	<u>10,570.13</u> <u>10,883.43</u>
Amortized construction GHG emissions				362.78 352.34

Source: CalEEMod Version 2016.3.1. See Appendix B for complete results.

Notes: Totals may not sum due to rounding.

NCWRP = North City Water Reclamation Plant; NCPWF = North City Pure Water Facility; Morena Pump Station and Pipelines = Morena Pump Station, Wastewater Force main, and Brine/Centrate Line; MBC = Metro Biosolids Center; NCPWF = North City Pure Water Facility.

MT CO₂ = metric tons of carbon dioxide; MT CH₄ = metric tons of methane; MT N₂O = metric tons of nitrous oxide; MT CO₂E = metric tons of carbon dioxide equivalent.

As shown in Table 6.8-3, the total construction GHG emissions from the San Vicente Reservoir Alternative would be ~~10,883.570~~ 10,827.11 MT CO₂E over the construction period and ~~362.352.78~~ 352.34 MT CO₂E per year amortized over the 30-year Project lifetime.

As further discussed in Sections 6.8.3 and 6.8.4, the Miramar Reservoir Alternative would be consistent with the City of San Diego's CAP. In addition, the North City Project 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. Therefore, no substantial adverse effects would occur due to GHG emissions.

Operational Impacts

Miramar Reservoir Alternative

Operation of the Miramar Reservoir Alternative 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)

The Miramar Reservoir Alternative would result in 60 additional staff. It is expected that during normal operations, these workers would generate in 120 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 60 new employees) would be required; therefore, it was assumed on a worst-case day an additional 10 operations and maintenance-related trips would occur. In total, Miramar Reservoir Alternative operations would be expected to generate approximately 140 average daily trips across the entire Project area.

Annual carbon dioxide (CO₂) emissions from motor vehicle trips for full Project buildout were quantified using CalEEMod Version 2016.3.1 (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 2022 were used to estimate emissions associated with the first phase of the Miramar Reservoir Alternative. Table 6.8-4 presents estimated annual motor vehicle GHG emissions resulting from Project-generated trips under the Miramar Reservoir Alternative.

**Table 6.8-4
Estimated Annual Mobile Source GHG Emissions
for Miramar Reservoir Alternative**

Emissions Source	MT CO ₂	MT CH ₄	MT N ₂ O	MT CO ₂ E
Mobile Sources	217.37	0.01	0.00	217.64

Source: Appendix E.

Notes: MT CO₂ = metric tons of carbon dioxide; MT CH₄ = metric tons of methane; MT N₂O = metric tons of nitrous oxide; MT CO₂E = metric tons of carbon dioxide equivalent.

Electricity Production and Consumption

The generation of electricity through combustion of fossil fuels typically results in emissions of CO₂ and, to a smaller extent, methane (CH₄) and nitrous oxide (N₂O). Electricity would be required to operate various components of the Miramar Reservoir Alternative. The Project components will be powered by an on-site North City Renewable Energy Facility or from grid electricity. The City provided the electricity demand for each Project component. The GHG emissions from the North City Renewable Energy Facility account for the emissions from power usage for the Miramar Reservoir Alternative. The GHG emissions were calculated using a spreadsheet based model and emission factors provided by the engine manufacturer (Appendix E).

The landfill gas (LFG) to be used in the Project is generated at the nearby Miramar Landfill and is currently being emitted from the surface of the landfill or flared. This LFG is a biogenic source of GHGs, i.e., GHG emissions related to nature’s carbon cycle from the biological decomposition of waste in the landfill. Biogenic GHG emissions associated with the LFG already occur and can be considered baseline conditions, and are not an impact generated by the Project. Therefore, non-biogenic GHG emissions from the combustion of natural gas generate the maximum Project-related GHG emissions. The amount of supplemental natural gas combusted per engine will fluctuate. Thus, these emissions are a conservative estimate. In actual practice, GHG emissions are expected to be significantly lower. However, for the analysis it was assumed that up to three of the engines would operate on 30% natural gas continuously.

The City’s current water supply includes importing one-third from the State Water Project and two-thirds from the Colorado River. The North City Project would offset the energy needed to pump, treat, and supply the imported water. The City provided annual electricity for the North City Project components. For components

that are expanded for the Project and not entirely new, only the net electricity demand was included. The total estimated energy use for the Project is 126,295,000 kWh per year, which would result in 11,534 kWh/MG assuming 30 MGD.

The North City Renewable Energy Facility will power the NCWRP, Pure Water Influent Pump Station, NCPWF, and North City Pump Station. The Miramar Water Treatment Plant (Miramar WTP) improvements would be completely powered by an on-site 1 megawatt solar photovoltaic system. The other components would receive electricity from San Diego Gas & Electric (SDG&E). The North City Renewable Energy Facility would export excess power to SDG&E as it will produce more energy than the Project components will demand. Although on a daily basis there would be a net import and export of electricity from the North City Renewable Energy Facility, over an entire year the Miramar Reservoir Alternative would export more power than it would import. Because the Project would offset the demand from electricity from SDG&E, the avoided emissions associated with energy not used is also included in the analysis. The emissions were based on the energy demand from the Project, excess energy supplied to the grid, and emission factors for SDG&E as found in CalEEMod. The estimated GHG emissions associated with the North City Renewable Energy Facility are shown below. Table 6.8-5 presents GHG emissions associated with the Miramar Reservoir Alternative’s anticipated annual electricity consumption and the avoided emissions from grid electricity.

Table 6.8-5
Estimated Annual Electricity Consumption GHG Emissions

Emissions Source	MT CO₂	MT CH₄	MT N₂O	MT CO₂E
<i>Avoided Emissions</i>				
Grid Energy Use ¹	41,274.36	1.66	0.35	41,421.23
<i>Project Emissions</i>				
Miramar Reservoir Alternative ²	30,880.22	2.85	0.06	30,968.58
Net Change in Emissions	(10,394.14)	1.19	(0.29)	(10,452.65)

Source: Appendix E

Notes:

¹ SDG&E GHG emission factors used.

² GHG emissions calculated from North City Renewable Energy Facility.

As presented in Table 6.8-5, GHG emissions associated with avoided grid-purchased electricity would be 41,421 MT CO₂E. The purified water electrical demand and resulting GHG emissions from the natural gas use from the North City Renewable Energy Facility would be 30,969 MT CO₂E per year. Accordingly, the net change in

GHG emissions from the Project would be a reduction of 10,453 MT CO₂E per year. Refer to Appendix E for details.

Wastewater Process Emissions

Centralized wastewater treatment processes can result in CH₄ and N₂O emissions. CH₄ 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. N₂O 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 (NO₃) through the aerobic process of nitrification. Denitrification occurs under anoxic conditions (without free oxygen), and involves the biological conversion of nitrate into nitrogen gas (N₂). N₂O can be an intermediate product of both processes (CARB et al. 2010). Methodologies used to estimate CH₄ and N₂O emissions from wastewater treatment processes were derived from the Local Government Operations Protocol (CARB et al. 2010).

Stationary CH₄ Emissions

According to the City's Sewer Design Guide, daily per-capita wastewater flow is approximately 80 gallons per-capita per day (City of San Diego 2015a). The North City Water Reclamation Plant (NCWRP), which would generate the biosolids processed by the Miramar Reservoir Alternative, would have an annual average daily flow of 30 MGD; therefore, for the purposes of estimating emissions, it is estimated that the Metro Biosolids Center (MBC) would have a service population equivalent of 375,000. Stationary CH₄ emissions from incomplete combustion of biogas were estimated to be approximately 417 MT CO₂E per year (see Appendix E for details).

Process N₂O Emissions

Process N₂O emissions can occur in facilities with nitrification/denitrification processes, and to a lesser extent in facilities without these processes. The NCWRP would increase capacity by 21 MGD during peak daily loads resulting in a service population equivalent of 262,500. Process N₂O emissions were estimated to be approximately 685 MT CO₂E per year (see Appendix E for details).

N₂O emissions can also be generated through discharge to surface waters such as the Miramar Reservoir. Minimal N₂O emissions could occur from North City Pure Water Facility (NCPWF) effluent discharge due to the removal of nitrogen compounds by reverse osmosis. The Miramar Reservoir Alternative would produce 30 MGD 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 0.5 milligrams per liter (mg/L) (MWH Americas et al. 2016). N₂O emissions from discharge were estimated to be approximately 49 MT CO₂E per year (see Appendix E for details).

Table 6.8-6 provides a summary of process and discharge GHG emissions for the Miramar Reservoir Alternative.

Table 6.8-6
Estimated Annual Wastewater Process and Discharge
GHG Emissions for the Miramar Reservoir Alternative

Source	MT CH ₄	MT N ₂ O	MT CO ₂ E
Incomplete combustion of digester gas	16.68	—	416.98
Wastewater treatment plant with nitrification/denitrification	—	2.30	684.47
Effluent discharge emissions	—	0.16	48.53
Total Process Emissions			1,149.98

Source: Appendix E.

Notes: MT CH₄ = metric tons of methane; MT N₂O = metric tons of nitrous oxide; MT CO₂E = metric tons of carbon dioxide equivalent

Refrigerant Use

The air-cooled chillers in the North City Project will contain refrigerant. The 60-ton chiller will have a total refrigerant charge of 131 pounds (lbs) of R-410A refrigerant. As discussed in Section 5.8, refrigerants like R-410A are high Global Warming Potential (GWP) hydrofluorocarbons that can have a large impact if released into the atmosphere. The U.S. Environmental Protection Agency-tolerated leak-rate for commercial HVAC equipment is 10% per year. Assuming that rate, it is estimated that up to 13.1 lbs of R-410A refrigerant would be emitted per year. The GWP for R-410A is 2,088, meaning that 1 lb of R-410A is 2,088 times more potent than CO₂ as a GHG (The Climate Registry 2016). Using the annual leak rate and the GWP, it is estimated that 12 MT CO₂E would be emitted per year from refrigerant use.

Diesel Generators

To conservatively estimate stationary source emissions related to generator use, it was assumed a new diesel-powered emergency generator would be required for back-up power at the NCPWF. For the purposes of a conservative analysis, it was assumed the generator would be approximately 750 kilowatts (approximately 1,000 horsepower (HP)). 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. The compressor station located on the Miramar Landfill would also have a 2,500 kilowatt Tier 4 diesel emergency generator. The California Air Resources Board’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 PM₁₀ (particulate matter less than or equal to 10 microns in diameter) 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 CO₂ and CH₄ were obtained from the CalEEMod User’s Guide, Appendix E, for generators over 1,001 HP² operating in 2022 (first year of Project operation). Table 6.8-7 presents estimated annual GHG emissions associated with testing and maintenance of emergency diesel generators.

**Table 6.8-7
Estimated Annual Diesel Generators GHG Emissions
for the Miramar Reservoir Alternative**

Emissions Source	MT CO₂	MT CH₄	MT N₂O	MT CO₂E
Diesel Generators	19.04	0.00	0.00	19.11
<u>Compressor Station</u>	<u>70.50</u>	<u>0.00</u>	<u>0.00</u>	<u>70.86</u>
<u>Total Generator Emissions</u>	<u>89.54</u>	<u>0.00</u>	<u>0.00</u>	<u>89.97</u>

Source: Appendix E.

Notes: MT CO₂ = metric tons of carbon dioxide; MT CH₄ = metric tons of methane; MT N₂O = metric tons of nitrous oxide; MT CO₂E = metric tons of carbon dioxide equivalent.

² The CalEEMod User’s Guide does not provide emission factors for generator sets rated at 751 to 1000 HP; however, the CO₂ emission factor for generator sets rated at 501–750 HP and greater than 1000 HP are the same and the CH₄ factor for the larger HP range is slightly higher than that for the smaller HP range.

Summary of GHG Emissions

Table 6.8-8 shows the total operational GHG emissions for the Miramar Reservoir Alternative after accounting for amortized construction emissions.

**Table 6.8-8
Summary of Estimated Annual GHG Emissions
for the Miramar Reservoir Alternative**

Emissions Source	MT CO ₂	MT CH ₄	MT N ₂ O	MT CO ₂ E
<i>Avoided Emissions</i>				
Grid Energy Use	41,274.36	1.66	0.35	41,421.23
<i>Miramar Reservoir Alternative</i>				
Mobile Sources	217.37	0.01	0.00	217.64
Electricity Production	30,880.22	2.85	0.06	30,968.58
Wastewater Process Emissions	—	16.12	2.46	1,149.98
Refrigerant Use	12.41	0.00	0.00	12.41
Diesel Generators	89.54 19.04	0.00 0.00	0.00 0.00	89.97 19.11
Waste	10.53	0.62	0.00	26.10
Water	8.51	0.06	0.00	10.48
Amortized Construction Emissions	—	—	—	307.54
Total Project Emissions				32,782.73 11.84
Net Change in Emissions				(8,638.53) (8,709.39)

Source: See Appendix E for complete results.

Notes: MT CO₂ = metric tons of carbon dioxide; MT CH₄ = metric tons of methane; MT N₂O = metric tons of nitrous oxide; MT CO₂E = metric tons of carbon dioxide equivalent.

Implementation of the Miramar Reservoir Alternative, as analyzed at the Project level of analysis, would result in a net decrease of approximately ~~8,709~~639 MT CO₂E per year as a result of offsetting the need for imported water sources and grid energy use.

As further discussed in Sections 6.8.3 and 6.8.4, the Miramar Reservoir Alternative would be consistent with the City of San Diego's CAP. In addition, the North City Project 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. Therefore, no substantial adverse effects would occur due to GHG emissions.

San Vicente Reservoir Alternative

Operation of the San Vicente Reservoir Alternative 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)

The mobile source emissions for the San Vicente Reservoir Alternative are very similar to the Miramar Reservoir Alternative. The San Vicente Reservoir Alternative would have slightly higher emissions due to the Mission Trails Booster Station. Table 6.8-9 presents estimated annual motor vehicle GHG emissions resulting from San Vicente Reservoir Alternative Project-generated trips.

**Table 6.8-9
Estimated Annual Mobile Source GHG Emissions
for the San Vicente Reservoir Alternative**

Emissions Source	MT CO ₂	MT CH ₄	MT N ₂ O	MT CO ₂ E
Mobile Sources	217.37	0.01	0.00	217.64

Source: Appendix E.

Notes: MT CO₂ = metric tons carbon dioxide; MT CH₄ = metric tons of methane; MT N₂O = metric tons of nitrous oxide; MT CO₂E = metric tons of carbon dioxide equivalent.

Electricity Consumption

The generation of electricity through combustion of fossil fuels typically results in emissions of CO₂ and, to a smaller extent, CH₄ and N₂O. Electricity would be required to operate various components of the San Vicente Reservoir Alternative. The Project components will be powered either by an existing on-site North City Renewable Energy Facility or through SDG&E. The City provided electricity use for each Project component. A spreadsheet model was used to calculate GHG emissions from the North City Renewable Energy Facility. CalEEMod was used to calculate GHG emissions from power derived from SDG&E. The purified water electricity usage was estimated to be approximately 144,904,000 kWh/year. Because the Project would offset the demand from electricity from SDG&E, the avoided emissions associated with energy not used is also included in the analysis. Table 6.8-10 presents GHG emissions associated with the typical urban imported water use and the North City Project’s anticipated annual electricity consumption.

**Table 6.8-10
Estimated Annual Electricity Consumption GHG Emissions**

Emissions Source	MT CO ₂	MT CH ₄	MT N ₂ O	MT CO ₂ E
<i>Avoided Emissions</i>				
Grid Energy Use ¹	44,087.86	1.77	0.38	44,244.70
<i>Project Emissions</i>				
San Vicente Reservoir Alternative ²	34,148.31	2.98	0.09	34,248.30
Net Change in Emissions	(9,939.55)	1.21	(0.29)	(9,996.40)

Source: Appendix E

Notes:

¹ SDG&E GHG emission factors used.

² GHG emissions calculated from North City Renewable Energy Facility and SDG&E.

As presented in Table 6.8-10, GHG emissions associated with avoided grid-purchased electricity would be 44,245 MT CO₂E. The purified water electrical demand and resulting GHG emissions from the natural gas use from the North City Renewable Energy Facility and grid-purchased electricity would be 34,248 MT CO₂E per year. Accordingly, the net change in GHG emissions from the Project would be a reduction of 9,996 MT CO₂E per year. Refer to Appendix E for details.

Wastewater Process Emissions

Centralized wastewater treatment processes can result in CH₄ and N₂O emissions. CH₄ emissions can result under processes associated with anaerobic digestion of soluble organic material when the captured biogas is not completely combusted. Table 6.8-11 provides a summary of process and discharge GHG emissions for the San Vicente Reservoir Alternative.

**Table 6.8-11
Estimated Annual Wastewater Process and Discharge GHG Emissions
for the San Vicente Reservoir Alternative**

Source	MT CH ₄	MT N ₂ O	MT CO ₂ E
Incomplete combustion of digester gas	16.68	—	416.98
Wastewater treatment plant with nitrification/denitrification	—	2.30	684.47
Effluent discharge emissions	—	0.16	48.53
Total Process Emissions			1,149.98

Source: Appendix E.

Notes: MT CH₄ = metric tons of methane; MT N₂O = metric tons of nitrous oxide; MT CO₂E = metric tons of carbon dioxide equivalent.

Refrigerant Use

The air-cooled chillers in the North City Project will contain refrigerant. The 60-ton chiller will have a total refrigerant charge of 131 lbs of R-410A refrigerant. As discussed in Section 5.8, refrigerants like R-410A are high GWP hydrofluorocarbons that can have a large impact if released into the atmosphere. The U.S. Environmental Protection Agency-tolerated leak-rate for commercial HVAC equipment is 10% per year. Assuming that rate, it is estimated that up to 13.1 lbs of R-410A refrigerant would be emitted per year. The GWP for R-410A is 2,088, meaning that 1 lb of R-410A is 2,088 times more potent than CO₂ (The Climate Registry 2016). Using the annual leak rate and the GWP, it is estimated that 12 MT CO₂E would be emitted per year from refrigerant use.

Diesel Generators

To conservatively estimate stationary source emissions related to generator use, it was assumed a new diesel-powered emergency generator would be required for back-up power at the NCPWF and compressor station. Table 6.8-12 presents estimated annual GHG emissions associated with testing and maintenance of emergency diesel generators for the San Vicente Reservoir Alternative.

Table 6.8-12
Estimated Annual Diesel Generators GHG Emissions
for the San Vicente Reservoir Alternative

Emissions Source	MT CO ₂	MT CH ₄	MT N ₂ O	MT CO ₂ E
Diesel Generators	19.04	0.00	0.00	19.11
<u>Compressor Station</u>	<u>70.50</u>	<u>0.00</u>	<u>0.00</u>	<u>70.86</u>
<u>Total Generator Emissions</u>	<u>89.54</u>	<u>0.00</u>	<u>0.00</u>	<u>89.97</u>

Source: Appendix E.

Notes: MT CO₂ = metric tons of carbon dioxide; MT CH₄ = metric tons of methane; MT N₂O = metric tons of nitrous oxide; MT CO₂E = metric tons of carbon dioxide equivalent.

Summary of GHG Emissions

Table 6.8-13 shows the San Vicente Reservoir Alternative total operational GHG emissions after accounting for amortized construction emissions.

**Table 6.8-13
Summary of Estimated Annual GHG Emissions
for the San Vicente Reservoir Alternative**

Emissions Source	MT CO ₂	MT CH ₄	MT N ₂ O	MT CO ₂ E
<i>Avoided Emissions</i>				
Grid Energy Use	44,087.86	1.77	0.38	44,244.70
<i>San Vicente Reservoir Alternative</i>				
Mobile Sources	217.37	0.01	0.00	217.64
Electricity Consumption	34,148.31	2.98	0.09	34,248.30
Wastewater Process Emissions	—	16.12	2.46	1,149.98
Refrigerant Use	12.41	0.00	0.00	12.41
Diesel Generators	89,5419.04	0.000.00	0.000.00	89,9719.11
Waste	10.36	0.61	0.00	25.66
Water	8.37	0.06	0.00	10.31
Amortized Construction Emissions	—	—	—	362352.7834
Total Project Emissions				36,106.61 36,046.19
Net Change in Emissions				(8,138.09) (8,198.54)

Source: See Appendix E for complete results.

Notes: MT CO₂ = metric tons of carbon dioxide; MT CH₄ = metric tons of methane; MT N₂O = metric tons of nitrous oxide; MT CO₂E = metric tons of carbon dioxide equivalent.

Implementation of the San Vicente Reservoir Alternative, as analyzed at the Project level of analysis, would result in a net decrease of approximately ~~8,199~~ 138 MT CO₂E per year as a result of offsetting the need for grid energy demand.

As further discussed in Sections 6.8.3 and 6.8.4, the San Vicente Reservoir Alternative would be consistent with the City of San Diego’s CAP. In addition, the North City Project 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. Therefore, no substantial adverse effects would occur due to GHG emissions.

6.8.3.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

There would be **no impact** over existing conditions under the No Project/No Action Alternative because the North City Project would not be built.

Miramar Reservoir Alternative

As discussed in Section 6.8.2.1, the City evaluates GHG significance based on a project's consistency with the City's CAP using the CAP Consistency Checklist. Step 1 of the Checklist determines the project's consistency with the land use assumptions used in the CAP. As discussed in Section 6.1, Land Use, the Miramar Reservoir and San Vicente Reservoir Alternatives are anticipated to be in conformance with adopted land use designations of applicable community or general plans. See Section 6.1 for a description of the zoning and land use designations for the Project components. The Alternatives would be consistent with Step 1 of the CAP Checklist. A completed checklist for the North City Project is included in Appendix E.

Step 2 of the checklist is not applicable to development projects that would not require a certificate of occupancy from the Building Official; rather public projects are required to implement best management practices for construction activities as set forth in the GREENBOOK (for public projects). The City has created the WHITEBOOK, a supplement which takes precedence over the specification language contained in the GREENBOOK and addresses the unique conditions in the City that are not addressed in the GREENBOOK. Mitigation measure (MM) MM-PU-1, which can be found in Section 6.15, Public Utilities, requires the North City Project to adhere to the requirements of Section 702 of the City's WHITEBOOK during construction with regards to the reduction of construction and demolition waste. Step 2 only applies to those parts of the project that require a certificate of occupancy. Section 10-1 of the City's WHITEBOOK implements the City Council Green Building Policy 900-14, which requires new or significantly remodeled City facilities to be designed and constructed to achieve energy consumption levels at least 15% below the then current Title 24 standards. The policy also requires new construction projects over 5,000 square feet to obtain Leadership in Energy and Environmental Design (LEED) Silver Rating Certification from the U.S. Green Building Council. The following discussion outlines the North City Project's applicability to Step 2 of the CAP Consistency Checklist.

Strategy 1: Energy & Water Efficient Buildings

1. Cool/Green Roofs

The North City Project would include a green roof on the NCPWF operations and maintenance building to help reduce energy consumption and stormwater runoff that would meet the minimum requirements of this section, weighing at least 25 pounds per square inch. The Project would answer Yes to this checklist question.

2. Plumbing Fixtures and Fittings

This item requires nonresidential buildings to have plumbing fixtures and fittings that meet the requirements under the California Green Building Standards (CALGreen) standard, Section A5.303.3. As the North City Project is committed to achieving the LEED Silver Certification, one of the main components to the Project's design is water efficiency. The Project is designed to exceed the minimum flow rates in the CALGreen standard. The Project would comply with this standard and would answer Yes to the checklist question.

Strategy 2: Clean & Renewable Energy

3. Energy Performance Standard/Renewable Energy

This checklist question requires nonresidential projects to have an energy budget that exceeds Title 24 standards with indoor lighting, mechanical systems, or through on-site renewable energy generation. The North City Project includes a renewable energy facility that is powered by 90% renewable LFG and 10% natural gas. The Miramar WTP would also have a solar photovoltaic production facility that would completely offset ~~its~~ the energy demand of the improvements to the facility. The energy consumption for the Miramar Reservoir Alternative would be met completely by the North City Renewable Energy Facility. The San Vicente Reservoir Alternative would still require approximately 4.6% of its power from SDG&E. The Project would exceed the minimum requirement for this checklist item and would answer Yes to the checklist question.

Strategy 3: Bicycling, Walking, Transit & Land Use

4. Electric Vehicle Charging

This checklist item requires nonresidential projects of a minimum size to install electric vehicle charging stations at the project site. According to Table 4 of Attachment A of the CAP Consistency Checklist, for industrial, manufacturing or process plants or industrial parks, electric vehicle charging stations are required for projects with 1,000 or more employees, 40 acres or more of land, or 650,000 square feet or more of gross floor area. The North City Project does not meet any of those three criteria, so the answer to the checklist question would be N/A.

5. Bicycle Parking Spaces

This checklist question asks if the project would provide more short- and long-term bicycle parking spaces than is required in the City's Municipal Code (Chapter 14, Article

2, Division 5). The code requires nonresidential developments to have 5% of the required automobile parking available for bicycle parking spaces. As the North City Project is committed to achieving the LEED Silver Certification, one of the main components to the Project's design is centered around location and transportation. The Project is designed to include bike parking in excess of the City's Municipal Code and locker rooms with showers for employees. The Project would comply with this standard and would answer Yes to the checklist question.

6. Shower Facilities

This checklist question asks if the proposed development has over 10 employees and if a shower/changing facility is incorporated into the design. The North City Project includes 10 showers in the men's locker room and 8 showers in the women's locker room. A project with 11–50 employees is required to have one shower stall and two lockers. The North City Project exceeds the requirement and would answer Yes to the checklist question.

7. Designated Parking Spaces

This checklist question asks if the project within a transit priority area provides designated parking for a combination of low-emitting, fuel-efficient, and carpool/vanpool vehicles. The North City Project is not located within a transit priority area and thus this question does not apply to the Project. The Project would answer N/A to this checklist question.

8. Transportation Demand Management Program

This checklist question asks if the project, if it accommodates over 50 employees, includes a transportation demand management program. The North City Project would participate in the City's Transportation Alternatives Program, which subsidizes vanpool, trolley, carpool, and coaster usage as a traffic demand management function. The North City Project would meet the requirements of this question and would answer Yes to the checklist question.

Step 3 of the checklist is only applicable if step one is answered in the affirmative under option three, which is not the case for the Alternatives, which answered step one in the affirmative under option one. Therefore, Step 3 is not applicable to the Alternatives.

The North City Project would be consistent with the City of San Diego's CAP Checklist Steps 1 and 2 as discussed above; Step 3 would not apply to the Project. Accordingly,

the Project is consistent with the City's CAP. In addition, the project 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. Therefore, the Miramar Reservoir Alternative's GHG emissions under CEQA **would not have a significant cumulative impact** on the environment.

San Vicente Reservoir Alternative

The City's CAP Checklist would apply the same to the San Vicente Reservoir Alternative as it did to the Miramar Reservoir Alternative above. There would be no deviations from that analysis. A copy of the completed checklist is included in Appendix E. Therefore, the San Vicente Reservoir Alternative's GHG emissions under CEQA would **not have a significant cumulative impact** on the environment.

6.8.3.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No mitigation is required.

Miramar Reservoir Alternative

No mitigation is required.

San Vicente Reservoir Alternative

No mitigation is required.

6.8.4 ISSUE 2

Would the North City Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emission of GHGs?

6.8.4.1 Impacts

No Project/No Action Alternative

Under the No Project/No Action Alternative, the treatment plants, pipelines, or pump stations would not be built, and no GHG impacts over existing conditions would occur.

Miramar Reservoir Alternative

As discussed in Section 6.8.3.2, the Miramar Reservoir Alternative would be consistent with the City's CAP Checklist Steps 1 and 2; Step 3 would not apply to the North City Project. Accordingly, the Project is consistent with the City's CAP. In addition, the Miramar Reservoir Alternative 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. The following discussion outlines the CAP strategies and how the Miramar Reservoir Alternative is consistent with them.

The City approved the CAP on December 15, 2015 (City of San Diego 2015b). The CAP includes the following five strategies developed to reduce Citywide GHG emissions and to achieve reduction targets for the years 2020 and 2035:

1. Energy & Water Efficient Buildings
2. Clean & Renewable Energy
3. Bicycling, Walking, Transit & Land Use
4. Zero Waste (Gas & Waste Management)
5. Climate Resiliency

Each of the City's CAP strategies includes goals to identify ways to reduce GHG emissions. The Miramar Reservoir Alternative's consistency with the applicable strategies is discussed below.

Strategy 1: Energy & Water Efficient Buildings

The CAP's first strategy is aimed at energy and water efficient buildings. The City's goals under strategy 1 include reducing residential building and municipal energy consumption, and reducing daily per-capita water consumption. Actions to reduce energy consumption include consideration of a residential Energy Conservation and Disclosure Ordinance and a Municipal Energy Strategy and Implementation Plan. Actions related to water efficiency include implementing new water rates and billing structure, consideration of a Water Conservation and Disclosure Ordinance, and implementation of an Outdoor Landscaping Ordinance requiring weather-based irrigation controllers. Strategy 1 actions are directed at City staff and City Council to adopt ordinances, plans, and supporting City requirements to achieve the City's targets.

The North City Project would support achievement of Strategy 1 by providing a less energy-intensive, domestic water supply source for the region. Electricity is consumed, and associated GHG emissions are generated, as a result of water supply, treatment, and distribution and treatment of wastewater generated. The Project's provision of a locally produced water supply would substantially reduce energy consumption currently required for the import, supply, and conveyance of traditional (imported) water sources. In addition, the Project would not conflict with the City's ability to implement the actions identified in the CAP related to energy and water efficient buildings. The Project would be consistent with the applicable CAP goals and actions identified in Strategy 1.

Strategy 2: Clean & Renewable Energy

Strategy 2 focuses on clean and renewable energy. Strategy 2 goals of transitioning to 100% renewable energy on the Citywide electrical grid by 2035, increasing municipal zero-emissions vehicles, and converting existing diesel municipal solid waste collection trucks to compressed natural gas or other alternative low-emissions fuels would be implemented by the City and would not apply to implementation of the North City Project.

The North City Project would include a renewable energy facility that would use 90% renewable LFG and 10% natural gas. The Miramar WTP would also have a solar photovoltaic system that would completely cover ~~its~~ the power needs of the improvements to the facility. The North City Renewable Energy Facility power would completely offset the power consumption needs of the Miramar Reservoir Alternative and would cover 95.4% of the San Vicente Reservoir Alternative's power consumption needs. Therefore, the Project would support the City's goal to increase use of renewable energy. In addition, the Project would not conflict with the City's ability to implement the actions identified in the Strategy 2.

Strategy 3: Bicycling, Walking, Transit & Land Use

Strategy 3 outlines goals and actions related to bicycling, walking, transit, and land use. Strategy 3 goals include increasing the use of mass transit, increasing commuter walking and bicycling opportunities, reducing vehicle fuel consumption, and promoting effective land use to reduce vehicle miles traveled.

The North City Project would include bicycle parking, shower facilities, and locker rooms. The Project would also participate in the City's Transportation Alternatives Program, which subsidizes vanpool, trolley, carpool, and coaster usage as a traffic

demand management function. Therefore, the Project would support the City's strategy to reduce vehicle miles traveled. In addition, the Project would not conflict with the City's ability to implement the actions identified in the Strategy 3.

Strategy 4: Zero Waste (Gas & Waste Management)

Strategy 4, which focuses on zero waste, includes the goal of diverting solid waste and capturing landfill CH₄ gas emissions, and capturing CH₄ gas from wastewater treatment.

Both of the Strategy 4 goals would be implemented by various City departments and the North City Project would not conflict with implementation of the actions required to meet the City's targets. In addition, the Project would capture CH₄ gas during wastewater treatment. Furthermore, the Project would comply with the goal of diverting 75% of the solid waste by 2020 consistent with statewide goals. The Project would be consistent with the applicable CAP goals and actions identified in Strategy 4.

Strategy 5: Climate Resiliency

The fifth and last strategy relates to climate resiliency and includes the goal of increasing tree canopy coverage. The action under this goal includes consideration of a Citywide Urban Tree Planting Program, which would incorporate water conservation measures and prioritization of drought-tolerant and native trees and plantings in areas with recycled water.

The intent of the North City Project is to avoid or minimize all potential impacts to trees and sensitive vegetation communities where possible. However, minimal vegetation removal may occur during construction of the Project components. As discussed in Section 6.4, Biological Resources, potential temporary and permanent impacts to sensitive upland vegetation communities will be mitigated per the mitigation ratios outlined in that section. Based on the site plans, the Project does not include specific removal of any trees and would avoid or minimize disturbance of existing trees to the extent feasible. The Project includes additional planting of canopy trees and other vegetation that would support this strategy. Moreover, the Project would not conflict with the City's actions to increase tree canopy coverage through a planting program and supporting measures. Strategy 5 of the CAP is not directly applicable to the Project; however, the Project would not conflict with the City's actions to implement Strategy 5.

The Miramar Reservoir Alternative would not conflict with the CAP strategies applicable to the North City Project, and the Miramar Reservoir Alternative would not impede the City's ability to implement the actions identified in the CAP to achieve the CAP's goals and targets and associated GHG emission reductions. As such, the Miramar Reservoir Alternative would comply with, and support the goals and policies of, the City's CAP, as well as those of the General Plan Conservation Element (CE-A.2, CE-A.8, CE-A.9, CE-F.3, CE-I.4, and CE-I.5), and no adverse impact would occur.

San Vicente Reservoir Alternative

The San Vicente Reservoir Alternative would apply the same to the City's CAP as the Miramar Reservoir Alternative. The San Vicente Reservoir Alternative would therefore be consistent with the City's CAP, and no adverse impact would occur.

6.8.4.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

Under the No Project/No Action Alternative, no construction, including pipelines or related infrastructure, would occur, and the Project area would remain in its current condition. Therefore, the No Project/No Action Alternative **would not result in any impacts** related to generating GHG emissions over existing conditions or conflict with an applicable plan or policy because no construction would occur.

Miramar Reservoir Alternative

The Miramar Reservoir Alternative would be consistent with the City's CAP as shown using the CAP Consistency Checklist and through the five CAP strategies. Therefore, under CEQA, impacts would be **less than significant**.

San Vicente Reservoir Alternative

The San Vicente Reservoir Alternative would be consistent with the City's CAP as shown using the CAP Consistency Checklist and through the five CAP strategies. Therefore, under CEQA impacts would **be less than significant**.

6.8.4.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No mitigation is required.

Miramar Reservoir Alternative

No mitigation is required.

San Vicente Reservoir Alternative

No mitigation is required.

6.8.5 LEVEL OF IMPACT AFTER MITIGATION

The North City Project would be consistent with the City's CAP as shown above and in Appendix E. No mitigation would be required. The Miramar Reservoir Alternative and San Vicente Reservoir Alternative GHG emissions would result in a less-than-significant impact related to the generation of GHG emissions.

6.9 HEALTH AND SAFETY/HAZARDS

6.9.1 INTRODUCTION

This section identifies potential hazards associated with the North City Project and mitigation measures to reduce these impacts.

Potential hazards associated with implementation of the North City Project include natural hazards such as those associated with development of a project 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 project, the potential for the release of a hazardous substance, and the potential for disturbance of a site containing hazardous materials. The North City Project could also cause hazards due to its proximity to airports.

The North City Project has been designed to meet the City of San Diego's development regulations to the extent feasible; however, due to Government Code Section 53091(e) the North City Project is not required to meet all standards (see Section 6.1, Land Use). Nonetheless, in all cases related to safety, the North City Project has been designed to meet the standards of applicable development regulations.

6.9.2 CEQA THRESHOLDS OF SIGNIFICANCE

The City has identified the following specific significance criteria to be addressed in the EIR/EIS, as outlined in the Public Notice of Preparation for the Pure Water San Diego Program, North City Project (City of San Diego 2016a). The City of San Diego's California Environmental Quality Act (CEQA) Significance Determination Thresholds (City of San Diego 2016b) contain the following additional guidance related to health and safety.

6.9.2.1 Hazards and Public Health

1. Would the project expose people or property to health hazards, including fire?

6.9.2.2 Hazardous Materials Transport, Use, and Disposal

1. Would the project create future risk of an explosion or the release of a hazardous substance (including, but not limited to gas, oil, pesticides, chemicals, or radiation)?

2. Would the project expose people or the environment to a significant hazard through the routine transport, use, or disposal of hazardous materials?
3. Would the project result in hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within a quarter-mile of an existing or proposed school?

The City's California Environmental Quality Act Significance Determination Thresholds (City of San Diego 2016b) provide the following guidance to determine the significance of impacts related to hazardous materials:

- 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. (Bulletin 116 available at: <https://www.sandiego.gov/sites/default/files/dsdib116.pdf>.)

6.9.2.3 Existing Hazardous Materials Sites

1. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or environment?

The City's California Environmental Quality Act Significance Determination Thresholds (City of San Diego 2016b) provide the following guidance to determine the significance of project sites located on or near known contamination sources:

- 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.sandiegocounty.gov/content/sdc/deh/lwqd/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).

6.9.2.4 Airport Hazards

1. Would the project result in a safety hazard for people working in a designated airport influence area?

The City’s California Environmental Quality Act Significance Determination Thresholds (City of San Diego 2016b) provide the following guidance to determine the significance of airport compatibility impacts:

- Projects 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.

- Inconsistency with an Airport Land Use Compatibility Plan (ALUCP).

6.9.3 ISSUE 1

Would the North City Project expose people or property to health hazards, including fire?

6.9.3.1 Impacts

No Project/No Action Alternative

Under the No Project/No Action Alternative, the North City Pure Water Facility (NCPWF) and ancillary facilities, pipelines, and other features would not be constructed. Therefore, impacts/effects related to public health/fire hazards would not occur.

Miramar Reservoir Alternative

The Miramar Reservoir Alternative would primarily be located within developed areas and roadways; however, various components are located adjacent to, or in the case of pipelines, traverse open space areas with potentially flammable materials such as brush, grass, or trees. In areas within and adjacent to open space, construction would pose a risk of wildland fires due to the possibility for engine-powered equipment and vehicles to produce exhaust particles that could ignite fire. The potential to ignite a wildfire due to construction activities is considered an adverse impact.

Brush management would occur at all facilities in accordance with Section 142.0412 of the San Diego Municipal Code, where feasible and required (i.e., where sufficient space between the structure and property boundary exist). Implementation of brush management would ensure no adverse impacts related to wildlife hazards from operation of Miramar Reservoir Alternative.

The potential for hazards, including fire, also exist where toxic or flammable chemicals are used in the treatment process. Hazards related to toxic or flammable chemicals are discussed in more detail below in Section 6.9.4.

San Vicente Reservoir Alternative

The San Vicente Reservoir Alternative would also primarily be located within developed areas and roadways; however, various components are located adjacent to, or in the case of pipelines, traverse open space areas with potentially flammable materials such as brush, grass, or trees. In areas within and adjacent to open space, construction would pose a risk of wildland fires due to the possibility for engine-powered equipment and vehicles to produce exhaust particles that could ignite fire. The potential to ignite a wildfire due to construction activities is considered an adverse impact.

Brush management would occur at all facilities in accordance with Section 142.0412 of the San Diego Municipal Code, where feasible and required (i.e., where sufficient space between the structure and property boundary exist). Implementation of brush management would ensure no adverse impacts related to wildlife hazards from operation of San Vicente Reservoir Alternative.

The potential for hazards, including fire, also exist where toxic or flammable chemicals are used in the treatment process. Hazards related to toxic or flammable chemicals are discussed in more detail below in Section 6.9.4.

6.9.3.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

No impacts to public health/fire hazards would occur under the No Project/No Action Alternative.

Miramar Reservoir Alternative

Wildfire Hazards

Engine-powered equipment and vehicles associated with the construction of the Miramar Reservoir Alternative 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** under CEQA.

San Vicente Reservoir Alternative

Wildfire Hazards

The San Vicente Reservoir Alternative could increase wildfire hazards similar to the Miramar Reservoir Alternative; therefore, impacts related to wildfire hazards would be **potentially significant** under CEQA.

6.9.3.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No impacts related to public health/fire hazards would occur under the No Project/No Action Alternative, and no mitigation is required.

Miramar Reservoir Alternative

MM-HAZ-1 A Construction Fire Prevention/Protection Plan shall be prepared by the City of San Diego or its contractors prior to construction of the North City Project, as determined necessary by the City of San Diego. Construction within or immediately adjacent to areas of dense foliage during periods of low humidity and/or high winds (Red Flag Warning periods) shall be prohibited. During all other non-Red Flag Warning periods, necessary brush fire prevention and management practices shall be incorporated and shall address common construction-related ignition prevention and hot-works (any spark-, heat-, or flame-producing activity) policies, as well as necessary fire prevention equipment to be on site during all construction activities. Details of the Construction Fire Prevention/Protection Plan shall be determined as site plans for each component are finalized to the satisfaction of the City of San Diego Fire Marshal. Plans shall also contain fire safety information to be disseminated to construction crews during regular safety meetings. Fire prevention techniques shall be applied during construction as deemed necessary by the City of San Diego Fire Marshal based on the vegetation (fuels) within the site and surrounding areas.

San Vicente Reservoir Alternative

Mitigation measure MM-HAZ-1 shall also be required for the San Vicente Reservoir Alternative.

6.9.4 ISSUE 2

Would the North City Project 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 North City Project expose people or the environment to a significant hazard through the routine transport, use, or disposal of hazardous materials?

6.9.4.1 Impacts

No Project/No Action Alternative

Under the No Project/No Action Alternative, the NCPWF and ancillary facilities, pipelines and other features would not be constructed. Therefore, impacts/effects related to hazardous materials transport, use and disposal would not occur.

Miramar Reservoir Alternative

Construction

Construction of the Miramar Reservoir Alternative would involve hazardous materials typically used in construction, such as fuel, oils, paints, epoxies, etc. Oils and fuel would be used for operation of construction equipment; protective coatings such as paints would be applied to exposed piping and structures including the proposed NCPWF facility, improvements to existing facilities, and the proposed pump stations; chlorinated potable water would be used to flush and clean the proposed pipeline prior to use; and concrete would be used to construct facilities as well as to line casings in trenchless pipe sections.

None of these materials are considered extremely hazardous, and all would be handled in accordance with applicable federal, state, and local laws, which require compliance with the U.S. Department of Transportation Title 49 of the Code of Federal Regulations and the California Highway Patrol Vehicle Code. Therefore, the transport, use, storage, or disposal of hazardous materials during construction would not cause an adverse impact as the material handled would not pose a significant risk to people or the environment.

Operation

No chemicals would be associated with operation of the NCPWF Influent Pump Station, North City Pure Water Pump Station (North City Pump Station), Morena

Wastewater Forcemain and Brine/Centrates Line (Morena Pipelines), the North City Pure Water Pipeline (North City Pipeline), or the Landfill Gas (LFG) Pipeline; therefore, these facilities and pipelines are not discussed in further detail below. Various toxic or flammable chemicals such as chlorine, sodium hypochlorite, ferric chloride, sodium bisulfite, and polymers would be used in the proposed wastewater and water treatment processes and/or odor control for the proposed North City Project components discussed below.

Morena Pump Station

Ferric chloride would be used at the Morena Pump Station for odor control.

North City Water Reclamation Plant Expansion

The North City Water Reclamation Plant (NCWRP) would require expanded chemical use, and therefore, expanded chemical handling systems. Additional chemicals required include methanol, ferric chloride, high purity oxygen, and chemically enhanced primary treatment (CEPT) polymer (MWH Americas et al. 2016). Methanol is considered highly flammable; the methanol storage and delivery system would be designed according to National Fire Protection Association (NFPA) 497 requirements.

North City Renewable Energy Facility

Urea 41% would be required for the oxidation and non-selective catalyst reduction at the North City Renewable Energy Facility.

North City Pure Water Facility Miramar Reservoir

NaOCl (delivered at 12.5% concentration and stored at 6.9% concentration after dilution), aqueous ammonia (NH₃) (18% concentration), antiscalant (100% concentration), sulfuric acid (H₂SO₄) (93% concentration), citric acid (C₆H₈O₇) (50% concentration), NaOH (25% concentration), and sodium bisulfite (NaHSO₃) (25% concentration) are the required chemicals at the NCPWF. All liquid chemicals required for NCPWF operation will be stored in the chemical storage area. This will provide a single delivery location for the chemicals for the facility's safety and ease of operation. The proposed liquid chemical system storage is sized to meet 14 days of demand at average consumption (MWH Americas et al. 2016).

A number of the chemicals would be incompatible with each other, including $C_6H_8O_7$, NaOH, NH_4OH , NaOCL, and antiscalant. Incompatible chemicals will be stored a minimum of 20 feet from each other in accordance with the International Fire Code.

The bulk chemical storage tanks will be installed on slabs on grade with secondary containment for each chemical sized to contain 110% of the largest volume of one tank plus volume to contain a 25-year rain event (per International Fire Code 2015, p. 331). Spilled chemicals will be collected within the sumps/containment and disposed of off site. Pumps will be located under canopies for weather protection; the tanks will not be provided with canopies.

The oxygen for the ozone generators in the Ozone System will be supplied by a liquid oxygen (LOX) system providing a total LOX storage capacity of 30,000 gallons. Access to the facility will be restricted by chain-link fence around the concrete pad and protected by bollards. A concrete apron will be provided for truck delivery, and a truck filling station will be located on the west side of the facility for easy access during filling.

Dechlorination Facility

Sodium bisulfate will be used to dechlorinate purified water in the North City Pipeline prior to discharge into the Miramar Reservoir. A maximum of 471 gallons per day would be used during maximum 34 million gallons per day (MGD) flow rates and a chlorine residual level of 4 milligrams per liter (mg/L) in the North City Pipeline. Two bulk sodium bisulfate tanks will be located inside a chemical storage building at this facility. Each tank will have a capacity of 74,000 gallons and will be constructed of fiberglass reinforced plastic. The storage tanks will be located within a 6-inch concrete curb containment area and will be sloped to direct overflows, draining, and spills to the building sump that will be plumbed to the existing sewer system (HDR ~~2016~~2018).

Metro Biosolids Center Improvements

Minor additions of polymer and ferric chloride may be necessary as part of the Metro Biosolids Center (MBC) improvements; however, these additions are inconsequential to the operations of the facility and would not result in substantial changes compared to existing conditions (BLP Engineers Inc. 2016)

Miramar Water Treatment Plant

The Miramar Water Treatment Plant (WTP) would require less ferric chloride and ozone due to improved quality of the influent water as a result of the Miramar Reservoir Alternative proposal to augment Miramar Reservoir with purified water. A small amount of additional sodium hydroxide may be required to increase the pH of the product water to prevent corrosion in the distribution system. Overall, changes in the transport, use, and storage of chemicals at the Miramar WTP would be inconsequential compared to existing conditions (Borchardt et al. 2016).

Summary of Operational Impacts

The transport, transfer, storage, and use of the materials discussed above if not properly stored and contained would create a risk of release of hazardous substances, constituting a potential adverse health hazard.

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.

The delivery of chemicals to each facility would occur along public roadways. Major transport routes within the City include Interstate 5 (I-5), I-805, I-8, and I-15; and State Route 52 (SR-52) and SR-163. Deliveries to the NCWRP and NCPWF would likely travel along I-805, Miramar Road, and Eastgate Mall. 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 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.

Transportation of hazardous materials is required to comply with all U.S. Department of Transportation, California Department of Transportation, U.S. Environmental Protection Agency (EPA), Department of Toxic Substances Control, California Highway Patrol, and California State Fire Marshal regulations. The U.S. Department of Transportation Office of Hazardous Materials Safety prescribes strict regulations for the transportation of hazardous materials, as described in Title 49 of the Code of Federal Regulations. Transportation along state roadways within or near the North City Project area is also subject to all

hazardous materials transportation regulations established by the California Highway Patrol pursuant to the California Vehicle Code. Compliance with all applicable federal and state laws related to the transport of hazardous materials would minimize the potential for a release and would provide for prompt and effective cleanup if an accidental release were to occur.

Facilities have been designed to 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 site in concrete containment structures with a 110% spill containment capability. Where 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 of incompatible materials 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; or where appropriate, discharged to the sewer system. 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. However, if not properly stored and contained chemicals would create a risk of release of hazardous substances, constituting a potential adverse health hazard.

The chemical feed system connecting chemicals from their storage areas to their points of application would be protected from leaks utilizing piping with double containment walls to prevent chemical leaks from reaching soil or groundwater.

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 and other ancillary facilities 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). However, if not properly stored and contained, on-site chemicals would create a risk of release of hazardous substances, constituting a potential adverse health hazard.

The LFG Pipeline would transport landfill gas from the City's Miramar Landfill gas collection system to the NCWRP via a new 12-inch-diameter pipeline. Landfill gas may be released from the proposed pipeline as a result of material failure, seismically induced stresses, damage to the pipeline (such as by accidental contact during third-party excavation activities), operator error, or vandalism. Landfill gas is composed primarily of methane and carbon dioxide. Methane is not toxic, but is classified as a simple asphyxiate, possessing an inhalation hazard. If natural gas is breathed in high concentration, oxygen deficiency can result in serious injury or death. Methane gas is also flammable and within an enclosed space could result in an explosion.

The City would conduct regular inspections of the LFG Pipeline in the field during construction to ensure that all material and work is compliant with industry standards. The City would continue to regularly inspect the LFG Pipeline once constructed to detect signs of corrosion or weakness. The risk of a pipeline rupture or failure is considered low, and no adverse impacts would occur.

San Vicente Reservoir Alternative

Similar to the Miramar Reservoir Alternative, none of the materials which would be used during construction are considered extremely hazardous, and all would be handled in accordance with applicable federal, state, and local laws. Therefore, the transport, use, storage, or disposal of hazardous materials during construction would not cause an adverse impact as the material handled would not pose a significant risk to people or the environment.

The transport, use, and disposal of hazardous materials would generally be the same under the San Vicente Reservoir Alternative as for the Miramar Reservoir Alternative for all shared Project components and if not properly stored and contained would create a risk of release of hazardous substances, constituting a potential adverse health hazard.

Similar to the North City Pipeline, no hazardous materials would be associated with the operation of the San Vicente Pipeline. In addition, the Mission Trails Booster Station (MTBS) would also not involve the use of hazardous materials.

The NCPWF San Vicente Reservoir (SVR) would have fewer treatment processes located at the facility than for the NCPWF Miramar Reservoir (MR). No Ozone System, or associated LOX system, would be operated at the NCPWF-SVR. However, all other chemicals associated with the pre-treatment, treatment, and post-conditioning process at the NCPWF-MR would also be transported to, stored, and used at the NCPWF-SVR.

6.9.4.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

No impacts related to the transport, use, or disposal of hazardous materials would occur under the No Project/No Action Alternative.

Miramar Reservoir Alternative

The transport, use, storage, and disposal of hazardous materials is regulated by the County DEH Hazardous Materials Division, and would be conducted according to all applicable federal, state, and local regulations. Consequently, the use of chemicals and materials alone for their intended purpose would not pose a significant risk to the public. However, accidental spills during operation and maintenance activities could occur, resulting in a **potentially significant** impact under CEQA.

San Vicente Reservoir Alternative

The transport, use, storage, and disposal of hazardous materials is regulated by the County DEH Hazardous Materials Division, and would be conducted according to all applicable federal, state, and local regulations. Consequently, the use of chemicals and materials alone for their intended purpose would not pose a significant risk to the public. However, accidental spills during operation and maintenance activities could occur, resulting in a **potentially significant** impact under.

6.9.4.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No impacts related to hazardous materials transport, use, delivery, and disposal would occur, and no mitigation is required.

Miramar Reservoir Alternative

MM-HAZ-2 A Hazardous Materials Reporting Form shall be prepared, as determined necessary by the City of San Diego, and a Hazardous Materials Review conducted by the Development Services Department for each North City Project component in compliance with the City of San Diego’s Information Bulletin 116.

MM-HAZ-3 A Spill Prevention and Emergency Response Plan shall be completed, as determined necessary by the City of San Diego, for each North City Project component which includes on-site storage of hazardous materials (i.e., Morena Pump Station, NCWRP Expansion, North City Renewable Energy Facility, NCPWF, and Dechlorination Facility) prior to the commencement of operation. 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.

San Vicente Reservoir Alternative

Mitigation measures MM-HAZ-2 and MM-HAZ-3 would also be applicable to the San Vicente Reservoir Alternative.

6.9.5 ISSUE 3

Would any component of the North City Project 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?

6.9.5.1 Impacts

No Project/No Action Alternative

Under the No Project/No Action Alternative, the NCPWF and ancillary facilities, pipelines and other features would not be constructed. Therefore, impacts/effects related to existing hazardous materials sites would not occur.

Miramar Reservoir Alternative

The Miramar Reservoir Alternative has the potential to intersect or be affected by 13 sites/cases which may pose an adverse health hazard during construction through excavation, disturbance, and exposure to known hazardous materials sites. These sites are discussed in more detail below in relation to the Project Alternative component with which they are associated and are shown on Figure 5.9-2.

Morena Pump Station

A known unauthorized release occurred at Lloyd Pest Control, located at 935 Sherman Street (see Site ID 13 on Figure 5.9-2). This site is located approximately 200 feet upgradient of the proposed Morena Pump Station site. The study performed by Donan Environmental Services indicates that contaminated soil and groundwater was encountered at this site. Based on review of available information and discussion with Mr. Greg Delson, project manager of Donan Environmental Services, it is anticipated that dewatering operations for the construction of the proposed Morena Pump Station will likely draw the contaminated plume from this site toward the pump station site.

Morena Pipelines

A total of 9 sites/cases are documented along the Morena Pipelines alignment.

Three gas stations located at the intersection of Governor Drive and Genessee Avenue have open active cases:

- United Oil Service Station (formerly Chevron), 3860 Governor Drive (Site ID 1)
- World Oil Service Station (formerly Exxon), 3918 Governor Drive (Site ID 2)
- Mobil Service Station, 3861 Governor Drive (Site ID 3)

Prior study by Stantec indicates that soil and groundwater contamination, due to unauthorized releases on MIC Gastation Inc., 4592 Clairemont Drive, extend beneath Clairemont Drive (see Figure 5.9-2, Site ID 4). Although the site has been redeveloped into a strip mall, the case has remained open.

Two gas stations are located at the intersection of Clairemont Drive and Balboa Avenue have documented soil and groundwater petroleum hydrocarbon contamination and shallow groundwater:

- Shell Oil Service Station (currently abandoned), 3901 Clairemont Drive (Site ID 5)
- Tune Craft #2 (formerly ARCO), 3901 Clairemont Drive (Site ID 6)

Three sites with unauthorized releases are located at the intersections of Morena Boulevard with Jellet Street, Cushman Avenue, and between the intersections of Napa Street and Linda Vista Road:

- USA Service Station (formerly Prestige Station), 2505 Morena Boulevard (Site ID 10)¹
- Valero Service Station (formerly Ultramar), 1083 Morena Boulevard (Site ID 11)
- Carl's Junior (formerly Texaco), 845 Morena Boulevard (Site ID 12)

Based on prior studies and the available information, it is anticipated that the potential of encountering petroleum hydrocarbon-contaminated soil and groundwater, and vapors during construction at the above listed sites is considered high.

The Morena Pipelines traverse the Formerly Used Defense Site, Camp Matthews, Range Complex No. 1, where weapons testing and training was previously conducted, and as such may contain unexploded ordnances (UXO), abandoned or buried munitions, and impacted soil that could be reactive/ignitable. The Morena Pipelines are located in the outer edge of the range away from the target center where munitions are not expected, and would almost entirely be located within roadway right-of-way. However, a trenchless section of the Morena Pipelines crossing Rose Canyon just east of the Genesee Avenue Bridge would require excavations outside of the roadway right-of-way for the tunnel access shafts.

North City Water Reclamation Plant, North City Pure Water Facility Influent Pump Station, and North City Renewable Energy Facility

Various chemical, sewage, and recycled water spills have occurred at the NCWRP site; however, all have been contained and managed appropriately. Therefore, the risk of encountering a hazardous materials site is considered low.

North City Pure Water Facility and North City Pump Station

The NCPWF site is currently undeveloped. There are no documented sites/cases within the NCPWF site or the immediate vicinity; therefore, the risk of encountering a hazardous materials site is low during construction of the NCPWF and North City Pump Station.

¹ Site IDs 7, 8, and 9 were removed from the analysis due to revisions to the Morena Pipelines alignment.

North City Pure Water Pipeline and Dechlorination Facility

There is documented evidence that contamination at Scripps/Miramar Chevron Car Wash (9650 Miramar Road) impacts utility conduits and vaults along Miramar Road. The site is shown on Figure 5.9-2 as Site ID 15.

Marine Corps Air Station (MCAS) Miramar, Site 1A–1D, 1F, which is located along Miramar Road between the intersection of Keenan Street and Anderson Avenue, has a documented history dating back to prior of 1966 of contaminated soil with wide range of substances. The site is located along the south side of the project alignment and is shown on Figure 5.9-2 as Site ID 16.

Based on the available information, it is anticipated that the potential of encountering contaminated soil and groundwater, and vapors during construction is considered high at these two locations.

The North City Pipeline is located adjacent to an active Installation Restoration (IR) site near the intersection of Miramar Road and Dowdy Drive; however, construction would occur entirely within the right-of-way within previously disturbed soils; therefore, the potential for encountering munitions and explosives of concern is unlikely.

Landfill Gas Pipeline

The LFG Pipeline alignment will primarily extend through open space on MCAS Miramar and the Miramar National Cemetery. An active IR site is located a few hundred feet to the east of the LFG Pipeline alignment, but does not intersect the alignment. No sites/cases on MCAS Miramar that intersect with or are adjacent to the alignment are considered to pose a risk. As a result of military training activities, UXO may be present on MCAS Miramar; however, the LFG Pipeline would be constructed entirely within the City's existing utility easement, which has been previously disturbed.

Miramar Water Treatment Plant

There are no indications of contaminated soil or groundwater on the Miramar WTP site; therefore, the risk of encountering a hazardous materials site is low.

San Vicente Reservoir Alternative

The San Vicente Reservoir Alternative has the potential to intersect or be affected by 23 sites/cases which may pose an adverse health hazard during construction through excavation, disturbance, and exposure to known hazardous materials sites.

Ten sites associated with the Morena Pump Station and Pipelines are discussed above under the Miramar Reservoir Alternative. Other potential risks associated with Project components common to both North City Project Alternatives are also discussed above.

No sites were identified within the construction footprint of the NCPWF-SVR or the MTBS. Twelve sites which may pose an environmental risk during construction were identified within the San Vicente Pipeline alignment. These sites are discussed in more detail below and are shown on Figure 5.9-2.

San Vicente Purified Water Pipeline

The following gasoline service stations with either past or current on-site aboveground storage tanks and underground storage tanks (USTs) were recorded along the San Vicente Pipeline alignment which have a high potential to impact the alignment:

- 7-Eleven Store, 9750 Cuyamaca Street, Santee, CA 92071 (Site ID 18)
- Circle K Corp #2981, 12320 Willow Road, Lakeside, CA 92040 (Site ID 19)
- Circle K/Tosco, 10219 Mast Boulevard, Santee, CA 92071 (Site ID 20)
- Mobil, 9750 Magnolia Avenue, Santee, CA 92071 (Site ID 21)
- 7-Eleven Store #26651, 10195 Riverford Road, Lakeside, CA 92040 (Site ID 22)
- 7-Eleven Store #13666, 11610 Riverside Drive, Lakeside, CA 92040 (Site ID 23)
- 7-Eleven Store #13661, 9351 Carlton Hills Boulevard, Santee, CA 92071 (Site ID 26)
- Mobil, 10496 Clairemont Mesa Boulevard, San Diego, CA 92124 (Site ID 28)

Where the alignment is located within the vicinity of each of these sites, due to the proximity of the site and the presence of shallow groundwater, there is the potential for encountering hydrocarbon-contaminated soil and groundwater during construction.

The portion of the San Vicente Pipeline which traverses MCAS Miramar is entirely the repurposed 36-inch-diameter recycled water line. No trenching or other excavation activities will occur on MCAS Miramar in association with the construction of this pipeline, and the potential for encountering UXO is unlikely.

The proposed San Vicente Pipeline alignment would be located in the vicinity of the mapped limits of the South Miramar Landfill, in particular along Copley Drive and

Copley Park Place, and would traverse between phases I and II of the West Miramar Landfill (see Figure 5.9-2, Site ID 24 and Site ID 25). Considering the proximity of the alignment to the landfill, there is a potential risk of encountering buried trash and/or methane gas intrusion during construction.

The Padre Dam Municipal Water District is located within the vicinity of the San Vicente Pipeline alignment and has documented cases of petroleum hydrocarbon contamination and potential groundwater contamination (see Figure 5.9-2, Site ID 27). Although the site is downgradient from the alignment, due to its close proximity there is a potential for encountering hydrocarbon contaminated soil and groundwater during construction.

Tierrasanta is located on the site of the former USMC Camp Elliot. There is a potential for encountering bullet casings/particles and/or UXO on this site. However, where the San Vicente Pipeline alignment would traverse this area, construction would occur entirely within the right-of-way within previously disturbed soils; therefore, the potential for encountering bullet casings/particles and/or UXO is unlikely. It should be noted that the Department of Toxic Substances Control has an open case for cleanup of contaminated soils from munitions.

6.9.5.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

No impacts related to hazardous materials sites would occur under the No Project/No Action Alternative.

Miramar Reservoir Alternative

Trenching, excavation, and dewatering operations performed at certain facilities and along certain segments of pipeline may encounter contaminated soil and groundwater. There are a large number of facilities with USTs along the pipeline corridors, and exposure to vapor intrusion during construction is possible. Impacts related to the potential to encounter a hazardous materials site during construction of the Miramar Reservoir Alternative, thereby posing a hazard to the public or environment, are **potentially significant** under CEQA. In addition, there is a potential to encounter munitions from historic military activities during excavations of access shafts for the trenchless portion of the Morena Pipelines crossing Rose Canyon, thereby resulting in a **potentially significant** impact.

San Vicente Reservoir Alternative

Similar to the Miramar Reservoir Alternative, trenching, excavation, and dewatering operations performed at certain facilities and along certain segments of may encounter contaminated soil and groundwater. There are a large number of facilities with USTs along the pipeline corridors, and exposure to vapor intrusion during construction is possible. Nine sites with past or current on-site aboveground storage tanks and USTs were identified along the San Vicente Pipeline alignment, as compared to three sites along the North city Pipeline alignment. The alignment is adjacent to the Miramar Landfill where there is a potential risk of encountering buried trash and/or methane gas intrusion during construction. Impacts related to the potential to encounter a hazardous materials site during construction of the San Vicente Reservoir Alternative, thereby posing a hazard to the public or environment, are **potentially significant** under CEQA. In addition, there is a risk of encountering munitions during excavations of access shafts for the trenchless portion of the Morena Pipelines crossing Rose Canyon, thereby resulting in a **potentially significant** impact.

6.9.5.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No impacts related to hazardous materials sites would occur under the No Project/No Action Alternative and therefore, no mitigation is required.

Miramar Reservoir Alternative

MM-HAZ-4 In the event that hazardous substances are encountered during construction, construction activities in the area shall immediately cease. All applicable procedures outlined in the City of San Diego “WHITEBOOK” Part 1 – General Provisions (A), Section 7-22, Encountering or Releasing Hazardous Substances shall be followed (City of San Diego 2015). In the case that groundwater contaminated with petroleum is encountered, the requirements of Section 7-8.6.6 of the “WHITEBOOK” shall be followed.

These procedures and requirements include, but are not limited to:

1. Comply with all applicable federal, state, and local laws and regulations and notification requirements.
2. Follow the guidelines of the current edition of the County of San Diego Department of Environmental Health (DEH) SAM Manual in the event that contaminated soil is encountered.

3. Immediately notify the Engineer, who in turn shall contact the City's Environmental Services Department, Hazardous Materials Management Program.
4. In areas of known petroleum-contaminated soil, monitoring for the presence of contamination shall be the contractor's responsibility, and an operational Photo Ionization Device shall be used at all times.
5. All suspected contaminated soil shall be stockpiled at a location approved by the Engineer and the HMMP on a relatively impervious surface.
6. Contaminated soil shall be disposed of dependent on classification and as approved by the Hazardous Substances Management Plan.

MM-HAZ-5 Prior to construction, the City shall conduct a survey where excavation is proposed to occur outside of roadway right-of-way for trenchless construction of the Morena Pipelines at Rose Canyon within the Camp Matthews Formerly Used Defense Site – Range Complex No.1 to identify potential munitions impacts. If the survey results indicate a potential risk for encountering munitions during excavation, an unexploded ordnances (UXO) identification, training, and reporting plan will be prepared and implemented during construction.

San Vicente Reservoir Alternative

Mitigation measures MM-HAZ-4 and MM-HAZ-5 would also be applicable to the San Vicente Reservoir Alternative.

6.9.6 ISSUE 4

Would the North City Project result in a safety hazard for people working in a designated airport influence area?

6.9.6.1 Impacts

No Project/No Action Alternative

Under the No Project/No Action Alternative, the NCPWF and ancillary facilities, pipelines and other features would not be constructed. Therefore, no new physical improvements would occur within a designated airport influence area and no safety hazard would occur.

Miramar Reservoir Alternative

All of the components associated with the Miramar Reservoir Alternative, except for the Morena Pump Station, Dechlorination Facility, and Miramar WTP improvements, would be located within the Airport Influence Area (AIA) for MCAS Miramar. The Morena Pump Station would be located in the AIA for the San Diego International Airport (SDIA). The Morena Pipelines would be located within the AIA of Montgomery Field Airport. The Dechlorination Facility and Miramar WTP improvements would not be located within the AIA for any airport, and are not discussed further in this section.

Components of the Miramar Reservoir Alternative would also be located within the 65–70 decibel (dB) Community Noise Equivalent Level (CNEL) and 70–75 dB CNEL Noise Exposure Contours for MCAS Miramar; see Section 6.12, Noise, for a detailed discussion related to noise compatibility.

The City is required to submit notification of the proposal to construct the North City Project to the FAA as required by the provisions of Federal Aviation Regulations Part 77, Subpart B, and by the California Public Utilities Code, Sections 21658 and 21659. The City is also required to submit an Application for Determination of Consistency for consideration by the Airport Land Use Commission. The application shall include site plans, including floor plans and dimensional elevations, and an FAA Determination of No Hazard to Air Navigation.

Facilities

The NCWRP Expansion, NCPWF Influent Pump Station, North City Renewable Energy Facility, the Landfill Gas Compressor Station, NCPWF-MR, North City Pump Station, and MBC Improvements would involve the installation of new facilities within Review Area 1 of the AIA for MCAS Miramar. Specifically, these facilities would be located within the Accident Potential Zone I, the FAA Height Notification Area, and the Airspace Protection Compatibility Area for MCAS Miramar.

Potentially hazardous materials would be stored and used on site at NCPWF-MR, NCWRP, and the North City Renewable Energy Facility. The expansion of processes at NCWRP, the construction of the NCPWF Influent Pump Station, the North City Renewable Energy Facility, and improvements at MBC would all occur within the footprint of existing treatment facilities and would be consistent with current uses at each facility. These facilities are not expected to result in an airport safety hazard or conflict with an ALUCP.

The NCPWF-MR and North City Pump Station would be constructed adjacent to the NCWRP to the north of Eastgate Mall. This site is currently designated for Institutional & Public and Semi-Public Facilities in the City's General Plan (City of San Diego 2008), which is consistent with the proposed use.

According to Table MIR-2 in the MCAS Miramar ALUC (see Table 5.9-4 in Section 5.9 for an excerpt), wastewater treatment and disposal facilities are considered "conditional uses" within Accident Potential Zone I (APZI) and APZII. Special requirements within these zones include "no processing or utilization of hazardous materials; fuel storage must be underground; and facilities must be designed and operated to avoid attracting birds."

The tallest building to be constructed as part of the NCPWF-MR would be a three-story operations and maintenance building. Buildings would generally not be constructed with mirrored or other highly reflective materials, nor would exceptionally bright or flashing lights be associated with any of the facilities. The NCPWF is not expected to result in an airport safety hazard or conflict with an ALUCP.

The U.S. Navy has experienced conflicts with aircraft operations and birds at MCAS Miramar, primarily due to the proximity of the Miramar Landfill. Accidents have resulted from birds getting caught in jet intakes and causing engine failure, as well as bird impacts on the cockpit canopy, wings, radome, flight control surfaces, and fuselage. Standing water in treatment ponds can attract birds, potentially resulting in increased bird strikes and accidents (City of San Diego 1991). There would be no open water surfaces associated with any of the proposed facilities or facility improvements as part of the Miramar Reservoir Alternative. Any water holding tank, basin, or treatment pond would be designed to be covered so as not to attract birds.

The Morena Pump Station would be located within the AIA, Review Area 2, for the SDIA, but not within any specific zone. This facility is not expected to result in an airport safety hazard or conflict with the ALUCP.

Pipelines

The Morena Pipelines, North City Pipeline, and the LFG Pipeline would be located within Review Area 1 and 2 of the AIA as well as within APZI, APZII, the FAA Height Notification Area, and the Airspace Protection Compatibility Area for MCAS Miramar. Pipelines would generally be constructed within roadway right-of-way and would be entirely underground once construction is complete.

San Vicente Reservoir Alternative

All of the components associated with the San Vicente Reservoir Alternative would be located within the AIA for MCAS Miramar, except for the Morena Pump Station and MTBS. The Morena Pump Station would be located in the AIA of the SDIA. In addition, the San Vicente Pipeline would be located within the AIA and Traffic Pattern Zone of Montgomery Field Airport and AIA of Gillespie Field Airport. The MTBS would be located within the AIA of Montgomery Field Airport. Facilities and pipelines located within an AIA could result in an adverse safety hazard.

Components of the San Vicente Reservoir Alternative would also be located within the 65–70 dB CNEL and 70–75 db CNEL Noise Exposure Contours for MCAS Miramar; see Section 6.12, Noise, for a detailed discussion related to noise compatibility.

The City is required to submit notification of the proposal to construct the North City Project to the FAA as required by the provisions of Federal Aviation Regulations Part 77, Subpart B, and by the California Public Utilities Code, sections 21658 and 21659. The City is also required to submit an Application for Determination of Consistency for consideration by the Airport Land Use Commission. The application shall include site plans, including floor plans and dimensional elevations, and an FAA Determination of No Hazard to Air Navigation.

Facilities

The NCWRP Expansion, NCPWF Influent Pump Station, NCPWF-SVR, North City Pump Station, and MBC Improvements would involve the installation of new facilities within Review Area 1 of the AIA for MCAS Miramar. Specifically, these facilities would be located within the APZI, the FAA Height Notification Area, and the Airspace Protection Compatibility Area for MCAS Miramar. These facilities would be constructed and operated similarly as described above under the Miramar Reservoir Alternative, including the NCPWF-SVR which would have a similar layout and design to the NCPWF-MR.

The Morena Pump Station would be located within the AIA of the SDIA, but not within any specific zone. Similarly, the MTBS would be located within the AIA of the Montgomery Field Airport, but not within any specific zone. These facilities are not expected to result in an airport safety hazard or conflict with an ALUCP.

Pipelines

The Morena Pipelines would be located within the AIA for MCAS Miramar and Montgomery Field. However, the Morena Pipelines would not be located within an APZ or the FAA Height Notification Area. The Morena Pipelines would be entirely underground once construction is complete.

The San Vicente Pipeline and LFG Pipeline would be located within Review Area 1 and 2 of the AIA, as well as within APZI, APZII, the FAA Height Notification Area, and the Airspace Protection Compatibility Area, for MCAS Miramar. Additionally, the San Vicente Pipeline would be located within the AIA and Traffic Pattern Zone of Montgomery Field and the AIA of Gillespie Field. The portion of the San Vicente Pipeline that crosses MCAS Miramar property would repurpose an existing 36-inch-diameter recycled water pipeline, and no new construction would occur within the naval base. The LFG Pipeline would be constructed within the City's existing utility easement and would be entirely underground once construction is complete. Outside of MCAS Miramar property, the San Vicente Pipeline would generally be constructed within roadway right-of-way and would be entirely underground once construction is complete.

6.9.6.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

No impacts related to airport hazards would occur under the No Project/No Action Alternative.

Miramar Reservoir Alternative

Impacts related to airport hazards under the Miramar Reservoir Alternative would be **less than significant** under CEQA.

San Vicente Reservoir Alternative

Impacts related to airport hazards under the San Vicente Reservoir Alternative would be **less than significant**.

6.9.6.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No impacts related to airport hazards would occur under the No Project/No Action Alternative and therefore, no mitigation is required.

Miramar Reservoir Alternative

No impacts related to airport hazards would occur under the Miramar Reservoir Alternative, and no mitigation is required.

San Vicente Reservoir Alternative

No impacts related to airport hazards would occur under the San Vicente Reservoir Alternative, and no mitigation is required.

6.9.7 LEVEL OF IMPACT AFTER MITIGATION

The applicability of each mitigation measure to each Project component is outlined below in Table 6.9-1.

**Table 6.9-1
Applicability of Health and Safety Mitigation Measures to Project Components**

Project Component	MM-HAZ-1	MM-HAZ-2	MM-HAZ-3	MM-HAZ-4	MM-HAZ-5
<i>Components Common to Project Alternatives</i>					
Morena Pump Station	✗	X	X	X	
Morena Pipelines	X	X		X	X
NCWRP Expansion	✗	X	X		
NCPWF Influent Pump Station		X			
North City Pump Station	X	X			
North City Renewable Energy Facility		X	X		
LFG Pipeline	X	X			
MBC Improvements	✗	✗			
<i>Miramar Reservoir Alternative</i>					
NCPWF-MR	X	X	X		
North City Pipeline	X	X		X	
Dechlorination Facility	✗	X	X		
Miramar WTP Improvements		✗			

**Table 6.9-1
Applicability of Health and Safety Mitigation Measures to Project Components**

Project Component	MM-HAZ-1	MM-HAZ-2	MM-HAZ-3	MM-HAZ-4	MM-HAZ-5
<i>San Vicente Reservoir Alternative</i>					
NCPWF-SVR	X	X	X		
San Vicente Pipeline	X	X		X	
MTBS	X	X			

Implementation of mitigation measure MM-HAZ-1 would mitigate identified adverse and significant impacts related to the exposure of people or property to wildfire hazards to **below a level of significance**.

The North City Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Implementation of mitigation measures MM-HAZ-2 and MM-HAZ-3 would mitigate potential hazards to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment to **below a level of significance**.

Identified adverse and significant impacts related to the potential for the North City Project to encounter a hazardous materials site during construction, thereby posing a hazard to the public or environment, would be mitigated with implementation of mitigation measure MM-HAZ-4 to **below a level of significance**. Implementation of mitigation measure MM-HAZ-5 would mitigate potential risks associated with construction of the Morena Pipelines within the Camp Matthews Formerly Used Defense Site to **below a level of significance**.

Impacts related to airport safety would be **less than significant**.

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6.10 HISTORICAL RESOURCES

6.10.1 INTRODUCTION

The following section examines the impacts of the North City Project on historical resources and cultural resources.

6.10.2 THRESHOLDS OF SIGNIFICANCE

The City of San Diego (City) California Environmental Quality Act Significance Determination Thresholds (City of San Diego 2016) and Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.) contain significance guidelines related to cultural resources. A significant impact to cultural resources would occur if the North City Project would:

1. Result in the alteration or destruction of a prehistoric or historic archaeological site, or adverse physical or aesthetic effects to a prehistoric building, structure, object, or site.
2. Result in any impact to existing religious or sacred uses or result in the disturbance of any human remains within the potential impact area.

6.10.3 ISSUE 1

Would the North City Project 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?

6.10.3.1 Impacts

No Project/No Action Alternative

Under the No Project/No Action Alternative, the North City Pure Water Facility (NCPWF) and ancillary facilities, pipelines, and other features would not be constructed. No adverse effects to prehistoric or historic archaeological sites, or prehistoric or historic buildings, structures, objects, and sites would occur.

Miramar Reservoir Alternative

The cultural site number, description of the site, eligibility, North City Project Component (Project component), and project proximity for each of the identified sites within the North City Project - Miramar Reservoir Alternative area of potential

effect (APE) are listed in Table 6.10-1. An analysis of Project effects and if necessary, management measures, is provided for each listed site below the table.

Table 6.10-1
Cultural Resources within the Miramar Reservoir Alternative Project APE

Site Number	Description	NRHP/CRHR Eligibility	North City Project Component	Project Proximity
CR 450 (HRB 450)	Scripps Meanley Stables and House Complex	San Diego Register of Historical Resources	North City Pure Water Pipeline	Within 100 feet
NCAWPF-IF-1	Isolated quartzite core	No formal evaluation	North City Pure Water Facility (NCPWF)	Intersects
NCAWPF-IF-2	Isolated metavolcanic flake	No formal evaluation	NCPWF	Intersects
NCAWPF-IF-3	Isolated quartzite flake	No formal evaluation	NCPWF	Intersects
P-37-012138	Shell midden and fire affected rock	No formal evaluation	Metro Biosolids Center (MBC)	Intersects
P-37-012139	Lithic scatter	No formal evaluation	MBC	Intersects
P-37-012408	Lithic scatter	6Y	LFG Pipeline	Intersects
P-37-012439	Artifact scatter	6Y	LFG Pipeline	Intersects
P-37-012453	Shell, lithics, and historic glass scatter	No formal evaluation	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	Within 100 feet
P-37-014981	Isolated flake and core	No formal evaluation	LFG Pipeline	Intersects
P-37-018327	Shell and lithic scatter	No formal evaluation	Miramar Water Treatment Plant Improvements	Intersects
P-37-035477	Isolated lithic flake	No formal evaluation	Morena Pipelines	Intersects
P-37-035478	Isolated lithic flake	No formal evaluation	Morena Pipelines	Within 100 feet

CR 450 (HRB 450)

The Scripps Meanley Stables and House Complex is listed locally in the San Diego Register of Historical Resources. It is not listed in the National Register of Historic Places (NRHP).

The North City Pipeline would be located on previously graded land near the far eastern boundary of the parcel containing the historic property. Work in that area would entail digging trenches to accommodate an underground water pipeline and a launching/receiving pit near the northeastern corner of the parcel to facilitate subsurface horizontal drilling deep underneath Evan's Pond and Scripps Lake Drive northward to Lake Miramar. The stone wall, dirt drive, and Evan's Pond are the contributing features to the historical resource, located more than 100 feet away from construction activity. The land in that section of the parcel is already graded and clear of all vegetation except for wild grasses and eucalyptus trees lining the south shore of Evan's Pond. No adverse effect to the Scripps Meanley Stables and House Complex has been identified.

There are two main concerns during construction relating to the site: (1) the possibility for coming across buried artifacts dating to the time the historic property was operating as a ranch and (2) the poor condition of the stone wall. While there are not anticipated effects to the site due to vibration from horizontal drilling, adverse effects concerning construction of the North City Pipeline and the site may occur during construction if vibrations from drilling further degrade the condition of the rock wall.

Further degradation of the rock wall due to vibrations from Project construction drilling may also result in an indirect adverse effect.

NCAWPF-IF-1

The site is not considered eligible for listing on the NRHP or the California Register of Historical Resources (CRHR).

NCAWPF-IF-2

The site is not considered eligible for listing on the NRHP or the CRHR.

NCAWPF-IF-3

The site is not considered eligible for listing on the NRHP or the CRHR.

P-37-012138; CA-SDI-12138

Construction of the MBC can be seen on aerial maps from 1996 and all areas within the MBC have been covered by buildings, pavement, or landscaping. The site was previously destroyed by construction of the MBC.

P-37-012139; CA-SDI-12139

The site was previously destroyed by construction of the MBC.

P-37-012408; CA-RIVSDI-12408

Aerial photographs show that the location of P-37-012408 was completely developed between 2010 and 2012. Based on previous inventories of the MCAS Miramar property and aerial photography depicting development of the P-37-012408 location, no adverse effect to the site has been identified.

P-37-012439; CA-RIVSDI-12439

Though the LFG Pipeline APE bisects the recorded site boundaries, the site no longer exists.

P-37-012453; CA-SDI-12453

The original site boundary falls within the Morena Pipelines APE; however, the site no longer exists.

P-37-014981

The site is not eligible for listing in the NRHP or the CRHR.

P-37-018327; CA-SDI-15556

The current study found that the majority of the less developed areas in which the scatter was identified are located in the periphery of the Miramar Water Treatment Plant. North City Project activities are not planned in these areas, and the City has committed to avoiding site P-37-018327.

P-37-035477

The site is not eligible for listing in the NRHP or the CRHR.

P-37-035478

The site is not eligible for listing in the NRHP or the CRHR.

Summary

With the exception of CR 450 (HRB 450), inventoried sites within the Miramar Reservoir Alternative APE would be avoided and would require limited standard protection measures to ensure adequate protection. Standard protection measures may include establishing work limits, marking environmentally sensitive areas with signage, and providing worker training. Collaboration with project engineers and construction specialists will ensure that the City and consulting archaeologists fully understand the possible impacts that each construction activity presents, so that the best protection measures may be implemented for each site.

Three historic resources were identified within the Miramar Reservoir Alternative APE: 877 Sherman Street, the Tecolote Creek concrete channel, and the Scripps Meanley Stables and House Complex.

The property at 877 Sherman Street is the old San Diego Humane Society complex. Constructed in 1951 in a small industrial area within Linda Vista, the San Diego Humane Society and Society for the Prevention of Cruelty to Animals moved to the property from 3656 Wright Street. The original architect and building remain unknown. Founded in 1880, the San Diego Humane Society and Society for the Prevention of Cruelty to Animals is the oldest non-profit animal welfare organization in San Diego County. George W. Hazzard and George W. Marston founded the organization to “encourage and promote enactment and enforcement of laws for the prevention of cruelty to animals; [and] to foster public sentiment and high ideals of kindness and gentleness toward helpless animals.” In 1888, the organization levied its first fine of \$2 against a man accused of overworking a horse. In 1934, it signed a contract with the City of San Diego to operate an animal shelter under the supervision of the San Diego County Department of Health. The facility grew, and in 1938, its staff of 7 people cared for over 6,200 dogs, 7,800 cats, and 232 other animals at the shelter. It moved to its current location in 1951, and in 1958, it increased the capacity of the facility by constructing a new administration building and 34 new dog kennels with radiant heat slabs to provide heat for the animals. Building permits also indicate a garage was designed by architect John S. M. Daniels and constructed by the local firm R. E. Hazard that same year. In 1974, it expanded and remodeled the facility again to include a modern thrift shop to raise

money for its operations. Based on its architectural style and construction materials, it is presumed that the large building to the south on the property and visible from the public right-of-way was constructed at this time. Although the organization no longer functions as an animal control agency and does not accept stray animals, it continues to investigate animal abuse and violations of state laws regarding the care and treatment of animals. Most recently, several small, temporary office buildings have been installed on the property facing Custer Street (date unknown). The San Diego Humane Society moved to their new headquarters at 5500 Gaines Street in San Diego during 2016, retaining the property at 877 Sherman Street for auxiliary offices and animal behavioral work. The investigation presented in Appendix F1 concluded that 877 Sherman Street was not eligible for listing at the national, state, or local level as the property failed to rise to the level of significance required to qualify under Criteria A/1, B/2, C/3, or D/4, in addition to lacking integrity. The site is not considered a historical resource under CEQA.

The 1-mile long Tecolote Creek concrete channel was constructed between 1953 and 1958. Rerouting and channelization of Tecolote Creek occurred concurrently with development in the area, to reduce the risk of flooding and to open up more land for development. The investigation presented in Appendix F1 concluded that the Tecolote Creek concrete channel was not eligible for listing at the national, state, or local level as the structure failed to rise to the level of significance required to qualify under Criteria A/1, B/2, C/3, or D/4, in addition to lacking integrity. As such, this site is not considered a historical resource under CEQA. For the purposes of this analysis, no adverse effects concerning the construction of the Morena Pump Station and existing structures at 877 Sherman Street would occur.

The third historical resource, the Scripps Meanley Stables and House Complex, is listed locally in the San Diego Register of Historical Resources as HRB 450 and is a historic resource for the purposes of this analysis. The property originally belonged to Nackey Scripps Meanley, daughter of newspaper man Edward W. Scripps, and her husband, Thomas Meanley Sr. In 1985, after her death, the property was sold to a development corporation with the stipulation that Thomas would continue to live in the house until he passed. She also stipulated that the 7,000-square-foot Spanish Colonial Revival home, constructed c. 1929, was not to be preserved after their deaths. The local listing was submitted and approved after the main house was demolished, and therefore only applies to the stone retaining wall, the dirt path behind and in front of it, and Evan's Pond. The remainder of the parcel was graded, removing any residual surface trace of the ranch and stable complex. Adverse effects resulting from nearby construction activities of the North City Pipeline may

occur if vibrations from horizontal drilling in the area further degrades the condition of the stone retaining wall at CR 450. Degradation of the stone wall due to vibrations from project construction drilling may also result in an indirect adverse effects.

San Vicente Reservoir Alternative

The cultural site number and recommended management measures for each of the identified sites within the San Vicente Reservoir Alternative APE are listed in Table 6.10-2. With the exception of the resources inventoried within the North City Pipeline and Miramar Water Treatment Plant APEs, the cultural resources listed in Table 6.10-1 would also be located within the San Vicente Reservoir Alternative APE (see preceding subsection, Miramar Reservoir Alternative). Historical resource impacts associated with the San Vicente Reservoir Alternative are discussed below Table 6.10-3.

Table 6.10-2
Cultural Resources within the San Vicente Pipeline APE

Site Number	Era	Description	NRHP/CRHR Eligibility	Project Proximity
P-37-004505	Prehistoric	Pictograph panel, lithic scatter, and rock pile	No formal evaluation	Within 100 feet
P-37-006660	Historic	San Diego Mission Flume segment	No formal evaluation	Within 100 feet
P-37-009117	Historic	WWII training camp remnants	No formal evaluation	Within 100 feet
P-37-011077	Prehistoric	Bedrock milling feature	No formal evaluation	Within 100 feet
P-37-011459	Prehistoric	Lithic and groundstone scatter	No formal evaluation	Within 100 feet
P-37-011611	Prehistoric	Lithic quarry	No formal evaluation	Within 100 feet
P-37-011612	Prehistoric	Lithic artifact scatter	No formal evaluation	Within 100 feet
P-37-011761	Historic	Concrete cistern	No formal evaluation	Within 100 feet
P-37-012408	Prehistoric	Lithic scatter	6Y	Intersects
P-37-012439	Prehistoric	Artifact scatter	6Y	Intersects
P-37-013651	Prehistoric	Milling and artifact scatter	No formal evaluation	Within 100 feet
P-37-014654	Multicomponent	Marine shell scatter and rock retaining wall	No formal evaluation	Intersects
P-37-014655	Prehistoric	Milling artifact scatter	No formal evaluation	Intersects
P-37-014656	Prehistoric	Milling artifact scatter	No formal evaluation	Within 100 feet
P-37-014657	Prehistoric	Artifact and marine shell scatter	No formal evaluation	Within 100 feet

**Table 6.10-2
Cultural Resources within the San Vicente Pipeline APE**

Site Number	Era	Description	NRHP/CRHR Eligibility	Project Proximity
P-37-014658	Prehistoric	Lithic and groundstone scatter	No formal evaluation	Within 100 feet
P-37-014660	Prehistoric	Lithic and marine shell scatter	No formal evaluation	Within 100 feet
P-37-014661	Prehistoric	Marine shell and flake scatter	No formal evaluation	Intersects
P-37-014961	Prehistoric	Isolated flake	No formal evaluation	Within 100 feet
P-37-026967	Prehistoric	Bedrock milling	No formal evaluation	Within 100 feet
P-37-026974	Historic	Concrete road	6Z	Intersects

**Table 6.10-3
Impacts and Management Measures – San Vicente Reservoir Alternative**

Site Number	Impacts and Management Measures
<i>San Vicente Pipeline</i>	
P-37-004505	The City has committed to avoiding the site by limiting construction activities to the existing Mission Gorge Road corridor. The site would not be impacted during construction.
P-37-006660	The City has committed to avoiding site P-37-006660 and would install the pipeline via underground methods as opposed to open cut trenching. No adverse effect to the site has been identified.
P-37-009117	The proposed San Vicente Pipeline APE encroaches on the originally recorded boundary of P-37-009117 but is nearly 300 feet east of any of the existing features of the resource. The City has committed to avoiding the site. This portion of the San Vicente Pipeline consists of an existing pipeline that will be repurposed for the Project. No ground disturbance will be necessary near P-33-009117.
P-37-011077	The City has committed to avoiding the site and limiting construction activities to the existing Mission Gorge Road corridor.
P-37-011459	The resource has been completely destroyed by residential development.
P-37-011611	The City has committed to avoiding the site by limiting construction activities to the existing Mission Gorge Road corridor.
P-37-011612	The City has committed to avoiding the site by limiting construction activities to the existing Mission Gorge Road corridor.
P-37-011761	The resource has been completely destroyed by residential development.
P-37-012408	The proposed San Vicente Pipeline APE bisects the resource boundaries; however, the resource no longer exists.

**Table 6.10-3
Impacts and Management Measures – San Vicente Reservoir Alternative**

Site Number	Impacts and Management Measures
P-37-012439	The San Vicente Pipeline APE bisects the recorded site boundaries; however, the site no longer exists.
P-37-013651	The resource is located east of the San Vicente Pipeline APE centerline. The City has committed to avoiding the site by limiting construction activities to the existing road corridor.
P-37-014654	The City has committed to avoiding the site entirely during construction.
P-37-014655	The resource was completely destroyed by development of a vehicle parking area.
P-37-014656	The resource was completely destroyed by development of a vehicle parking area.
P-37-014657	The City has committed to avoiding the site by limiting construction activities to the existing road and shoulder corridor.
P-37-014658	The resource was completely destroyed by development of vehicle parking area.
P-37-014660	Review of an aerial photograph shows that the portion of the resource that falls within the APE was graded between 2010 and 2012. Aerial photography suggests that the resource was likely destroyed by grading activities in this section of the APE. The City has committed to avoiding the site by limiting construction activities to the existing road corridor.
P-37-014661	This site has been determined not to be a cultural resource and requires no avoidance measures during adjacent San Vicente Pipeline project activities.
P-37-014961	The resource is not considered eligible for listing in the NRHP or the CRHR.
P-37-015823	P-37-015823 no longer demonstrates any historical or architectural integrity within the APE due to the development of modern condos and commercial and industrial parks between 1996 and 2002.
P-37-026967	The resource no longer exists.
P-37-026974	The site is not eligible for listing in the NRHP or CRHR (see Appendix F2).
<i>San Vicente Pipeline – In-Reservoir Alternative Terminus</i>	
P-37-013846	The City has committed to avoiding the site and steep hillside by limiting construction activities to the existing road corridor.
P-37-015477	The resource was located within the San Vicente Pipeline – IRAT APE, but it has been completely destroyed.
<i>San Vicente Pipeline – Marina Alternative Terminus</i>	
P-37-013846	The City has committed to avoiding the site and steep hillside by limiting construction activities to the existing road corridor.
P-37-014119	The resource has been completely destroyed.
<i>San Vicente Pipeline – Tunnel Alternative Terminus</i>	
P-37-013629	The City has committed to avoiding the site by limiting construction activities to the existing road corridor alignment.

**Table 6.10-3
Impacts and Management Measures – San Vicente Reservoir Alternative**

Site Number	Impacts and Management Measures
P-37-013630	The resource was evaluated through close-interval survey, archaeological testing, and laboratory analysis. This evaluation determined that the resource contained significant subsurface deposits. Further research at the site will likely yield important prehistoric information. The site is recommended eligible for listing on the NRHP and CRHR under Criteria D and 4, respectively. The City has committed to avoiding the site during construction of the San Vicente Pipeline – TAT. However, given the proximity of construction activities and the sensitivity of the site, construction activities in the vicinity may encounter unknown artifacts and/or grave sites. As such, adverse effects concerning construction of the San Vicente Pipeline – TAT and unknown artifacts and/or grave sites near site P-37-013630 may occur.
P-37-026969	Recorded site P-37-026969 is located in a section of the alignment that would be directionally drilled. The drilling pit is located 300 feet west of the resource. The underground tunnel would have no impact on the surface resource. The City has committed to avoiding the site during nearby construction activities, and no adverse effect has been identified for the site.
P-37-036497	A drilling pit would be excavated within approximately 50 feet of the resource, and a temporary work area is proposed within 35 feet of the resource. Dudek recommends P-37-036497 not eligible for listing on the NRHP or the CRHR. The City has committed to avoiding the site during construction of the San Vicente Pipeline – TAT. However, due to proximity and sensitivity of the site, construction activities near the resource may encounter unknown artifacts and/or grave sites. As such, adverse effects concerning drilling associated the San Vicente Pipeline – TAT and unknown artifacts and/or grave sites near site P-37-036497 may occur.

Also, although not listed in Table 6.10-3, one potential historical resource was identified within the San Vicente Pipeline – TAT APE. The subject property is located in the community of Lakeside, California, in unincorporated San Diego County, on a parcel identified with APN 329-121-0300. The property is situated on the east side of the 13500 block of Moreno Avenue, approximately 1,200 feet south of where Moreno Avenue reaches a dead end at the San Vicente Reservoir dam at the reservoir’s southern bank. An address above the door on the property reads “5111,” but the associated street is simply noted as “Private Road” on maps. A DPR form was completed and is included in Appendix F1.

The house is a one-story, single-family residence, likely constructed between 1947 and 1953 (NETR 2012), and is a heavily altered example of the Minimal Traditional

style. The building is roughly rectangular in-plan with a front-facing, moderately pitched gable roof clad in composition shingles, and a slight eave overhang with exposed rafters. Turbine roof vents and a brick chimney project from roof. The exterior of the building is clad in textured stucco. Windows throughout the property consist of various sized horizontal sliding aluminum sash windows. The west elevation contains a large screened-in porch addition set atop a concrete block foundation and accessed via a set of concrete block steps with a metal pipe hand railing. The porch has a flat, shed roof extension supported by a series of beams that align with the base of the main gable. Investigation revealed that the property was not eligible for listing at the national, state, or local level.

6.10.3.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

Under CEQA, **no impacts** to prehistoric or historical archaeological sites or prehistoric or historic resources would occur as a result of the No Project/No Action Alternative.

Miramar Reservoir Alternative

Construction of the proposed Miramar Reservoir Alternative (specifically, construction of the North City Pipeline) may result in impacts to CR 450 (HR 450) which is inventoried within the pipeline APE and impacts to unknown archaeological resources and/or grave sites near CR 450 (HR 450). Without implementation of the mitigation described below, impacts to CR 450 (HR 450) and impacts to unknown archaeological resources and/or grave sites near CR 450 (HR 450) would be considered **potentially significant** under CEQA.

There are two main concerns during construction of the North City Pipeline relating to the Scripps Meanley Stables and House Complex (i.e., HR 450): the possibility for coming across buried, unknown artifacts dating to the time the historic property was operating as a ranch, and the poor condition of the stone wall. If vibrations from horizontal drilling associated with construction of the North City Pipeline further degrade the condition of the rock wall, construction impacts to the historic property would be **potentially significant** under CEQA. Regarding operational impacts, the pipeline will be buried underground, and there will be no noise or vibrations emanating from it. Therefore, there will be no adverse effects to the historic property as a result of North City Pipeline operations.

San Vicente Reservoir Alternative

While sites P-37-013630 and P-37-036497 would be avoided during construction of the San Vicente Pipeline – TAT, due to the proximity of construction areas to the sites and the general sensitivity of the areas near the sites, construction activities may impact unknown archaeological resources and/or grave sites. Without implementation of the mitigation described below, impacts to unknown archaeological resources and/or grave sites near sites P-37-013630 and P-37-036497 would be considered **potentially significant** under CEQA.

No impacts to historic resources would occur as a result of construction or operation of the San Vicente Reservoir Alternative.

6.10.3.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No mitigation is required.

Miramar Reservoir Alternative

To reduce potential impacts to site CR 450 (HRB 450) associated with construction of the North City Pipeline, the following mitigation measures (MM) shall be implemented:

MM-HIS-1 Cultural Resources Monitoring and Treatment Plan (CRMTP)

I. Prior to Start of Construction

A. Preparation of CRMTP

1. Prior to the start of construction, the Principal Investigator (PI) archaeologist shall prepare a CRMTP that specifies and describes:
 - The cultural resources area of potential effect (APE)
 - The chains of authority and communication, including interagency relationships for the purposes of compliance with Section 106 of the National Historic Preservation Act (NHPA), California Environmental Quality Act (CEQA), and City of San Diego (City) Historic Resource Guidelines
 - Roles and responsibilities

- Construction monitoring methods
 - Reporting protocol
 - Avoidance and protective measures for cultural resources
 - Procedures for evaluating resource significance and/or data recovery for significant resources that cannot be avoided (known and unanticipated discoveries)
 - Consultation obligations and timelines for providing feedback
 - Post construction requirements
2. The PI will prepare the draft CRMTP and submit it to the City of San Diego Point of Contact, who will then distribute to interagency contacts as appropriate for review and to facilitate stakeholder consultation obligations.

MM-HIS-2 The following shall be implemented to protect known archaeological resources that have not been evaluated for significance or that have been evaluated as significant under Section 106 and CEQA:

I. Prior to Start of Construction

- A. Identified cultural resources that have not been evaluated for significance or that have been evaluated as significant under Section 106 of the NHPA and CEQA, will be avoided through project design. These include resources that were either found outside of the work limits or for which significance evaluation did not identify significant archaeological deposits within the work limits.
 1. Prior to the start of construction, the PI archaeologist shall ensure that resource-specific avoidance measures are implemented to prevent unanticipated impacts. These measures may include exclusionary fencing, environmentally sensitive areas (ESA) signage, or other measures deemed appropriate and as specified in the CRMTP.
 2. Only one resource, P-37-013630, overlaps the impact area. This resource was evaluated, and a small portion of the site located on a rocky knoll was identified as significant under

Criterion D of Section 106 and Criterion 4 of CEQA. The remainder of the site area did not contain significant deposits. Therefore, avoidance of significant impacts/adverse effects to this resource will include exclusion of construction-related activities within or immediately near to the area containing significant deposits.

MM-HIS-3 To reduce potential impacts to unknown archaeological resources and/or grave sites during construction of all Project components (i.e., Components Common to the Project Alternatives, Miramar Reservoir Alternative, and San Vicente Reservoir Alternative) the following measures shall be implemented:

I. Prior to Permit Issuance or Bid Opening/Bid Award

A. Entitlements Plan Check

1. Prior to permit issuance or bid opening/bid award, whichever is applicable, the Assistant Deputy Director (ADD) environmental designee shall verify that the requirements for archaeological monitoring and Native American monitoring have been noted on the applicable construction documents through the plan check process.

B. Letters of Qualification have been submitted to ADD

1. Prior to bid award, the applicant shall submit a letter of verification to Mitigation Monitoring Coordinator (MMC) identifying the Principal Investigator (PI) for the Project and the names of all persons involved in the archaeological monitoring program, as defined in the City Historical Resources Guidelines (HRG). If applicable, individuals involved in the archaeological monitoring program must have completed the 40-hour HAZWOPER training with certification documentation.
2. MMC will provide a letter to the applicant confirming the qualifications of the PI and all persons involved in the archaeological monitoring of the Project meet the qualifications established in the City Historical Resources Guidelines.

3. Prior to the start of work, the applicant must obtain written approval from MMC for any personnel changes associated with the monitoring program.

II. Prior to Start of Construction

A. Verification of Records Search

1. The PI shall provide verification to MMC that a site-specific records search (0.25-mile radius) has been completed. Verification includes, but is not limited to a copy of a confirmation letter from South Coastal Information Center, or, if the search was in-house, a letter of verification from the PI stating that the search was completed.
2. The letter shall introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities.
3. The PI may submit a detailed letter to MMC requesting a reduction to the 0.25-mile radius.

B. PI Shall Attend Preconstruction Meetings

1. Prior to beginning any work that requires monitoring, the applicant shall arrange a Preconstruction Meeting that shall include the PI, Native American consultant/monitor (where Native American resources may be impacted), Construction Manager (CM), Grading Contractor, Resident Engineer (RE), Building Inspector (BI), if appropriate, and MMC. The qualified archaeologist and Native American monitor shall attend any grading/excavation related Preconstruction Meetings to make comments and/or suggestions concerning the archaeological monitoring program with the CM and/or Grading Contractor.
 - a. If the PI is unable to attend the Preconstruction Meeting, the applicant shall schedule a focused Preconstruction Meeting with MMC, the PI, RE, CM, if appropriate, prior to the start of any work that requires monitoring.

2. Acknowledgment of Responsibility for Curation (Capital Improvement Program or Other Public Projects)

The applicant shall submit a letter to MMC acknowledging their responsibility for the cost of curation associated with all phases of the archaeological monitoring program.

3. Identify Areas to be Monitored

a. Prior to the start of any work that requires monitoring, the PI shall submit an Archaeological Monitoring Exhibit (AME) (with verification that the AME has been reviewed and approved by the Native American consultant/monitor when Native American resources may be impacted) based on the appropriate construction documents (reduced to 11×17) to MMC identifying the areas to be monitored, including the delineation of grading/excavation limits.

b. The AME shall be based on the results of a site-specific records search as well as information regarding the age of existing pipelines, laterals and associated appurtenances, and/or any known soil conditions (native or formation).

c. MMC shall notify the PI that the AME has been approved.

4. When Monitoring Will Occur

a. Prior to the start of any work, the PI shall also submit a construction schedule to MMC through the RE indicating when and where monitoring will occur.

b. The PI may submit a detailed letter to MMC prior to the start of work or during construction requesting a modification to the monitoring program. This request shall be based on relevant information such as review of final construction documents which indicate conditions such as age of existing pipe to be replaced, depth of excavation and/or site graded to bedrock, etc., which may reduce or increase the potential for resources to be present.

5. Approval of AME and Construction Schedule

After approval of the AME by MMC, the PI shall submit to MMC written authorization of the AME and Construction Schedule from the CM.

III. During Construction

A. Monitor Shall be Present During Grading/Excavation/Trenching

1. The Archaeological Monitor shall be present full-time during all soil-disturbing and grading/excavation/trenching activities that could result in impacts to archaeological resources as identified on the AME. **The CM is responsible for notifying the RE, PI, and MMC of changes to any construction activities such as in the case of a potential safety concern within the area being monitored. In certain circumstances Occupational Safety and Health Administration safety requirements may necessitate modification of the AME.**
2. The Native American consultant/monitor shall determine the extent of their presence during soil-disturbing and grading/excavation/trenching activities based on the AME and provide that information to the PI and MMC. If prehistoric resources are encountered during the Native American consultant/monitor's absence, work shall stop, and the Discovery Notification Process detailed in Section III.B-III.C and IV.A-IV.D shall commence.
3. The PI may submit a detailed letter to MMC during construction requesting a modification to the monitoring program when a field condition such as modern disturbance post-dating the previous grading/trenching activities, presence of fossil formations, or when native soils are encountered that may reduce or increase the potential for resources to be present.
4. The archaeological and Native American consultant/monitor shall document field activity via the Consultant Site Visit Records. The Consultant Site Visit Records shall be emailed by the CM to the RE the first day of monitoring, the last day of monitoring, monthly (Notification of Monitoring

Completion), and in the case of ANY discoveries. The RE shall forward copies to MMC.

B. Discovery Notification Process

1. In the event of a discovery, the Archaeological Monitor shall direct the contractor to temporarily divert all soil-disturbing activities, including but not limited to digging, trenching, excavating, or grading activities in the area of discovery and in the area reasonably suspected to overlay adjacent resources and immediately notify the RE or CM, as appropriate.
2. The Archaeological Monitor shall immediately notify the PI (unless monitor is the PI) of the discovery.
3. The PI shall immediately notify MMC by phone of the discovery, and shall also submit written documentation to MMC within 24 hours by email with photos of the resource in context, if possible.
4. No soil shall be exported off site until a determination can be made regarding the significance of the resource specifically if Native American resources are encountered.

C. Determination of Significance

1. The PI and Native American consultant/monitor, where Native American resources are discovered shall evaluate the significance of the resource. If Human Remains are involved, follow protocol in Section IV below.
 - a. The PI shall immediately notify MMC by phone to discuss significance determination and shall also submit a letter to MMC indicating whether additional mitigation is required.
 - b. If the resource is significant, the PI shall submit an Archaeological Data Recovery Program (ADRP) and obtain written approval of the program from MMC, CM, and RE. The ADRP and any mitigation must be approved by MMC, RE, and/or CM before ground-disturbing activities in the area of discovery will be allowed to resume. **Note: If a unique archaeological site is also an historical resource as defined in CEQA Guidelines Section 15064.5, then the**

limits on the amount(s) that a Project applicant may be required to pay to cover mitigation costs as indicated in CEQA Section 21083.2 shall not apply.

(1) Note: For pipeline trenching and other linear projects in the public Right-of-Way, the PI shall implement the Discovery Process for Pipeline Trenching projects identified below under “D.”

- c. If the resource is not significant, the PI shall submit a letter to MMC indicating that artifacts will be collected, curated, and documented in the Final Monitoring Report. The letter shall also indicate that that no further work is required.

(1) Note: For pipeline trenching and other linear projects in the public right-of-way, if the deposit is limited in size, both in length and depth; the information value is limited and is not associated with any other resource; and there are no unique features/artifacts associated with the deposit, the discovery should be considered not significant.

(2) Note: For pipeline trenching and other linear projects in the public right-of-way, if significance cannot be determined, the Final Monitoring Report and Site Record (DPR Form 523A/B) shall identify the discovery as potentially significant.

D. Discovery Process for Significant Resources – Pipeline Trenching and Other Linear Projects in the Public Right-of-Way

The following procedure constitutes adequate mitigation of a significant discovery encountered during pipeline trenching activities or for other linear project types within the public right-of-way, including but not limited to excavation for jacking pits, receiving pits, laterals, and manholes to reduce impacts to below a level of significance:

- 1. Procedures for documentation, curation, and reporting
 - a. One hundred percent (100%) of the artifacts within the trench alignment and width shall be documented in situ,

to include photographic records, plan view of the trench and profiles of side walls, recovered, photographed after cleaning and analyzed and curated. The remainder of the deposit within the limits of excavation (trench walls) shall be left intact.

- b. The PI shall prepare a Draft Monitoring Report and submit to MMC via the RE as indicated in Section VI-A.
- c. The PI shall be responsible for recording (on the appropriate State of California Department of Parks and Recreation forms DPR 523 A/B) the resource(s) encountered during the Archaeological Monitoring Program in accordance with the City's HRG. The DPR forms shall be submitted to the South Coastal Information Center for either a Primary Record or SDI Number and included in the Final Monitoring Report.
- d. The Final Monitoring Report shall include a recommendation for monitoring of any future work in the vicinity of the resource.

IV. Discovery of Human Remains

If human remains are discovered, work shall halt in that area, and no soil shall be exported off-site until a determination can be made regarding the provenance of the human remains; and the following procedures as set forth in CEQA Guidelines Section 15064.5(e), the California Public Resources Code Section 5097.98, and the California Health and Safety Code Section 7050.5, shall be undertaken:

A. Notification

1. Archaeological Monitor shall notify the RE or CM as appropriate, MMC, and the PI, if the monitor is not qualified as a PI. MMC will notify the appropriate Senior Planner in the Environmental Analysis Section of the Development Services Department to assist with the discovery notification process.
2. The PI shall notify the Medical Examiner after consultation with the RE, either in person or via telephone.

B. Isolate discovery site

1. Work shall be directed away from the location of the discovery and any nearby area reasonably suspected to overlay adjacent human remains until a determination can be made by the Medical Examiner in consultation with the PI concerning the provenience of the remains.
2. The Medical Examiner, in consultation with the PI, will determine the need for a field examination to determine the provenience.
3. If a field examination is not warranted, the Medical Examiner will determine with input from the PI, if the remains are or are most likely to be of Native American origin.

C. If human remains are determined to be Native American

1. The Medical Examiner will notify the Native American Heritage Commission (NAHC) within 24 hours. By law, only the Medical Examiner can make this call.
2. NAHC will immediately identify the person or persons determined to be the Most Likely Descendant (MLD) and provide contact information.
3. The MLD will contact the PI within 24 hours or sooner after the Medical Examiner has completed coordination, to begin the consultation process in accordance with CEQA Guidelines Section 15064.5(e) and the California Public Resources and Health and Safety Codes.
4. The MLD will have 48 hours to make recommendations to the property owner or representative, for the treatment or disposition with proper dignity, of the human remains and associated grave goods.
5. Disposition of Native American human remains will be determined between the MLD and the PI, and, if:
 - a. The NAHC is unable to identify the MLD, OR the MLD failed to make a recommendation within 48 hours after being notified by the Commission, OR

- b. The landowner or authorized representative rejects the recommendation of the MLD and mediation in accordance with California Public Resources Code Section 5097.94(k), by the NAHC fails to provide measures acceptable to the landowner, THEN
 - c. To protect these sites, the landowner shall do one or more of the following:
 - (1) Record the site with the NAHC,
 - (2) Record an open space or conservation easement, or
 - (3) Record a document with the County.
 - d. Upon the discovery of multiple Native American human remains during a ground-disturbing land development activity, the landowner may agree that additional conferral with descendants is necessary to consider culturally appropriate treatment of multiple Native American human remains. Culturally appropriate treatment of such a discovery may be ascertained from review of the site utilizing cultural and archaeological standards. Where the parties are unable to agree on the appropriate treatment measures, the human remains and items associated and buried with Native American human remains shall be reinterred with appropriate dignity, pursuant to Section 5.c.
- D. If human remains are not Native American
- 1. The PI shall contact the Medical Examiner and notify them of the historic era context of the burial.
 - 2. The Medical Examiner will determine the appropriate course of action with the PI and City staff (California Public Resources Code, Section 5097.98).
 - 3. If the remains are of historic origin, they shall be appropriately removed and conveyed to the San Diego Museum of Man for analysis. The decision for internment of the human remains shall be made in consultation with MMC, Environmental

Analysis Section, the applicant/landowner, any known descendant group, and the San Diego Museum of Man.

V. Night and/or Weekend Work

- A. If night and/or weekend work is included in the contract
 - 1. When night and/or weekend work is included in the contract package, the extent and timing shall be presented and discussed at the Preconstruction Meeting.
 - 2. The following procedures shall be followed.
 - a. No Discoveries

In the event that no discoveries were encountered during night and/or weekend work, the PI shall record the information on the Consultant Site Visit Record and submit to MMC by email by 8 a.m. of the next business day.
 - b. Discoveries

All discoveries shall be processed and documented using the existing procedures detailed in Sections III – During Construction, and IV – Discovery of Human Remains. Discovery of human remains shall always be treated as a significant discovery.
 - c. Potentially Significant Discoveries

If the PI determines that a potentially significant discovery has been made, the procedures detailed under Section III – During Construction and IV –Discovery of Human Remains shall be followed.
 - d. The PI shall immediately contact the RE and MMC, or by 8 a.m. of the next business day to report and discuss the findings as indicated in Section III-B, unless other specific arrangements have been made.
- B. If night and/or weekend work becomes necessary during the course of construction
 - 1. The CM shall notify the RE, as appropriate, a minimum of 24 hours before the work is to begin.

2. The RE, or CM, as appropriate, shall notify MMC immediately.
- C. All other procedures described above shall apply, as appropriate.

VI. Post Construction

A. Submittal of Draft Monitoring Report

1. The PI shall submit two copies of the Draft Monitoring Report (even if negative), prepared in accordance with the HRG (Appendix C/D) that describes the results, analysis, and conclusions of all phases of the Archaeological Monitoring Program (with appropriate graphics) to MMC via the RE for review and approval within 90 days following the completion of monitoring. **It should be noted that if the PI is unable to submit the Draft Monitoring Report within the allotted 90-day time frame as a result of delays with analysis, special study results or other complex issues, a schedule shall be submitted to MMC establishing agreed due dates and the provision for submittal of monthly status reports until this measure can be met.**
 - a. For significant archaeological resources encountered during monitoring, the ADRP or Pipeline Trenching Discovery Process shall be included in the Draft Monitoring Report.
 - b. Recording Sites with State of California Department of Parks and Recreation

The PI shall be responsible for recording (on the appropriate State of California Department of Parks and Recreation forms DPR 523 A/B) any significant or potentially significant resources encountered during the Archaeological Monitoring Program in accordance with the City's HRG, and submittal of such forms to the South Coastal Information Center with the Final Monitoring Report.
2. MMC shall return the Draft Monitoring Report to the PI via the RE for revision or for preparation of the Final Report.
3. The PI shall submit revised Draft Monitoring Report to MMC via the RE for approval.

4. MMC shall provide written verification to the PI of the approved report.
5. MMC shall notify the RE or CM, as appropriate, of receipt of all Draft Monitoring Report submittals and approvals.

B. Handling of Artifacts

1. The PI shall be responsible for ensuring that all cultural remains collected are cleaned and catalogued
2. The PI shall be responsible for ensuring that all artifacts are analyzed to identify function and chronology as they relate to the history of the area; that faunal material is identified as to species; and that specialty studies are completed, as appropriate.

C. Curation of artifacts: Accession Agreement and Acceptance Verification

1. The PI shall be responsible for ensuring that all artifacts associated with the survey, testing and/or data recovery for this project are permanently curated with an appropriate institution. This shall be completed in consultation with MMC and the Native American representative, as applicable.
2. When applicable to the situation, the PI shall include written verification from the Native American consultant/monitor indicating that Native American resources were treated in accordance with state law and/or applicable agreements. If the resources were reinterred, verification shall be provided to show what protective measures were taken to ensure no further disturbance occurs in accordance with Section IV – Discovery of Human Remains, Subsection C.
3. The PI shall submit the Accession Agreement and catalogue record(s) to the RE or CM, as appropriate for donor signature with a copy submitted to MMC.
4. The RE or CM, as appropriate shall obtain signature on the Accession Agreement and shall return to PI with copy submitted to MMC.

5. The PI shall include the Acceptance Verification from the curation institution in the Final Monitoring Report submitted to the RE or CM and MMC.

D. Final Monitoring Report(s)

1. The PI shall submit one copy of the approved Final Monitoring Report to the RE or CM as appropriate, and one copy to MMC (even if negative), within 90 days after notification from MMC of the approved report.
2. The RE shall in no case issue the Notice of Completion until receiving a copy of the approved Final Monitoring Report from MMC which includes the Acceptance Verification from the curation institution.

MM-HIS-4 For construction activities associated with the North City Pipeline occurring within 1,000 feet of inventoried CR 450 (HRB 450) features, a qualified historic preservation specialist shall prepare a Protection and Stabilization Plan for the stone wall associated with the Scripps Meanley Stables and House Complex (HRB 450). The plan shall detail the methods that will be used to protect the structure during construction activities. This includes attachment methods for installing temporary protection to stabilize the wall, fencing around the wall, and an analysis of vibration source amplitudes. The vibration test shall be conducted by a qualified vibration engineer to determine if nearby construction-related vibration has the potential to damage the wall or further degrade its condition. If the engineer determines that vibration source amplitudes will not reach damaging levels, no additional protection will be required beyond stabilization and fencing. However, if the engineer determines that the wall could be damaged by construction-related vibration, additional protection measures would be required prior to the start of construction. Such measures would include rehabilitation of the wall in conformance with the Secretary of the Interior's Standards to repair existing cracks in the mortar and replace missing stones to strengthen the structure, and daily construction monitoring of the wall by a qualified historic preservation specialist during periods of construction that utilize equipment known to be significant sources of vibration. If the specialist identifies a need for further protection of the resource,

construction methods in the vicinity of the wall will be modified to avoid any damaging levels of vibration.

The final Protection and Stabilization Plan shall be appended to the final set of construction plans and brought to the attention of contractors prior to the start of any construction activities occurring within 1,000 feet of the stone wall.

San Vicente Reservoir Alternative

Mitigation measures MM-HIS-2 and MM-HIS-3 are also applicable to the San Vicente Reservoir Alternative.

6.10.4 ISSUE 2

Would the North City Project result in any impact to existing religious or sacred uses or result in the disturbance of any human remains within the potential impact area?

6.10.4.1 Impacts

No Project/No Action Alternative

No adverse effects to existing religious or sacred uses or disturbances of any human remains would occur under the No Project/No Action Alternative.

Miramar Reservoir Alternative

Avoiding impacts on religious or sacred places uses or human remains may be unavoidable in certain circumstances if resources are discovered during construction. A search of the NAHC Sacred Lands File was conducted for the North City Project APE. The NAHC results letter indicated the presence of Native American resources within the North City Project APE, although specific locations and details on the type of resources were not provided. Outreach letters were mailed on August 16, 2016, to all Native American group representatives included on the NAHC contact list in an attempt to solicit additional information relating to Tribal Cultural Resources that may be affected by the North City Project. Native American representatives were requested to define a general area where known resources intersect the North City Project APE. This will help guide communications with tribal groups and representatives that maintain specific traditional associations with particular sectional of the North City Project APE. To date, there have been no

responses to these outreach letters, and no Tribal Cultural Resources have been indicated within the APE.

No known religious or sacred uses have been identified within the Miramar Reservoir Alternative APE. There is potential for these to be encountered during future construction activities associated with implementation of the North City Project. Additionally, previously unknown prehistoric human remains and prehistoric sites have been uncovered within the City during both archaeological investigations and grading activities. Encountering human remains during construction activities is also possible, and adverse effects concerning construction of the Miramar Reservoir Alternative (including components common to the alternatives) and religious or sacred uses and human remains may occur.

Under CEQA, the lead agency is required to perform formal government-to-government consultation with Native American Tribes under AB 52. Three tribal entities have previously requested to be included on the City's AB 52 Notice List for project consultation: the Iipay Nation of Santa Ysabel (Santa Ysabel), the Jamul Indian Village of Kumeyaay Nation (Jamul), and Mesa Grande Band of Mission Indians (Mesa Grande). The City sent initial consultation letters to representatives of these tribal entities via certified mail on June 29, 2017 (see Appendix C of Appendix F2). Representatives from Santa Ysabel and Jamul responded positively to the consultation request, while no response was received from Mesa Grande.

City representatives met with representatives from Santa Ysabel and Jamul on July 14, 2017. The City described the North City Project and presented the results of this inventory to the tribal representatives. After reviewing the proposed mitigation measures (Section 6.10.3.3), both Santa Ysabel and Jamul representatives agreed that the required archaeological and Native American monitoring would reduce possible impacts to Tribal Cultural Resources to a non-significant level. At the conclusion of this meeting, Santa Ysabel and Jamul representatives agreed that no further consultation under AB 52 review is required.

San Vicente Reservoir Alternative

Potential impacts to religious or sacred places uses or human remains under the San Vicente Reservoir Alternative would be similar to those previously discussed for the Miramar Reservoir Alternative.

6.10.4.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

No impacts to existing religious or sacred uses or human remains would occur as a result of the No Project/No Action Alternative.

Miramar Reservoir Alternative

Absent mitigation, **potentially significant** impacts on known tribal cultural resources associated with religious or sacred uses or human remains may occur as a result of construction of the North City Project Miramar Reservoir Alternative.

San Vicente Reservoir Alternative

Absent mitigation, **potentially significant** impacts on known tribal cultural resources associated with religious or sacred uses or human remains may occur as a result of construction of the North City Project San Vicente Reservoir Alternative.

6.10.4.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No impacts to tribal cultural resources associated with religious or sacred uses or human remains would occur as a result of the No Project/No Action Alternative; therefore, no mitigation is required.

Miramar Reservoir Alternative

Mitigation measure MM-HIS-3 would be implemented during construction and contains procedures set forth in the CEQA Guidelines Section 15064.5(e), the California Public Resources Code Section 5097.98, and the California Health and Safety Code Section 7050.5 that would be enacted if human remains are discovered.

San Vicente Reservoir Alternative

Mitigation measure MM-HIS-3 is also applicable to the San Vicente Reservoir Alternative and would be implemented during construction activities.

6.10.5 LEVEL OF IMPACT AFTER MITIGATION

Table 6.10-4 indicates the Project components to which mitigation measures MM-HIS-1, MM-HIS-2, MM-HIS-3, and MM-HIS-4 are applicable.

**Table 6.10-4
Applicability of Historical Resources
Mitigation Measures to Project Components**

Project Component	MM-HIS-1	MM-HIS-2	MM-HIS-3	MM-HIS-4
<i>Components Common to Project Alternatives</i>				
Morena Pump Station			X	
Morena Pipelines		X	X	
North City Water Reclamation Plant Expansion			X	
NCPWF Influent Pump Station			X	
North City Pump Station			X	
North City Renewable Energy Facility			X	
LFG Pipeline		X	X	
MBC Improvements			X	
<i>Miramar Reservoir Alternative</i>				
NCPWF – Miramar Reservoir			X	
North City Pipeline	X	X	X	X
Dechlorination Facility			X	
Miramar WTP Improvements		X	X	
<i>San Vicente Reservoir Alternative</i>				
NCPWF – San Vicente Reservoir			X	
San Vicente Pipeline		X	X	
Mission Trails Booster Station			X	

Implementation of mitigation measures MM-HIS-1, MM-HIS-2, and MM-HIS-4 would mitigate identified adverse and potentially significant impacts related to a known prehistoric or historic archaeological sites, and adverse physical or aesthetic effects to a known prehistoric or historic building, structure, object, or site (Issue 1) resulting from construction of the Miramar Reservoir Alternative and more specifically, the North City Pipeline. Mitigation measure MM-HIS-3 would also be implemented and would mitigate identified adverse and potentially significant impacts related to unknown archaeological resources during construction of all project components.

Implementation of mitigation measure MM-HIS-3 would mitigate identified adverse and potentially significant impacts to existing religious or sacred uses or disturbances of any human remains (Issue 2).

6.11 HYDROLOGY AND WATER QUALITY

6.11.1 INTRODUCTION

The following section examines the impacts of the North City Project that relate to hydrology and water quality, and provides mitigation as necessary.

6.11.2 CEQA THRESHOLDS OF SIGNIFICANCE

The City of San Diego's (City's) California Environmental Quality Act Significance Determination Thresholds (City of San Diego 2016a) and Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.) contain significance guidelines related to hydrology and water quality impacts.

Use of Hydrology and Water Quality Thresholds

The thresholds associated with hydrology are listed below, along with an explanation either of why the impact is not applicable or under CEQA less than significant, or reference to the relevant issue discussion in the following sections:

Hydrology

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.

As discussed in the setting, the only components of the Project Alternatives within a 100-year floodplain are pipeline facilities, which would be located underground, and would not alter the existing boundaries of the floodplain or cause flood flows to be altered or redirected, either on-site or off-site. Pipeline-related facilities such as blow-off valves or access vaults could be located within a 100-year floodplain, but would be flush with the ground and would not involve appreciable changes to the cross-sectional area of the floodplain. None of the pump stations, treatment facilities, plant improvements or other aboveground facilities are within a 100-year floodplain. Because Project Alternatives do not involve appreciable development or habitable structures in the 100-year floodplain, the North City Project would not have an adverse impact with regard to public safety or property damage from flood hazards. Under CEQA impacts would be less than significant with regard to increased flooding on and off site.

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.

Project Alternatives do not involve groundwater wells or groundwater extraction and thus would have no impact with respect to depletion of the groundwater aquifer. Proposed facilities that would involve new impervious surfaces (i.e., building footprints and/or concrete/asphalt surfaces) or replacement of existing impervious surfaces include the North City Pure Water Facility (NCPWF), the North City Water Reclamation Plant (NCWRP) Expansion, the Morena Pump Station, improvements to the Metro Biosolids Center (MBC) and Miramar Water Treatment Plant (WTP). The NCPWF would have the greatest amounts of new or replaced impervious surface, with other components consisting of small pads or located within previously developed areas. Impervious surfaces at the Morena Pump Station are expected to be reduced from existing conditions.

Increases in impervious surfaces cause a greater percentage of rainfall to become runoff instead of infiltrating into the ground and becoming available for deep percolation (recharge). However, the impervious surfaces proposed are disconnected and dispersed over a very large geographical area, and the runoff from priority development projects (as defined in the City's Stormwater Standards Manual) will be directed to structural pollutant control features that promote stormwater capture and treatment to applicable water quality standards (further discussed in Section 6.11.3). Furthermore, the most significant recharge in the region occurs in wetlands, along stream and river corridors, and beneath standing bodies of water. Much of the rainfall within upland areas is lost to runoff, evapotranspiration or remains within the vadose zone. Given the impervious surfaces would not be located in major recharge areas, the potential effects of the Project on groundwater recharge would be negligible or minor.

In addition, because the region is served by municipal water services from San Diego County Water Authority member agencies (including the City of San Diego), the land uses surrounding the Project Alternatives are not reliant on domestic or private groundwater wells (which would be susceptible to the effects of decreased recharge). The San Diego Regional Water Quality Control Board (RWQCB) has excepted groundwater in the Miramar and Tecolote hydrologic areas from the "Municipal" beneficial use designation under the terms and conditions of State Water Resources Control Board (SWRCB) Resolution No. 88-63, Sources of

Drinking Water Policy (San Diego RWQCB 2016a). This exception is based on the finding that groundwater in these areas is unlikely to be a source of municipal drinking water, in the past or future. Because the impacts of the Project on groundwater recharge are negligible/minor, and because the region's water demands are met by municipal services (instead of domestic/private groundwater wells), the impact of the Project Alternatives on groundwater recharge under CEQA is less than significant.

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.

The Project Alternatives would involve greater than 1 acre of land disturbance as well as construction activities within water quality sensitive areas. This threshold is addressed in this section under Issues 1, 2, and 3 (Sections 6.11.3 and 6.11.4).

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, or substantial changes to stream-flow velocities.

The Project Alternatives include components that could alter drainage patterns. This threshold is generally applicable to aboveground components and is addressed under Issue 1 and Issue 2 (Section 6.11.3).

Water Quality

The thresholds associated with water quality are listed below, along with either (1) an explanation of why there is no impact, or (2) a reference to the relevant issue discussion in the following sections:

1. Compliance with the Water Quality Standards is assured through permit conditions provided by LDR Engineering for private projects. For the Project Alternatives, compliance is the responsibility of the City of San Diego Public Utilities Department. Adherence to the City's Stormwater Standards is the Water Quality threshold, and is normally considered to preclude water quality impacts unless substantial evidence supports a fair argument that a significant impact will still occur.

The water quality related impacts on stormwater runoff are addressed under Issue 1 and Issue 2, and the impacts of the North City Project's non-stormwater discharges on water quality are addressed under Issue 3 (Section 6.11.5).

6.11.3 ISSUE 1 AND ISSUE 2

Would the North City Project increase impervious surfaces and associated increased runoff, or result in a substantial alteration to on- and off-site drainage patterns due to changes runoff flow rates or volumes?

6.11.3.1 Impacts

No Project/No Action Alternative

Under the No Project/No Action Alternative, there would be no changes in impervious surfaces, or alterations to drainage patterns because development of North City Project components (project components) would not occur. Therefore, the No Project/No Action Alternative would have no impact with regard to alteration to on- and off-site drainage patterns.

Miramar Reservoir Alternative

Under the Miramar Reservoir Alternative, impacts to drainage patterns and runoff flow rates or volumes would be limited to those project components that involve appreciable increases in the coverage of impervious surfaces. Components of the Miramar Reservoir Alternative are addressed separately below.

Pipelines

The Morena Wastewater Forcemain and Brine/Centrates Line, the 12-inch Landfill Gas Pipeline, and the North City Pure Water Pipeline (North City Pipeline) would be located belowground and will 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 is the primary method to install the conveyance facilities. Trenchless methods could include methods such as auger boring/auger jack and bore, microtunneling, or horizontal directional drilling. 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 repaved (if in a developed/urban area). Pipeline installations are narrow, and it is standard practice to match the surface grade and cover type when completing an installation. Where the Morena Pipeline would cross Tecolote Creek just to the east of Tecolote Road bridge, open cut installation would occur, which also involves restoring the pipeline section to pre-construction condition, including cover type

and topography. Therefore, no substantial adverse effects due to increases in impervious surfaces and/or alterations to on- and off-site drainage patterns associated with proposed conveyance facilities would occur.

Staging and Access

Pipeline staging areas will typically be located within roadway rights-of-way and adjacent parking lots or other developed areas, and would move frequently as construction progresses along the alignment. No new access roads would be needed. Staging areas for open cut construction would range from 30 feet to 60 feet wide and would occupy half the roadway width. Staging areas for trenchless construction would range from 20 feet by 50 feet up to 100 feet by 150 feet. These features would be temporary and would not require permanent changes in surface cover or newly paved areas. Therefore, no substantial adverse effects due to increases in impervious surfaces and/or alterations to on- and off-site drainage patterns associated with construction staging and access facilities would 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. With the exception of the new facilities of the Miramar Reservoir Alternative, such as the NCPWF and NCWRP Expansion, increases will be minor, localized, and/or within existing paved/developed areas. For example, improvements at the Miramar WTP and the Morena Pump Station would occur within the development footprint of the facilities which are already served by stormwater drainage infrastructure, and thus would involve negligible changes in the flow, volume, and direction of stormwater runoff.

The City has stormwater standards in place to ensure the Project Alternatives would be designed to both avoid substantial increases in the rate or volume of stormwater runoff leaving the site, and avoid discharge of polluted stormwater. This means reducing discharges of pollutants to the stormwater system to the maximum extent practicable through implementation of low-impact development (LID) designs, source control and site design measures, structural pollutant control measures, and hydromodification management measures (City of San Diego 2016b). Collectively these are referred to as stormwater quality best management practices (BMPs). The City's standards are outlined in the Storm Water Standards manual, and have been developed to be consistent with the Regional Municipal Separate Storm Sewer System (MS4) Permit (see Section 5.11.3) and City's Storm Water Runoff and Drainage

Regulations (Code of Ordinances Chapter 14, Article 2, Division 2). Compliance with the Water Quality Standards is ensured through permit conditions for private projects, and for public projects (such as the proposed North City Project), is the responsibility of the particular department implementing the Project, in this case, the City's Public Utilities Department.

Specific requirements for implementation of BMPs or LID designs vary based on the type of project, the sensitivity of receiving waters, and the amount of impervious surfaces proposed. The City's "Storm Water Requirements Applicability Checklist" (Form DS-560) 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 facilities and improvements fall into all three of these categories of projects. Thresholds that define PDPs depend on the specific location of the project. For example, a project is a PDP if it creates or replaces more than 5,000 square feet of impervious surface, or 2,500 square feet if discharging directly to an environmentally sensitive area. Except for the underground pipeline facilities and small improvements to existing facilities, nearly all the Project components are likely to be defined¹ as PDPs. Table 6.11-1 shows each of the Project components and the stormwater standards that apply to each for both construction activities and permanent stormwater management/design.

Table 6.11-1
Storm Water Requirements Applicability for Project Components

Project Component	Site Priority¹	Construction: SWPPP or WPCP	Permanent BMPs?	PDP or Standard Project?
Morena Pump Station	High	SWPPP	Yes	PDP
North City Water Reclamation Plant Expansion and Influent Conveyance	High	SWPPP	Yes	PDP
North City Pure Water Facility and Pure Water Pump Station	High	SWPPP	Yes	PDP
Eastgate Mall Roadway Improvements	High	SWPPP	Yes	PDP
North City Dechlorination Facility	Low	WPCP	Yes	Standard
Miramar Water Treatment Plant Improvements	Low	WPCP	No	N/A

**Table 6.11-1
Storm Water Requirements Applicability for Project Components**

Project Component	Site Priority ¹	Construction: SWPPP or WPCP	Permanent BMPs?	PDP or Standard Project?
Metropolitan Biosolids Center Improvements	Low	WPCP	Yes	Standard
Landfill Gas Pipeline and Compressor Station	High	SWPPP	Yes	Standard
North City Renewable Energy Facility	Low	WPCP	Yes	PDP

Notes: SWPPP = Stormwater Pollution Prevention Plan; WPCP = Water Pollution Control Plan; PDP = priority development project

¹ Site priority is based on project size and sensitivity of receiving water (i.e., area of special biological significance).

The PDPs identified in Table 6.11-1 have prepared stormwater quality management plans (SWQMPs) that define impervious areas and drainage management areas, identify potential pollutant sources and receiving water sensitivity, determine infiltration BMP feasibility, perform BMP sizing calculations, and describe how each project will meet stormwater quality standards, including hydromodification control requirements, where applicable (HDR 2017; MWH Americas et al. 2016). Stormwater quality management plans 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 not defined as PDPs 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.

As indicated in Table 6.11-1, stormwater standards and submittal requirements have been determined for each component of the Miramar Reservoir Alternative, with

drainage studies and stormwater quality management plans being submitted as part of the City’s project development process. The information below on drainage calculations and stormwater quality BMPs is from project design submittals, and thus are considered part of the Project for the purposes of environmental review (HDR 2017; MWH Americas et al. 2016). The site conditions and stormwater management approach for project components are described below.

North City Pure Water Facility

The NCPWF would be developed within an area of roughly 10 acres in size north of the existing NCWRP. Based on the Preliminary Stormwater Quality Management Plan, new impervious surface areas would amount to 6.64 acres, or 83% of the NCWPF’s development footprint. Runoff from the NCPWF will primarily flow in the same fashion as the existing site runoff. Stormwater will be collected in proposed storm pipe systems that will wither be conveyed to biofiltration basins or to underground detention vaults where stormwater will be temporarily stored to fulfill hydromodification requirements and mitigate the increase in runoff for the 100-year 6-hour storm event. Table 6.11-2 shows a comparison of the runoff volume from the 100-year 6-hour storm event and how the design of the NCPWF has accounted for it.

Table 6.11-2
NCPWF 100-Year 6-Hour Stormwater Runoff Volume Comparison

Drainage Area	Existing Conditions 100-Year 6-Hour Storm Event	Proposed Conditions 100-Year 6-Hour Storm Event	Volume Increase	Storage Capacity of Proposed Underground Storage System	Proposed Underground Storage Capacity >Volume Increase?
	<i>(Cubic Feet)</i>				
North	12,407	27,812	15,057	23,563	Yes
East	17,874	27,812	9,938	35,190	Yes

Source: MWH Americas et al. 2016, Appendix A-7.

As shown in Table 6.11-2, the NCPWF has been designed with underground stormwater storage systems with sufficient capacity to store the increase in volume anticipated to be produced under the 100-year 6-hour storm, which means the detention volume would be sufficient for all storms with a higher recurrence interval. In addition to the runoff volume, the design of the NCPWF also reduces the peak discharge to the pre-development peak discharge rate of 3.89 cubic feet per

second in the 100-year 6-hour storm event. Since the existing site is split into two sub-basins, post-developed stormwater would be required to be discharged at these two discharge points where runoff is currently leaving the site. After storage and treatment about half of the on-site stormwater surface will continue to flow north towards a natural gully that leads to concrete-lined channel within the Amtrak-owned right-of-way. The other half will be connected to the existing 27-inch pipe that discharges into a concrete channel north of the Robertson's Ready Mix plant and conveys drainage to the Amtrak-owned right-of-way. The concrete channel eventually discharges into the Carroll Canyon Creek that then discharges into the Peñasquitos Lagoon. The ultimate point of discharge is the Pacific Ocean south of Torrey Pines State Beach.

In addition, source control BMPs similar to those described below (Stormwater Measures Common to All Facilities), as applicable to the site and described in the SWQMP, will be implemented.

Eastgate Mall Roadway Improvements

The Eastgate Mall Roadway Improvements provide for a widened section of Eastgate Mall adjacent to the NCWRP and NCPWF sites and an improved signalized intersection at the entrance points to both facilities. The Project is anticipated to result in disturbance of 1.77 acres, of which 0.57 acre would be developed with impervious surfaces. This results in a 32% increase in impervious surfaces compared to existing conditions along Eastgate Mall. Eastgate Mall is a crowned roadway with a high point located on the western edge of the Project near the Interstate 805 Bridge.

As shown in Table 6.11-3, the Eastgate Mall Roadway Improvements has been designed with a bio-retention stormwater storage system with sufficient capacity to store the increase in runoff volume anticipated to be produced under the 100-year, 6-hour storm. The detention volume would be sufficient for all storms with a higher recurrence interval. In addition to storing the increase in runoff volume, the design of the Eastgate Mall Roadway Improvements will reduce the peak discharge to the match the pre-development peak discharge rate of 3.04 cubic feet per second in the 100-year, 6-hour storm event. After detention storage and treatment, stormwater runoff from the northern half of the roadway will flow east along the existing gutter of Eastgate Mall where it will discharge into an existing curb inlet. The stormwater runoff from the southern half of the roadway will discharge to an energy dissipater to slow flow velocities to match existing overland flow velocities. The runoff will flow east along an existing unimproved drainage swale and will be

captured by an existing grated inlet located on the south side of Eastgate Mall immediately to the east of the property boundary. The existing grated inlet connects with the existing curb inlet on the north side of Eastgate Mall via an 18-inch-diameter reinforced concrete pipe (RCP) storm drain. The stormwater continues north connecting into a concrete channel north of the Robertson’s Ready Mix plant as described under the NCPWF section, above.

**Table 6.11-3
Eastgate Mall Roadway Improvements
100-Year 6-Hour Stormwater Runoff Volume Comparison**

Drainage Area	Existing Conditions 100-Year 6-Hour Storm Event	Proposed Conditions 100-Year 6-Hour Storm Event	Volume Increase	Storage Capacity of Proposed Bio-Retention	Proposed Underground Storage Capacity >Volume Increase?
	<i>(Cubic Feet)</i>				
North	7,408	12,572	5,164	6,300	Yes

Source: West Coast Civil 2017.

In addition, source control BMPs similar to those described below (Stormwater Measures Common to All Facilities), as applicable to the site and described in the SWQMP, will be implemented.

North City Water Reclamation Plant Expansion

The NCWRP Expansion is anticipated to result in disturbance of 13.25 acres, of which 6.95 acres would be developed with impervious surfaces, or a 25% increase in impervious surfaces compared to existing conditions. Based on the location and receiving water sensitivity of the NCWRP Expansion, it is subject to stricter hydromodification control requirements. The drainage on the site consists of two areas: the north area drains east to a dirt channel through an existing 60-inch reinforced concrete pipe, which conveys flows to the southwest to a canyon tributary to Rose Creek. The south basin drains to an existing 18-inch storm drain, which conveys flows in a southwestern direction eventually traveling south under Miramar Road for discharge into the adjacent canyon. All stormwater on site from the new or replaced impervious surface will be routed to six on-site biofiltration facilities prior to entering the existing storm drain system. The biofiltration facilities are sized to meet the water quality and hydromodification requirements of the City of San Diego Storm Water Standards BMP Design Manual. Due to geotechnical constraints, including

review of the adjacent structure foundations, the distance of each BMP to the adjacent structures, grain size and seepage analysis of the materials underneath the BMPs, liquefaction potential, and seismic settlement, it has been determined that biofiltration basins will allow for partial infiltration (CH2M 2017). In addition, source control BMPs similar to those described below (Stormwater Measures Common to All Facilities), as applicable to the site and described in the SWQMP, will be implemented.

Morena Pump Station

The Morena Pump Station and the other proposed facilities would have a lesser degree of new impervious surfaces. The Morena Pump Station would result in a disturbance area of 0.97 acre located on a 1.3-acre site that is already developed with impervious surfaces. The disturbance area would consist entirely of impervious surfaces, resulting in a 16% increase compared to existing conditions (which is mostly, but not all, impervious) (KEH & Associates 2017). The Morena Pump Station is categorized as a PDP under the City's Stormwater Standards Manual, and like the NCPWF, has prepared a stormwater quality management plan to demonstrate compliance with the City's stormwater standards, and show how stormwater quality features will be integrated into the Project design. The runoff from the site sheet flows north towards Sherman Street and Custer Street, from where it travels along Sherman Street via curb and gutter in a northeastern direction into an existing public curb inlet located approximately 200 feet from the Project site. The public curb inlet is connected to an existing 24-inch reinforced concrete storm drain pipe from which runoff is routed northwest until it meets existing train tracks. The pipe jogs under the tracks and discharges on the western side of the train track slope. Stormwater then flows into an existing constructed open channel and is picked back up by a 60-inch reinforced concrete pipe where it is eventually discharged to a natural channel that discharges into the Tecolote Creek Channel and Mission Bay.

The proposed stormwater collection system consists of directing on-site runoff to the north and west corners of the site via a concrete gross gutter in the middle of the site. Because of site constraints related to shallow groundwater and soils with low infiltration (Type D soils), infiltration basins are not proposed. Instead, prior to discharge off site, flows will be collected at the northern corner by a 4-foot x 6-foot modular wetland system which will then discharge the water into a hydromodification management BMP concrete tank (cistern). Flows at the west corner will be collected by a separate 4-foot x 8-foot modular wetland system, before being discharged into the same "cistern" tank. The modular wetland systems will be sized to handle the total design capture volume required by the City's Stormwater

Standards, which is 2,472 cubic feet (KEH & Associates 2017). This stormwater collection and treatment system, and associated design capture volume, also complies with hydromodification standards of the MS4 Permit. The “cistern” tank will then release the water at a controlled rate of flow, via a submersible pump and a 6-inch pipeline to the existing north curb inlet in Sherman Street.

In addition, source control BMPs similar to those described below (Stormwater Measures Common to All Facilities), as applicable to the site and described in the SWQMP, will be implemented.

Stormwater Measures Common to All Facilities

Other proposed pump stations and/or booster stations would involve much smaller areas, generally less than 1 acre in size, would be scattered along the North City Project study area, and would also involve an increase in impervious surfaces. Other project components in Table 6.11-1 that are not exempt from post-construction (permanent) BMPs will implement source control BMPs, and manage stormwater runoff to ensure pollutants do not enter the storm drain system and that pre-existing drainage patterns are maintained, as required to comply with the City’s Storm Water Standards Manual.

In addition to biofiltration basins that will be sized to fulfill the design treatment volume and hydromodification requirements in the City’s Storm Water Standards Manual, source control BMPs will be implemented at all components of the Miramar Alternative defined as a “Standard Project” or PDP. Source control BMPs are measures that prevent polluted stormwater from being discharge in the first place, by protecting pollutant sources from stormwater runoff, or directing non-stormwater discharges to the sewer system or individual treatment systems. Examples of source control measures to be implemented at the NCPWF include the following:

- Prevention of illicit discharges into the MS4
- Signage and stenciling to prohibit all non-stormwater discharges
- Protection of trash storage areas from rainfall, run-on, runoff, and wind dispersal
- Use of interior floor drains, elevator shaft sump pumps, and loading dock sumps to ensure poor-quality water is no sent to the storm drain
- Minimizing use of landscaping chemicals such as herbicides, pesticides, and fertilizers
- Regular maintenance and sweeping of plazas, sidewalks, and parking lots

Discharge sources that are not stormwater (e.g., fire sprinkler test water, industrial process wastewaters) would be sent to the sewer system or treated appropriately prior to discharge. Bulk chemical storage that occurs outdoors will be installed on slabs on grade with secondary containment for each chemical sized to contain 110% of the largest volume of one tank plus volume to contain 25-year rain (per International Code Council 2015, p. 331). Pumps will be located under canopies for weather protection, and exposed equipment or processes with hazardous materials components will be protected by fencing and bollards and/or located indoors. Facility zones where the potential exists for chemical spillage will be isolated from the storm drain system with curbs, berms, and other types of containment zones.

Summary

Together, the standards listed in this section would ensure that 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. Project components that would create additional impervious surfaces have been designed to comply with the Regional MS4 Permit, the Construction General Permit, and the City's Stormwater Standards Manual, 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. Project components that are located in or discharge to a water quality sensitive area would be subject to stricter requirements of the MS4 Permit and the City's Stormwater Standards Manual. Compliance with these standards is required by law, and these requirements are being met as part of the planning, design, and engineering of individual components of the North City Project.

Therefore, no substantial adverse effect due to the Miramar Reservoir Alternative on drainage patterns would occur and the rate/volume of stormwater runoff would be minor.

San Vicente Reservoir Alternative

The analysis and conclusions regarding impacts on drainage patterns and the rate/volume of stormwater runoff for the Miramar Reservoir Alternative are equally applicable to the San Vicente Reservoir Alternative. Compliance with the Regional MS4 Permit, the Construction General Permit, and the City's Stormwater Standards Manual are required for City projects. For this reason, no substantial

adverse effect due to the San Vicente Reservoir Alternative on drainage patterns would occur, and the rate/volume of stormwater runoff would be minor.

6.11.3.2 Significance of Impact Under CEQA

No Project/No Action Alternative

The No Project/No Action Alternative would have **no impact** with regard to alteration to drainage patterns and the rate/volume of stormwater runoff.

Miramar Reservoir Alternative

Compliance with the City's Stormwater Standards Manual, the Construction General Permit, and the Regional MS4 Permit (San Diego RWQCB Order No. R9-2015-001) is adequate to eliminate or substantially minimize adverse effects with regard to alteration to drainage patterns and the rate/volume of stormwater runoff.

Impacts due to substantial increases in impervious surfaces and/or alterations to on- and off-site drainage patterns would be **less than significant**.

San Vicente Reservoir Alternative

Compliance with the City's Stormwater Standards Manual, the Construction General Permit, and the Regional MS4 Permit (San Diego RWQCB Order No. R9-2015-001) is adequate to eliminate or substantially minimize adverse effects with regard to alteration to drainage patterns and the rate/volume of stormwater runoff.

Impacts due to substantial increases in impervious surfaces and/or alterations to on- and off-site drainage patterns would be **less than significant**.

6.11.3.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No mitigation is required.

Miramar Reservoir Alternative

No mitigation is required.

San Vicente Reservoir Alternative

No mitigation is required.

6.11.4 ISSUE 3

Would the North City Project 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?

6.11.4.1 Impacts

Changes in water quality in receiving waters associated permanent land-use changes (including increases in impervious surfaces and alteration of drainage patterns) are addressed under the preceding issues discussion (Section 6.11.3). This analysis addresses stormwater and non-stormwater discharges during construction, purified water (product water discharges) to Miramar Reservoir and San Vicente Reservoir, as well as planned and unplanned (emergency) treated water discharges during facility operations. For the purpose of this analysis, the significance standard regarding alteration of surface or groundwater quality is whether such alterations would violate the terms of an NPDES permit, ~~result in the loss or impairment of beneficial uses identified in Table 5.11-1,~~ or lead to exceedance of water quality objectives established for applicable receiving waters in the Water Quality Control Plan for the San Diego Basin (Basin Plan).

As discussed in Chapter 2 (Section 2.5.2), activities associated with the North City Project would be subject to several permits and approvals from the SWRCB and the San Diego RWQCB. Implementation of the North City Project 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 (WDRs) and National Pollutant Discharge Elimination System (NPDES) permits to authorize discharge of advanced treated 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 WDRs is to ensure proposed activities do not substantially degrade water quality and that quality of discharges are controlled in a manner consistent with the water quality objectives of the Basin Plan. 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 substantially degrade water quality.

No Project/No Action Alternative

Under the No Project/No Action Alternative, wastewater flows and associated pollutant loads to the Point Loma Wastewater Treatment Plant (Point Loma WWTP) and Point Loma Ocean Outfall (PLOO) would not be offloaded to the NCPWF. Through phased implementation of a proprietary technology called Peroxide Regenerated Iron Sulfide Control, the City has and will continue to achieve substantial reductions in the total suspended solids (TSS) loads discharged through the PLOO. However, as wastewater generation within the service area increase in the future, the reduced wastewater flow diversion capability means the Point Loma WWTP would need to treat and discharge a higher volume of wastewater when compared to the Project Alternatives. This would result in reduced detention time in the Point Loma WWTP sedimentation basins. As a result, under the No Project/No Action Alternative, the possibility exists that the City might not be able to maintain the current level of TSS removal (which in recent years has been close to the 30 milligrams per Liter (mg/L) secondary treatment standard). Under all Project Alternatives, the City would continue to operate the Point Loma WWTP under a modified NPDES permit, which includes a Secondary Treatment Waiver granted by the U.S. Environmental Protection Agency pursuant to Clean Water Act Sections 301(h) and 301(j)(5) for TSS and biochemical oxygen demand. Should alternative means of ensuring continued compliance with Clean Water Act requirements for the Point Loma WWTP be required in the future under the No Action Alternative, such an action would be subject to separate environmental review under CEQA and/or NEPA, and is outside the scope of this Environmental Impact Report/Environmental Impact Statement (EIR/EIS). Because the Point Loma WWTP would continue to meet its WDR and NPDES permits, no substantial adverse effects would occur.

All other operational discharges (i.e., planned and unplanned treated water discharges during facility operations) would continue to occur as they do currently and thus no impact would occur. As there would be no construction activities, there would be no impact with regard to construction related impacts to surface or groundwater.

Miramar Reservoir Alternative

Under the Miramar Reservoir Alternative, impacts to water quality from discharges into surface or groundwater could result from construction activities as well as long term changes in the location and quality of point-source discharges within the City's wastewater and drinking water systems. Components of the Miramar Reservoir Alternative are addressed separately below.

Construction Stormwater Discharges

There are two typical ways that construction activities associated with the Miramar Reservoir Alternative 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 gulying on site or downgradient. Land disturbance would be required in order 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 6.11.3, as well as implementation of the City's Stormwater Standards Manual.

Compliance with the Construction General Permit requires that a stormwater pollution prevention plan (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, which is a standard requirement for all applicable City of San Diego projects, would protect water quality in the Project area due to construction-induced erosion and sedimentation. (See also Section 6.9, Health and Safety/Hazards, 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).

Therefore, required coverage under the Statewide Construction General Permit and compliance with the City’s stormwater standards would be adequate to ensure that no substantial adverse effects due to construction to water quality would occur.

Temporary Groundwater Dewatering Discharges

Construction and maintenance of a number of project components may require temporary 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 will depend on location, depth of excavation, and timing (season/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 may 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 under the San Diego RWQCB’s “Conditional Waivers of Waste Discharge Requirements for Low-Threat Discharges in the San Diego Region” as described in Section 5.11.3, provided certain conditions are met (see San Diego RWQCB Order No. R9-2014-0041). This includes notification to the RWQCB and implementation of certain BMPs, including testing of groundwater and comparison to screening levels for a number of physical, chemical, and thermal parameters (as applicable). Where groundwater does not exceed screening levels, the dewatering discharges would not result in substantial adverse effects on receiving water quality. If groundwater dewatering were required at sites with evidence of groundwater contamination, such dewatering discharges would be either treated prior to discharge or disposed of at an appropriate permitted facility. In cases where the conditional waiver is not applicable, the City and/or its contractor would be required to obtain RWQCB approval through a general or individual WDR/NPDES permit, and conduct dewatering activities in accordance with the hazardous materials mitigation measures (MMs) described below. The City’s preferred and typical method of dewatering is by pumping water into an adjacent sewer facility (trunk sewer or sewer main) rather than a surface water body, which avoids potential receiving water impacts and the need for NPDES permitting.

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 6.9, there are a number of hazardous materials sites that may have had contaminant releases to groundwater in the vicinity of planned excavations, specifically, at the Morena Pump Station and certain locations along the North City Pipeline and Pure Water Dechlorination Facility. Where contaminated or potentially contaminated groundwater is encountered, it is the City’s standard procedure to either collect the groundwater by vacuum truck and dispose of it at an appropriate facility, or

treat and discharge it in coordination with the San Diego RWQCB and in accordance with applicable NPDES/WDRs. These standard procedures and permit requirements are sufficient to ensure the impacts of groundwater dewatering discharges on water quality would be minor, and no substantial adverse effects would occur. Mitigation measure MM-HAZ-4 further ensures that no substantial adverse effect would occur due to groundwater dewatering by implementing the City's standard provisions for encountering or releasing hazardous substances, which includes implementation of proper dewatering and disposal methods.

Construction-Related 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). Given that dust control activities would be temporary and localized, and would not be done in a manner that generates runoff, the activity would not cause or contribute to exceedances of water quality objectives contained in the relevant Basin Plan, and no substantial adverse effects would occur.

Treated Wastewater Discharges to the Pacific Ocean

Although the proposed treatment, pumping, and conveyance facilities do not involve physical modification to the Point Loma WWTP or City's ocean outfalls, the implementation of the North City Project would decrease the volume of water needing to be discharged through the PLOO and the South Bay Ocean Outfall by diverting some of the City's wastewater stream to the NCPWF and increasing the capabilities of the NCWRP. Based on upstream recycled water production and use, diversion of flows to the South Bay Water Reclamation Plant, and production and use of purified water, the City is projecting annual flow rates of 172 million gallons per day (MGD) in 2023, 160 MGD in 2027, and 139 MGD in 2035 (San Diego RWQCB 2016b). With a decrease in volume needing to be discharged through the ocean outfalls, the North City Project would not result in substantial adverse effects on ocean water quality.

The Point Loma WWTP is covered under an individual NPDES permit (RWQCB Order No. R9-2017-0007), as discussed in Section 5.11.3. The Point Loma WWTP has had an ongoing authorization from the SWRCB and U.S. Environmental Protection Agency for variance from secondary treatment requirements for the discharge of TSS and biochemical oxygen demand. Order No. R9-2017-0007 extends this renewable Secondary Treatment Waiver (which has been in effect since 1995) to year 2022. Order No. R9-2017-0007 recognizes the City's phased implementation of a proprietary technology called Peroxide Regenerated Iron Sulfide Control, which has contributed to a significant increase in TSS removal. The Order also includes an implementation schedule for the initial phases of the City's Pure Water Program. Diversions of treated wastewater away from the ocean outfalls to the NCPWF (and eventually after advanced treatment, to Miramar Reservoir) would 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 Project would have a beneficial impact with respect to this existing issue.

Discharge of Purified Water to Miramar Reservoir

An engineered system of pumps, pipes, valves and gates manages the volume, water level and origin of water within Miramar Reservoir. The Miramar WTP primarily treats raw water from Lake Skinner that is conveyed through the second San Diego Aqueduct for delivery into the City's water distribution system. The reservoir was constructed for the purpose of holding imported raw water supplies, with water quality that is mostly dependent on the timing, frequency and magnitude of imported water deliveries to the reservoir. As indicated in Section 5.11, the watershed draining into Miramar Reservoir is limited to the immediate area that surrounds it (approximately 1 square mile), being largely a constructed feature that does not intersect a major drainage. The reservoir itself occupies 21% of this watershed area, and almost all of the surface runoff within Miramar Reservoir watershed is collected in storm drain facilities and diverted to adjoining watersheds; that is to say, diverted away from the reservoir (City of San Diego 2016c). As a result, surface runoff contributes very little to the overall reservoir water balance or nutrient load, since close to 100% of the water is comprised of imported water delivered to the reservoir by the City. The water quality within the reservoir at any one time is therefore primarily dependent on the water quality of imported water sources.

As described in Chapter 2 (Section 2.5.3), the quality of purified water discharges to Miramar Reservoir would be higher (e.g., lower concentrations) than the existing raw water imports from the State Water Project and Colorado River

Aqueduct and would meet all drinking water quality standards. Purified water discharges would not involve discharge of pollutants to a receiving water, will have improved water quality with respect to human health and safety, and will be required to meet NPDES and WDR permit conditions to authorize purified water discharges to Miramar Reservoir, once developed by the San Diego RWQCB. The Project would replace the existing imports of water through the second San Diego Aqueduct with the discharge of purified water through 188 diffusers positioned throughout the lake, all of which will be positioned at an elevation above the hypolimnion, so as to have minimum impacts to lake stratification and seasonal turnover.¹ Compared to existing conditions, the throughput of water within the reservoir (i.e., the volume of water entering and exiting the reservoir) would increase, and become continual rather than episodic (imported water is currently discharged only as needed to maintain the operational water level). The variability in source water quality would decrease since the Miramar Reservoir Alternative would switch away from the Colorado River and/or the State Water Project, each of which has significantly different source water quality, to purified water discharges anticipated to have relatively consistent water quality characteristics.

As indicated in Section 5.11, the beneficial uses of Miramar Reservoir include municipal and domestic supply (MUN), industrial service supply (IND), warm freshwater habitat (WARM) and wildlife habitat (WILD), water contact recreation (REC 1) and non-contact water recreation (REC 2), and hydropower generation (POW). The water quality objectives applicable to the Project Alternatives, as outlined in the Basin Plan, are designed to protect these beneficial uses. Therefore, consistency with water quality objectives is ~~generally~~ considered as evidence that beneficial uses are being protected. Water quality objectives are both numeric and narrative in nature, and may be specific to individual water bodies, unique to certain beneficial uses, or general in nature. Water Code Section 13241 recognizes that while water quality objectives must ensure the reasonable protection of beneficial uses and the prevention of nuisance, it may be possible for the quality of the water to be changed to some degree, so long as beneficial uses are not unreasonably affected (San Diego RWQCB 2016a). In addition, in recognition that multiple beneficial uses may have competing water quality goals, the San Diego RWQCB passed a resolution clarifying their policy on beneficial uses (Resolution No. R9-2017-0030) in February 2017 indicating that the key (highest) beneficial use for drinking water reservoirs, including Miramar Reservoir, is for drinking water

¹ Turnover is defined as the first day in late fall/early winter when the difference between the highest and lowest temperature is less than 1 degree Celsius (°C) along the water column.

supply (MUN). Beneficial uses associated with habitats and ecosystems (e.g., WARM and WILD) are prioritized for ocean waters, bays and estuaries, and stream systems, but are not considered as a “key” beneficial uses for drinking water reservoirs (Resolution R9-2017-0030; San Diego RWQCB 2017).

The Miramar Reservoir Alternative would have beneficial impacts with regard to the key beneficial use of MUN, because the purpose of the Project is to expand the City’s potable water production capacity, to replace imported water supplies, and to meet projected water demands within the City’s service area. The Project would result in higher source-water quality for drinking water purposes resulting from the advanced purification process and the switch away from imported water with comparatively high levels of TDS and salts. The Project would have no impact with regard to IND and POW, since the Miramar WTP would continue to treat the water within the reservoir to potable standards for delivery into the City’s water distribution system, which includes industrial users. See Chapter 1 (Section 1.2, Purpose and Need) and Chapter 6.17 (Water Supply) for further information.

With regard to the ability of Miramar Reservoir to continue supporting WARM, WILD, REC 1 and REC 2 beneficial uses, the effects of the Project will vary depending on anticipated changes in individual water quality parameters, and how important each is in supporting various uses. Table 6.11-4 provides information on existing water quality, product water quality, applicable basin plan objectives, and the future expected water quality for key physical and biochemical parameters within the reservoir. The information is based on Appendix G, which used the Estuary Lake and Coastal Ocean Model (ELCOM) and the Computational Aquatic Ecosystem Dynamics Model (CAEDYM) calibrated to existing conditions (i.e., matching the simulation results with 2 years of measured field data). The purpose of the study is to examine how the water quality of the reservoir under the product water inflow rate of 30 MGD compares with the reservoir’s water quality before product water augmentation (Appendix G). Table 6.11-4 presents ranges and median concentrations based on existing and proposed model run outputs. Because nutrient and chlorophyll-*a* concentrations are characterized by pronounced peaks during certain periods of the year, the median (rather than average values) is presented as a more appropriate metric of prevailing conditions. Additional information on model outputs is provided in Appendix G, including averages and predicted loading.

**Table 6.11-4
Existing and Future Water Quality Conditions for Miramar Reservoir**

Parameter	Units	Numeric Basin Plan Water Quality Objectives for Miramar Reservoir ^a	Current Water Quality Conditions at Miramar Reservoir	Product Water Quality	Future Reservoir Condition (CAEDYM Simulation) ^e
Temperature	Degrees Celsius	NA	Surface: 13 – 28 Bottom: 13 – 14 ^e	16 – 30 ^d	Surface: 14-28, Bottom: 13-20
Dissolved Oxygen	mg/L	> 7 average, 5 minimum	Surface: 7 – 10 Bottom: 0 – 10 ^e	6.4 - 9.5 ^d	Surface: 8-10, Bottom: 0-10
pH	standard units	6.5 - 8.5	Surface: 7.5 - 8.2, Bottom: 7.0 - 8.1 ^e	7.5 - 8.5 ^c	Surface: 8.0-8.4, Bottom: 7.2-8.2
Total Dissolved Solids	mg/L	< 500	442 - 568 ^b	50 - 195 ^d	Not Assessed
Turbidity	NTU	< 20	0.3 - 1.4 ^b	0.60 ^d	Not Assessed
Chlorophyll- <i>a</i>	µg/L	NA	Surface: 0.21-2.72 (median = 0.26) ^e	NA	Surface: 0.21-0.93 (median: 0.21 – 0.22) ^f
Total Nitrogen	mg/L	NA ^a	Surface: 0.018 – 0.324 (median = 0.125), Bottom: 0.042 – 1.320 (median = 0.240) ^e	0.78 ^e	Surface: 0.5 - 0.6 (median = 0.5), Bottom: 0.1 - 1.3 (median = 0.5)
Total Phosphorus	mg/L	< 0.025	Surface: 0.008 – 0.040 (median = 0.015), Bottom: 0.012 - 0.412 (median = 0.042) ^e	0.004 – 0.010 ^{c,e}	Surface: 0.003 - 0.018 (median = 0.004 – 0.009), Bottom: 0.004 - 0.389 (median = 0.013 – 0.015) ^f
Soluble Reactive Phosphorus	mg/L	NA	Surface: 0.001 - 0.025 (median = 0.010), Bottom: 0.009 - 0.411 (median = 0.036) ^e	100% (0.004 – 0.010)	Surface: 0.003 - 0.018 (median = 0.004 – 0.009), Bottom: 0.004 - 0.389 (median = 0.013 – 0.015) ^f

Notes: mg/L = milligram per Liter, NA = not applicable, NTU = nephelometric turbidity units.

^a Water Quality Control Plan for the San Diego Basin, California Regional Water Quality Control Board San Diego Region, Updated April 4, 2011, Chapter 3, Table 3-2, Inland Surface Water WQOs. For TN -While the Basin Plan establishes numerical concentration standards for total phosphorus, the Basin Plan does not establish analogous concentration values for total nitrogen, but instead

establishes that "natural" ratios of N:P are to be identified through monitoring and upheld. In the absence of data, the Basin Plan specifies that an N:P ratio of 10:1 is to be used.

^b Miramar Reservoir 2005-2006 data for 303d, City of San Diego, San Diego Water Department.

^c Trussell Technologies Inc. 2016.

^d City of San Diego 2013.

^e Appendix G.

^f The total phosphorus (TP) of product water is estimated between 0.004 and 0.010 mg/L. The CAEDYM Simulation was run using three different TP concentrations for the Product Water: 0.004, 0.007, and 0.010 mg/L. The median concentrations and ranges presented for chlorophyll-*a*, TP, and SRP represent a combination of the three different model inputs for product water TP concentrations.

The following discussion addresses how purified water discharges would change various physical and biochemical parameters, whether Basin Plan water quality objectives would be exceeded, and whether the Miramar Reservoir Alternative would cause the loss or impairment of beneficial uses, including WARM, WILD, REC 1, and REC 2.

Nutrients

With regard to nutrients (e.g., nitrogen and phosphorus), while very low levels are desirable from a drinking water quality perspective, nutrients are required to support photosynthesis and provide food sources for aquatic invertebrates and other organisms in the aquatic food chain. The focus of Basin Plan water quality objectives for nutrients is on avoiding excessive inputs that could lead to algae blooms (biostimulation), low dissolved oxygen, and related water quality constraints on aquatic habitat (i.e., eutrophic waters). To ensure that biostimulation effects do not adversely impact designated beneficial uses, the Basin Plan establishes the following water quality objectives applicable to Miramar Reservoir:

- numerical concentration objectives for total phosphorus,
- a narrative objective that concentrations of nitrogen and phosphorus, by themselves or in combination with any other nutrient, shall be maintained at levels below those that stimulate algal and emergent plant growth, and
- provisions that ratios of nitrogen to phosphorus (N:P) are to be identified and upheld.

With regard to phosphorus, the Basin Plan states that threshold total phosphorus (P) shall not exceed 0.05 mg/L in any stream at the point where it enters any standing body of water, nor 0.025 mg/L in any standing body of water (San Diego RWQCB 2016a). Monitoring of the water purification demonstration plant has consistently

shown median and long-term average purified water total phosphorus concentrations of less than 0.010 mg/L (Table 6.11-4). This indicates the Project would not contribute to an exceedance of the Basin Plan objective for total phosphorus (TP). The Basin Plan establishes concentration standards for TP, but does not establish analogous concentration standards for total nitrogen (TN), instead requiring that natural ratios of N:P are to be identified and upheld. The Basin Plan further specifies that a 10:1 N:P ratio is to be used in the absence of data.

Because the reservoir's purpose is to hold imported water (or under the proposed project, purified water) destined for treatment and delivery, "natural" ratios of N:P do not exist. Instead, reservoir N:P ratios are entirely a function of City reservoir management actions, the sources of supply used to fill the reservoir, and inputs to the nutrient cycle from atmospheric sources, runoff from shoreline areas, and reservoir management actions such as introduction of stocked fish². Nutrient concentrations in Miramar Reservoir have varied depending on the source of imported supply provided to the City by the Metropolitan Water District of Southern California and San Diego County Water Authority. However, Miramar Reservoir has historically been phosphorus-limited. Based on City of San Diego water quality monitoring data (28 concurrent samples for total nitrogen and total phosphorus) for January 2005 through December 2006, the average N:P ratio in the reservoir during 2005–2006 exceeded 110:1, and the median value during this time period exceeded 90:1 (City of San Diego 2016c). Phosphorus was less than the laboratory's method detection limit in 27 of the 28 samples³ (City of San Diego 2016c). As a comparison, water quality samples collected from the inlet and outlet to Lake Skinner in 2014 had N:P ratios fluctuating between < 1 and 68.

Concentrations of nutrients within NCPWF product water would remain consistent, with generally lower levels of TP, similar or higher levels of TN, and an increase in N:P ratios when compared to existing conditions. The total nitrogen concentration of water delivered to the reservoir is expected to range from 0.52 to 1.12 mg/L, with an average of 0.75 mg/L; total phosphorus is expected to be between 0.004 and 0.010 mg/L (Trussell Technologies Inc. 2016; Appendix G). Typical N:P ratios in the purified water are projected to exceed 100:1 when purified water total nitrogen concentrations are at the projected low end (near 1

² The CDFW provided stocking records indicating that they have seasonally stocked approximately 9,900 lbs/19,000+ fish from January 2013 to Nov 29, 2016.

³ For the purpose of calculating N:P ratios for each sampling event, samples in which no concentrations of phosphorus were detected were assumed to have a phosphorus concentration of < 0.005.

mg/L). Purified water N:P ratios could exceed 200:1 when purified water nitrogen concentrations approach the projected upper concentration limit of 2 mg/L. Although the Basin Plan includes a provision that a 10:1 ratio of N:P be used in the absence of data, historical data confirms that N:P ratios have consistently exceeded the Basin Plan provision by a significant margin. Furthermore, increases in the N:P ratio above 10:1 and relative to existing conditions within Miramar Reservoir would not induce biostimulation effects because product water discharges would decrease concentrations of TP; where low soluble reactive phosphorus concentrations (SRP - the form of TP that is readily available for plant uptake) remain the controlling factor in algal growth in the reservoir.

Although TP concentrations in the product water are very low, external inputs of nutrients would continue to come from a variety of sources unrelated to product water discharges, including (a) atmospheric deposition, (b) aquatic vegetation, (c) fauna contributions (avian feces and carcass decomposition augmented by fish stocking activities), (d) the intentional return of nutrients to the reservoir from the Miramar WTP, (e) the recycling of nutrients in the oxic region of Miramar Reservoir, and (f) other (considered negligible) sources, such as surface water runoff into the reservoir from immediately adjacent areas, recreation impacts (e.g., use of fish bait, duck feeding, and/or litter), and terrestrial leaf litter (Dudek 2017 Appendix G). While external sources of nitrogen are an order of magnitude smaller than what is coming in with product inflows, external phosphorus sources are nearly identical during the dry season, and approximately half in the wet season (Dudek 2017 Appendix G). This indicates that external sources decrease the sensitivity of the reservoir to the lower TP levels from product water inflows. In addition, an important distinction between the existing condition and proposed condition with regard to TP is that all of it will consist of SRP (i.e., bioavailable) when compared to existing imports from Lake Skinner. This distinction is the reason that chlorophyll-*a* concentrations (the most relevant analogue for primary productivity) shown in Table 6.11-4 are not expected to substantially decrease, i.e., from a median value of 0.26 µg/L to 0.22 µg/L.

Although the N:P ratio is expected to increase under the proposed project, phosphorus within the Miramar Reservoir will remain the limiting nutrient and decrease over time. Furthermore, episodic peaks of TP, which occur when water from Lake Skinner consists primarily of State Water Project, would not occur. Therefore, product water discharges will not cause biostimulatory substances to occur in concentrations that promote excessive aquatic growth.

The traditional focus of nutrient impacts on receiving waters has been in the context of *excessive* nutrients and their potential to lead to eutrophication of lakes and streams. The Miramar Reservoir Alternative presents a unique and rarely considered question of how a potential decrease in nutrient inputs might affect the aquatic resources and food web present within Miramar Reservoir. The degree to which changes in the limnology and water quality of Miramar Reservoir might affect the reservoir's secondary beneficial uses are summarized below:

- **Warm Freshwater Habitat (WARM) and Wildlife Habitat (WILD):** The following findings are based on review of water quality data pertinent to the reservoir and purified water discharges, as well as an extensive literature review pertinent to the subject, which is provided in Section 4.6.5 of Appendix C, and summarized below:
 - Literature addressing relationships between nutrient levels, trophic state, primary productivity, and fish biomass in small warm-water, nutrient-poor lakes similar to Miramar Reservoir is scarce;
 - The available literature indicates a highly complex relationship and suggests that factors other than nutrient levels measured in lake water may determine the development of fish biomass in nutrient-limited ecosystems;
 - Review of analogous lakes (i.e., small, nutrient-poor lakes, with different concentrations of colored organic matter) indicate that low nutrient levels measured in the water is not necessarily an indicator of an ecologically unproductive environment; and
 - Numerous factors influence the nutrient cycle of the lake besides input/source water quality, which include terrestrial inputs, atmospheric deposition/atmospheric food sources, the fish stock itself, and feeder fish added to supply a food source.

Based on a synthesis of available literature and the reservoir comparative data provided in Section 4.6.5 of Appendix C, a functioning aquatic community is expected to continue to exist in the reservoir after the changeover to purified water, albeit at likely a reduced level of productivity. The possible effects on the aquatic ecology of the lake are likely to be tempered due to the significant inputs of nutrients from other sources (terrestrial nutrient inputs) (Appendix C). Piscivorous fish will likely be the least affected organism group, since the current population of largemouth bass (the reservoirs top predator and apparently the fish species most pursued by sport fishermen, based on catch data) at least during the late fall

to early spring. Predation on other fish species likely increases as the numbers of trout declines in the spring. The City will continue to manage the reservoir on a continual basis, would continue to allow fishing at the reservoir, and would continue to support CDFW stocking the reservoir with fish (i.e., rainbow trout), which will continue to be available for fishermen and for consumption by top predators (i.e., largemouth bass). Some reduction in the numbers of bluegill (primarily young of the year) and crappie (which will also feed on small fish and insects) may occur as a result of decreased abundance of zooplankton, although pressure on the zooplankton community does not appear to be very high since very few species of the fish community feed primarily on zooplankton but instead feed on a variety of food resources including snails, crustaceans (e.g., crayfish), aquatic and terrestrial insects, leeches, quagga mussels, clams, frogs, and some terrestrial organisms. Reductions in zooplankton are likely to have a minimal effect on the abundance of these food resources since none of these groups of organisms feed primarily on zooplankton.

- **Water Contact and Non-Water Contact Recreation (REC-1 and REC-2):** Recreational uses of the Miramar Reservoir and shoreline include bicycling, jogging, walking, rollerblading, picnicking, and fishing. In addition to fishing from boats, anglers can use float tubes, waders, or simply fish from shore. The effect on fisheries is summarized in the above bullet point. From a human health perspective (i.e., exposure to bacteria and viruses), the Project would be beneficial, since the quality of purified water discharges would exceed that of imported raw water from the Colorado River Aqueduct and the California Aqueduct.

The magnitude of the change in trophic structure on the biological community resulting from changes in nutrient loading (primarily SRP) would likely be greatest for consumers of phytoplankton and zooplankton, and of less importance for top predators, like largemouth bass, which feed primarily on fish. Although the minimum and median levels of TP are expected to decrease under the proposed Project, 100% of the TP in product water is in the bioavailable form (SRP), whereas SRP delivered by current imported water supplies varies, but is approximately one-third of TP. With respect to primary productivity within the Miramar Reservoir, the magnitude of the change is expected to be minor, i.e., reduced to a level that still supports the reservoir's overall aquatic ecosystem and a relatively productive warm water fishery ~~given the existing and continuing stocking of the~~

~~reservoir with rainbow trout.~~⁴ It is also notable that though product water would have low TP concentrations, the product water would be continually discharged into the reservoir at 30 MGD and would be all bioavailable, which means that compared to existing conditions, the average total loading of TP and SRP is not significantly different from existing conditions. Based on the modeling results in Appendix G, the predicted loading (assuming moderate external nutrient inputs) ranges from 1.12 to 1.8 kilograms per day (kg/day), depending on the assumed concentration of product water TP (i.e., between 0.004 and 0.010 mg/L). The existing conditions model run show an average TP loading of 1.52 kg/day.

Because product water discharges would not violate Basin Plan water quality objectives (i.e., result in the loss or impairment of identified beneficial uses), and because the warm water habitat of the reservoir would continue to be well-supported, albeit likely at a reduced level, the impact would be less than significant.

Temperature

The Basin Plan does not contain a numeric water quality objective for any beneficial use other than the COLD (cold freshwater habitat) beneficial use, which prohibits increases of more than 5° F (2.8° C) above the natural receiving water temperature. For WARM, WILD, REC-1, and REC-2, a narrative objective applies, i.e., that changes in natural receiving water temperature shall not result in loss or impairment of beneficial uses (San Diego RWQCB 2016a). As indicated in Table 6.11-4, purified water discharges are expected to maintain the overall range of temperatures historically observed in the reservoir with the exception of the maximum bottom temperature of the reservoir. Hydrodynamic modeling of the reservoir shows that the average annual temperature increase in the epilimnion and hypolimnion will be 1.2° C and 2.0° C, respectively. Broken down seasonally, the average temperature in the epilimnion will increase by 0.6° C during the warmer months (April through September), and 1.8° C during the cooler months (October through March). For the hypolimnion, the average temperature in will increase by 2.0° C during the warmer months (April through September), and 2.1° C during the cooler months (October through March).

Additional analyses of the hydrodynamic modeling show a deepening of the thermocline by about 16 feet over a 2-year period (Appendix G). The volume of the

⁴ ~~Of the 25 largest largemouth bass caught in the world, 20 were recorded from reservoirs in Southern California (including Miramar Reservoir), and 19 of these were recorded from reservoirs stocked with rainbow trout (Fishing Network 2017).~~

epilimnion [the water above the thermocline], is roughly 4,000 acre-feet. Deepening the thermocline by 16 feet increases the epilimnetic volume by roughly 200 acre-feet, which is a 5% change from existing conditions. The modeling results also show that the turnover dates would not be significantly affected (Appendix G).

The warming of the water column would not be substantial because the reservoir would continue to support the WARM, WILD, REC-1, and REC-2 beneficial uses. The reservoir already supports a warm water fishery, and planned discharge structure diffusers have been positioned throughout the lake at an elevation above the hypolimnion, so as to minimize impacts to lake stratification and seasonal turnover. The modeled deepening of the thermocline is not considered a substantial change because a sizeable cold-water pool would remain in place during thermally stratified conditions (i.e., late spring through late fall), the typical lake turnover dates would remain similar (modeled to change by only a few days), and the maximum surface water temperature would not increase beyond the existing condition. The increased maximum bottom temperature is modeled to occur only during a brief period following lake turnover in the late fall.

Because the anticipated changes in temperature within the Miramar Reservoir would be minor and would not violate the narrative water quality objective (i.e., result in the loss or impairment of identified beneficial uses), the impact would be less than significant.

pH

The hydrogen ion concentration of water is called “pH.” The acidity or basicity of water is measured by the pH factor. The pH scale ranges from 1 to 14, with 1 to 6.9 being acid, 7.1 to 14 being alkaline, and 7.0 being neutral. Ranges (pH) of 6.5 to 9.0 are considered harmless. The applicable Basin Plan objective for pH is that it should not be depressed below 6.5 nor raised above 8.5 (San Diego RWQCB 2016a). For WARM beneficial uses, the Basin Plan further specifies that changes in pH levels attributed to discharge not be changed by more than 0.5 unit from normal ambient conditions. As indicated in Table 6.11-4, pH levels within the required range of 6.5 to 8.5 would be maintained, and the ambient pH levels of the reservoir would not be changed by more than 0.5 unit.

Because the anticipated changes in pH within the Miramar Reservoir would be relatively similar to existing conditions and would not violate the numeric water

quality objective (i.e., result in the loss or impairment of identified beneficial uses), the impact would be less than significant.

Total Dissolved Solids, Salinity, and Turbidity

The advanced purification process is expected to result in decreased levels of TDS, salts, and turbidity when compared to existing conditions. Imports from the Colorado River, which are delivered to Miramar Reservoir from the outlet of Skinner Lake, have been historically high in TDS, which includes chlorides/salts. Excessive concentrations of these constituents are generally undesirable for all beneficial uses. The water quality objectives for TDS, turbidity, chloride, and percent sodium all pertain to maximum levels not to be exceeded more than 10% of the time, over a 1-year period: for TDS, the objective is 550 mg/L; for turbidity, the objective is 20 NTU; for chloride, the objective is 250 mg/L; and for percent sodium, the objective is 60% (San Diego RWQCB 2016a). As shown in Table 6.11-4, turbidity and TDS within the product water will be substantially less than the respective water quality objectives. Because purified water discharges are anticipated to decrease contributions of turbidity compared to existing conditions, it was not assessed in the water quality model in Appendix G.

Because the anticipated changes in TDS, salts, and turbidity within the Miramar Reservoir would be in a positive direction (decreases), the Project would not violate the water quality objectives related to these constituents, and would have positive impacts on the identified beneficial uses. The impact would be beneficial.

Dissolved Oxygen

Adequate dissolved oxygen (DO) levels, which are a function of water temperature and salinity, are important in the maintenance of WARM beneficial uses. Depression of DO levels can lead to fish kills and odors resulting from anaerobic decomposition. As indicated in Table 6.11-4, the Basin Plan water quality objective for DO is to maintain an annual mean DO concentration of at least 7 mg/L, and a minimum level no less than 5 mg/L (San Diego RWQCB 2016a). Table 6.11-4 shows that the range of DO oxygen for both the surface and bottom of the reservoir would be largely maintained, with a slight increase in the minimum level at the reservoir surface (from 7 mg/L to 9 mg/L). Low/non-existent minimum DO levels at the bottom of the reservoir corresponds to the expected anoxic conditions that develop in the summer and fall months as the reservoir thermally stratifies. Lake stratification and the presence of seasonal anoxic conditions at the bottom of the

lake is a natural hydrodynamic process. Accordingly the Basin Plan water quality objective related to the minimum DO level of 5 mg/L is applicable to surface waters rather than deep anoxic waters in a seasonally stratified reservoir.

Because changes in DO concentrations within the Miramar Reservoir would be minimal and in a positive direction (increase), product water discharges would not result in the loss or impairment of identified beneficial uses attributable to DO; the impact would be less than significant.

Summary

As is evident in the preceding discussion, impacts on beneficial uses can be perceived as both positive and negative, depending on the context. The North City Project presents a dilemma in that purified water discharge to Miramar Reservoir is desirable in the context of human health (i.e., drinking water quality), but the very low levels of TP from product water inflows are a concern with respect to its effect on consumers of phytoplankton and zooplankton, and by extension, organisms that rely on primary producers as a food resource. Water quality modeling shows changes in the range and median concentrations of key water quality parameters related to primary productivity in Miramar Reservoir (i.e., TP, SRP, and chlorophyll-*a*) are tempered by external nutrient inputs and the higher bioavailability of TP from product water discharges (Appendix G). The Project will result in a reduction of median SRP between 0.001 mg/L and 0.006 mg/L and is projected to reduce the current median chlorophyll-*a* concentration of 0.26 micrograms per Liter ($\mu\text{g/L}$) by 0.04 $\mu\text{g/L}$ to 0.05 $\mu\text{g/L}$ (Appendix G). Given chlorophyll-*a* and SRP are the key parameters for sustaining warm water beneficial uses, and that the expected changes would be minor, the reservoir would continue to sustain a functioning aquatic ecosystem, and the impact would be less than significant. The impacts of product water discharges with regard to other water quality constituents, including temperature, pH, TDS, salinity, turbidity, and dissolved oxygen would be either less than significant or beneficial.

The Project would support the MUN, IND, and POW beneficial uses and would maintain the WARM, WILD, REC-1, and REC-2 beneficial uses; no loss or impairment of the beneficial uses of Miramar Reservoir would occur.

Ultimately, the San Diego RWQCB is responsible for considering the beneficial uses Miramar Reservoir in the development and issuance of the individual WDRs and NPDES permits. As part of this process, the RWQCB develops discharge

limitations in NPDES/WDR permits based on the applicable water quality criteria or objectives of the Basin Plan, the beneficial uses being protected, and corresponding state and federal antidegradation policies.

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. Water purveyors including the City of San Diego regularly discharge drinking water into storm drains or other conveyances that drain to surface waters. Surface water discharges also occur from pipe breaks, system failures, and emergencies.

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 SWRCB'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 water quality impacts. 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 proposed advanced water purification facility treatment train contains multiple and redundant treatment processes, redundant water quality monitoring

equipment, and conservative design specifications that will ensure treatment reliability and ensure compliance with applicable water quality standards. In the unlikely event that major treatment and monitoring processes simultaneously fail, however, it is possible that water not meeting the specified log removals, or “Off Spec” water, could be produced.

As a first level of public health protection against such off-spec water, the supply of Miramar Reservoir water to the Miramar WTP would be cut off, and water treatment plant operations would rely on imported aqueduct water until the off-spec problem was corrected and it was demonstrated to regulators that reservoir water could again be directed to the filtration plant. If the cause of the off-spec water cannot be immediately rectified, conveyance of advanced water purification facility water to the reservoir would be suspended, and advanced water purification facility water would be directed to the sewer for treatment at the Point Loma WWPT and ocean discharge.

In the event the off-spec issue is sufficient to warrant no discharge of the pipeline water to the reservoir, the off spec water would be diverted from the pipeline for disposal or reuse. The flowing proposed strategies for off-spec water disposal were developed based on the following goals:

- Provide barriers to protect public health.
- Minimize required facilities to reduce project costs.
- Minimize the conveyance system out of service time to bring the NCPWF back on-line as quickly as possible.
- Develop preferred disposal options based on listed criteria such as available time, reducing water loss, etc.

Three options have been developed to provide operational flexibility for operations staff to dispose of off-spec water in the very unlikely event that off-spec water leaves the NCPWF, enters the North City Pipeline, and the off-spec issue is sufficiently significant to warrant disposal of the off-spec water in the pipeline. The three options utilize the closure of an isolation valve downstream of the Dechlorination Facility to prevent off-spec water from entering Miramar Reservoir. Two of the options involve diverting the Off Spec water to holding tanks in other parts of the City’s recycled water system (i.e., Carrol Canyon Trunk Sewer at Via Pasar) or diverting the water back to the sewage system (i.e., the NCPWF Waste Discharge Pipeline). In nearly all situations one of these two options will be preferred and feasible (City of San Diego 2016d). The third, and least preferred or likely option,

would be discharging to the storm drain system (an existing 18-inch storm drain located in Meanley Drive). Should the third option be used, it will require an NPDES permit to demonstrate compliance with applicable surface water quality standards, and will include water quality compliance monitoring. The NCPWF will be equipped with a fully automated control system, equipment redundancy, and integrity monitoring, with backup power systems for certain critical components necessary to ensure the City could quickly respond to process interruptions or equipment malfunction. These are described in detail in Chapter 3, Project Description, Section 3.6.2 (“Reliability Features for Water Quality”). Failsafe disposal adds an extra layer of protection in case these systems fail and off-spec water is detected in the system.

Because the Project has been designed to send off-spec water to the sewer system or holding tanks, and to avoid discharges to the storm drain system, and because compliance with SWRCB Order No. 2014-0194-DWQ requires dechlorination prior to discharge and immediate notification of unplanned/emergency discharges, no substantial adverse effects would occur.

San Vicente Reservoir Alternative

Except for the water quality impacts of purified water (product water) discharges on surface water quality, the analysis and conclusions above for the Miramar Reservoir Alternative are equally applicable to the San Vicente Reservoir Alternative for the same reasons.

Compared to the Miramar Reservoir Alternative, the impacts on water quality of treated water discharges to the San Vicente Reservoir is anticipated to be much less pronounced due to the greater size and watershed area contributing to the reservoir. The Miramar Reservoir holds 6,680 acre-feet of water at full capacity, has a surface area of 183 acres, and has a watershed of about 1 square mile. In contrast, the San Vicente Reservoir holds 242,000 acre-feet of water at full capacity, has a surface area of 1,600 acres, and has a watershed that covers a 74.2-square-mile area. The difference in physical size and watershed size of the two reservoirs is substantial: the storage capacity and the watershed size of the Miramar Reservoir are 2.7% and 1.3% of that of the San Vicente Reservoir, respectively. San Vicente Reservoir receives a greater amount of local runoff compared to Miramar Reservoir due to its larger watershed size, about 4,000 acre-feet per year, though this amount approximately equals yearly evaporative losses (City of San Diego 2016). With respect to factors affecting water quality, both the San Vicente Reservoir and

Miramar Reservoir are influenced to a greater degree by the quality of raw imported water supplies than by local runoff.

The City conducted extensive studies of San Vicente Reservoir to investigate its limnology and water quality characteristics and assess the residence time and flow patterns of the proposed purified water discharge point. 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 part, to determine whether addition of purified water to San Vicente Reservoir would affect water quality within the reservoir. The study found that the addition of purified water would not affect any aspect of water quality in San Vicente Reservoir. The dam raise and reservoir expansion 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. The study found that addition of purified water would improve some aspects of reservoir water quality, such as reducing salt concentration. Compared to the Miramar Reservoir, the San Vicente Reservoir is much larger and has a much larger watershed, so it is less sensitive to the effects of inputs of purified water.

6.11.4.2 Significance of Impact Under CEQA

No Project/No Action Alternative

Because the No Project/No Action Alternative would continue to meet the growing wastewater treatment demands of the City's service area through the Point Loma WWTP, and continue to comply with the applicable WDR/NPDES, impacts would continue to be **less than significant**.

Miramar Reservoir Alternative

With a decrease in volume needed to be treated at the Point Loma WWTP and discharged through the PLOO, the Miramar Reservoir Alternative would have a beneficial impact with respect to treated wastewater disposal through the PLOO. Furthermore, the Miramar Reservoir Alternative has been designed to meet the water quality objectives as designated in the Basin Plan with regard to purified water discharges to Miramar Reservoir. Construction-related stormwater impacts, groundwater dewatering impacts, and off-spec water discharges would be **less than significant**.

San Vicente Reservoir Alternative

Impacts associated with stormwater and non-stormwater discharges during construction of project components would be adequately addressed through compliance with the SWRCB Construction General Permit (Order Number 2009-0009-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 WDRs. Therefore, impacts related to stormwater and non-stormwater discharges during construction and operations would under CEQA be **less than significant**.

6.11.4.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No mitigation is required.

Miramar Reservoir Alternative

No mitigation is required.

The impacts would be less than significant, although mitigation measure MM-HAZ-4 from Section 6.9, Health and Safety/Hazards, will further ensure a less-than-significant impact on surface and groundwater quality. See Section 6.9.5.3, Mitigation, Monitoring, and Reporting, for full text of these measures.

San Vicente Reservoir Alternative

No mitigation is required.

The impacts would be less than significant, although mitigation measure MM-HAZ-4 from Section 6.9, Health and Safety/Hazards, will further ensure a less-than-significant impact on surface and groundwater quality. See Section 6.9.5.3, Mitigation, Monitoring, and Reporting, for full text of these measures.

6.11.5 LEVEL OF IMPACT AFTER MITIGATION

Compliance with existing laws, regulations, NPDES/WDR permits, and the City's Stormwater Standards Manual are sufficient to avoid or substantially reduce adverse impacts with regard to alteration to drainage patterns, the rate/volume of stormwater runoff, stormwater quality, and non-stormwater discharges to **less than significant**.

6.12 NOISE

6.12.1 INTRODUCTION

The following section examines the impacts of the North City Project related to construction and operational noise and groundbourne vibration. Information in this section is from the Noise Technical Report for the North City Project Environmental Impact Report/Environmental Impact Statement (EIR/EIS), City of San Diego, prepared by Dudek (September 2017) and included as Appendix H.

6.12.2 CEQA THRESHOLDS OF SIGNIFICANCE

The City's California Environmental Quality Act Significance Determination Thresholds (City of San Diego 2016) and Appendix G of the CEQA Guidelines contain significance guidelines related to noise:

- Would the project result in or create a significant increase in the existing ambient noise level?
- Would construction noise associated with implementation for any component of the project exceed the City's adopted noise ordinance or noise levels as established in the General Plan?

The City of San Diego Development Services Department updated its CEQA Significance Determination Thresholds in July 2016 (City of San Diego 2016). This document provides guidance for City of San Diego staff, project proponents, and the public for determining whether, based on substantial evidence, a project may have a significant effect on the environment under Section 21082.2 of CEQA. 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
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-decibels (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						
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 5.12.3.3 for the City of Santee and the County of San were used for determining the significance of potential noise impacts for construction and operation of project components located 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).

6.12.3 ISSUE 1

Would the North City Project result in or create a significant increase in the existing ambient noise level? Would construction noise associated with implementation for any component of the North City Project exceed the City's adopted noise ordinance or noise levels as established in the General Plan?

6.12.3.1 Methodology

The noise assessment quantifies construction and operational noise generation and the resulting noise levels at noise-sensitive receptors in the vicinity that are generally representative of the areas surrounding the project components. 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. Construction noise levels were assessed at two distances for each project component: the distance from the nearest noise-sensitive receivers (for the purposes of the construction analysis, these were typically residential land uses) to the closest construction activities, and the more typical distance between the

noise-sensitive receivers and the construction activities (the average distance between the near and far work areas).

Construction Assumptions

Construction of the North City Project components would result in temporary localized increases in noise levels from on-site construction equipment, as well as from off-site trucks hauling construction materials. To estimate the potential effects of construction on noise levels in the North City Project vicinity, typical construction equipment used for similar water infrastructure projects (i.e., pipelines, pump stations, water/wastewater treatment facilities, and existing facility improvements) was assumed. Equipment mix assumptions for construction activity are based on the design reports and Project Data Summary Sheets for each project component, typical infrastructure construction practices, review of related projects conducted in the Southern California area¹, and the South Coast Air Quality Management District's California Emissions Estimator Model 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.

Pipeline construction would require both open-trench construction and trenchless 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 in Appendix H.

Noise generated by construction equipment will 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 6.12-1. Note that these are maximum noise levels, not an average sound level. The equipment

¹ 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).

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 6.12-1
Construction Equipment Noise Levels

Equipment Type	Maximum 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 6.12-2 provides the estimated construction timeline and potential phasing of project components; more detail is provided in Appendix H. The construction schedule has been developed based on available information provided by the City, 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 6.12-2
North City Project Construction Phasing Assumptions

Project Component	Construction Start Date	Construction End Date
<i>Project Components Common to Alternatives</i>		
NCWRP Expansion	10/2018	12/2021
NCPWF Influent Pump Station	1/2019	10/2021
Morena Pump Station and Pipelines	4/2019	10/2021
MBC Improvements	4/2019	10/2021
North City Pump Station	5/2019	11/2021
North City Renewable Energy Facility	3/2020	12/2021
Landfill Gas Pipeline	3/2020	10/2021

**Table 6.12-2
North City Project Construction Phasing Assumptions**

Project Component	Construction Start Date	Construction End Date
<i>Miramar Reservoir Alternative</i>		
North City Pure Water Pipeline (North City Pipeline)	11/2018	10/2021
Pure Water Dechlorination Facility	1/2019	10/2021
NCPWRF-MR	10/2018	11/2021
Miramar Water Treatment Plant Improvements	7/2020	9/2021
<i>San Vicente Reservoir Alternative</i>		
San Vicente Pure Water Pipeline (San Vicente Pipeline)	12/2018	5/2021
NCPWF-SVR	10/2018	11/2021
Mission Trails Booster Station	5/2019	9/2021

Notes: NCWRP = North City Water Reclamation Plant; NCPWF = North City Pure Water Facility; MBC = Metro Biosolids Center; NCPWF-MR = North City Pure Water Facility – Miramar Reservoir; NCPWF-SVR = North City Pure Water Facility – San Vicente Reservoir.

Detailed assumptions related to the construction scenario (i.e., duration of construction phases, vehicle trips, and equipment quantity and usage) for each Project component can be found in Appendix H.

6.12.3.2 Impacts

No Project/No Action Alternative

Under the No Project/No Action Alternative, the North City Pure Water Facility (NCPWF) and ancillary facilities, pipelines, and other features would not be constructed. Therefore, no adverse noise effects related to the construction and operation of these facilities would occur.

Miramar Reservoir Alternative

Construction Impacts

Noise

Based on the construction assumptions above, and provided in more detail in Appendix H, the noise assessment quantifies construction noise generation for each component of the Miramar Reservoir Alternative and the resulting noise levels at the nearest and typical noise-sensitive receptors in the vicinity.

Table 6.12-3 summarizes the estimated construction noise levels resulting from the Miramar Reservoir Alternative project phases. Complete details of the noise calculations are provided in Appendix H of this EIR/EIS.

**Table 6.12-3
Construction Noise Summary – Miramar Reservoir Alternative (dBA L_{eq})**

Project Component	Construction Phase	Construction Noise Level at Nearest Source - Receiver Distance	Construction Noise Level at Typical Source - Receiver Distance
		(dBA L _{eq})	(dBA L _{eq})
<i>Project Components Common to both Alternatives</i>			
NCWRP Expansion		1700'	2100'
	Architectural Coating	45	47
	Building Construction	49	48
	Demolition	54	53
	Grading & Trenching	52	51
	Paving	51	46
	Summary (Maximum level by phase)	54	53
NCPWF Influent Pump Station		1700'	1850'
	Architectural Coating	47	48
	Building Construction	49	50
	Demolition	54	54
	Grading & Trenching	52	52
	Paving	47	50
	Summary (Maximum level by phase)	54	54
Morena Pump Station		960'	1100'
	Architectural Coating	50	52
	Building Construction	54	55
	Demolition	54	54
	Grading & Trenching	52	52
	Paving	47	50
	Summary (Maximum level by phase)	54	54
Morena Pipeline (Open Trench)		150'	250'
	Paving	76	72
	Pipeline Installation and Backfill	70	68
	Trenching	76	73
	Summary (Maximum level by phase)	76	73

**Table 6.12-3
Construction Noise Summary – Miramar Reservoir Alternative (dBA L_{eq})**

Project Component	Construction Phase	Construction Noise Level at Nearest Source – Receiver Distance	Construction Noise Level at Typical Source – Receiver Distance
		(dBA L _{eq})	(dBA L _{eq})
Morena Pipeline (Trenchless)		960'	1100'
	Site Preparation	74	70
	Portal Excavation	75	71
	Tunnel Excavation	75	71
	Site Restoration	71	66
	Summary (Maximum level by phase)	75	71
MBC Improvements		2600'	2800'
	Construction	46	45
	Demolition	51	50
	Grading	49	48
	Paving	49	45
	Summary (Maximum level by phase)	49	50
North City Pump Station		2700'	3120'
	Building Construction	45	45
	Demolition	48	48
	Paving	51	50
	Trenching	51	51
	Summary (Maximum level by phase)	51	51
NCPWF		2700'	3000'
	Architectural Coating	47	46
	Building Construction	47	47
	Finish Grading	51	54
	Mass Grading	55	54
	Paving	47	51
	Summary (Maximum level by phase)	55	54
North City Renewable Energy Facility		2250'	2370'
	Building Construction	46	45
	Demolition	51	51
	Grading	51	51
	Paving	50	49
	Summary (Maximum level by phase)	51	51

**Table 6.12-3
Construction Noise Summary – Miramar Reservoir Alternative (dBA L_{eq})**

Project Component	Construction Phase	Construction Noise Level at Nearest Source – Receiver Distance	Construction Noise Level at Typical Source – Receiver Distance
		(dBA L _{eq})	(dBA L _{eq})
LFG Pipeline (Trenched)		2600'	3060'
	Paving	52	50
	Pipeline Installation and Backfill	52	45
	Trenching	52	51
	Summary (Maximum level by phase)	52	51
LFG Pipeline (Trenchless)		2600'	3060'
	Portal Excavation	51	50
	Site Preparation	52	48
	Site Restoration	51	44
	Portal Excavation	51	50
	Summary (Maximum level by phase)	52	50
<i>Miramar Reservoir Alternative</i>			
North City Pipeline (Open Trench)		100'	120'
	Paving	78	77
	Subaqueous Pipeline	82	79
	Trenching	79	77
	Tunneling	78	76
	Summary (Maximum level by phase)	82	79
North City Pipeline (Trenchless)		100'	120'
	Pipe Connection	75	74
	Pipe Installation	75	70
	Portal Excavation	79	78
	Site Preparation	77	76
	Site Restoration	75	72
	Summary (Maximum level by phase)	79	78
Pure Water Dechlorination Facility		550'	575'
	Building Construction	59	62
	Grading & Trenching	62	62
	Paving	61	57
	Summary (Maximum level by phase)	62	62

**Table 6.12-3
Construction Noise Summary – Miramar Reservoir Alternative (dBA L_{eq})**

Project Component	Construction Phase	Construction Noise Level at Nearest Source – Receiver Distance	Construction Noise Level at Typical Source – Receiver Distance
		(dBA L _{eq})	(dBA L _{eq})
Miramar Water Treatment Plant Improvements		400'	900'
	Building Pump Structure Construction	65	59
	Demolition	68	61
	Summary (Maximum level by phase)	68	61

As shown in Table 6.12-3, construction noise levels would range from approximately 49 dBA L_{eq} to 82 dBA L_{eq}. The nearest noise-sensitive receptors would be located along the North City Pipeline (residences located at 50 feet from the alignment) and the Morena Wastewater Forcemain and Brine/Centrates Line (Morena Pipelines; residences located at 150 feet from the alignment). The loudest construction noise levels would occur at these noise-sensitive receivers (82 dBA L_{eq} and 76 dBA L_{eq} for the North City Pipeline and Morena Pipelines, respectively). At these locations, construction noise levels could exceed the City of San Diego’s noise standard for construction of 75 dBA L_{eq} over a 12-hour period.

Additionally, because the majority of the pipeline alignments would be within roadway rights-of-way, the entirety of the North City Pipeline and slightly more than half of the Morena Pipelines work is anticipated to take place during nighttime hours under special permit in order to reduce temporary traffic congestion or avoid inconveniences to neighboring businesses. Noise levels during pipeline construction could therefore create temporary substantial noise increases and result in short-term exceedance of construction noise standards, thereby resulting in an adverse impact to nearby noise-sensitive receivers.

As shown in Table 6.12-3, none of the other project components associated with the Miramar Reservoir Alternative would create temporary substantial noise increases or exceed the City of San Diego’s construction noise standard.

Vibration

Groundborne vibration from heavy equipment operations during 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 construction was analyzed using the methodology contained in Section 12.2 of the FTA Manual (FTA 2006). The vibration levels corresponding to the nearest distances between adjacent noise-sensitive land uses and the project components for the Miramar Reservoir Alternative are shown in Table 6.12-4.

**Table 6.12-4
Construction Vibration Summary – Miramar Reservoir Alternative**

Project Component	Nearest Source - Receiver Distance (feet)	Vibration Level from Heavy Truck and Similar (PPV (inches/sec))	Vibration Level from Vibratory Roller (PPV (inches/sec))
Morena Pump Station	960	0.000	0.001
Morena Pipelines (open trench)	150	0.006	0.014
Morena Pipelines (trenchless)	960	0.000	0.001
North City Pipeline (open trench)	100	0.011	0.026
North City Pipeline (trenchless)	100	0.011	0.026
NCWRP Expansion	1700	0.000	0.000
NCPWF Influent Pump Station	1700	0.000	0.000
North City Renewable Energy Facility	2250	0.000	0.000
LFG Pipeline (open trench)	2600	0.000	0.000
LFG Pipeline (trenchless)	2600	0.000	0.000
MBC Improvements	2600	0.000	0.000
North City Pump Station	2700	0.000	0.000
NCPWF-MR	2700	0.000	0.000
Pure Water Dechlorination Plant	550	0.001	0.002
Miramar WTP Improvements	400	0.001	0.003

Notes: NCWRP = North City Water Reclamation Plant; MBC = Metro Biosolids Center; NCPWF-MR = North City Pure Water Facility – Miramar Reservoir.

As shown in Table 6.12-4, the nearest source receiver for the Miramar Reservoir Alternative is 100 feet from the North City Pipeline. Vibration levels at this location would be 0.011 inches per second (in/sec) from heavy construction machinery (such as a heavy truck or large bulldozer), or 0.026 in/sec from a vibratory roller. Vibration levels of this magnitude would be below the threshold of perception of 0.10 in/sec or the damage threshold for structures of engineered concrete and masonry (0.30 in/sec) and would not result in an adverse effect.

Other project components with measurable vibration levels include the Morena Pipelines, Morena Pump Station, Pure Water Dechlorination Facility, and the Miramar WTP Improvements. Similarly, vibration levels at each of these project components would be below the threshold of perception of 0.10 in/sec or the damage threshold for structures of engineered concrete and masonry (0.30 in/sec).

Operational Impacts

Noise

Traffic Noise

Following the completion of construction activities, the North City Project would generate noise from vehicular traffic as a result of 60 additional staff for the Miramar Reservoir Alternative. It is expected that during normal operations, these workers would generate 120 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 would be required; therefore, it was assumed on a worst-case day that an additional 10 one-way operations and maintenance-related trips would occur. In total, the North City Project operations would be expected to generate approximately 1,404 average daily trips (ADT) for the Miramar Reservoir Alternative. Because of the relatively small number of trips associated with North City Project operations compared to the number of non-project vehicle trips (generally in the thousands to tens of thousands per day) on the same City roadways in the existing and future years (see Appendix I), the noise increase from North City Project-related vehicular traffic would be well below 1 dB, which would not result in a measurable or audible increase and no adverse effects would occur.

Pipelines

Once constructed, the North City Pipeline, Morena Pipelines, and LFG Pipeline would not result in noise impacts as the flow of water, wastewater, or landfill gas within the underground pipelines would not be audible. Noise levels would not exceed the limits expressed in the municipal code. Occasional maintenance and emergency repair activities will generate some additional noise; however, these activities are sporadic in nature and do not occur at the same location for long periods of time. No adverse noise effects would occur related to the operation of pipelines.

Pump Stations

The primary noise sources from pump station facilities (i.e., the Morena Pump Station, NCPWF Influent Pump Station, and North City Pump Station) are the motors and the pumps. Noise from the heating, ventilation and air conditioning units (HVAC) often used within the pump station building is also a source of noise. ~~Based upon the Technical Noise Memorandum prepared for the Basis of Design Report for the North City Pipeline, North City Pump Station, and Dechlorination Facility (HDR 2016),~~ ~~the~~ North City Pump Station will have four 1,000-Hp pumps, three of which would be operational at any one time (HDR 2017). The specific pump manufacturer has not yet been selected, but a noise level of 90 dBA per pump/motor at a distance of 1 meter (3.28 feet) was utilized. The HVAC equipment is estimated to produce approximately 64 dBA L_{eq} at 1 meter from the indoor inlet, 74 dBA L_{eq} at 1 meter from the indoor exhaust, and 80 dBA L_{eq} at 1 meter from the outdoor compressor. The Technical Noise Memorandum analyzed the noise levels resulting from the North City Pump Station at the three nearest off-site land uses (a repair and maintenance facility, the North City Water Reclamation Plant (NCWRP) and an office park, respectively). Resultant noise levels at the nearest off-site land use, located 340 feet away, was estimated to be 44 dBA L_{eq} , and thus lower than the City noise threshold of 60 dBA L_{eq} daytime and 55 dBA L_{eq} nighttime. At the nearest residential land uses located approximately 2,700 feet away, and with numerous buildings in between, the noise levels would be substantially lower. Similarly, the NCPWF Influent Pump Station and the Morena Pump Station would be located approximately 1,700 feet and 960 feet away, respectively, from the nearest noise-sensitive land uses, and therefore, would also be assumed to result in noise levels lower than the City noise thresholds.

Nonetheless, specific site designs and equipment specifications for each pump station are still in a preliminary stage and it cannot yet be determined with full certainty that City of San Diego noise standards will be met upon final design. As such, adverse noise effects related to the operation of pump station may occur.

North City Renewable Energy Facility

The North City Renewable Energy Facility would provide a combined total of six new ICE and generator units (also 3.8 MW Caterpillar Model CG260-16 IC or equivalent), all of which could be operational at any one time, and one additional 3.8 MW Caterpillar Model CG260-16 IC or equivalent to serve as backup.

The engines will be within a building located immediately south of the new circular secondary clarifiers and north of the existing emergency power generation facility at NCWRP. The building will include sound suppression features to reduce the noise levels outside the building.

Based upon reference data sheets provided by the equipment manufacturer, each of the Caterpillar CG260-16 units would produce a sound power level of 136 dBA at the exhaust stack, which is equivalent to approximately 101 dBA at a distance of 50 feet in the free field. The nearest noise-sensitive land uses would be located approximately 2,250 feet from the proposed facility, with numerous structures in between, including the I-805 freeway. Nonetheless, because the site design and equipment specifications are still in a preliminary stage, adverse noise effects could occur as a result of operation of the North City Renewable Energy Facility.

Treatment Facilities

Treatment facilities associated with the Miramar Reservoir Alternative include the new North City Pure Water Facility–Miramar Reservoir (NCPWF-MR) and Dechlorination Facility, as well as expansion or improvements at the NCWRP, Metro Biosolids Center (MBC), and Miramar Water Treatment Plant (WTP). Treatment facilities, similar to pump stations, involve the use of large pumps and motors with similar high noise levels.

With the exception of the Miramar WTP, treatment facilities would be located 500 feet or more from noise-sensitive land uses (residences, churches, schools, recreational land uses). The pump station to be upgraded at Miramar WTP would be located approximately 350 feet from the Scripps Ranch Library. Machinery and pumps would be housed within concrete structures with acoustically absorptive treatments, where necessary. Additional noise reduction measures may also be applied, such as sound enclosures, separate rooms for high noise equipment, etc. As such, noise levels are not expected to exceed City noise thresholds at the nearest sensitive receptors or result in a substantial increase in the ambient noise environment, and adverse impacts from operational noise would not occur.

Vibration

The pump stations and treatment facilities associated with the Miramar Reservoir Alternative would utilize large machinery such as pumps, motors and other rotating machinery which generate groundborne vibration. However, because of the relatively large distances between these facilities and noise- and vibration-sensitive receivers, and because vibration through ground generally dissipates fairly rapidly, vibration at noise- and vibration-sensitive uses is not anticipated; adverse impacts would not occur.

San Vicente Reservoir Alternative

Construction Impacts

Noise

Based on the construction assumptions above, and provided in more detail in Appendix H, the noise assessment quantifies construction noise generation for each component of the San Vicente Reservoir Alternative and the resulting noise levels at the nearest and typical noise-sensitive receptors in the vicinity.

Table 6.12-5 summarizes the estimated construction noise levels resulting from the San Vicente Reservoir Alternative project phases. Complete details of the noise calculations are provided in Appendix H of this EIR/EIS.

**Table 6.12-5
Construction Noise Summary – San Vicente Reservoir Alternative (dBA L_{eq})**

Project Component	Construction Phase	Construction Noise Level at Nearest Source – Receiver Distance	Construction Noise Level at Typical Source – Receiver Distance
		(dBA L_{eq})	(dBA L_{eq})
<i>Project Components Common to both Alternatives</i>			
NCWRP Expansion		1700'	2100'
	Architectural Coating	45	47
	Building Construction	49	48
	Demolition	54	53
	Grading & Trenching	52	51
	Paving	51	46
	Summary (Maximum level by phase)	54	53

**Table 6.12-5
Construction Noise Summary – San Vicente Reservoir Alternative (dBA L_{eq})**

Project Component	Construction Phase	Construction Noise Level at Nearest Source – Receiver Distance	Construction Noise Level at Typical Source – Receiver Distance
		(dBA L _{eq})	(dBA L _{eq})
NCPWF Influent Pump Station		1700'	1850
	Architectural Coating	47	48
	Building Construction	49	50
	Demolition	54	54
	Grading & Trenching	52	52
	Paving	47	50
	Summary (Maximum level by phase)	54	54
Morena Pump Station		960'	1100'
	Architectural Coating	50	52
	Building Construction	54	55
	Demolition	54	54
	Grading & Trenching	52	52
	Paving	47	50
	Summary (Maximum level by phase)	54	54
Morena Pipeline (Open Trench)		150'	250'
	Paving	76	72
	Pipeline Installation and Backfill	70	68
	Trenching	76	73
	Summary (Maximum level by phase)	76	73
Morena Pipeline (Trenchless)		960'	1100'
	Site Preparation	74	70
	Portal Excavation	75	71
	Tunnel Excavation	75	71
	Site Restoration	71	66
	Summary (Maximum level by phase)	75	71
MBC Improvements		2600'	2800'
	Construction	46	45
	Demolition	51	50
	Grading	49	48
	Paving	49	45
	Summary (Maximum level by phase)	49	50

**Table 6.12-5
Construction Noise Summary – San Vicente Reservoir Alternative (dBA L_{eq})**

Project Component	Construction Phase	Construction Noise Level at Nearest Source – Receiver Distance	Construction Noise Level at Typical Source – Receiver Distance
		(dBA L _{eq})	(dBA L _{eq})
North City Pump Station		2700'	3120'
	Building Construction	45	45
	Demolition	48	48
	Paving	51	50
	Trenching	51	51
	Summary (Maximum level by phase)	51	51
NCPWF		2700'	3000'
	Architectural Coating	47	46
	Building Construction	47	47
	Finish Grading	51	54
	Mass Grading	55	54
	Paving	47	51
	Summary (Maximum level by phase)	55	54
North City Renewable Energy Facility		2250'	2370'
	Building Construction	46	45
	Demolition	51	51
	Grading	51	51
	Paving	50	49
	Summary (Maximum level by phase)	51	51
LFG Pipeline (Trenched)		2600'	3060'
	Paving	52	50
	Pipeline Installation and Backfill	52	45
	Trenching	52	51
	Summary (Maximum level by phase)	52	51
LFG Pipeline (Trenchless)		2600'	3060'
	Portal Excavation	51	50
	Site Preparation	52	48
	Site Restoration	51	44
	Portal Excavation	51	50
	Summary (Maximum level by phase)	52	50

**Table 6.12-5
Construction Noise Summary – San Vicente Reservoir Alternative (dBA L_{eq})**

Project Component	Construction Phase	Construction Noise Level at Nearest Source – Receiver Distance	Construction Noise Level at Typical Source – Receiver Distance
		(dBA L _{eq})	(dBA L _{eq})
San Vicente Reservoir Alternative			
San Vicente Pipeline (Open Trench)		50'	70'
	Paving	85	81
	Pipeline Installation and Backfill	74	71
	Trenching	83	81
	Summary (Maximum level by phase)	85	81
San Vicente Pipeline (Trenchless)		50'	70'
	Building Construction	81	80
	Trenching	83	83
	Summary (Maximum level by phase)	83	83
Mission Trails Booster Station		20'	65'
	Building Construction	79	78
	Grading	90	83
	Paving	91	82
	Underground install & Trenching	92	84
	Summary (Maximum level by phase)	92	84

As shown in Table 6.12-5, construction noise levels would range from approximately 49 dBA L_{eq} to 92 dBA L_{eq}. The nearest noise-sensitive receptors would be located at the Mission Trails Booster Station (MTBS; residences located at 20 feet from the pump station) and along the San Vicente Pipeline (residences located at 50 feet from the alignment) and the Morena Pipelines (residences located at 150 feet from the alignment). The loudest construction noise levels would occur at these noise-sensitive receivers (92 dBA L_{eq}, 85 dBA L_{eq} and 76 dBA L_{eq} for the MTBS, San Vicente Pipeline and Morena Pipelines, respectively). At these locations, construction noise levels could exceed the City of San Diego's noise standard for construction of 75 dBA L_{eq} over a 12-hour period.

Additionally, because the majority of the pipeline alignments would be within roadway rights-of-way, some of the work is anticipated to take place during nighttime hours under special permit in order to reduce temporary traffic congestion or avoid inconveniences to neighboring businesses. Noise levels during pipeline construction could therefore create temporary substantial noise increases and result in short-term exceedance of construction noise standards, thereby resulting in an adverse effect to nearby noise-sensitive receivers.

As shown in Table 6.12-5, none of the other project components associated with the San Vicente Reservoir Alternative would create temporary substantial noise increases or exceed the City of San Diego’s construction noise standard.

Vibration

The vibration levels corresponding to the nearest distances between adjacent noise-sensitive land uses and the project components for the San Vicente Reservoir Alternative are shown in Table 6.12-6.

Table 6.12-6
Construction Vibration Summary – San Vicente Reservoir Alternative

Project Component	Nearest Source – Receiver Distance (feet)	Vibration Level from Heavy Truck and Similar (PPV (inches/sec))	Vibration Level from Vibratory Roller (PPV (inches/sec))
Morena Pump Station	960	0.000	0.001
Morena Pipelines (open trench)	150	0.006	0.014
Morena Pipelines (trenchless)	960	0.000	0.001
San Vicente Pipeline (open trench)	50	0.031	0.074
San Vicente Pipeline (trenchless)	50	0.031	0.074
NCWRP Expansion	1700	0.000	0.000
NCPWF Influent Pump Station	1700	0.000	0.000
North City Renewable Energy Facility	2250	0.000	0.000
LFG Pipeline (open trench)	2600	0.000	0.000
LFG Pipeline (trenchless)	2600	0.000	0.000
MBC Improvements	2600	0.000	0.000
North City Pump Station	2700	0.000	0.000
NCPWF-SVR	2700	0.000	0.000
MTBS	20	0.124	0.293

As shown in Table 6.12-6, the nearest source receiver for the San Vicente Reservoir Alternative is 20 feet from the MTBS. Vibration levels at this location would be 0.124 in/sec from heavy construction machinery (such as a heavy truck or large bulldozer), or 0.293 in/sec from a vibratory roller. Vibration levels of this magnitude would exceed the threshold of perception of 0.10 in/sec but would not exceed the threshold for structures of engineered concrete and masonry (0.30 in/sec). It should be noted that construction activities within approximately 20 feet of the nearest sensitive receptor with vibratory rollers or similar equipment would be short term and relatively brief (likely on the order of several days or less). In general, heavy construction equipment would create lower vibration levels and would operate at greater distances. Nonetheless, the vibration levels from construction activities at the nearest residential land uses to the MTBS would be clearly perceptible and would result in short-term adverse effects.

Other project components with measurable vibration levels include the Morena Pipelines, Morena Pump Station, and the San Vicente Pipeline. However, vibration levels at each of these project components would be below the threshold of perception of 0.10 in/sec or the damage threshold for structures of engineered concrete and masonry (0.30 in/sec).

Operational Impacts

Noise

Traffic Noise

The San Vicente Reservoir is anticipated to result in the same number of trips as the Miramar Reservoir Alternative, and therefore, noise levels associated with Project-related vehicular traffic would similarly be well below 1 dB, which would not result in a measurable or audible increase.

Pipelines

Once constructed, the San Vicente Pipeline, Morena Pipelines, and the LFG Pipeline would not result in noise impacts as the flow of water, wastewater, or gas within the underground pipelines would not be audible. Noise levels would not exceed the limits expressed in the municipal code. Occasional maintenance and emergency repair activities will generate some additional noise; however, these activities are sporadic in nature and do not occur at the same location for long periods of time.

Pump Stations

The primary noise sources from pump station facilities (i.e., the Morena Pump Station, NCPWF Influent Pump Station, North City Pump Station, and MTBS) are the motors and the pumps. Noise from the heating, ventilation and air conditioning units (HVAC) often used within the pump station building is also a source of noise. Operational noise at the Morena Pump Station, NCPWF Influent Pump Station and North City Pump Station would be the same as described under the Miramar Reservoir Alternative.

The MTBS is located immediately adjacent to a residential neighborhood. The MTBS is proposed to have the same pump count, building footprint and indoor arrangement as the North City Pump Station. Therefore, noise generated at the MTBS is anticipated to be similar to the North City Pump Station. Specific design considerations have been made considering the pump station's proximity to residential uses. In particular, inertia flywheels are proposed to be used in lieu of surge tanks for surge mitigation, which replaces a very loud piece of equipment with a silent piece of equipment. Nonetheless, because specific site designs and equipment specifications for each pump station are still in a preliminary stage and it cannot yet be determined with full certainty that City of San Diego noise standards will be met upon final design. As such, adverse noise effects related to the operation of pump station may occur.

North City Renewable Energy Facility

Operation of the North City Renewable Energy Facility would be the same under the San Vicente Reservoir Alternative as described above under the Miramar Reservoir Alternative. Because the site design and equipment specifications are still in a preliminary stage, adverse noise effects could occur as a result of operation of the North City Renewable Energy Facility.

Treatment Facilities

Treatment facilities associated with the San Vicente Reservoir Alternative include the new North City Pure Water Facility–San Vicente Reservoir (NCPWF-SVR), as well as expansion or improvements at the NCWRP and MBC. Operational noise resulting from treatment facilities would be similar to what is described above under the Miramar Reservoir Alternative, with the exception that no improvements would occur at the Miramar WTP; therefore, no noise-sensitive land uses would be located within 500 feet of a treatment facility under this alternative. As for the Miramar

Reservoir Alternative, noise levels for the San Vicente Reservoir are not expected to exceed City noise thresholds at the nearest sensitive receptors or result in a substantial increase in the ambient noise environment.

Vibration

The pump stations and treatment facilities associated with the Miramar Reservoir Alternative would utilize large machinery such as pumps, motors and other rotating machinery which generate groundborne vibration. There are relatively large distances between all of these facilities and noise- and vibration-sensitive receivers, except for at the MTBS. Special design considerations have been made at MTBS to reduce vibration levels such that they are not perceptible at the nearest residence. Because vibration through ground generally dissipates fairly rapidly, vibration at noise- and vibration-sensitive uses is not anticipated.

6.12.3.3 Significance of Impacts Under CEQA

No Project/No Action Alternative

No impacts/effects related to noise would occur under the No Project/No Action Alternative.

Miramar Reservoir Alternative

Construction Noise

Construction activities along the Morena Pipelines (during open trench construction) and North City Pipeline (during both open trench and trenchless construction) are anticipated to create temporary substantial noise increases and result in short-term exceedances of the City's noise standard for construction of 75 dBA L_{eq} ; therefore, construction noise impacts for the North City Pipeline and Morena Pipelines would be **potentially significant** under CEQA. Sensitive receivers within 200 feet of the Morena Pipelines and North City Pipeline that would be impacted by construction noise are shown on Figures 6.12-1A and 6.12-1B. None of the other project components are anticipated to create temporary substantial noise increase or result in short-term exceedances of the City's noise standard due to the distance of noise-sensitive receptors; impacts would be **less than significant** under CEQA.

Construction Vibration

Vibration levels at each project components would be below the threshold of perception of 0.10 in/sec or the damage threshold for structures of engineered concrete and masonry (0.30 in/sec). Therefore, vibration impacts from construction activities under the Miramar Reservoir Alternative would be **less than significant** under CEQA.

Operational Noise

The Miramar Reservoir Alternative would result in a relatively small number of operational trips compared to non-project vehicle trips on the same City roadways and is not anticipated to result in a measurable or audible increase; therefore, impacts related to traffic noise would be **less than significant** under CEQA.

Impacts related to the operation of the pipelines, and treatment facilities would be **less than significant** under CEQA.

Impacts related to the operation of the pump stations and the North City Renewable Energy Facility would be **potentially significant** under CEQA.

Operational Vibration

Impacts related to vibration at noise- and vibration-sensitive uses is anticipated to be **less than significant** under CEQA.

San Vicente Reservoir Alternative

Construction Noise

Construction activities at the MTBS as well as along the Morena Pipelines and San Vicente Pipeline are anticipated to create temporary substantial noise increases and result in short-term exceedances of the City's noise standard for construction of 75 dBA L_{eq} ; therefore, construction noise impacts for the MTBS, San Vicente Pipeline and Morena Pipelines would be **potentially significant** under CEQA. Noise-sensitive receptor impacts are shown on Figures 6.12-2A through 6.12-2E. None of the other project components are anticipated to create temporary substantial noise increase or result in short-term exceedances of the City's noise standard due to the distance of noise-sensitive receptors; impacts would be **less than significant** under CEQA.

Construction Vibration

The MTBS would result in vibration that would exceed the threshold of (although it would not exceed the threshold for structures of engineered concrete and masonry), and therefore, impacts would be **potentially significant** under CEQA. Vibration impacts from construction activities under the San Vicente Reservoir Alternative for all other project components except the MTBS would be **less than significant** under CEQA.

Operational Noise

The San Vicente Reservoir Alternative would result in a relatively small number of operational trips compared to non-project vehicle trips on the same City and County roadways and is not anticipated to result in a measurable or audible increase; therefore, impacts related to traffic noise would be **less than significant** under CEQA.

Impacts related to the operation of the pipelines, and treatment facilities would be **less than significant** under CEQA.

Impacts related to the operation of the pump stations and the North City Renewable Energy Facility would be **potentially significant** under CEQA.

Operational Vibration

Impacts related to vibration at noise- and vibration-sensitive uses is anticipated to be **less than significant** under CEQA.

6.12.3.4 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No noise or vibration impacts would occur under the No Project/No Action Alternative, and therefore, no mitigation is required.

Miramar Reservoir Alternative

MM-NOI-1 The following best management practices shall be implemented to reduce noise associated with construction of the North City Project:

1. 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.

2. All mobile or fixed noise-producing equipment used on the Project facilities that are regulated for noise output by a local, state, or federal agency shall comply with such regulation while in the course of project activity.
3. Idling equipment shall be kept to a minimum and moved as far as practicable from noise-sensitive land uses.
4. Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where feasible.
5. Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.
6. Construction site and access road speed limits shall be established and enforced during the construction period.
7. The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.
8. Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow surrounding property owners to contact the job superintendent if necessary. In the event the City receives a complaint, appropriate corrective actions shall be implemented and a report of the action provided to the reporting party.
9. Pumps and associated equipment (e.g., portable generators etc.) 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 will be determined in conjunction with construction plans for individual projects.

MM-NOI-2 Construction activities shall not occur between the hours of 7:00 p.m. and 7:00 a.m. or on legal holidays or on Sundays unless a permit has been applied for and granted beforehand by the Noise Abatement and Control Administrator, in accordance with City of San Diego Municipal Code Section 59.5.0404. All terms and conditions of said permit shall be complied with.

MM-NOI-3 In order to avoid daytime traffic jams or service outages, nighttime work will be planned 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.

Effectiveness of these mitigation measures would vary from several decibels (which in general is a relatively small change) to ten or more decibels (which subjectively would be perceived as a substantial change), depending upon the specific equipment and the original condition of that equipment, the specific locations of the noise sources and the receivers, etc. Installation of a noise barrier, for example, would vary in effectiveness depending upon the degree to which the line-of-sight between the source and receiver is broken, and typically ranges from 5 to 10 dB. Installation of more effective silencers could range from several decibels to well over 10 dB. Reduction of idling equipment could reduce overall noise levels from barely any reduction to several decibels. Cumulatively, however, these measures would result in substantial decreases in the noise from construction.

MM-NOI-4 A noise and vibration study shall be conducted during the final design phase for the NCPWF Influent Pump Station, Morena Pump Station, North City Pump Station, North City Renewable Energy Facility (both Project Alternatives), and the Mission Trails Booster Station (San Vicente Reservoir Alternative only). Pump station machinery and/or generators shall be housed within concrete structures with acoustically absorptive treatments where necessary, and additional measures such as sound enclosures, separate rooms for high noise equipment, etc. shall be incorporated into the final project design as necessary to assure that noise and vibration produced by operation of the facility shall not exceed the applicable limits in the municipal code.

San Vicente Reservoir Alternative

Mitigation measures MM-NOI-1, MM-NOI-2, MM-NOI-3, and MM-NOI-4 also apply to the San Vicente Reservoir Alternative.

6.12.4 LEVEL OF IMPACT AFTER MITIGATION

The applicability of the mitigation measures to each Project component is outlined below in Table 6.12-7.

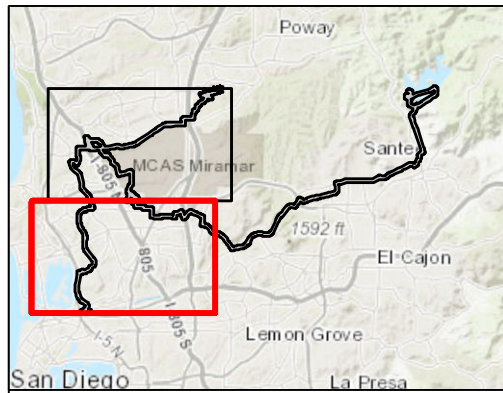
**Table 6.12-7
Applicability of Utility Conflict Mitigation Measure to Project Components**

Project Component	MM-NOI-1	MM-NOI-2	MM-NOI-3	MM-NOI-4
<i>Components Common to Project Alternatives</i>				
Morena Pump Station				X
Morena Pipelines	X	X	X	
NCWRP Expansion				
NCPWF Influent Pump Station				X
North City Pump Station				X
North City Renewable Energy Facility				X
Landfill Gas Pipeline				
MBC Improvements				
<i>Miramar Reservoir Alternative</i>				
NCPWF–MR				
North City Pipeline	X	X	X	
Dechlorination Facility				
Miramar WTP Improvements				
<i>San Vicente Reservoir Alternative</i>				
NCPWF-SVR				
San Vicente Pipeline	X	X	X	
MTBS	X	X	X	X

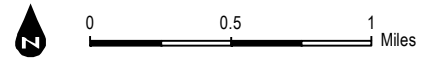
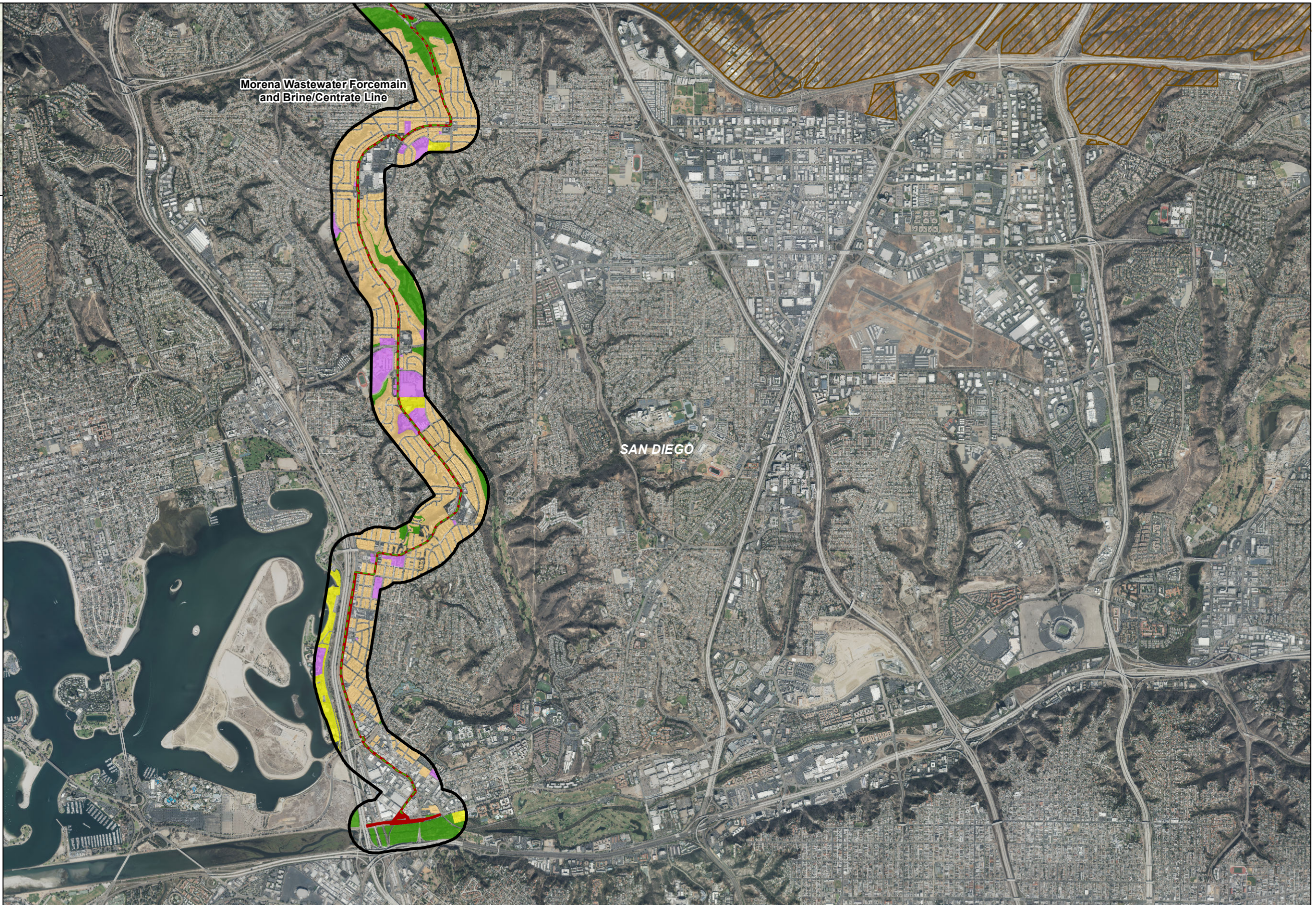
Noise impacts related to construction activities under both the Miramar Reservoir Alternative and San Vicente Reservoir Alternative would remain significant and unavoidable even with implementation of mitigation measures MM-NOI-1 through MM-NOI-3.

Vibration impacts related to construction activities would be less than significant under the Miramar Reservoir Alternative; however, due to impacts associated with the MTBS, construction vibration impacts would be significant and unavoidable for the San Vicente Reservoir Alternative.

With implementation of mitigation measure MM-NOI-4, operational noise impacts would be less than significant under both alternatives. Operational vibration impacts would be less than significant without mitigation under both alternatives.



- Study Area
- Sensitive Receptor Location**
- Residential
- Recreation
- Public Institution
- Open Space
- Municipal Boundaries
- MCAS Miramar
- Project Pipelines**
- Morena Wastewater Forcemain and Brine/Centrate Line
- Impact Footprint



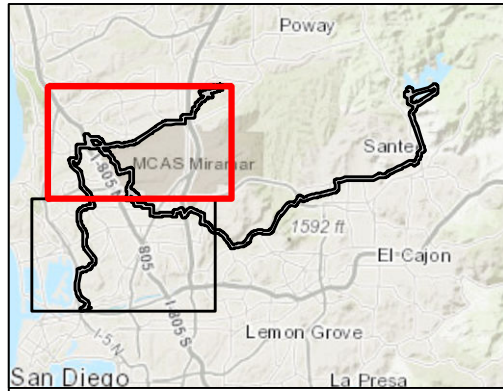
SOURCE: SanGIS 2016; SANDAG 2016

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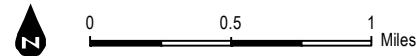
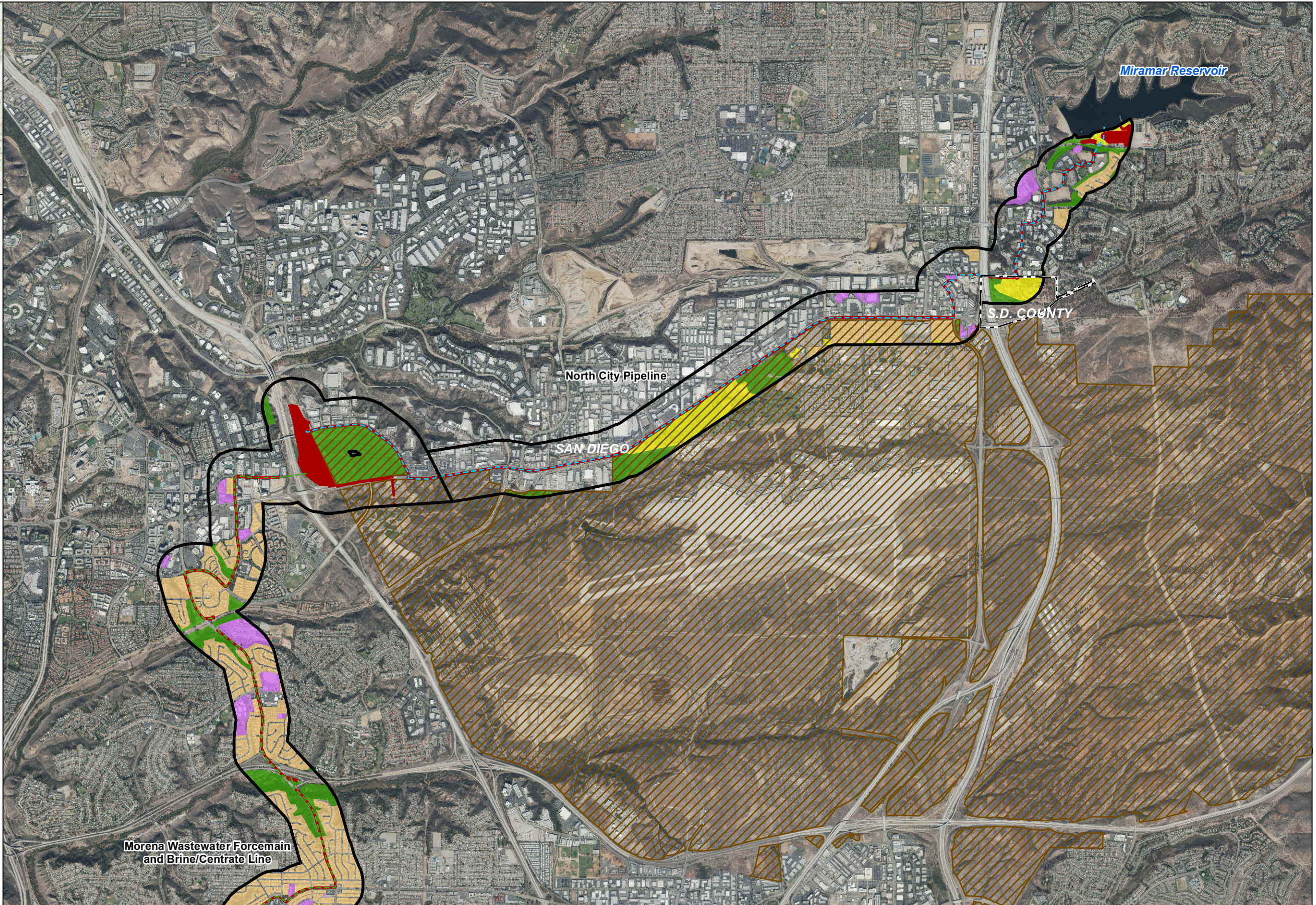
Pure Water San Diego Program North City Project EIR/EIS

FIGURE 6.12-1A
Noise Sensitive Receptor Impacts - Miramar Reservoir Alternative

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- Study Area
- Sensitive Receptor Location**
- Residential
- Recreation
- Public Institution
- Open Space
- Municipal Boundaries
- MCAS Miramar
- Project Pipelines**
- North City Pure Water Pipeline
- Morena Wastewater Forcemain and Brine/Centrates Line
- Impact Footprint



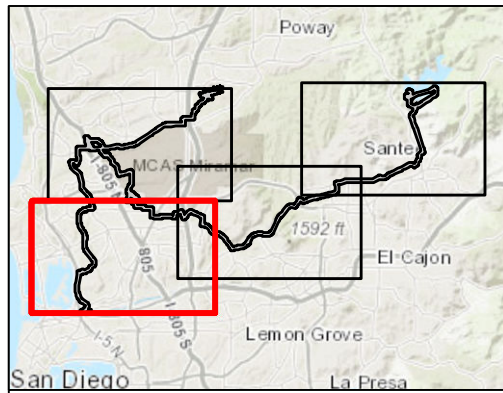
SOURCE: SanGIS 2016; SANDAG 2016

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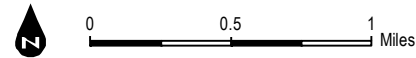
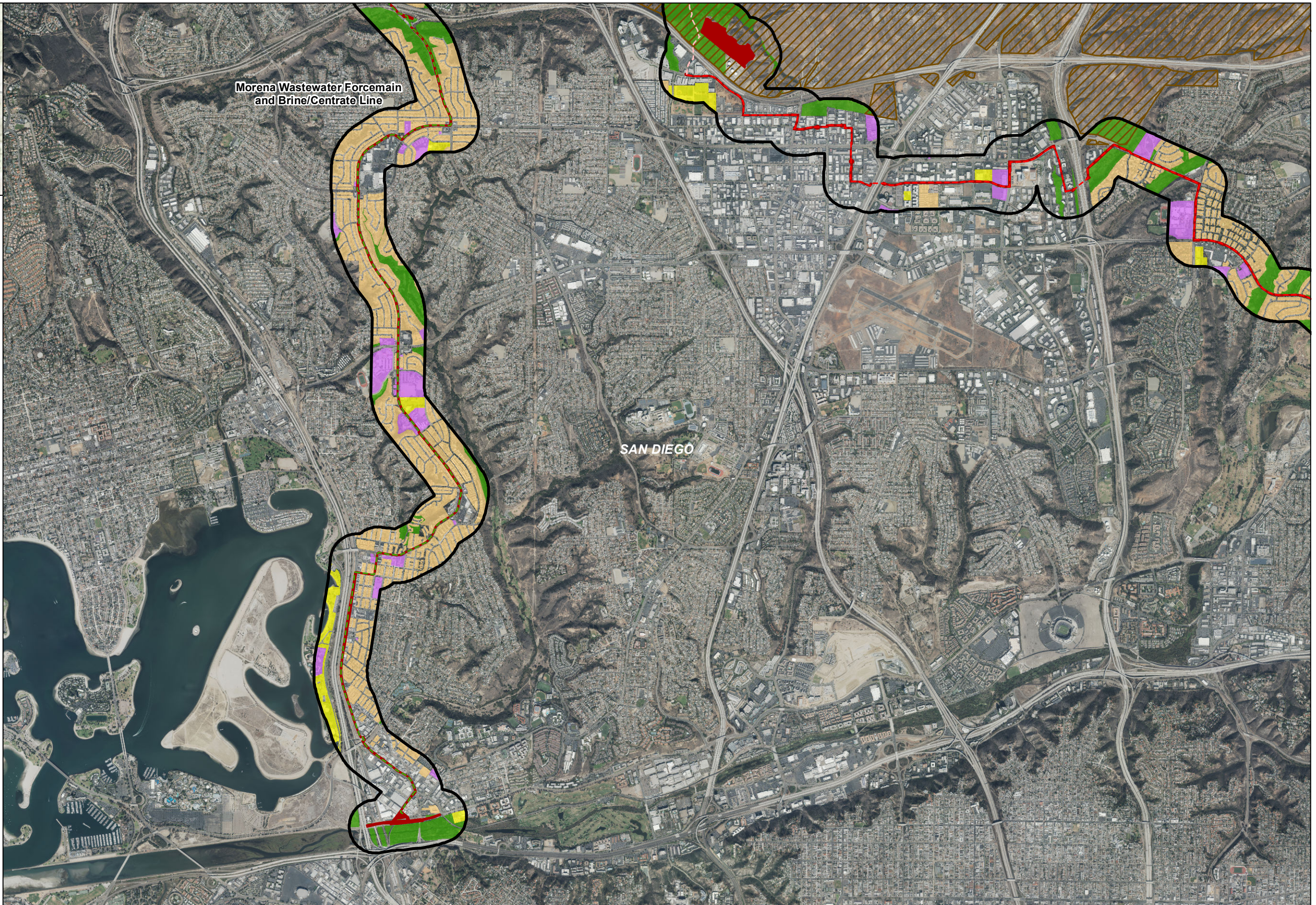
Pure Water San Diego Program North City Project EIR/EIS

FIGURE 6.12-1B
Noise Sensitive Receptor Impacts - Miramar Reservoir Alternative

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- Study Area
- Sensitive Receptor Location**
- Residential
- Recreation
- Public Institution
- Open Space
- Municipal Boundaries
- MCAS Miramar
- Project Pipelines**
- San Vicente Pure Water Pipeline and Alternatives
- Morena Wastewater Forcemain and Brine/Centrates Line
- Repurposed Existing 36" Pipeline
- Impact Footprint



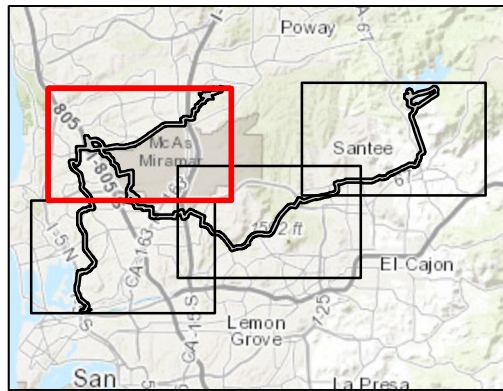
SOURCE: SanGIS 2016; SANDAG 2016

DUDEK

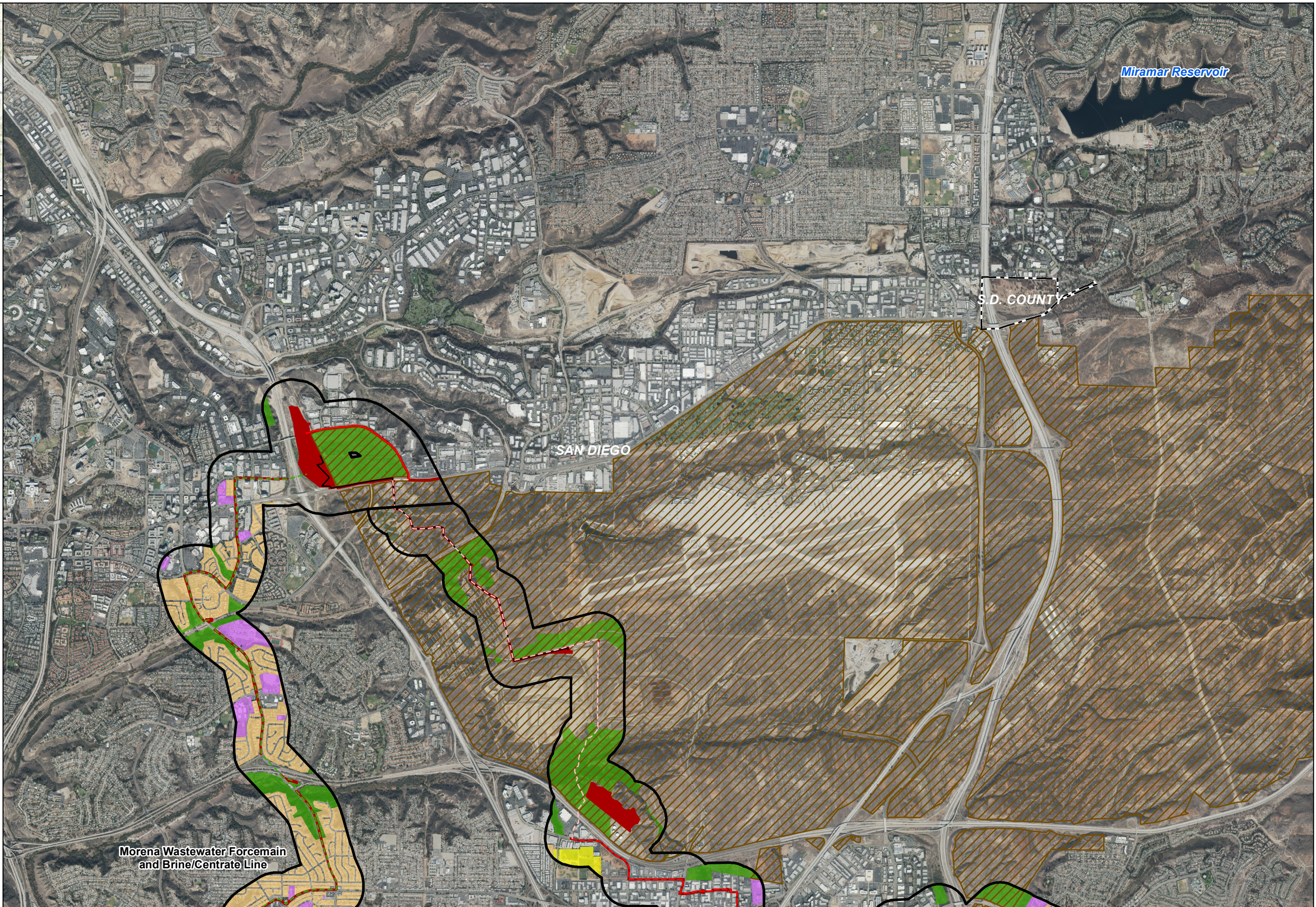
Pure Water San Diego Program North City Project EIR/EIS

FIGURE 6.12-2A
Noise Sensitive Receptor Impacts - San Vicente Reservoir Alternative

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- Study Area
- Sensitive Receptor Location**
- Residential
- Recreation
- Public Institution
- Open Space
- Municipal Boundaries
- MCAS Miramar
- Project Pipelines**
- San Vicente Pure Water Pipeline and Alternatives
- Morena Wastewater Forcemain and Brine/Centrates Line
- Landfill Gas Pipeline
- Repurposed Existing 36" Pipeline
- Impact Footprint



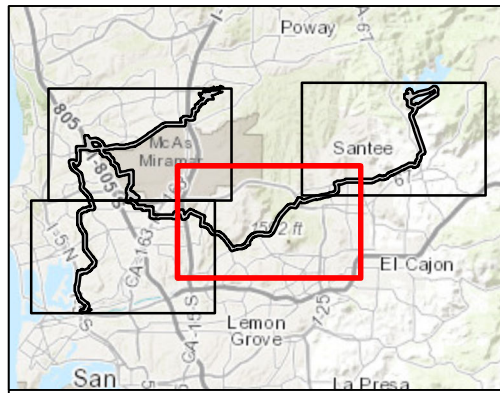
Morena Wastewater Forcemain and Brine/Centrates Line

FIGURE 6.12-2B

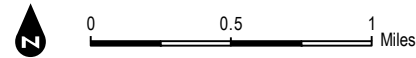
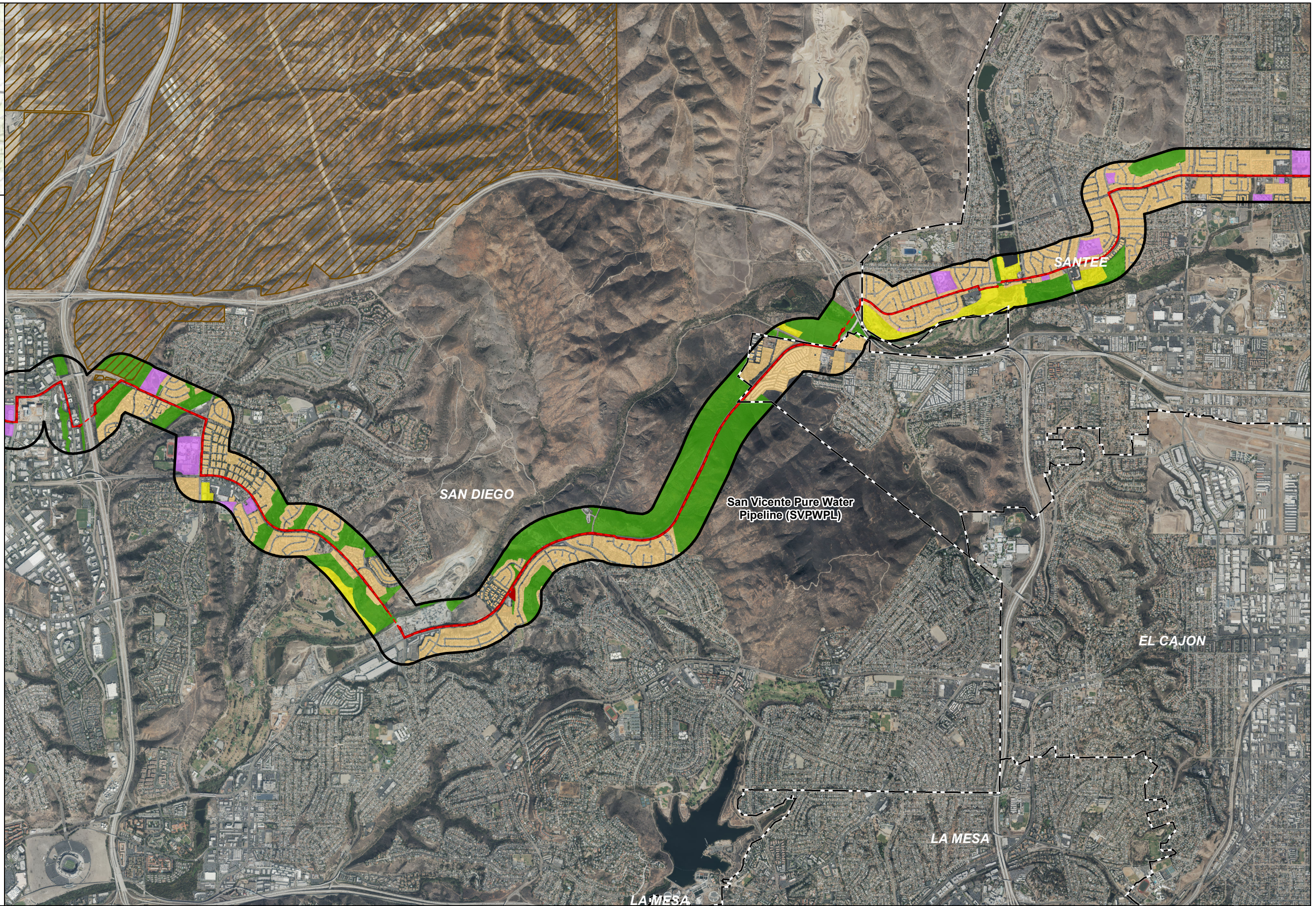
Noise Sensitive Receptor Impacts - San Vicente Reservoir Alternative

SOURCE: SanGIS 2016; SANDAG 2016

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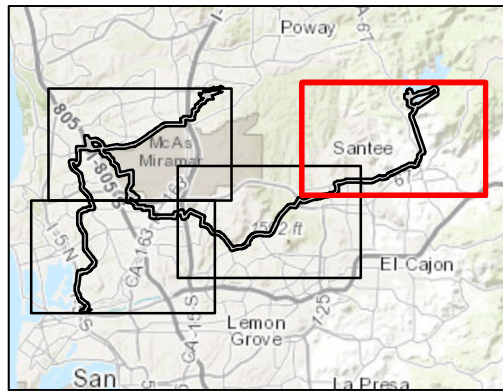
- Study Area
- Sensitive Receptor Location**
- Residential
- Recreation
- Public Institution
- Open Space
- Municipal Boundaries
- MCAS Miramar
- Project Pipelines**
- San Vicente Pure Water Pipeline and Alternatives
- Impact Footprint



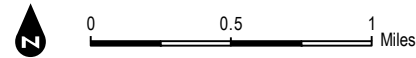
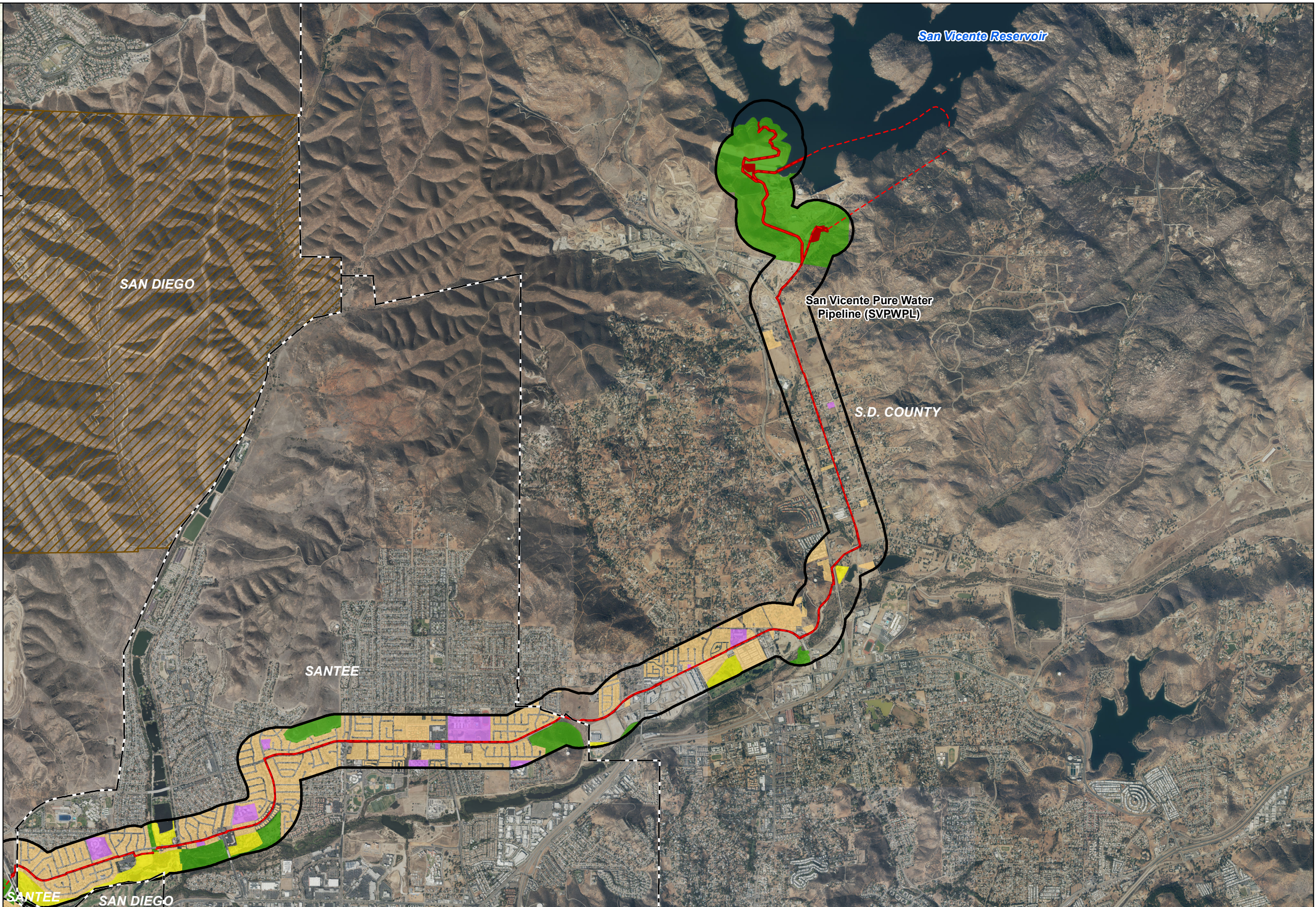
SOURCE: SanGIS 2016; SANDAG 2016

FIGURE 6.12-2C
Noise Sensitive Receptor Impacts - San Vicente Reservoir Alternative

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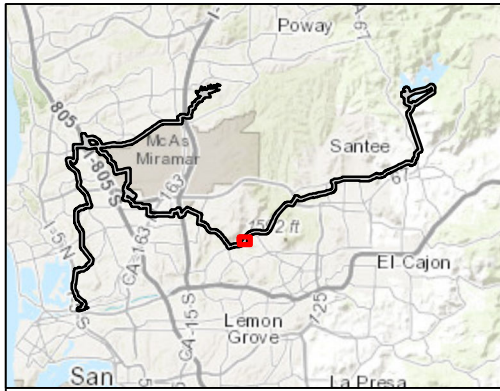
- Study Area
- Sensitive Receptor Location**
- Residential
- Recreation
- Public Institution
- Open Space
- Municipal Boundaries
- MCAS Miramar
- Project Pipelines**
- San Vicente Pure Water Pipeline and Alternatives
- Impact Footprint






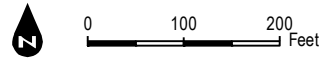
SOURCE: SanGIS 2016; SANDAG 2016

FIGURE 6.12-2D
Noise Sensitive Receptor Impacts - San Vicente Reservoir Alternative

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-  350' Noise Impact Area
-  Sensitive Receptor Area
- Project Facilities**
-  Mission Trails Booster Station



SOURCE: SanGIS 2016; SANDAG 2016

FIGURE 6.12-2E
Noise Sensitive Receptor Impacts - San Vicente Reservoir Alternative

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6.13 PALEONTOLOGICAL RESOURCES

6.13.1 INTRODUCTION

The following section examines the impacts of the North City Project on paleontological resources and identifies mitigation measures as necessary.

6.13.2 CEQA THRESHOLDS OF SIGNIFICANCE

The City's *California Environmental Quality Act Significance Determination Thresholds* (City of San Diego 2016) and Appendix G of the California Environmental Quality Act (CEQA) Guidelines contain significance guidelines related to paleontological resources. In addition, the City of San Diego Development Services Department submitted a comment letter regarding the scope of the Environmental Impact Report/Environmental Impact Statement (EIR/EIS) and identified significance thresholds to utilize in the EIR/EIS. Therefore, pursuant to the City Development Services Department comment letter dated August 4, 2016, a significant impact to paleontological resources would occur if the proposed project would:

1. Result in the loss of significant paleontological resources.

The resource potential of the geologic formations has been determined in accordance with the Potential Fossil Yield Classification (PFYC) guidelines set forth by the BLM. The levels of sensitivity listed in Table 5.13-1 are identified in the PFYC System that recognize the important relationship between fossils and the geologic formations within which they are preserved. Excavation in geologic formations with moderate to high potential for paleontological resources could have a significant impact on these resources, if present. Excavation in geologic formations with no or low potential for paleontological resources would not result in the loss of significant paleontological resources.

6.13.3 ISSUE 1

Would the North City Project result in the loss of significant paleontological resources?

6.13.3.1 Impacts

No Project/No Action Alternative

Under the No Project/No Action Alternative, the North City Pure Water Facility (NCPWF) and ancillary facilities, pipelines, and other features would not be constructed. Therefore, no adverse effects to paleontological resources would occur.

Miramar Reservoir Alternative

Construction activities associated with specific project components have the potential to impact undisturbed, native sedimentary deposits during earthwork and could result in disturbance or destruction of paleontological resources. Figures 5.13-1A and 5.13-1B illustrate the paleontological sensitivity of geologic units underlying components common to the Project Alternatives and Miramar Reservoir Alternative. Table 6.13-1 identifies the geologic rock units that underlie components common to Project Alternatives and components specific to the Miramar Reservoir Alternative and the San Vicente Reservoir Alternative, and identifies whether construction activities have potential to impact paleontological resources. Footnotes at the end of the table provide rationale for the impact determination. Where the potential for impacts to paleontological resources is listed as “yes,” construction activities have potential to adversely affect paleontological resources. Conversely, where the potential for impacts to paleontological resources is listed as “no,” no substantial adverse effects would occur. As shown in Table 6.13-1, excavation activities associated with the Morena Pump Station; North City Water Reclamation Plant (NCWRP) Expansion, Influent Pump Station, and North City Renewable Energy Facility; NCPWF–Miramar Reservoir (MR) and Influent Pump Station; Metro Biosolids Center Improvements; Dechlorination Facility; and Miramar Water Treatment Plant Improvements could result in adverse effects to paleontological resources through disturbance or destruction.

**Table 6.13-1
Paleontological Sensitivity of Geological Rock Units
Underlying Project Components and Impacts**

Project Component	Geological Rock Units	Location	Sensitivity Rating	Potential for Impacts to Paleontological Resources?
<i>Components Common to Project Alternatives</i>				
Morena Pump Station	Bay Point Formation (Qbp)	—	High	Yes ¹
Morena Pipelines (Wastewater Forcemain and Brine/Centrates Line)	Ardath Shale (Ta)	Western portion of project alignment	High	No ²
	Scripps Formation (Tsc and Tscu)	Western portion of project alignment	High	No ²

**Table 6.13-1
Paleontological Sensitivity of Geological Rock Units
Underlying Project Components and Impacts**

Project Component	Geological Rock Units	Location	Sensitivity Rating	Potential for Impacts to Paleontological Resources?
	Stadium Conglomerate (Tst)	North of Rose Canyon crossing	High	No ²
	Pleistocene old alluvial flood plain deposits (Qoa)	Rose Canyon crossing	High	No ²
	Lindavista Formation (Qln)	Western portion of project alignment	Moderate	No ²
	Bay Point Formation (Qbp)	Near southern terminus of alignment	High	No ²
	Artificial fill (Af)	Along Interstate 5, east of Mission Bay, near the southwest termination of the alignment	Low	No ²
NCWRP Expansion, Influent Pump Station, and North City Renewable Energy Facility	Scripps Formation (Tsc and Tscu)	—	High	Yes ¹
	Lindavista Formation (Qln)	—	Moderate	Yes ¹
NCPWF and Influent Pump Station	Scripps Formation (Tsc and Tscu)	—	High	Yes ¹
	Lindavista Formation	—	Moderate	Yes ¹
Landfill Gas Pipeline	Scripps Formation (Tsc and Tscu)	—	High	No ²
	Stadium Conglomerate (Tst)		High	No ²
	Friars Formation (Tf)		High	No ²
	Lindavista Formation (Ql)		Moderate	No ²
Metro Biosolids Center Improvements	Friars Formation (Tf)	—	High	Yes ¹
	Stadium Conglomerate (Tst)	—	High	Yes ¹

**Table 6.13-1
Paleontological Sensitivity of Geological Rock Units
Underlying Project Components and Impacts**

Project Component	Geological Rock Units	Location	Sensitivity Rating	Potential for Impacts to Paleontological Resources?
	Lindavista Formation (Qln)	—	Moderate	Yes ¹
<i>Miramar Reservoir Alternative</i>				
North City Pure Water Pipeline	Lindavista Formation (Qln)	Along the western portion of the alignment	High ³	No ²
	Stadium Conglomerate (Tst)	Along the upper slopes of modern drainages across the central portion of the alignment	High	No ²
	Quaternary alluvium (Qa)	—	Low	No ²
	Mesozoic metasedimentary and metavolcanic rocks, undivided(Jsp)	Near the Miramar Reservoir	Moderate	No ²
Dechlorination Facility	Stadium Conglomerate (Tst)	—	High	Yes ¹
Miramar Water Treatment Plant Improvements	Stadium Conglomerate (Tst)	—	High	Yes ¹
<i>San Vicente Reservoir Alternative</i>				
San Vicente Pure Water Pipeline	Pleistocene older alluvial deposits (Qoa)	Along the north side of the San Diego River Valley	High	No ²
	Mesozoic metasedimentary and metavolcanic rocks, undivided (Mzu)	Near the San Vicente, west of Cowles Mountain, and at the east edge of the City of Santee.	Moderate	Yes ¹

**Table 6.13-1
Paleontological Sensitivity of Geological Rock Units
Underlying Project Components and Impacts**

Project Component	Geological Rock Units	Location	Sensitivity Rating	Potential for Impacts to Paleontological Resources?
	Quaternary younger alluvium (Recent, or Holocene alluvium) (Qya)	Along drainages associated with the San Diego River Valley	Low	No ²
	Cretaceous intrusive igneous rocks (granite) (Kgu)	North of Cowles Mountain and in patches at the east end of the alignment	Zero	No ²
	Quaternary landslide deposits (Qls)	Tierrasanta and area east of Murphy Canyon and north of Mission Valley	Low	No ²
	Friars Formation (Tf)	Central portion of alignment along the upper slopes of modern drainages across the City of San Diego; central portion of the City of Santee	High	No ⁴
	Stadium Conglomerate (Tst)	Along the upper slopes of modern drainages across the central portion of the alignment; San Vicente Reservoir	High	No ²
Mission Trails Booster Station	Friars Formation (Tf)	—	High	Yes ¹

Notes:

- ¹ Denotes excavations into undisturbed, native sediments and/or construction of new facility.
- ² Denotes excavations into previously disturbed sediments, geological units with zero to low paleontological sensitivity, or artificial fill.

- ³ The Lindavista Formation has high paleontological sensitivity in this portion of San Diego County.
- ⁴ There is a potential for impacts to paleontological resources in portions of the pipeline alignment that traverse undeveloped areas of the San Diego River Valley if underlain by the Friars Formation.

San Vicente Reservoir Alternative

Construction activities associated with specific project components have the potential to impact undisturbed, native sedimentary deposits during earthwork and could result in disturbance or destruction of paleontological resources. Figures 5.13-1C and 5.13-1D illustrate the paleontological sensitivity of geologic units underlying components of the San Vicente Reservoir Alternative. As shown in Table 6.13-1, excavation activities associated with the Morena Pump Station; NCWRP Expansion, Influent Pump Station, and North City Renewable Energy Facility; NCPWF – San Vicente Reservoir (SVR) and Influent Pump Station; San Vicente Pure Water Pipeline (San Vicente Pipeline) (construction in Mesozoic metasedimentary and metavolcanic rocks, undivided); and the Mission Trails Booster Station could result in adverse effects to paleontological resources through disturbance or destruction.

6.13.3.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

No impacts to paleontological resources would occur as a result of the No Project/No Action Alternative.

Miramar Reservoir Alternative

Depending on depth, excavation activities associated with the construction of Miramar Reservoir Alternative components occurring within geologic formations with moderate to high potential for paleontological resources could have a **significant impact** under CEQA to these resources.

Excavation activities associated with the construction of Miramar Reservoir Alternative components occurring within geologic formations with zero to low potential for paleontological resources would under CEQA have a **less-than-significant impact** on these resources.

San Vicente Reservoir Alternative

Depending on depth, excavation activities associated with the construction of San Vicente Reservoir Alternative components occurring within geologic formations with moderate to high potential for paleontological resources could under CEQA have a **significant impact** on these resources, if present.

Excavation activities associated with the construction of San Vicente Reservoir Alternative components occurring within geologic formations with zero to low potential for paleontological resources would under CEQA have a **less-than-significant impact** on these resources.

6.13.3.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No impact to paleontological resources would occur under the No Project/No Action Alternative, and no mitigation measures would be required.

Miramar Reservoir Alternative

Where excavation in geologic formations with a moderate to high potential for paleontological resources is proposed, the following mitigation measure (MM) would be required and would be implemented for the following project components: Morena Pump Station; NCWRP Expansion, Influent Pump Station, and North City Renewable Energy Facility; NCPWF–Miramar Reservoir and Influent Pump Station; Metro Biosolids Center Improvements; Dechlorination Facility; and Miramar Water Treatment Plant Improvements.

MM-PALEO-1 If construction of a project would occur within a formation with a moderate to high resource potential, monitoring during construction would be required, and a paleontological resources mitigation program consisting of the following components shall be implemented:

I. Prior to Permit Issuance or Bid Opening/Bid Award

A. Entitlements Plan Check

1. Prior to permit issuance or Bid Opening/Bid Award, whichever is applicable, the Assistant Deputy Director (ADD) Environmental designee shall verify that the

requirements for Paleontological Monitoring have been noted on the appropriate construction documents.

B. Letters of Qualification have been submitted to ADD

1. Prior to Bid Award, the applicant shall submit a letter of verification to Mitigation Monitoring Coordinator (MMC) identifying the Principal Investigator (PI) for the Project and the names of all persons involved in the paleontological monitoring program, as defined in the City of San Diego Paleontology Guidelines.
2. MMC will provide a letter to the applicant confirming the qualifications of the PI and all persons involved in the paleontological monitoring of the Project.
3. Prior to the start of work, the applicant shall obtain approval from MMC for any personnel changes associated with the monitoring program.

II. Prior to Start of Construction

A. Verification of Records Search

1. The PI shall provide verification to MMC that a site-specific records search has been completed. Verification includes, but is not limited to, a copy of a confirmation letter from San Diego Natural History Museum, other institution or, if the search was in-house, a letter of verification from the PI stating that the search was completed.
2. The letter shall introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities.

B. PI Shall Attend Precon Meetings

1. Prior to beginning any work that requires monitoring, the applicant shall arrange a Precon Meeting that shall include the PI, Construction Manager (CM), Grading Contractor, Resident Engineer (RE), Building Inspector (BI), if appropriate, and MMC. The qualified paleontologist shall attend any grading/excavation related Precon Meetings to make comments and/or suggestions concerning the

Paleontological Monitoring program with the Construction Manager and/or Grading Contractor.

- a. If the PI is unable to attend the Precon Meeting, the applicant shall schedule a focused Precon Meeting with MMC, the PI, RE, CM or BI, if appropriate, prior to the start of any work that requires monitoring.
2. Acknowledgement of Responsibility for Curation (CIP or Other Public Projects)

The applicant shall submit a letter to MMC acknowledging their responsibility for the cost of curation associated with all phases of the paleontological monitoring program.

3. Identify Areas to be Monitored
 - a. Prior to the start of any work that requires monitoring, the PI shall submit a Paleontological Monitoring Exhibit (PME) based on the appropriate construction documents (reduced to 11x17) to MMC for approval identifying the areas to be monitored including the delineation of grading/excavation limits. Monitoring shall begin at depths below 10 feet from existing grade or as determined by the PI in consultation with MMC. The determination shall be based on site-specific records search data which supports monitoring at depths less than 10 feet.
 - b. The PME shall be based on the results of a site-specific records search as well as information regarding existing known soil conditions (native or formation).
 - c. MMC shall notify the PI that the PME has been approved.

4. When Monitoring Will Occur
 - a. Prior to the start of any work, the PI shall also submit a construction schedule to MMC through the RE indicating when and where monitoring will occur.
 - b. The PI may submit a detailed letter to MMC prior to the start of work or during construction requesting a modification to the monitoring program. This request

shall be based on relevant information such as review of final construction documents which indicate conditions such as depth of excavation and/or site graded to bedrock, presence or absence of fossil resources, etc., which may reduce or increase the potential for resources to be present.

5. Approval of PME and Construction Schedule

After approval of the PME by MMC, the PI shall submit to MMC written authorization of the PME and Construction Schedule from the CM.

III. During Construction

A. Monitor Shall be Present During Grading/Excavation/Trenching

1. The monitor shall be present full-time during grading/excavation/trenching activities including, but not limited to mainline, laterals, jacking and receiving pits, services and all other appurtenances associated with underground utilities as identified on the PME that could result in impacts to formations with high and/or moderate resource sensitivity. The Construction Manager is responsible for notifying the RE, PI, and MMC of changes to any construction activities such as in the case of a potential safety concern within the area being monitored. In certain circumstances Occupational Safety and Health Administration safety requirements may necessitate modification of the PME.
2. The PI may submit a detailed letter to MMC during construction requesting a modification to the monitoring program when a field condition such as trenching activities that do not encounter formational soils as previously assumed, and/or when unique/unusual fossils are encountered, which may reduce or increase the potential for resources to be present.
3. The monitor shall document field activity via the Consultant Site Visit Record (CSV). The CSV shall be emailed by the CM to the RE the first day of monitoring, the last day of monitoring, monthly (Notification of

Monitoring Completion), and in the case of ANY discoveries. The RE shall forward copies to MMC.

B. Discovery Notification Process

1. In the event of a discovery, the Paleontological Monitor shall direct the contractor to temporarily divert trenching activities in the area of discovery and immediately notify the RE or CM, as appropriate.
2. The Monitor shall immediately notify the PI (unless Monitor is the PI) of the discovery.
3. The PI shall immediately notify MMC by phone of the discovery, and shall also submit written documentation to MMC within 24 hours by email with photos of the resource in context, if possible.

C. Determination of Significance

1. The PI shall evaluate the significance of the resource.
 - a. The PI shall immediately notify MMC by phone to discuss significance determination and shall also submit a letter to MMC indicating whether additional mitigation is required. The determination of significance for fossil discoveries shall be at the discretion of the PI.
 - b. If the resource is significant, the PI shall submit a Paleontological Recovery Program (PRP) and obtain written approval of the program from MMC, MC and/or RE. PRP and any mitigation must be approved by MMC, RE, and/or CM before ground-disturbing activities in the area of discovery will be allowed to resume.
 - (1) Note: For pipeline trenching projects only, the PI shall implement the Discovery Process for Pipeline Trenching projects identified below under "D."
 - c. If resource is not significant (e.g., small pieces of broken common shell fragments or other scattered common fossils) the PI shall notify the RE, or CM as appropriate, that a non-significant discovery has been made. The Paleontologist shall continue to

monitor the area without notification to MMC unless a significant resource is encountered.

- d. The PI shall submit a letter to MMC indicating that fossil resources will be collected, curated, and documented in the Final Monitoring Report. The letter shall also indicate that no further work is required.

- (1) Note: For Pipeline Trenching Projects Only. If the fossil discovery is limited in size, both in length and depth; the information value is limited and there are no unique fossil features associated with the discovery area, then the discovery should be considered not significant.

- (2) Note, for Pipeline Trenching Projects Only: If significance can not be determined, the Final Monitoring Report and Site Record shall identify the discovery as Potentially Significant.

D. Discovery Process for Significant Resources - Pipeline Trenching Projects

The following procedure constitutes adequate mitigation of a significant discovery encountered during pipeline trenching activities including but not limited to excavation for jacking pits, receiving pits, laterals, and manholes to reduce impacts to below a level of significance.

1. Procedures for documentation, curation, and reporting

- a. One hundred percent (100%) of the fossil resources within the trench alignment and width shall be documented in-situ photographically, drawn in plan view (trench and profiles of side walls), recovered from the trench and photographed after cleaning, then analyzed and curated consistent with Society of Invertebrate Paleontology Standards. The remainder of the deposit within the limits of excavation (trench walls) shall be left intact and so documented.
- b. The PI shall prepare a Draft Monitoring Report and submit to MMC via the RE as indicated in Section VI-A.

- c. The PI shall be responsible for recording (on the appropriate forms for the San Diego Natural History Museum) the resource(s) encountered during the Paleontological Monitoring Program in accordance with the City's Paleontological Guidelines (PG). The forms shall be submitted to the San Diego Natural History Museum and included in the Final Monitoring Report.
- d. The Final Monitoring Report shall include a recommendation for monitoring of any future work in the vicinity of the resource.

IV. Night and/or Weekend Work

- A. If night and/or weekend work is included in the contract
 - 1. When night and/or weekend work is included in the contract package, the extent and timing shall be presented and discussed at the precon meeting.
 - 2. The following procedures shall be followed.
 - a. No Discoveries

In the event that no discoveries were encountered during night and/or weekend work, the PI shall record the information on the CSVR and submit to MMC via the RE by email by 8AM on the next business day.
 - b. Discoveries

All discoveries shall be processed and documented using the existing procedures detailed in Sections III - During Construction.
 - c. Potentially Significant Discoveries

If the PI determines that a potentially significant discovery has been made, the procedures detailed under Section III - During Construction shall be followed.
 - d. The PI shall immediately contact the RE and MMC, or by 8:00 a.m. on the next business day to report and discuss the findings as indicated in Section III-B, unless other specific arrangements have been made.

- B. If night and/or weekend work becomes necessary during the course of construction
 - 1. The Construction Manager shall notify the RE, as appropriate, a minimum of 24 hours before the work is to begin.
 - 2. The RE, or CM, as appropriate, shall notify MMC immediately.
- C. All other procedures described above shall apply, as appropriate.

V. Post Construction

- A. Preparation and Submittal of Draft Monitoring Report
 - 1. The PI shall submit two copies of the Draft Monitoring Report (even if negative), prepared in accordance with the PG, which describes the results, analysis, and conclusions of all phases of the Paleontological Monitoring Program (with appropriate graphics) to MMC via the RE for review and approval within 90 days following the completion of monitoring.
 - a. For significant paleontological resources encountered during monitoring, the Paleontological Recovery Program or Pipeline Trenching Discovery Process shall be included in the Draft Monitoring Report.
 - b. Recording Sites with the San Diego Natural History Museum

The PI shall be responsible for recording (on the appropriate forms) any significant or potentially significant fossil resources encountered during the Paleontological Monitoring Program in accordance with the City's PG, and submittal of such forms to the San Diego Natural History Museum with the Final Monitoring Report.
 - 2. MMC shall return the Draft Monitoring Report to the PI via the RE for revision or for preparation of the Final Report.
 - 3. The PI shall submit revised Draft Monitoring Report to MMC via the RE for approval.

4. MMC shall provide written verification to the PI of the approved report.
 5. MMC shall notify the RE or CM, as appropriate, of receipt of all Draft Monitoring Report submittals and approvals.
- B. Handling of Fossil Remains
1. The PI shall be responsible for ensuring that all fossil remains collected are cleaned and catalogued.
- C. Curation of Fossil Remains: Deed of Gift and Acceptance Verification
1. The PI shall be responsible for ensuring that all fossil remains associated with the monitoring for this project are permanently curated with an appropriate institution.
 2. The PI shall submit the Deed of Gift and catalogue record(s) to the RE or CM, as appropriate for donor signature with a copy submitted to MMC.
 3. The RE or CM, as appropriate shall obtain signature on the Deed of Gift and shall return to PI with copy submitted to MMC.
 4. The PI shall include the Acceptance Verification from the curation institution in the Final Monitoring Report submitted to the RE or CM and MMC.
- D. Final Monitoring Report(s)
1. The PI shall submit two copies of the Final Monitoring Report to MMC (even if negative), within 90 days after notification from MMC of the approved report.
 2. The RE shall, in no case, issue the Notice of Completion until receiving a copy of the approved Final Monitoring Report from MMC which includes the Acceptance Verification from the curation institution.

San Vicente Reservoir Alternative

Mitigation measure MM-PALEO-1 is also applicable to the San Vicente Reservoir Alternative and would be implemented for the following project components:

Morena Pump Station; NCWRP Expansion, Influent Pump Station, and North City Renewable Energy Facility; NCPWF (SVR) and Influent Pump Station; San Vicente Pipeline (construction in Mesozoic metasedimentary and metavolcanic rocks, undivided); and the Mission Trails Booster Station.

6.13.4 LEVEL OF IMPACT AFTER MITIGATION

The applicability of the mitigation measure to each Project component is outlined below in Table 6.13-2.

Table 6.13-2
Applicability of Paleontological Mitigation Measure to Project Components

Project Component	MM-PALEO-1 ¹
<i>Components Common to Project Alternatives</i>	
Morena Pump Station	X
Morena Pipelines	
NCWRP Expansion	X
NCPWF Influent Pump Station	X
North City Pump Station	X
North City Renewable Energy Facility	X
Landfill Gas Pipeline	
Metro Biosolids Center Improvements	X
<i>Miramar Reservoir Alternative</i>	
NCPWF-MR	X
North City Pure Water Pipeline	
Dechlorination Facility	X
Miramar Water Treatment Plant Improvements	X
<i>San Vicente Reservoir Alternative</i>	
NCPWF-SVR	X
San Vicente Pipeline	X
Mission Trails Booster Station	X

Note:

¹ See Table 6.13-1 and Section 6.13.3.3 for additional detail. Implementation of mitigation measure MM-PALEO-1 is specific to geological rock units with moderate to high sensitivity for paleontological resources.

Implementation of mitigation measure MM-PALEO-1 would reduce identified adverse and potentially significant impacts to paleontological resources to a level below significance.

6.14 PUBLIC SERVICES

6.14.1 INTRODUCTION

The following section examines the impacts of the North City Project on public services, including police protection, fire protection, public parks and recreation facilities, schools, and libraries, and identifies mitigation measures as necessary. Potential physical impacts related to parks and recreation facilities and potential long-term impacts to recreational opportunities are discussed in greater detail in Section 6.18, Recreation.

6.14.2 CEQA THRESHOLDS OF SIGNIFICANCE

The City of San Diego's *California Environmental Quality Act Significance Determination Thresholds* (City of San Diego 2016) and Appendix G of the CEQA Guidelines contain significance guidelines related to "substantial adverse physical impacts from the construction or alterations of governmental facilities needed to maintain acceptable service ratios, response times, or other performance objectives for any of the public services."

6.14.3 ISSUE 1

Would the North City Project 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?

6.14.3.1 Impacts

No Project/No Action Alternative

Under the No Project/No Action Alternative, there would be no potential for adverse effects to police protection, fire protection, parks and recreational facilities, schools, and libraries because the North City Pure Water Facility (NCPWF) and associated improvements at other treatment facilities would not occur.

Miramar Reservoir Alternative

Police

Construction

Pipelines

All pipeline facilities will be located within public rights-of-way where available corridors exist. As pipeline construction would occur within roadways, there is potential to temporarily and partially ~~impede~~ affect emergency response times, including police response, to areas in the vicinity of pipeline construction. In all cases, pipeline construction within roadways would result only in temporary partial closures, with movement along the roadway and access to surrounding properties maintained at all times. Pipeline work would also move along the proposed alignments as segments are completed. Additionally, as described in Section 3.4.2 and detailed in Section 6.16, nighttime work hours would be implemented within certain high traffic roadways to avoid peak traffic times.

The majority of the Landfill Gas (LFG) Pipeline would be located within Marine Corps Air Station (MCAS) Miramar and would generally follow the existing City of San Diego (City) utility corridor and would not affect police response times. A segment of the LFG Pipeline would be located along Miramar Road. Similar to pipeline construction, this segment of the LFG Pipeline would require only partial roadway closure with adequate movement along the roadway and access to surrounding properties maintained at all times.

Prior to pipeline and LFG Pipeline construction that requires encroachment into public roadways, a traffic control plan (TCP) would be prepared by the City in conformance with the City'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. Therefore, no adverse effects to police would occur during construction of pipelines

Facilities and Pump Stations

Staging areas for facilities and pump stations would be located within the facility footprints. Therefore, construction of the facilities and pump stations would not adversely affect the ability for police to adequately respond to emergency calls.

Operation

Pipelines

Once operational, all pipelines would be located underground. The majority of the LFG Pipeline would be located within MCAS Miramar and would generally follow the existing City utility corridor. The portion located along Miramar Road would not impede roadway movement. All pipelines and the LFG Pipeline would not be manned facilities. 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. 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 LFG Pipeline maintenance activities would result in a substantial increase in demand for police protection services and no adverse effects would occur.

Facilities and Pump Stations

Pump stations would be unmanned, and maintenance would be similar to that described for pipelines. Maintenance of pump stations would not result in a permanent increase in emergency calls. Additionally, pump stations not collocated with the North City Water Reclamation Plant (NCWRP)¹ or NCPWF would be fully fenced and would include exterior lighting for security purposes. Therefore, it is not expected that pump stations would result in a substantial increase in demand for police protection services and no adverse effects would occur.

A maximum of 60 new full time employees would be required for operation of the North City Project, including approximately 15 new full-time employees at the NCWRP. The facilities would be staffed in shifts 24 hours per day. These new workers represent an incremental increase in demand for police protection and could result in an increase in service calls for the San Diego Police Department (SDPD). No new staff would be required at the Metropolitan Biosolids Center or Miramar Water Treatment Plant.

Site security at the NCWRP would remain similar to existing conditions, including on-site security guards, cameras, and a secure entrance. Security lighting would be provided around new equipment/structures as necessary. For the NCPWF, security

¹ For the purposes of analysis in this section, references to NCWRP also include the NCPWF Influent Pump Station and North City Renewable Energy Facility.

lighting on the exterior of structures, paths, and the entrance would be provided as necessary. The main entrance would include a secure access via a guard shack at the entrance and the perimeter of the facility would be fully fenced. These security measures would reduce the need for police protection from SDPD.

The NCPWF and NCWRP are located within established areas currently served by SDPD, and the nearest station is located approximately 1 mile away. Therefore, with the combination of staffing, 24-hour monitoring, and implementation of security measures, the facilities would not result in a substantial increase in demand for police protection services, and no adverse effects would occur.

With regards to population growth, of the 60 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 new permanent workers may relocate to the area (along with their families). Any workers that would relocate could 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 could 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 Miramar Reservoir Alternative is not anticipated to represent an additional quantity of water supply over and above what is already contemplated for the San Diego region. Rather, it would offset supplies that would have otherwise been obtained through another method, such as importing. Therefore, it is not anticipated that implementation of the Miramar Reservoir Alternative would have any effect on planned growth within the service area. As such, the long-term operation of the Miramar Reservoir Alternative would not result in a substantial incremental increase in regional demand for police protection services such that service ratios would be adversely affected, and no adverse effects would occur. For additional information regarding growth, refer to Chapter 9 of this Environmental Impact Report/Environmental Impact Statement (EIR/EIS).

Fire

Construction

Pipelines

Construction of pipelines and the LFG Pipeline would have similar potential to temporarily and partially ~~impede~~ impede affect emergency access for San Diego Fire-Rescue

Department (SDFD) due to work within the public right-of-way creating partial road closures. However, partial roadway closures would maintain adequate movement along the roadway and access to surrounding properties at all times. Additionally, prior to pipeline and LFG Pipeline construction that requires encroachment into public roadways, a TCP would be prepared by the City in conformance with the City's traffic control regulations. The TCP would be prepared to ensure that all access, including SDFD access, would not be restricted, and no adverse effects would occur. Refer also to Section 5.4316, Transportation, Circulation, and Parking, for more detail regarding the TCP.

Facilities and Pump Stations

Staging areas for facilities and pump stations would be located within the facility footprints. Staging areas and equipment would be placed to maintain access to construction sites and existing facilities in the event of an emergency. Therefore, construction of the facilities and pump stations would not affect the ability of SDFD to adequately respond to emergency calls, and no adverse effects would occur.

Operation

Pipelines

Operation and maintenance of pipelines and the LFG Pipeline would have similar potential to affect fire protection services as described for police protection above. Any potential for calls for fire services associated with these maintenance activities would not be permanent. Therefore, it is not expected that pipeline and LFG Pipeline maintenance activities would result in a substantial increase in demand for fire protection services, and no adverse effects would occur.

Facilities and Pump Stations

Similar to police services, the NCPWF, improved 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. Improvements at NCWRP, Metropolitan Biosolids Center, and Miramar Water Treatment Plant would not alter emergency fire access to the sites. The NCPWF, pump stations, and improvements at all other facilities would meet design and construction standards of SDFD and the City of San Diego Municipal Code with respect to fire hazard safety prior to approval. These standards can include fire apparatus access requirements, landscaping standards, and automatic fire

protection systems, which are created with the intent to minimize risk of fire. The NCPWF would have two access points (front and rear) and would be located approximately 1 mile from an existing fire station. These requirements, in combination with staffing and 24-hour monitoring of treatment facilities and pump stations, would minimize the increase of demand for fire protection services such that no adverse effects would occur.

As discussed previously, the Miramar Reservoir Alternative would not have any effect on planned growth within its service area. Additionally, the 60 new permanent workers would minimally increase demand for fire protection services. As such, the long-term operation of the Miramar Reservoir Alternative 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 Miramar Reservoir Alternative would not result in the temporary or permanent alteration, closure, construction, or demolition of any school facilities. Therefore, no adverse effects would occur.

As discussed previously, the Miramar Reservoir Alternative would not have any effect on planned growth within its service area. Additionally, the 60 new permanent workers would minimally increase demand for school 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 Miramar Reservoir Alternative 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 Miramar Reservoir Alternative would not result in a substantial increase in demand for schools such that new school facilities would be required, and no adverse effects would occur.

Parks and Recreational Facilities

The Miramar Reservoir Alternative would result in temporary closures of parks and recreational facilities. However, such temporary closures would not permanently affect the service ratios for parks such that new or expanded facilities would be required. Implementation of the Miramar Reservoir Alternative would not result in their permanent alteration, closure, construction, or demolition of any park or recreational facilities. As discussed previously, the Miramar Reservoir Alternative

would not result in a substantial increase in population. Therefore, similar to schools, the Miramar Reservoir Alternative would not result in a substantial increase in demand for parks and recreational facilities, and no adverse effects would occur.

Please refer to Section 6.18, Recreation, which analyzes the potential impacts of the Miramar Reservoir Alternative on parks and recreational facilities in greater detail.

Libraries

Implementation of the Miramar Reservoir Alternative would not result in the temporary or permanent alteration, closure, construction, or demolition of any library facility. Note that the proposed alignment would not cross in front of the Scripps Ranch Library and would avoid any temporary impacts to library access. As discussed previously, the Miramar Reservoir Alternative would not result in a substantial increase in population. Therefore, similar to schools, the Miramar Reservoir Alternative would not result in a substantial increase in demand for libraries, and no adverse effects would occur.

San Vicente Reservoir Alternative

Police

Construction

Pipelines

Construction of pipelines and the LFG Pipeline would have similar potential effects to police protection for the San Vicente Reservoir Alternative as described for the Miramar Reservoir Alternative above. The construction of pipelines under the San Vicente Reservoir Alternative would require additional coordination with the San Diego County Sheriff's Department for portions located within the City of Santee and the unincorporated portions of the County of San Diego to ensure compliance with local jurisdictional traffic encroachment and that adequate movement and access is maintained at all times during construction. Therefore, no adverse effects would occur.

Facilities and Pump Stations

The construction of facilities and pump stations under the San Vicente Reservoir Alternative would have similar effects as previously described for the Miramar Reservoir Alternative. Therefore, no adverse effects would occur.

Operation

Pipelines

Operation and maintenance of pipelines (including those located within the City of Santee and unincorporated portions of the County of San Diego) and the LFG Pipeline under the San Vicente Reservoir Alternative would have similar effects as previously described for the Miramar Reservoir Alternative. Therefore, no adverse effects would occur.

Facilities and Pump Stations

Operation and maintenance of facilities and pump stations under the San Vicente Reservoir Alternative would have similar effects as previously described for the Miramar Reservoir Alternative. Therefore, no adverse effects would occur.

Fire

Construction

Pipelines

Construction of pipelines and the LFG Pipeline would have similar potential effects to fire protection for the San Vicente Reservoir Alternative as described for the Miramar Reservoir Alternative above. The construction of pipelines under the San Vicente Reservoir Alternative would require additional coordination with the Santee Fire Department and Lakeside Fire Protection District for portions located within the City of Santee and the unincorporated portions of the County of San Diego to ensure compliance with local jurisdictional traffic encroachment and that adequate movement and access is maintained at all times during construction. Therefore, no adverse effects would occur.

Facilities and Pump Stations

The construction of facilities and pump stations under the San Vicente Reservoir Alternative would have similar effects as previously described for the Miramar Reservoir Alternative. Therefore, no adverse effects would occur.

Operation

Pipelines

Operation and maintenance of pipelines (including those located within the City of Santee and unincorporated portions of the County of San Diego) and the LFG

Pipeline under the San Vicente Reservoir Alternative would have similar effects as previously described for the Miramar Reservoir Alternative. Therefore, no adverse effects would occur.

Facilities and Pump Stations

Operation and maintenance of facilities and pump stations under the San Vicente Reservoir Alternative would have similar effects as previously described for the Miramar Reservoir Alternative. Therefore, no adverse effects would occur.

Schools

Potential effects to schools under the San Vicente Reservoir Alternative would be similar to that previously described for the Miramar Reservoir Alternative. No adverse effects would occur.

Parks and Recreational Facilities

Potential effects to parks and recreational facilities under the San Vicente Reservoir Alternative would be similar to that previously described for the Miramar Reservoir Alternative. No adverse effects would occur.

Please refer to Section 6.18, Recreation, which analyzes the potential impacts of the San Vicente Reservoir Alternative on parks and recreational facilities in greater detail. Libraries

Potential effects to libraries under the San Vicente Reservoir Alternative would be similar to that previously described for the Miramar Reservoir Alternative.

6.14.3.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

No impact to public services would occur under the No Project/No Action Alternative.

Miramar Reservoir Alternative

Police

Construction

Pipelines

Construction of pipelines and the LFG Pipeline within public rights-of-way may temporarily and partially impede ~~affect~~ police access due to partial roadway

closures. However, construction would maintain adequate movement and access at all times, would implement traffic control measures as required by the City of San Diego, and would occur at nighttime to avoid peak traffic times as necessary. No new or altered police facilities would be required. Therefore, impacts under CEQA would be **less than significant**.

Facilities and Pump Stations

All construction of facilities and pump stations would be located within facility footprints and would not affect police response. No new or altered police facilities would be required. Therefore impacts under CEQA would be **less than significant**.

Operation

Pipelines

It is not expected that pipeline and LFG Pipeline maintenance activities would result in a substantial increase in demand for police protection services. No new or altered police facilities would be required. Therefore, impacts under CEQA would be **less than significant**.

Facilities and Pump Stations

The NCPWF and NCWRP are located within established areas currently served by SDPD, and the nearest station is located approximately 1 mile away. Therefore, with the combination of staffing, 24-hour monitoring, and implementation of security measures, the treatment facilities would not result in a substantial increase in demand for police protection services. Additionally, the Miramar Reservoir Alternative would not result in a substantial population increase. No new or altered police facilities would be required. Therefore, impacts under CEQA would be **less than significant**.

Fire

Construction

Pipelines

Construction of pipelines and the LFG Pipeline within public rights-of-way may temporarily and partially impede affect fire access due to partial roadway closures. However, construction would maintain adequate movement and access at all times,

would implement traffic control measures as required by the City of San Diego, and would occur at nighttime to avoid peak traffic times as necessary. No new or altered fire protection facilities would be required. Therefore, impacts under CEQA would be **less than significant**.

Facilities and Pump Stations

All construction of facilities and pump stations would be located within facility footprints and would not affect fire protection services response. No new or altered fire facilities would be required. Therefore, impacts under CEQA would be **less than significant**.

Operation

Pipelines

It is not expected that such pipeline and LFG Pipeline maintenance activities would result in a substantial increase in demand for fire protection services. No new or altered fire facilities would be required. Therefore, impacts under CEQA would be **less than significant**.

Facilities and Pump Stations

Applicable fire code requirements, in combination with staffing and 24-hour monitoring of treatment facilities and pump stations, would minimize the increase of demand for fire protection services. Additionally, the Miramar Reservoir Alternative would not result in a substantial population increase. No new or altered fire facilities would be required. Therefore, impacts under CEQA would be **less than significant**.

Schools

The Miramar Reservoir Alternative 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. No new or altered school facilities would be required. Therefore, impacts under CEQA would be **less than significant**.

Parks and Recreational Facilities

The Miramar Reservoir Alternative would not result in a substantial increase in demand for parks and recreational facilities such that the provision of these

facilities and service ratios would be adversely affected. No new or altered parks and recreational facilities would be required. Therefore, impacts under CEQA would be **less than significant**.

Libraries

The Miramar Reservoir Alternative would not result in a substantial increase in demand for libraries such that the provision of library facilities and service ratios would be adversely affected. No new or altered library facilities would be required. Therefore, impacts under CEQA would be **less than significant**.

San Vicente Reservoir Alternative

Police

Construction

Pipelines

For similar reasons described for the Miramar Reservoir Alternative, construction of pipelines and the LFG Pipeline under the San Vicente Reservoir Alternative would not require new or altered police protection facilities. Therefore, impacts under CEQA would be **less than significant**.

Facilities and Pump Stations

For similar reasons described for the Miramar Reservoir Alternative, construction of facilities and pump stations under the San Vicente Reservoir Alternative would not require new or altered police protection facilities. Therefore, impacts under CEQA would be **less than significant**.

Operation

Pipelines

For similar reasons described for the Miramar Reservoir Alternative, operations of pipelines and the LFG Pipeline under the San Vicente Reservoir Alternative would not require new or altered police protection facilities. Impacts under CEQA would be **less than significant**.

Facilities and Pump Stations

For similar reasons described for the Miramar Reservoir Alternative, operation of facilities and pump stations under the San Vicente Reservoir Alternative would not require new or altered police protection facilities. Therefore, impacts under CEQA would be **less than significant**.

Fire

Construction

Pipelines

For similar reasons described for the Miramar Reservoir Alternative, construction of pipelines and the LFG Pipeline under the San Vicente Reservoir Alternative would not require new or altered fire protection facilities. Therefore, impacts under CEQA would be **less than significant**.

Facilities and Pump Stations

For similar reasons described for the Miramar Reservoir Alternative, construction of facilities and pump stations under the San Vicente Reservoir Alternative would not require new or altered fire protection facilities. Therefore, impacts under CEQA would be **less than significant**.

Operation

Pipelines

For similar reasons described for the Miramar Reservoir Alternative, operations of pipelines and the LFG Pipeline under the San Vicente Reservoir Alternative would not require new or altered fire protection facilities. Therefore, impacts under CEQA would be **less than significant**.

Facilities and Pump Stations

For similar reasons described for the Miramar Reservoir Alternative, operation of facilities and pump stations under the San Vicente Reservoir Alternative would not require new or altered fire protection facilities. Therefore, impacts under CEQA would be **less than significant**.

Schools

The San Vicente Reservoir Alternative 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. No new or altered school facilities would be required. Therefore, impacts under CEQA would be **less than significant**.

Parks and Recreational Facilities

The San Vicente Reservoir Alternative would not result in a substantial increase in demand for parks and recreational facilities such that the provision of these facilities and service ratios would be adversely affected. Therefore, no new or altered parks and recreational facilities would be required. Therefore, impacts under CEQA would be **less than significant**.

Libraries

The San Vicente Reservoir Alternative would not result in a substantial increase in demand for libraries such that the provision of library facilities and service ratios would be adversely affected. Therefore, no new or altered library facilities would be required. Therefore, impacts under CEQA would be **less than significant**.

6.14.3.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No impact to public services would occur under the No Project/No Action Alternative, and no mitigation measures would be required.

Miramar Reservoir Alternative

No mitigation measures would be required.

San Vicente Reservoir Alternative

No mitigation measures would be required.

6.14.4 LEVEL OF IMPACT AFTER MITIGATION

Under CEQA, impacts related to public services for all Alternatives would be less than significant, and no mitigation is required.

6.15 PUBLIC UTILITIES

6.15.1 INTRODUCTION

The following section examines the impacts of the North City Project in relation to public utilities, including communication systems, solid waste, and conflicts with existing utilities.

The North City Project involves the construction of new water and sewer facilities and upgrades to existing facilities as addressed throughout this Environmental Impact Report/Environmental Impact Statement (EIR/EIS). Because the North City Project Alternatives (Project Alternatives) would not affect population levels, no new demand on water or wastewater facilities would occur.

Potential impacts related to stormwater drainage are discussed in Section 6.11, Hydrology and Water Quality; impacts related to energy (natural gas and electrical power) are discussed in Section 6.6, Energy; and impacts related to water supply are discussed in Section 6.17, Water Supply.

6.15.2 CEQA THRESHOLDS OF SIGNIFICANCE

The City of San Diego's (City's) California Environmental Quality Act (CEQA) Significance Determination Thresholds (City of San Diego 2016) and Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) contain the following significance thresholds related to Public Utilities:

1. Would the project 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.

The City's CEQA Significance Determination Thresholds (City of San Diego 2016) provide the following guidance to determine the significance of impacts related to solid waste for public projects:

1. Public projects are required to adhere to City of San Diego Administrative Regulations and project specifications that require that the overall waste produced is reduced sufficiently to comply with waste reduction targets established in the Public Resources

Code. Furthermore, Council Policy 900-14 requires City projects to achieve the U.S. Green Building Council's LEED Silver standard for all new buildings and major renovations over 5,000 feet.

2. Projects complying with the City of San Diego Administrative Regulations are not required to prepare a Waste Management Plan.

These thresholds are consistent with the General Plan policies and the General Plan PEIR mitigation, including PF-I.2. "Maximize waste reduction and diversion" and CE-A.2 "Reduce waste by improving management and recycling programs" (City of San Diego 2016).

6.15.3 ISSUE 1

Would the North City Project 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.

6.15.3.1 Impacts

Communication Systems

No Project/No Action Alternative

Under the No Project/No Action Alternative, the North City Pure Water Facility (NCPWF) and ancillary facilities, pipelines, and other features would not be constructed. Therefore, no adverse effects related to the construction of new communication systems or alterations to existing utilities would occur.

Miramar Reservoir Alternative

Yard piping at each facility would include communication duct banks. The North City Project would extend the City's COMNET Distributed Control System to each new facility via underground fiber-optic cables to allow for remote operation and monitoring of all systems. These cables and other aspects of the Distributed Control System would be constructed within the facility impact footprints and pipeline impact areas; these construction effects are discussed throughout Chapter 6 of this EIR/EIS.

During construction, the Miramar Reservoir Alternative may result in adverse short-term impacts to existing telephone and cable facilities if underground utility lines

within a roadway right-of-way are interrupted or relocated during construction; see additional discussion below regarding potential conflicts with existing utilities.

San Vicente Reservoir Alternative

Similar to the Miramar Reservoir Alternative, the San Vicente Reservoir Alternative would also extend the City's COMNET Distributed Control System to each new facility. The construction of the communication system would be within the facility impact footprints and pipeline impact areas; these construction effects are discussed throughout Chapter 6 of this EIR/EIS.

During construction, the San Vicente Reservoir Alternative may result in adverse short-term impacts to existing telephone and cable facilities if underground utility lines within a roadway right-of-way are interrupted or relocated during construction; see additional discussion below regarding potential conflicts with existing utilities.

Solid Waste

No Project/No Action Alternative

Under the No Project/No Action Alternative, the NCPWF and ancillary facilities, pipelines, and other features would not be constructed. Therefore, no adverse effects related to solid waste would occur.

Miramar Reservoir Alternative

Temporary, Construction Impacts

Construction of the North City Project would generate a limited amount of demolition waste and solid waste, such as material packaging. In addition, construction may involve the export of soil. However, soils would be removed and exported to local sites for reuse.

Demolition of existing buildings would occur at the Morena Pump Station site and the North City Water Reclamation Plant (NCWRP) site. At the Morena Pump Station, all existing structures and buildings would be demolished. At the NCWRP site, the existing guard shack and portions of the existing secondary clarifiers building would be demolished. In addition, 14 existing clarifiers located within the structure to be partially demolished would also be demolished. Portions of roadways within the site would be demolished as well, specifically, portions of Road A, Road B, Road F, and smaller access roads.

Public projects are required to implement best management practices for construction activities as set forth in The “Greenbook”: Standard Specifications for Public Works Construction. The City of San Diego has created the Whitebook, a supplement which takes precedence over the specification language contained in the Greenbook and addresses the unique conditions in the City that are not addressed in the Greenbook. The North City Project would adhere to the requirements of Section 702 of the City’s Whitebook during construction with regard to the reduction of construction and demolition waste, including meeting the 75% waste diversion target, and no adverse impacts related to solid waste disposal would occur.

Permanent, Operational Impacts

The primary sources of solid waste from Miramar Reservoir Alternative would consist of sludge and disposal of other wastes such as filter cartridges and reverse osmosis (RO) membrane elements. Additional sludge would be generated as a result of the treatment of additional wastewater at the North City Water Reclamation Plant (NCWRP) to produce sufficient tertiary treated effluent to enable the production of 34 million gallons per day of purified water at the NCPWF, as described in more detail below.

The treatment process at the NCPWF would use consumables (i.e., components of the unit processes that are known to wear out over time). These items include biological activated carbon filtration (BAC) filter media, membrane filtration (MF) membrane modules, RO cartridge filters, RO membrane elements, UV lamps, and UV ballasts. Replacement intervals for each item range from twice yearly for RO cartridge filters to every 10 years for BAC filter media and MF membrane modules. The quantity of each consumable item to be replaced yearly is shown below in Table 6.15-1.

Table 6.15-1
Quantity of Consumables to Be Replaced Yearly

Consumable Item	Quantity of Each Consumable at NCPWF
BAC filter media	199,600 pounds
MF modules	197 modules
RO cartridge filters	432 filters
RO Membrane Elements – Stages 1 and 2	1,399 elements
RO Membrane Elements – Stage 3	1,260 elements
Trojan UV TorrentE CT lamps	198 lamps
Trojan UV TorrentE CT ballasts	17 ballasts

Source: MWH Americas et al. 2016, Table 11-5.

Notes: NCPWF = North County Pure Water Facility; BAC = biological activated carbon filtration; MF = membrane filtration; RO = reverse osmosis.

The expansion and improvement of other facilities would also result in additional solid waste disposal. The City would manage disposal of consumables to ensure a minimum 75% waste diversion through source reduction, recycling, composting, or transformation. No long-term adverse effects related to solid waste disposal would occur.

Biosolids

Morena Pump Station

Screening will be collected in two roll-off dumpsters. Each dumpster is sized to accommodate 1 week of solids collection during a high solids period. It has been assumed that 1 cubic yard of solids will be collected each day during a high solids period. It is anticipated that the screens will be operated alternately to collect solids for a week and then allow a week for the collected solids to dewater. Water will drain from the solids through the bottom of the dumpster and drop through a trench drain to the third channel. Once per week a dumpster will be removed from the screening building and transported to a local landfill for disposal. If necessary, a third dumpster can be kept on site to allow further dewatering.

Metro Biosolids Center

Implementation of the North City Project will result in changes to the quantity and characteristics of the biosolids and/or chemical sludge produced and sent to Metro Biosolids Center (MBC). Initially, during the first year of operation, the North City Project is anticipated to reduce the quantity of MBC biosolids production due to increased diversion of flow from Point Loma Wastewater Treatment Plant to NCWRP. However, beginning in 2023, as a result of the North City Project, MBC biosolids production is anticipated to be approximately 2,235 wet tons/year greater than without the North City Project, which would constitute an approximately 1% increase in biosolids production.

As discussed in Section 5.15, in 2009 the majority of biosolids produced at MBC was beneficially reused as alternative daily cover at the Otay Landfill; about 9.9% was beneficially reused via land application at multiple locations in Yuma, Arizona; and the remainder (about 0.7%) was disposed of in the Otay Landfill. The increase in biosolids production at MBC as a result of the North City Project would be minimal. Although potential regulatory changes may change near-term definitions and classifications of biosolids, which may result in biosolids sent to Otay Landfill qualifying as disposal rather than alternative daily cover, the North City Project is

not expected to contribute a substantial quantity of biosolids such that the capacity of Otay Landfill would be exceeded or such that the City would be required to change their future biosolids disposal strategy as a result.

San Vicente Reservoir

Temporary Construction Impacts

Construction of the North City Project under the San Vicente Reservoir Alternative would similarly generate a limited amount of solid waste, such as material packaging. In addition, construction may involve the export of soil. However, soils would be removed and exported to local sites for reuse. Demolition would occur, and similar to the Miramar Reservoir Alternative, demolition debris would be diverted.

Additionally, the San Vicente Reservoir Alternative would adhere to the requirements of Section 702 of the City's Whitebook during construction with regard to the reduction of construction and demolition waste, similar to the Miramar Reservoir Alternative. No adverse impacts related to solid waste disposal would occur.

Permanent Operational Impacts

The primary sources of solid waste from San Vicente Reservoir Alternative would consist of sludge and disposal of other wastes such as filter cartridges and RO membrane elements. Additional sludge would be generated as a result of the treatment of additional wastewater at NCWRP to produce sufficient tertiary treated effluent to enable the production of 34 million gallons per day of purified water at the NCPWF.

The treatment process at the NCPWF would use consumables (i.e., components of the unit processes that are known to wear out over time). These items include BAC filter media, MF membrane modules, RO cartridge filters, RO membrane elements, UV lamps, and UV ballasts. No BAC filter media would require disposal under the San Vicente Reservoir Alternative because the BAC treatment step would not be included at the NCPWF San Vicente Reservoir. Replacement intervals for each item range from twice yearly for RO cartridge filters to every 10 years for MF membrane modules. The quantity of each consumable item to be replaced yearly would be as shown in Table 6.15-1, less the 199,600 pounds of BAC filter media.

The expansion and improvement of other facilities would also result in additional solid waste disposal. The City would manage disposal of consumables to ensure a minimum 75% waste diversion through source reduction, recycling, composting, or transformation. No long-term adverse effects related to solid waste disposal would occur.

Biosolids

Under the San Vicente Reservoir Alternative, the same amount of additional wastewater would be diverted to NCWRP as under the Miramar Reservoir Alternative; therefore, the same additional quantity of biosolids would be produced at MBC.

Existing Utility Conflicts

No Project/No Action Alternative

Under the No Project/No Action Alternative, the NCPWF and ancillary facilities, pipelines, and other features would not be constructed. Therefore, no conflicts with existing utilities would occur.

Miramar Reservoir Alternative

The Morena Wastewater Forcemain and Brine/Centrates Line (Morena Pipelines) and North City Pipeline would both be located primarily within existing roadways, which are areas of highly congested utilities. Careful consideration and a number of design changes have been implemented to both pipeline alignments to avoid conflicts with existing utilities, as well as the ongoing Mid-Coast Corridor Transit Project, as much as possible. Existing utilities were identified using the SanGIS database and all utilities equal to and greater than 8 inches, as well as high-pressure gas lines, were included in the plan and profile sheets for the pipeline designs.

Design guidelines have incorporated the Department of Health Services, Department of Drinking Water's Guidance Memo No. 2003-02: Guidance Criteria for the Separation of Water Mains and Non-Potable Pipelines. Accordingly, for the Morena Pipelines, a minimum horizontal clearance of 6 feet and minimum vertical clearance of 1 foot will be provided between the alignment and all potable water lines. In addition, the alignment will be placed at least 1 foot below adjacent water lines. The Morena Pipelines would parallel the new 36-inch Morena Water Main pipeline project; coordination with the City's Public Works Department will be required.

For the North City Pipeline, the pipeline would be required to be "Special Pipe" such as welded steel pipe if within four to ten feet from the edge of an existing pipe. The majority of the pipeline will fall into this category. Where feasible, the pipeline will be located a minimum of 10 horizontal feet from any adjacent wet utility and attempt to stay at least 1 foot above any adjacent sewer or reclaimed water lines.

Several large diameter water, sewer and storm drains will be crossed by the North City Pipeline. In cases where 5 feet of cover cannot be achieved to meet City design criteria, the North City Pipeline will be located below the interfering utility with at least 1 foot of clearance between the pipelines. If the interfering pipeline is a sewer or reclaimed waterline, the Department of Drinking Water may require a casing for the North City Pipeline that extends 10 feet beyond the edge of the pipe that is crossed.

Despite careful consideration of the pipeline placements, in some cases, design standards requiring minimum separation of utilities may not be able to be met and could result in an adverse impact.

San Vicente Reservoir Alternative

Under the San Vicente Reservoir Alternative, the Morena Pipelines and San Vicente Pipeline would also be located primarily within existing roadways, which are areas of highly congested utilities. Careful consideration and a number of design changes have been implemented to both pipeline alignments to avoid conflicts with existing utilities, as well the ongoing Mid-Coast Corridor Transit Project, as much as possible. Existing utilities were identified using the SanGIS database and all utilities equal to and greater than 8 inches, as well as high-pressure gas lines, were included in the plan and profile sheets for the pipeline designs.

Design guidelines have incorporated the Department of Drinking Water's Guidance Memo No. 2003-02: Guidance Criteria for the Separation of Water Mains and Non-Potable Pipelines. Under this alternative, pipelines would be designed in a manner similar to how they would be designed under the Miramar Reservoir Alternative. Despite careful consideration of the pipeline placements, in some cases, design standards requiring minimum separation of utilities may not be able to be met and could result in an adverse impact.

6.15.3.2 Significance of Impacts under CEQA

No Project/No Action Alternative

No impacts to public utilities would occur under the No Project/No Action Alternative.

Miramar Reservoir Alternative

Construction effects resulting from the communication system to be implemented as part of the Miramar Reservoir Alternative are discussed throughout Chapter 6, Environmental Analysis.

Under the Miramar Reservoir Alternative, limited amounts of demolition waste and solid waste would be produced during construction and operation of the Project Alternative. Through compliance with the best management practices of the City's Whitebook and compliance with City policies requiring 75% diversion, solid waste generated by the project would be further reduced. The Miramar Landfill serves as the landfill for solid waste generated by the North City Project and has permitted capacity to accept solid waste anticipated from the Miramar Reservoir Alternative. Therefore, construction and operation of the Miramar Reservoir Alternative would not result in substantial alterations to solid waste disposal; under CEQA, impacts would be **less than significant**.

The increase in biosolids would represent a minor increase over the amount of biosolids currently produced at MBC, and the Otay Landfill has sufficient capacity to handle the additional biosolids. Therefore, impacts would be **less than significant** under CEQA.

Pipelines would be constructed primarily in roadway rights-of-way in areas of highly congested utilities. In some cases, design standards requiring minimum separation of utilities may not be able to be met. Impacts related to conflicts with existing utilities may be **potentially significant** under CEQA.

San Vicente Reservoir Alternative

Construction effects resulting from the communication system to be implemented as part of the San Vicente Reservoir Alternative are discussed throughout Chapter 6, Environmental Analysis.

Impacts related to solid waste under the San Vicente Reservoir Alternative would be similar to the Miramar Reservoir Alternative. Impacts would be **less than significant** under CEQA.

Similar to the Miramar Reservoir Alternative, impacts related to conflicts with existing utilities under the San Vicente Reservoir Alternative may be **potentially significant** under CEQA.

6.15.3.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No mitigation is required.

Miramar Reservoir Alternative

To reduce potential impacts, the following mitigation measure (MM) would be required:

MM-PU-1 The City of San Diego Public Utilities Department shall consult with other City departments and other utility service providers to avoid interference with facilities. Special design considerations, such as a casing, may be necessary if the interfering utility is a sewer or reclaimed water line to ensure protection of utility lines.

San Vicente Reservoir Alternative

Mitigation measure MM-PU-1 would also be required under the San Vicente Reservoir Alternative.

6.15.4 LEVEL OF IMPACT AFTER MITIGATION

The applicability of the mitigation measure to each Project component is outlined below in Table 6.15-2.

**Table 6.15-2
Applicability of Utility Conflict Mitigation Measure to Project Components**

Project Component	MM-PU-1
<i>Components Common to Project Alternatives</i>	
Morena Pump Station	
Morena Pipelines	X
NCWRP Expansion	
NCPWF Influent Pump Station	
North City Pump Station	
North City Renewable Energy Facility	
Landfill Gas Pipeline	X
MBC Improvements	
<i>Miramar Reservoir Alternative</i>	
NCPWF-MR	
North City Pipeline	X
Dechlorination Facility	
Miramar WTP Improvements	
<i>San Vicente Reservoir Alternative</i>	
NCPWF-SVR	
San Vicente Pipeline	X
MTBS	

Impacts related to communication systems and solid waste disposal would be less than significant. Implementation of mitigation measure MM-PU-1 would mitigate identified adverse and potentially significant impacts related to conflicts with existing utilities resulting from the Project Alternatives to a **level below significance**.

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6.16 TRANSPORTATION, CIRCULATION, AND PARKING

6.16.1 INTRODUCTION

The following section examines the impacts of the North City Project on transportation, circulation, and parking. The information in this section is based on the North City Project Transportation Impact Study (prepared by Chen Ryan) provided as Appendix I. The analysis was performed in accordance with the requirements of the City of San Diego Traffic Impact Study Manual (City of San Diego 1998).

6.16.2 CEQA THRESHOLDS OF SIGNIFICANCE

The City of San Diego's (City's) California Environmental Quality Act (CEQA) Significance Determination Thresholds (City of San Diego 2016a) and Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) contain the following significance thresholds related to transportation. They are as follows:

1. 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, the impact would be significant if the project exceeds the thresholds shown in Table 6.16-1 below.
2. At any ramp meter location with delays above 15 minutes, the impact would be significant if the project exceeds the thresholds shown in Table 6.16-1 below.
3. If a project would increase traffic hazards to motor vehicles, bicyclists, or pedestrians due to proposed non-standard design features (e.g., poor sight distance, proposed driveway onto an access-restricted roadway), the impact would be significant.
4. If a project would result in the construction of a roadway which is inconsistent with the General Plan and/or a community plan, the impact would be significant if the proposed roadway would not properly align with other existing or planned roadways.
5. If a project would result in a substantial restriction in access to publicly or privately owned land, the impact would be significant.

6. Generally, if a project is deficient by more than 10% of the required amount of parking and at least one of the following criteria applies, then a significant impact may result:
- The project’s parking shortfall or displacement of existing parking would substantially affect the availability of parking in an adjacent residential area, including the availability of public parking.
 - The parking deficiency would severely impede the accessibility of a public facility, such as a park or beach.

**Table 6.16-1
LOS Threshold for Significant Project Impacts**

Level of Service (LOS) with Project*	Allowable Change Due to Impact**					
	Freeways		Roadway Segments		Intersections	Ramp Metering
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)	Delay (min.)
LOS E (or ramp meter delays > 15 min.)	0.010	1.0	0.02	1.0	2.0	2.0
LOS F (or ramp meter delays > 15 min.)	0.005	0.5	0.01	0.5	1.0	1.0

Source: City of San Diego 2016a.

Notes: V/C = volume to capacity ratio; mph = miles per hour; sec. = seconds; min. = minutes

The allowable increase in delay at a ramp meter with more than 15 minutes of delay and freeway LOS E is 2 minutes.

The allowable increase in delay at a ramp meter with more than 15 minutes of delay and freeway LOS F is 1 minute.

* All LOS measurements are based upon Highway Capacity Manual procedures for peak hour conditions. However, volume to capacity (V/C) ratios for roadway segments may be estimated on an average daily traffic (ADT)/24-hour traffic volume basis (using Table 2.1 in City of San Diego 2016a or a similar LOS chart for each jurisdiction). The acceptable LOS for freeways, roadways, and intersections is generally “D” (“C” for undeveloped or not densely developed locations per jurisdiction definitions). For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.

** If a proposed project’s traffic causes the values shown in the table to be exceeded, the impacts are determined to be significant. These impact changes may be measured from appropriate computer programs or expanded manual spreadsheets. The project applicant shall then identify feasible mitigation (within the Traffic Impact Study report) that will maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable (see previous note), or if the project adds a significant amount of peak hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, the project applicant shall be responsible for mitigating significant impact changes.

6.16.3 METHODOLOGY

The construction of the North City Project will result in both operational- and construction-related traffic. The analysis of potential impacts related to transportation uses LOS, a performance measure which is defined and discussed in Section 5.16.2, Environmental Setting.

6.16.3.1 Study Area and Study Scenarios

The construction and operations of the North City Project are analyzed separately. The North City Project Alternatives (Project Alternatives) include the Miramar Reservoir Alternative and San Vicente Reservoir Alternative. Construction-related traffic would be different for each Project Alternative and would be associated with the North City Pure Water Pipeline (North City Pipeline) under the Miramar Reservoir Alternative and the San Vicente Pure Water Pipeline (San Vicente Pipeline) under the San Vicente Reservoir Alternative. Additionally, the construction of the Morena Wastewater Forcemain and Brine/Centrates Line (Morena Pipelines) is analyzed separately and would be included in the study area for both Project Alternatives. Both Project Alternatives would result in the same operational traffic, and therefore, the study area for operations is the same for both Project Alternatives. The study areas are defined in Section 5.16.2, Environmental Setting.

Construction of the North City Pure Water Facility (NCPWF) is anticipated to take place between October 2018 and November 2021. Expansion of the NCWRP is anticipated to take place between October 2018 and December 2021. Therefore, for purposes of the traffic analysis, the near-term year of analysis of 2022 was assumed. Operation of the North City Project was evaluated under the following scenarios:

- Existing without Project (see Section 5.16)
- Existing with Project
- Near Term (2022) without Project
- Near Term (2022) with Project
- Horizon Year (2035) without Project
- Horizon Year (2035) with Project

Construction of the Project Alternatives was evaluated under the following scenarios:

- Near Term (2022) without Construction of Miramar Reservoir Alternative
- Near Term (2022) with Construction of Miramar Reservoir Alternative

- Near Term (2022) without Construction of San Vicente Reservoir Alternative
- Near Term (2022) with Construction of San Vicente Reservoir Alternative
- Near Term (2022) without Construction of the Morena Pump Station and Pipelines
- Near Term (2022) with Construction of the Morena Pump Station and Pipelines

6.16.3.2 Background Growth, Cumulative Traffic Volumes, and Roadway Network Improvements

Near-Term (2022) Operations Analysis

It is assumed that the North City Project will be in operation by 2022 and that roadway geometrics in 2022 will be identical to those under Existing Conditions. A list of potential cumulative projects within one mile of the North City Project was obtained from the City of San Diego's website to determine the cumulative traffic volumes. This list was carefully reviewed and discussed with Development Services staff in order to estimate traffic contributed to the roadway network by cumulative projects. These cumulative projects are included in all operations Near-Term scenarios.

Table 6.16-2 provides the trip generation for the cumulative projects. All trip generation rates for the cumulative projects were derived from the City of San Diego Land Development Code Trip Generation Manual (City of San Diego 2003).

Separate trip distributions were developed for each of the cumulative projects in order to accurately reflect the associated travel patterns. The distribution patterns were based on the location of cumulative projects' access points to the regional roadway network and predicted travel patterns. Figures showing the distribution and assignment of the trips for the cumulative projects are provided in Appendix I.

**Table 6.16-2
Cumulative Projects Trip Generation**

Project ID	Project Location	Project Description	Daily Trip Generation
1	4570 Executive Drive	Construct a 95,609-square-foot commercial building with two commercial condominium units on a 3.36-acre site.	1,632

**Table 6.16-2
Cumulative Projects Trip Generation**

Project ID	Project Location	Project Description	Daily Trip Generation
2	4589 La Jolla Village Drive	Add approximately 483,000 square feet of retail space, 300 residential units, associated parking structures, and the Transit Center; encompasses 75.86 acres.	21,906
3	4770 Eastgate Mall	Construct a 62,805-square-foot, three-story office building over sub-level parking.	1,188
4	4755 Nexus Centre Drive	Construct a new 78,000-square-foot research and development, three-story building, with subterranean parking, on a 11.27-acre site.	624
5	4767 Nexus Centre Drive	Demolish a 69,000-square-foot building and construct a 122,015-square-foot, four-story research and development building.	425
6	4775 Executive Drive	Construct a 250,000-square-foot office and research and development building over three-level, below-grade parking on a 7.07-acre site.	2,000
7	6320 Miramar Road	Construct a 21,000-square-foot retail/warehouse building on a vacant 1.5-acre site.	105
8	9923 1/3 Olson Drive	Change in use from an existing equipment and materials storage facility for the development of a private parking facility for utilization by the adjacent 13.61-acre FedEx Building site.	817
9	5909 Nancy Ridge Drive	Construct two level pads for an outdoor storage yard and an access road on a 13.95-acre site.	837
10	6162 Nancy Ridge Drive	Construct a 47,228-square-foot, four-story research and development/office building and a five-story parking structure on a 3-acre site.	378
11	9198 Genesee Avenue	Construction of 560 multi-family dwelling units.	3,360
12	9015 Judicial Drive	Construct 309 residential condominiums with deviation to building height and remove Prime Industrial Lands designation on a 7.93-acre site.	1,854
Total			35,126

Source: Appendix I.

Near-Term (2022) Construction Analysis

It is assumed that the North City Project will be in operation by 2022 and that roadway geometrics in 2022 will be identical to those under Existing Conditions.

Because the construction study area is extremely large, growth in traffic volumes does not include specific cumulative projects. Instead, background growth was derived by comparing San Diego Association of Governments (SANDAG) Series 13 year 2035 and year 2020 forecast volumes, as well as the existing traffic counts. Growth factors were developed and applied to existing traffic volumes for each specific roadway segment. This approach captures cumulative development to the extent that development is forecasted and included in the SANDAG model.

Horizon Year (2035) Operations Analysis

Both roadway network and traffic volumes under Horizon Year Conditions were assumed to be identical to the University Community Plan Amendment effective December 5, 2016 (City of San Diego 2016b). Detailed traffic volume information was obtained from the City of San Diego Planning Department.

6.16.3.3 Project Trip Generation, Distribution, and Assignment

North City Project Operations

The daily operations of the North City Project will include staffing at both the NCPWF and the North City Water Reclamation Plant (NCWRP), as described in the following paragraphs. All other North City Project components are negligible traffic generators and are not included in the traffic impact analysis.

There will be a total of 45 employees at the NCPWF as follows:

- 37 employees during regular day shift (6:00 a.m. to 3:00 p.m.)
- 8 employees after regular day shift (3:00 p.m. to 6:00 a.m.)

There will be 15 additional employees at the NCWRP as follows:

- 9 employees during regular day shift (6:00 a.m. to 3:00 p.m.)
- 6 employees after regular day shift (3:00 p.m. to 6:00 a.m.)

The proposed work shift for the majority of the workers at these facilities is from 6:00 a.m. to 3:00 p.m., which based on an analysis of 15-minute interval traffic counts, does not coincide with typical commute AM and PM peak hour (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.). Employees who work after the regular day shift are divided into two shifts of four people at the NCPWF and two shifts of three people at NCWRP. The first shift of employees would work from 3:00 p.m. to 11:00 p.m. and the second from 11:00 p.m. to 6:00 a.m. Even if 20% of the workers were to arrive or depart the Project site during regular commute hours, this would result in an addition of 12 trips (10 in/2 out) during the AM peak hour and 12 trips (2 in/10 out) during the PM peak hour. This amount of peak hour trips is less than the peak hour trip requirement of 50 trips for a traffic impact study, per the City of San Diego Traffic Impact Study Manual (City of San Diego 1998). Therefore, a peak hour intersection analysis was not completed for Project operations. However, a roadway segment analysis was conducted.

The North City Project is not anticipated to contribute more than 50 peak hour trips on Interstate 805 (I-805) in either direction, or 20 or more peak hour trips on I-805 freeway metered on-ramps; therefore, neither a freeway impact analysis nor a ramp metering analysis was conducted.

Based on the numbers of employees, daily trip generation for was estimated at 180 trips as shown in Table 6.16-3 below. The trip rate was based on the assumption that each employee commutes to and from work every day (two trips a day) and that approximately 50% of employees would make two extra trips (inbound and outbound) during their shift for reasons such as a meeting or lunch.

**Table 6.16-3
Operations Trip Generation**

Land Use	Number of Employees	Trip Rate	AM Peak Hour (5:00 a.m. to 6:00 a.m.)	PM Peak Hour (5:00 a.m. to 6:00 a.m.)	Daily Trips
NCPWF	45	3/employee	41 (37 in/4 out)	41 (4 in/37 out)	135
NCWRP Expansion	15	3/employee	12 (9 in/3 out)	12 (3 in/9 out)	45
Total			53 (46 in/7 out)	53 (7 in/46 out)	180

Source: City of San Diego staff, pers. comm. 2017, as cited in Appendix I.

The North City Project trip distribution was developed based on existing traffic patterns, surrounding land uses, and access to freeways. Based upon the assumed Project trip distribution, as well as the anticipated Project trip generation, daily Project trips were assigned to the adjacent roadway network. Figures showing North City Project trip distribution and assignment are provided in Appendix I.

North City Project Construction

Construction of the pipelines connecting to the reservoirs for both Project Alternatives is proposed largely to be open trench and during nighttime (between 9:00 p.m. and 5:00 a.m.), with trenches backfilled and steel plated in order to open travel lanes during the day. As a result, typical commute AM and PM peak hour (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.) trips are not anticipated to be generated during the construction of these pipelines, thus no peak hour intersection analysis was conducted for the North City Pipeline and San Vicente Pipeline. However, construction of the Morena Pipelines will include daytime construction on some roadway segments and will require some lane closures as described in Section 5.16.2, Environmental Setting. Therefore, both a roadway and intersection analysis was conducted for the Morena Pipelines. The results of this analysis are presented separate from the Project Alternatives even though the Morena Pipelines are included in both Project Alternatives.

North City and San Vicente Pipelines

It is assumed that truck trips (excavation, material transport, utility trucks, etc.) and worker trips will be generated during construction. Based on information from the City of San Diego Public Utilities Department, the open-trench excavation will be approximately 10 feet deep and 6 feet wide and 75 feet long per day, and the same number of workers and heavy vehicles will be required per day throughout the construction duration for both the North City Pipeline and San Vicente Pipeline. As a worst-case scenario, it was assumed that all workers would drive individual vehicles to the construction sites. As shown in Table 6.16-4, construction of either the North City Pipeline or San Vicente Pipeline is anticipated to generate approximately 280 daily construction trips. The trip rate for construction employees was based on the assumption that each employee commutes to and from work every day (two trips a day) and that approximately 50% of employees would make two extra trips (inbound and outbound) during their shift for reasons such as a lunch.

**Table 6.16-4
North City Pipeline and San Vicente Pipeline Construction Trip Generation**

Trip Type	Unit	Rate	Daily Generation	Passenger Car Equivalent	Daily Vehicle Trips
Construction Worker Vehicles	20 workers	3/worker	60 vehicle trips	1	60
Construction Trucks	44 trucks	2/truck	88 truck trips	2.5	220
Total					280

Source: Appendix I.

Trip distribution and assignment for the construction of the North City Pipeline is based on the alignment and staging locations. The North City Pipeline connects the NCPWF site at I-805 and Eastgate Mall to the Miramar Reservoir via Eastgate Mall, Miramar Road, Kearny Villa Road, Candida Street, Via Pasar, Via Excelencia, under I-15 to Businesspark Avenue, Carroll Canyon Road, Hoyt Park Drive, and Meanley Drive. Information provided by the City indicates that construction staging areas will be located at the NCWRP site off Eastgate Mall, Scripps Technology Ranch property, Miramar Water Treatment Plant (near the tunnel shaft opening west of the clearwells), and at Miramar Reservoir (near the boat dock). Vulcan in Mira Mesa will be the main site as the origin and destination of construction materials.

Daily trip generation for the construction of the San Vicente Pipeline is the same as construction of the North City Pipeline. However, the trip distribution and assignment is different based on the alignment. The San Vicente Pipeline alignment connects the NCPWF to the San Vicente Reservoir via Eastgate Mall, the repurposed 36-inch recycled water pipeline, Copley Drive, Copley Park Place, Convoy Street, Convoy Court, Mercury Court, Industrial Park Driveway, crosses under Clairemont Mesa Boulevard to Ronson Court and Road, Lightwave Avenue, Ruffin Road, Clairemont Mesa Boulevard, Murphy Canyon Road, crosses under I-15 until rejoining Clairemont Mesa Boulevard, Santo Road, Tierrasanta Boulevard, Mission Gorge Road, Carlton Oaks Drive, Halberns Boulevard, Mast Boulevard, Riverside Drive, Lakeside Avenue, Willow Road, and finally Moreno Avenue before continuing north to the shore of the San Vicente Reservoir. Locations for staging for the San Vicente Pipeline have not yet been identified. Since the locations are unknown a conservative approach to the trip assignment was taken by adding construction traffic to all roadways on the San Vicente Pipeline alignment.

Morena Pipelines

It is assumed that truck trips (excavation, material transport, utility trucks) and worker trips will be generated during construction. Based on review of the 10% Engineering Design Report for the Morena Pipelines, it is also assumed that the open-trench excavation will be approximately 10 feet deep, 8 feet wide, and 75 feet long per day, and the same number of workers and heavy vehicles will be required per day for the duration of the pipeline construction. As a worst-case scenario, it was assumed that all workers would drive individual vehicles to the Project site. As shown in Table 6.16-5, the construction is anticipated to generate approximately 324 daily trips, as well as 46 trips during both the AM and PM peak hours.

**Table 6.16-5
Morena Pipelines Construction Trip Generation**

Trip Type	Unit	Rate	Daily Generation	Passenger Car Equivalent	Daily Vehicle Trips	AM Peak Hour	PM Peak Hour
Construction Worker Vehicles	8 workers	3/worker	24 vehicle trips	1	24	8 (8 in/ 0 out)	8 (0 in/ 8 out)
Construction Trucks	60 trucks	2/truck	120 truck trips	2.5	300	38 (19 in/ 19 out)	38 (19 in/ 19 out)
Total					324	46 (27 in/ 19 out)	46 (19 in/ 27 out)

Source: Appendix I.

Trip distribution and assignment for the construction of the Morena Pipelines is based on the alignment and staging locations. The pipelines will connect the new Morena Pump Station to the NCWRP via Sherman Street, Morena Boulevard, West Morena Boulevard, Ingulfellett Street, Denver Street, Clairemont Drive, Clairemont Mesa Boulevard, Genesee Avenue, Nobel Drive, Towne Centre Drive, and Executive Drive, traversing the communities of Linda Vista, Clairemont Mesa, and University. Pipeline staging areas are proposed to be located within developed parking lots or other developed areas to minimize traffic and road disruptions and would move frequently as construction progresses along the alignment. No new access roads would be needed. Staging areas for open cut construction would range from 30 feet to 60 feet wide and would occupy half the roadway width. Staging areas for trenchless construction would range from 20

feet by 50 feet up to 100 feet by 150 feet. The Miramar Landfill would be the main site of origin and destination for material disposal truck trips and SR-52 would be the main route.

6.16.4 ISSUE 1

Would implementation of the North City Project 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?

6.16.4.1 Impacts

No Project/No Action Alternative

Under the No Project/No Action Alternative, the proposed NCPWF and associated improvements at other treatment facilities and pumping and conveyance facilities would not be constructed. No traffic/transportation effects related to the construction and operations would occur.

Miramar Reservoir Alternative

Morena Pipelines

The Morena Pipelines would be constructed under both the Miramar Reservoir Alternative and San Vicente Reservoir Alternative. It is assumed that the North City Project will be in operation by 2022. To analyze the impacts of construction, the traffic generated by construction (Table 6.16-5) was added to Near-Term traffic volumes and compared against Near-Term Conditions without the construction of the Morena Pipelines.

Roadway Segments

Figure 6.16-1 displays the Near-Term roadway traffic volumes, while Figure 6.16-2 displays the Near-Term roadway traffic volumes with construction traffic. Table 6.16-6 shows the daily roadway segment LOS results under both scenarios.

**Table 6.16-6
Roadway Segment LOS Near-Term Conditions Morena Pipelines Construction Traffic**

Roadway	Segment	Near Term + Construction					Near Term					Change in V/C
		Functional Classification	Threshold (LOS E)	ADT	V/C	LOS	Functional Classification	Threshold (LOS E)	ADT	V/C	LOS	
Executive Drive	End of cul-de-sac and Judicial Drive	Two-lane Collector	8,000	7,424	0.928	E	Two-lane Collector	8,000	7,100	0.888	E	0.041
	Judicial Drive and Towne Centre Drive	Four-lane Major Arterial	40,000	7,424	0.186	A	Four-lane Major Arterial	40,000	7,100	0.178	A	0.008
Towne Centre Drive	Executive Drive and La Jolla Village Drive	Four-lane Major Arterial	40,000	20,924	0.523	B	Four-lane Major Arterial	40,000	20,600	0.515	B	0.008
	La Jolla Village Drive and Golden Haven Drive	Two-lane Collector	8,000	16,224	2.028	F	Four-lane Major Arterial	40,000	15,900	0.398	B	1.631

**Table 6.16-6
Roadway Segment LOS Near-Term Conditions Morena Pipelines Construction Traffic**

Roadway	Segment	Near Term + Construction					Near Term					Change in V/C
		Functional Classification	Threshold (LOS E)	ADT	V/C	LOS	Functional Classification	Threshold (LOS E)	ADT	V/C	LOS	
	Golden Haven Drive and Nobel Drive	Two-lane Collector	8,000	16,224	2.028	F	Four-lane Major Arterial	40,000	15,900	0.398	B	1.631
Nobel Drive	Towne Centre Drive and Genesee Avenue	Two-lane Collector	8,000	23,124	2.891	F	Four-lane Major Arterial	40,000	22,800	0.570	C	2.321
Genesee Avenue	Nobel Drive to Governor Drive	Four-lane Major Arterial	40,000	39,524	0.988	E	Four-lane Major Arterial	40,000	39,200	0.980	E	0.008
	Governor Drive and SR-52 WB ramps	Four-lane Major Arterial	40,000	35,224	0.881	E	Four-lane Major Arterial	40,000	34,900	0.873	D	0.008
	SR-52 WB ramps and SR-52 EB ramps	Four-lane Major Arterial	40,000	33,924	0.848	D	Four-lane Major Arterial	40,000	33,600	0.840	D	0.008

**Table 6.16-6
Roadway Segment LOS Near-Term Conditions Morena Pipelines Construction Traffic**

Roadway	Segment	Near Term + Construction					Near Term					Change in V/C
		Functional Classification	Threshold (LOS E)	ADT	V/C	LOS	Functional Classification	Threshold (LOS E)	ADT	V/C	LOS	
	SR-52 EB ramps and Appleton Street	Four-lane Major Arterial	40,000	31,624	0.791	D	Four-lane Major Arterial	40,000	31,300	0.783	D	0.008
	Appleton Street and Clairemont Mesa Boulevard	Two-lane Collector	8,000	31,624	3.953	F	Four-lane Major Arterial	40,000	31,300	0.783	D	3.171
Clairemont Mesa Boulevard	Genesee Avenue and Clairemont Drive	Two-lane Collector	8,000	26,124	3.266	F	Four-lane Secondary Arterial	30,000	25,800	0.860	E	2.406
Clairemont Drive	Clairemont Mesa Boulevard and Lakehurst Avenue	Two-lane Collector	8,000	9,324	1.166	F	Four-lane Secondary Arterial	30,000	9,000	0.300	A	0.866

**Table 6.16-6
Roadway Segment LOS Near-Term Conditions Morena Pipelines Construction Traffic**

Roadway	Segment	Near Term + Construction					Near Term					Change in V/C
		Functional Classification	Threshold (LOS E)	ADT	V/C	LOS	Functional Classification	Threshold (LOS E)	ADT	V/C	LOS	
	Lakehurst Avenue and Clairemont Mesa Boulevard	Two-lane Collector	8,000	9,324	1.166	F	Four-lane Secondary Arterial	30,000	9,000	0.300	A	0.866
	Clairemont Mesa Boulevard and Balboa Avenue	Two-lane Collector	8,000	22,324	2.791	F	Two-lane Collector w/ CLTL	15,000	22,000	1.467	F	1.324
	Balboa Avenue and Rappahannock Avenue	Two-lane Collector	8,000	20,324	2.541	F	Four-lane Major Arterial	40,000	20,000	0.500	B	2.041
	Rappahannock Avenue and Iroquois Avenue	Two-lane Collector w/ CLTL	15,000	20,424	1.362	F	Four-lane Secondary Arterial	30,000	20,100	0.670	D	0.692

**Table 6.16-6
Roadway Segment LOS Near-Term Conditions Morena Pipelines Construction Traffic**

Roadway	Segment	Near Term + Construction					Near Term					Change in V/C
		Functional Classification	Threshold (LOS E)	ADT	V/C	LOS	Functional Classification	Threshold (LOS E)	ADT	V/C	LOS	
Clairemont Drive	Iroquois Avenue and Burgener Drive	Four-lane Secondary Arterial	30,000	15,024	0.501	C	Four-lane Secondary Arterial	30,000	14,700	0.490	C	0.011
	Burgener Drive and Denver Street	Two-lane Collector w/ CLTL	15,000	24,224	1.615	F	Two-lane Collector w/ CLTL	15,000	23,900	1.593	F	0.022
Denver Street	Clairemont Drive and Ingulfjellett Street	Two-lane Collector (Full closure during work hours)	8,000	10,695	1.337	F	Two-lane Collector	8,000	11,000	1.375	F	-0.038

**Table 6.16-6
Roadway Segment LOS Near-Term Conditions Morena Pipelines Construction Traffic**

Roadway	Segment	Near Term + Construction					Near Term					Change in V/C
		Functional Classification	Threshold (LOS E)	ADT	V/C	LOS	Functional Classification	Threshold (LOS E)	ADT	V/C	LOS	
Ingulf Street	Galveston Drive	Two-lane Collector	8,000	6,641 770	0.830 0.846	E	Two-lane Collector	8,000	6,700	0.838	E	-0.007 0.009
	Street and West Morena Boulevard	Two-lane Collector (Full closure during work hours)	8,000	6,641	0.830	E	Two-lane Collector	8,000	6,700	0.838	E	-0.007
Galveston Street	Clairemont Drive and Jellet Street	Two-lane Collector	8,000	4,240 611	0.530 0.576	C	Two-lane Collector	8,000	3,600	0.450	C	0.080 0.126
	Jellet Street and Lister Street	Two-lane Collector	8,000	4,025 274	0.503 0.534	C	Two-lane Collector	8,000	3,600	0.450	C	0.053 0.084
	Lister Street and Milton Street	Two-lane Collector	8,000	3,815 937	0.477 0.492	C	Two-lane Collector	8,000	3,600	0.450	C	0.027 0.042

**Table 6.16-6
Roadway Segment LOS Near-Term Conditions Morena Pipelines Construction Traffic**

Roadway	Segment	Near Term + Construction					Near Term					Change in V/C
		Functional Classification	Threshold (LOS E)	ADT	V/C	LOS	Functional Classification	Threshold (LOS E)	ADT	V/C	LOS	
Jellet Street	Galveston Street and West Morena Boulevard	Two-lane Collector	8,000	3,937 715	0.492 0.464	C	Two-lane Collector	8,000	3,600	0.450	C	0.042 0.014
Lister Street	Galveston Street and West Morena Boulevard	Two-lane Collector	8,000	4,237 970	0.530 0.496	C	Two-lane Collector	8,000	3,900	0.488	C	0.042 0.009
Milton Street	Galveston Street and West Morena Boulevard	Two-lane Collector	8,000	4,237 970	0.530 0.496	C	Two-lane Collector	8,000	3,900	0.488	C	0.042 0.009

**Table 6.16-6
Roadway Segment LOS Near-Term Conditions Morena Pipelines Construction Traffic**

Roadway	Segment	Near Term + Construction					Near Term					Change in V/C
		Functional Classification	Threshold (LOS E)	ADT	V/C	LOS	Functional Classification	Threshold (LOS E)	ADT	V/C	LOS	
West Morena Boulevard	Inglis/Jellett Street and Littlefield Street	Four-lane Major Arterial	40,000	17,724	0.443	B	Four-lane Major Arterial	40,000	17,400	0.435	B	0.008
	Littlefield Street to Morena Boulevard	Four-lane Major Arterial	40,000	17,724	0.443	B	Four-lane Major Arterial	40,000	17,400	0.435	B	0.008
	Morena Boulevard and Tecolote Road Overpass	Four-lane Major Arterial	40,000	12,824	0.321	A	Four-lane Major Arterial	40,000	12,500	0.313	A	0.008
	Tecolote Road Overpass and Vega Street	Four-lane Major Arterial	40,000	12,824	0.321	A	Four-lane Major Arterial	40,000	12,500	0.313	A	0.008

**Table 6.16-6
Roadway Segment LOS Near-Term Conditions Morena Pipelines Construction Traffic**

Roadway	Segment	Near Term + Construction					Near Term					Change in V/C
		Functional Classification	Threshold (LOS E)	ADT	V/C	LOS	Functional Classification	Threshold (LOS E)	ADT	V/C	LOS	
West Morena Boulevard	Vega Street and North of Dorcas Street	Five-lane Major Arterial	50,000	14,324	0.286	A	Five-lane Major Arterial	50,000	14,000	0.280	A	0.006
	North of Dorcas Street and Morena Boulevard	Five-lane Major Arterial	50,000	15,724	0.314	A	Five-lane Major Arterial	50,000	15,400	0.308	A	0.006

Source: Appendix I.

Notes: ADT = Average Daily Traffic; V/C = Volume to Capacity Ratio; EB = eastbound; WB = westbound.

Bold indicates substandard LOS E or F.

Bold and highlighted indicates a potentially significant impact.

As shown in Table 6.16-6, the following seven roadway segments are projected to operate at substandard LOS E or F under Near-Term Conditions:

- Executive Drive, between End of cul-de-sac to Judicial Drive – LOS E
- Genesee Avenue, between Nobel Drive and Governor Drive – LOS E
- Clairemont Mesa Boulevard, between Genesee Avenue and Clairemont Drive – LOS E
- Clairemont Drive, between Clairemont Mesa Boulevard and Balboa Avenue – LOS F
- Clairemont Drive, between Burgener Drive and Denver Street – LOS F
- Denver Street, between Clairemont Drive and Ingulf/Jellett Street – LOS F
- Ingulf Street, between ~~Denver~~ Galveston Street and West Morena Boulevard – LOS E

Under Near-Term Conditions with Construction traffic, 16 roadway segments are projected to operate at substandard LOS E or F, primarily due to reduced roadway capacity from nightly lane closures. Of those, 13 exceed the thresholds in Table 6.16-1, and therefore, meet the threshold criteria for a significant impact:

- Executive Drive, between end of cul-de-sac and Judicial Drive – LOS E
- Towne Centre Drive, between La Jolla Village Drive and Golden Haven Drive – LOS F
- Towne Centre Drive, between Golden Haven Drive and Nobel Drive – LOS F
- Nobel Drive, between Towne Centre Drive and Genesee Avenue – LOS F
- Genesee Avenue, between Governor Drive and SR-52 WB Ramps – LOS F
- Genesee Avenue, between Appleton Street and Clairemont Mesa Boulevard – LOS F
- Clairemont Mesa Boulevard, between Genesee Avenue and Clairemont Drive – LOS F
- Clairemont Drive, between Clairemont Mesa Boulevard and Lakehurst Avenue – LOS F
- Clairemont Drive, between Lakehurst Avenue and Clairemont Mesa Boulevard – LOS F

- Clairemont Drive, between Clairemont Mesa Boulevard and Balboa Avenue – LOS F
- Clairemont Drive, between Balboa Avenue and Rappahannock Avenue – LOS F
- Clairemont Drive, between Rappahannock Avenue and Iroquois Avenue – LOS F
- Clairemont Drive, between Burgener Drive and Denver Street – LOS F

Based on information provided by the City of San Diego Public Utilities Department, the Morena Pipelines would be constructed at a rate of 75 linear feet per day. The affected work area would also include the area required for traffic control setup. Table 6.16-7 shows the projected construction duration on the impacted roadways identified above, as well as on roadways adjacent to residential areas. These impacts would not occur concurrently, but rather sequentially depending on the location of pipeline construction, and therefore, will only affect short segments of roadway at one time.¹ Nighttime work hours may be modified/reduced or work may be performed during weekends on roadways near residential areas. As shown in Table 6.16-7, the duration of impacts to any one roadway segment would range from 4 days to 85 days.

**Table 6.16-7
Summary of Roadway Segment Impact Duration Morena Pipelines**

Roadway	Segment	Length (feet)	Approximate Duration of Impact (days)
Executive Drive	End of cul-de-sac and Judicial Drive	1,000	13
	Judicial Drive and Towne Centre Drive	550	7
Towne Centre Drive	Executive Drive and La Jolla Village Drive	880	12
	La Jolla Village Drive and Golden Haven Drive	1,300	26 ¹
	Golden Haven Drive and Nobel Drive	1,700	34 ¹
Nobel Drive	Towne Center Drive and Genesee Avenue	1,650	33 ¹
Genesee Avenue	Nobel Drive and Governor Drive	5,320	71
	Governor Drive and SR-52 WB Ramps	2,112	28
	SR-52 EB Ramps and Appleton Street	2,855	38
	Appleton Street and Clairemont Mesa Blvd	1,166	19 ²
Clairemont Mesa Boulevard	Genesee Avenue and Clairemont Drive	2,112	28

¹ For a roadway segment that measures 750 feet in length, at 75 feet of installation per day, it is estimated that it would take approximately 10 days to complete. After the pipeline installation is complete at the first 75 linear feet, the next 75 linear feet of the roadway segment would be impacted, and so on.

**Table 6.16-7
Summary of Roadway Segment Impact Duration Morena Pipelines**

Roadway	Segment	Length (feet)	Approximate Duration of Impact (days)
Clairemont Drive	Clairemont Mesa Boulevard and Lakehurst Avenue	2,112	28
	Lakehurst Avenue and Clairemont Mesa Boulevard	1,056	14
	Clairemont Mesa Boulevard and Balboa Avenue	6,336	85
	Balboa Avenue and Rappahannock Avenue	2,112	28
	Rappahannock Avenue and Iroquois Avenue	3,696	49
	Iroquois Avenue and Burgener Boulevard	1,160	15
	Burgener Boulevard and Denver Street	3,168	42
Denver Street	Clairemont Drive and Ingulfjellett Street	330	4
Ingulfjellett Street	Denver Street and West Morena Boulevard	660	9
West Morena Boulevard	Ingulfjellett Street to Littlefield Street	3,370	45
	Littlefield Street and Morena Boulevard	1,970	26
	Morena Boulevard and Tecolote Road Overpass	1,660	22
	Tecolote Road Overpass and Vega Street	300	4
	Vega Street and Morena Boulevard	1,700	23

Notes:

- ¹ Duration of Impact calculated based on 50 LF of pipeline installation per day due to restricted working hours.
- ² Duration of Impact calculated based on 60 LF of pipeline installation per day due to restricted working hours.

Intersections

Figure 6.16-3 displays the intersection geometry in the Near Term with and without Construction. Figure 6.16-4 displays the Near-Term intersection traffic volumes, and Figure 6.16-5 displays the Near-Term intersection traffic volumes with construction traffic. Table 6.16-8 shows the intersection LOS results under both scenarios.

**Table 6.16-8
Intersection LOS Near-Term Conditions Morena Pipelines Construction Traffic**

Intersection	Traffic Control	Near-Term Year 2022 + Construction Traffic				Near-Term Year 2022 Base				Change in Delay
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	
Towne Centre Drive and Golden Haven Drive	Signalized	26.7	C	30.0	C	14.5	B	16.7	B	12.2/13.3
Towne Centre Drive and Nobel Drive	Signalized	30.4	C	256.4	F	29.9	C	26.8	C	0.5/229.6
Genesee Avenue and Nobel Drive	Signalized	424.1	F	133.8	F	72.6	E	33.1	C	351.5/100.7
Genesee Avenue and Appleton Street/Lehrer Drive	Signalized	71.2	E	141.5	F	69.4	E	33.2	C	1.8/108.3
Genesee Avenue and Clairemont Mesa Boulevard	Signalized	251.0	F	268.9	F	48.4	D	57.3	E	202.6/211.6
Clairemont Mesa Boulevard and Clairemont Drive/Kleefeld Avenue	Signalized	342.8	F	N/A ¹	F	359.4	F	700.4	F	-16.6/-26.2
Clairemont Drive and Clairemont Mesa Boulevard	Signalized	97.1	F	199.9	F	72.2	E	56.9	E	24.9/143
Clairemont Drive and Balboa Avenue	Signalized	44.5	D	75.2	E	44.3	D	74.9	E	0.2/0.3

Source: Appendix I.

Notes: EB = eastbound; WB = westbound; SSSC = side-street stop control.

For SSSC intersections, the delay shown is the worst delay experienced by any of the approaches.

Bold indicates substandard LOS E or F. **Bold and highlighted** indicates a potentially significant impact.

¹ Exceeds maximum reasonable calculable delay of 600 seconds per Synchro 9.0 traffic analysis software.

As shown in Table 6.16-8, the following six intersections are projected to operate at substandard LOS E or F under Near-Term Conditions without construction traffic:

- Genesee Avenue and Nobel Drive – LOS E during the AM peak hour
- Genesee Avenue and Appleton Street/Lehrer Drive – LOS E during the AM peak hour
- Genesee Avenue and Clairemont Mesa Boulevard – LOS E during the PM peak hour
- Clairemont Mesa Boulevard and Clairemont Drive/Kleefeld Avenue – LOS F during both the AM and PM peak hours
- Clairemont Drive and Clairemont Mesa Boulevard – LOS E during both the AM and PM peak hours
- Clairemont Drive and Balboa Avenue – LOS E during the PM peak hour

Under Near-Term Conditions with Construction traffic, seven of the eight study intersections are projected to operate at substandard LOS E or F. Of those seven intersections, six exceed the thresholds in Table 6.16-1, and therefore, meet the threshold criteria for a significant impact:

- Towne Centre Drive and Nobel Drive – LOS F during the PM peak hour
- Genesee Avenue and Nobel Drive – LOS F during both the AM and PM peak hours
- Genesee Avenue and Appleton Street/Lehrer Drive – LOS E during the AM peak hour and LOS F during the PM peak hours
- Genesee Avenue and Clairemont Mesa Boulevard – LOS F during both the AM and PM peak hours
- Clairemont Mesa Boulevard and Clairemont Drive/Kleefeld Avenue – LOS F during both the AM and PM peak hours
- Clairemont Drive and Clairemont Mesa Boulevard – LOS F during both the AM and PM peak hours

A traffic control plan/permit will be submitted per the City of San Diego requirements for all roadway segments where construction will occur.

North City Pipeline

The North City Pipeline connects the NCPWF site at I-805 and Eastgate Mall to the Miramar Reservoir via Eastgate Mall, Miramar Road, Kearny Villa Road, Candida Street, Via Pasar, Via Excelencia, under I-15 to Businesspark Avenue, Carroll Canyon Road, Hoyt Park Drive, and Meanley Drive.

It is assumed that the Miramar Reservoir Alternative will be in operation by 2022. To analyze the impacts of construction, the traffic generated by construction (Table 6.16-4) was added to Near-Term traffic volumes and compared against Near-Term Conditions without the construction of the North City Pipeline. Figure 6.16-6 displays the Near-Term traffic volumes without the North City Project, while Figure 6.16-7 displays the Near-Term Conditions traffic volumes with the North City Pipeline construction traffic. Table 6.16-9 shows the daily roadway segment LOS results under both scenarios.

**Table 6.16-9
Roadway Segment LOS Near-Term Conditions North City Pipeline Construction Traffic**

Roadway	Segment	Functional Classification	Threshold (LOS E)	Near Term + Construction			Near Term			Change in V/C
				ADT	V/C	LOS	ADT	V/C	LOS	
Eastgate Mall	NCPWF and NCWRP driveway and Miramar Road	Two-lane Collector w/ CLTL	15,000	17,090	1.139	F	16,810	1.121	F	0.019 >0.01
Miramar Road	Eastgate Mall and Camino Santa Fe	Six-lane Prime Arterial	60,000	71,280	1.188	F	71,000	1.183	F	0.005 <0.01
	Camino Santa Fe and Carroll Road	Six-lane Prime Arterial	60,000	48,980	0.816	C	48,700	0.812	C	0.005
	Carroll Road and Camino Ruiz	Six-lane Prime Arterial	60,000	58,980	0.983	E	58,700	0.978	E	0.005 <0.02
	Camino Ruiz and Black Mountain Road	Six-lane Prime Arterial	60,000	68,880	1.148	F	68,600	1.143	F	0.005 <0.01
	Black Mountain Road and Kearny Villa Road	Six-lane Prime Arterial	60,000	68,280	1.138	F	68,000	1.133	F	0.005 <0.01
Kearny Villa Road	Black Mountain Road/Carroll Centre Road and Miramar Road	Four-lane Collector w/ CLTL	30,000	19,680	0.656	C	19,400	0.647	C	0.009
Candida Street	Kearny Villa Road and Via Pasar	Two-lane Collector	8,000	2,080	0.260	A	1,800	0.225	A	0.035
Via Pasar	Via Excelencia and Candida St	Two-lane Collector	8,000	1,880	0.235	A	1,600	0.200	A	0.035
Via Excelencia	east of Via Pasar	Two-lane Collector	8,000	1,480	0.185	A	1,200	0.150	A	0.035

**Table 6.16-9
Roadway Segment LOS Near-Term Conditions North City Pipeline Construction Traffic**

Roadway	Segment	Functional Classification	Threshold (LOS E)	Near Term + Construction			Near Term			Change in V/C
				ADT	V/C	LOS	ADT	V/C	LOS	
Businesspark Avenue	south of Willow Creek Road	Two-lane Collector	8,000	3,080	0.385	B	2,800	0.350	B	0.035
	Carrol Canyon Road and Willow Creek Road	Three-lane Collector (1 SB and 2 NB)	12,000	8,580	0.715	D	8,300	0.692	D	0.023
Carroll Canyon Road	Businesspark Avenue and Scripps Ranch Boulevard	Four-lane Collector w/ CLTL	30,000	15,380	0.513	C	15,100	0.503	C	0.009
Scripps Ranch Boulevard	Carroll Canyon Road and Hoyt Park Drive	Four-lane Major Arterial	40,000	14,580	0.365	A	14,300	0.358	A	0.007
Hoyt Park Drive	Scripps Ranch Blvd and Meanley Drive	Two-lane Collector (no fronting property)	10,000	3,980	0.398	A	3,700	0.370	A	0.028

Source: Appendix I.

Notes: ADT = Average Daily Traffic; V/C = Volume to Capacity Ratio; NB = northbound; SB = southbound; CLTL = controlled left-turn lane.

Bold indicates substandard LOS E or F.

Bold and highlighted indicates a potentially significant impact.

As shown in Table 6.16-9, the following five roadway segments are projected to operate at substandard LOS E or F both with and without construction traffic under Near-Term Conditions:

- Eastgate Mall, between the NCPWF and NCWRP driveway and Miramar Road – LOS F
- Miramar Road, between Eastgate Mall and Camino Santa Fe – LOS F
- Miramar Road, between Carroll Road and Camino Ruiz – LOS E
- Miramar Road, between Camino Ruiz and Black Mountain Road – LOS F
- Miramar Road, between Black Mountain Road and Kearny Villa Road – LOS F

Of the five segments listed above, one exceeds the thresholds in Table 6.16-1, and therefore, meets the threshold criteria for a significant impact: Eastgate Mall between NCPWF and NCWRP driveway and Miramar Road.

Similar to the Morena Pipelines, the North City Pipeline would be constructed 75 linear feet per day. The affected work area would also include the area required for traffic control setup. Table 6.16-10 shows the projected construction duration on the impacted roadway identified above, as well as on roadways adjacent to residential areas. These impacts would not occur concurrently, but rather sequentially depending on the location of pipeline construction, and therefore, will only affect short segments of roadway at one time. Nighttime work hours may be modified/reduced or work may be performed during weekends on roadways near residential areas. As shown in Table 6.16-10, the duration of impacts to any one roadway segment would range from 14 days to 64 days.

**Table 6.16-10
Summary of Impact Duration North City Pipeline**

Roadway	Segment	Length (feet)	Approximate Duration of Impact (days)
Eastgate Mall	NCPWF and NCWRP Driveway and Miramar Road	4,800	64
Miramar Road	Camino Ruiz and Black Mountain Road	3,000	40
	Black Mountain Road and Kearny Villa Road	1,000	14

Source: Appendix I.

A traffic control plan/permit will be submitted per the City of San Diego requirements for all roadway segments where construction will occur.

San Vicente Reservoir Alternative

Under the San Vicente Reservoir Alternative, the Morena Pipelines, which are discussed above under the Miramar Reservoir Alternative, would also be constructed. In addition, the San Vicente Pipeline would also be constructed.

San Vicente Pipeline

The San Vicente Pipeline connects the NCPWF site at I-805 and Eastgate Mall to the San Vicente Reservoir traversing a number of local jurisdictions, including the cities of San Diego and Santee, and the community of Lakeside in unincorporated San Diego County.

It is assumed that the San Vicente Reservoir Alternative will be in operation by 2022. To analyze the impacts of construction, the traffic generated by construction (Table 6.16-4) was added to Near-Term traffic volumes and compared against Near-Term Conditions without the construction of the San Vicente Reservoir Alternative. Figure 6.16-8 displays the Near-Term traffic volumes without the San Vicente Pipeline, while Figure 6.16-9 displays the Near-Term traffic volumes with the San Vicente Pipeline construction traffic. Table 6.16-11 shows the daily roadway segment LOS results under both scenarios.

**Table 6.16-11
Roadway Segment LOS Near-Term Conditions San Vicente Pipeline Construction Traffic**

Roadway	Segment	Functional Classification	Threshold (LOS E)	Near Term + Construction			Near Term			Change in V/C
				ADT	V/C	LOS	ADT	V/C	LOS	
<i>Section 1A</i>										
Eastgate Mall	NCPWF and NCWRP driveway and Miramar Road	Two-lane Collector w/ CLTL	15,000	17,090	1.139	F	16,810	1.121	F	0.019 >0.01
Miramar Road	Nobel Drive and Eastgate Mall	Eight-lane Prime Arterial	80,000	67,920	0.849	D	67,640	0.846	D	0.003
Copley Drive	Hickman Field Drive and Copley Park Place	Four-lane Collector	15,000	11,380	0.759	D	11,100	0.740	D	0.019
Copley Park Place	Copley Drive and Convoy Street	Four-lane Collector w/ CLTL	30,000	12,580	0.419	B	12,300	0.410	B	0.009
Convoy St	Copley Park Place and Convoy Court	Four-lane Collector w/ CLTL	30,000	26,580	0.886	E	26,300	0.877	E	0.009 <0.02
Convoy Court	east of Convoy Street	Two-lane Collector	8,000	2,280	0.285	A	2,000	0.250	A	0.035
<i>Section 1B</i>										
Ronson Road	Ronson Court and Kearny Mesa Road	Two-lane Collector	8,000	4,580	0.573	C	4,300	0.538	C	0.035
Lightwave Avenue	Kearny Villa Road and Ruffin Road	Four-lane Collector w/ CLTL	30,000	7,680	0.256	A	7,400	0.247	A	0.009
Ruffin Road	Clairemont Mesa Boulevard and Lightwave Avenue	Four-lane Major Arterial	40,000	12,680	0.317	A	12,400	0.310	A	0.007
Clairemont Mesa Boulevard	Ruffin Road and Murphy Canyon Road	Four-lane Major Arterial	40,000	28,680	0.717	C	28,400	0.710	C	0.007

**Table 6.16-11
Roadway Segment LOS Near-Term Conditions San Vicente Pipeline Construction Traffic**

Roadway	Segment	Functional Classification	Threshold (LOS E)	Near Term + Construction			Near Term			Change in V/C
				ADT	V/C	LOS	ADT	V/C	LOS	
Murphy Canyon Road	Clairemont Mesa Boulevard and 1,650 feet south of Clairemont Mesa Boulevard	Two-lane Collector	8,000	6,180	0.773	D	5,900	0.738	D	0.035
Clairemont Mesa Boulevard	1,300 feet east of I-15 NB ramps and Santo Road	Four-lane Major Arterial	40,000	21,780	0.545	C	21,500	0.538	C	0.007
Santo Road	Clairemont Mesa Boulevard and Tierrasanta Boulevard	Four-lane Major Arterial	40,000	12,580	0.315	A	12,300	0.308	A	0.007
Tierrasanta Boulevard	Santo Road and Copperleaf Lane	Four-lane Major Arterial	40,000	24,980	0.625	C	24,700	0.618	C	0.007
Princess View Drive	north of Mission Gorge Road	Two-lane Collector	8,000	5,180	0.648	D	4,900	0.613	C	0.035
<i>Section 2</i>										
Mission Gorge Road	Princess View Drive and Golfcrest Drive	Six-lane Prime Arterial	60,000	24,680	0.411	A	24,400	0.407	A	0.005
	Golfcrest Drive and Rockyridge Road	Five-lane Prime Arterial (2 EB and 3 WB)	50,000	14,380	0.288	A	14,100	0.282	A	0.006
	Rockyridge Road and W Hills Parkway	Four-lane Major Arterial	40,000	17,180	0.430	B	16,900	0.423	B	0.007

**Table 6.16-11
Roadway Segment LOS Near-Term Conditions San Vicente Pipeline Construction Traffic**

Roadway	Segment	Functional Classification	Threshold (LOS E)	Near Term + Construction			Near Term			Change in V/C
				ADT	V/C	LOS	ADT	V/C	LOS	
W Hills Parkway	Mission Gorge Road and Carlton Oaks Drive	Four-lane Major Arterial	40,000	13,880	0.347	A	13,600	0.340	A	0.007
<i>Section 3</i>										
Carlton Oaks Drive	W Hills Parkway and Fanita Parkway	Two-lane Collector w/ CLTL	15,000	8,980	0.599	C	8,700	0.580	C	0.019
	400 feet West of Fanita Parkway and Stoyer Drive	Two-lane Collector w/ CLTL	15,000	11,680	0.779	D	11,400	0.760	D	0.019
Halberns Boulevard	Stoyer Drive and Mast Boulevard	Two-lane Collector w/ CLTL	15,000	9,580	0.639	C	9,300	0.620	C	0.019
<i>Section 4</i>										
Mast Boulevard	Halberns Boulevard and Magnolia Avenue	Four-lane Major Arterial	40,000	21,580	0.540	C	21,300	0.533	C	0.007
	Magnolia Avenue and Eastern Terminus	Two-lane Collector w/ CLTL	15,000	6,380	0.425	B	6,100	0.407	B	0.019
	Western Terminus and Riverford Road	Two-lane Collector	8,000	780	0.098	A	500	0.063	A	0.035
Riverside Drive	Riverford Road and Valle Vista Road	Two-lane Collector w/ CLTL	15,000	11,580	0.772	D	11,300	0.753	D	0.019

**Table 6.16-11
Roadway Segment LOS Near-Term Conditions San Vicente Pipeline Construction Traffic**

Roadway	Segment	Functional Classification	Threshold (LOS E)	Near Term + Construction			Near Term			Change in V/C
				ADT	V/C	LOS	ADT	V/C	LOS	
Lakeside Avenue	Valle Vista Road and Lakeside Avenue/Channel Road	Two-lane Collector w/ CLTL	15,000	8,580	0.572	C	8,300	0.553	C	0.019
	Lakeside Avenue/Channel Road and SR-67	Two-lane Collector	8,000	4,280	0.535	C	4,000	0.500	C	0.035
Willow Road	SR-67 and Moreno Avenue	Two-lane Collector	8,000	12,480	1.560	F	12,200	1.525	F	0.035 <i>>0.01</i>
Moreno Avenue	San Vicente Reservoir and Willow Road	Two-lane Collector	8,000	6,280	0.785	D	6,000	0.750	D	0.035

Source: Appendix I.

Notes: ADT = Average Daily Traffic; V/C = Volume to Capacity Ratio; NB = northbound; EB = eastbound; WB = westbound; CLTL = controlled left-turn lane.

Bold indicates substandard LOS E or F.

Bold and highlighted indicates a potentially significant impact.

As shown in Table 6.16-11, the following three roadway segments are projected to operate at substandard LOS E or F both with and without construction traffic under the Near Term:

- Eastgate Mall, between the NCPWF and NCWRP driveway and Miramar Road – LOS F
- Convoy Street, between Copley Park Place and Convoy Court – LOS E
- Willow Road, between SR-67 and Moreno Avenue – LOS F

Of the three segments listed above, two exceed the thresholds in Table 6.16-1, and therefore, meet the threshold criteria for a significant impact:

- Eastgate Mall, between the NCPWF & NCWRP driveway and Miramar Road – LOS E
- Willow Road, between SR-67 and Moreno Avenue – LOS F

The San Vicente Pipeline would be constructed 75 linear feet per day. The affected work area would also include the area required for traffic control setup. Table 6.16-12 shows the projected construction duration on the impacted roadway identified above, as well as on roadways adjacent to residential areas. These impacts would not occur concurrently, but rather sequentially depending on the location of pipeline construction, and therefore, will only affect short segments of roadway at one time. Nighttime work hours may be modified/reduced or work may be performed during weekends on roadways near residential areas. As shown in Table 6.16-12, the duration of impacts to any one roadway segment would range from 12 days to 151 days.

**Table 6.16-12
Summary of Impact Duration San Vicente Pipeline**

Roadway	Segment	Length (ft)	Approximate Duration of Impact (days)
<i>Section 1A</i>			
Eastgate Mall	NCPWF and NCWRP Driveway and Miramar Road	4,800	64
<i>Section 1B</i>			
Lightwave Avenue	Kearny Villa Road and Ruffin Road	4,800	64
Ruffin Road	Clairemont Mesa Boulevard and Lightwave Avenue	880	12

**Table 6.16-12
Summary of Impact Duration San Vicente Pipeline**

Roadway	Segment	Length (ft)	Approximate Duration of Impact (days)
Clairemont Mesa Boulevard	1,300 feet East of I-15 NB Ramps	1,300	18
Santo Road	Clairemont Mesa Boulevard and Tierrasanta Boulevard	2,070	28
Tierrasanta Boulevard	Santo Road and Cooperleaf Lane	8,000	107
<i>Section 2</i>			
Mission Gorge Road	Princess View Drive and Golfcrest Drive	11,300	151
	1,160 feet west of Rockyridge Road	1,160	16
	Rockyridge Road and W Hills Parkway	3,000	40
W Hills Parkway	Mission Gorge Road and Carlton Oaks Drive	2,200	30
<i>Section 3</i>			
Carlton Oaks Drive	W Hills Parkway and Fanita Parkway	6,500	87
	400 feet West of Fanita Parkway and Stoyer Drive	4,400	59
Halberns Boulevard	Stoyer Drive and Mast Boulevard	1,600	22
<i>Section 4</i>			
Mast Boulevard	Halberns Blvd and Magnolia Avenue	6,850	92
	Magnolia Avenue and Eastern Terminus	4,000	54
	Western Terminus and Riverford Road	2,500	32
Riverside Drive	Riverford Road and Valle Vista Road	5,400	72
Lakeside Drive	Valle Vista Road and Lakeside Avenue/Channel Road	1,125	15
	Lakeside Avenue/Channel Road and SR-67	2,600	35
Willow Road	SR-67 and Moreno Avenue	1,300	17
Moreno Avenue	San Vicente Reservoir and Willow Road	9,600	125

Source: Appendix I.

A traffic control plan/permit will be submitted per the City of San Diego requirements for all roadway segments where construction will occur.

6.16.4.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

Under the No Project/No Action Alternative, the proposed NCPWF and associated improvements at other treatment facilities and pumping and conveyance facilities would not be constructed. There would be no increase in projected traffic associated with construction, and no impact would occur.

Miramar Reservoir Alternative

Based upon the significance criteria presented in Section 6.16.2, construction of the Morena Pipelines would exceed significance thresholds for 13 of the study roadway segments and 6 of the study intersections.

The construction of the North City Pipeline would exceed significance thresholds for a single roadway segment.

A traffic control plan/permit will be submitted per the City of San Diego requirements for all roadway segments where construction will occur. The impacts from the construction of the Morena Pipelines and North City Pipeline are temporary in nature and would only occur on short segments at a time. The majority of construction and lane closures will occur during the nighttime when there is less traffic on the road and lanes would be reopened to traffic during the day. Therefore, roadways should function at reasonable operations even with the lane closure.

Nonetheless, construction impacts would exceed significance thresholds, and therefore, the Miramar Reservoir Alternative would result in a **potentially significant** impact.

San Vicente Reservoir Alternative

Based upon the significance criteria presented in Section 6.16.2, the construction of the Morena Pipelines would exceed significance thresholds for 13 of the study roadway segments and 6 of the study intersections, and construction of the San Vicente Pipeline would exceed significance thresholds for two of the study roadway segments along the San Vicente Pipeline alignment.

A traffic control plan/permit will be submitted per the City of San Diego requirements for all roadway segments where construction will occur. The impacts from the construction of the Morena Pipelines and San Vicente Pipeline are temporary in

nature and would only occur on short segments at a time. The majority of construction and lane closures will occur during the nighttime when there is less traffic on the road and lanes would be reopened to traffic during the day. Therefore, roadways should function at reasonable operations even with the lane closure.

Nonetheless, construction impacts would exceed significance thresholds, and therefore, the San Vicente Reservoir Alternative would result in a **potentially significant** impact.

6.16.4.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

There is no impact under the No Project/No Action Alternative; therefore, no mitigation is required.

Miramar Reservoir Alternative

Mitigation measure MM-TRAF-1 is also provided to reduce traffic impacts.

MM-TRAF-1 A Transportation Demand Management (TDM) Plan shall be prepared to limit the number of construction worker trips that travel through the impacted intersections or roadways during peak periods. The following lists a series of TDM strategies that may be appropriate during Project construction.

- Implement a ride-sharing program to encourage carpooling among workers.
- Adjust work schedules so workers do not access the site during the peak hours.
- Provide off-site parking locations for workers outside of the area with shuttle services to bring them on site.
- Provide subsidized transit passes for construction workers.

San Vicente Reservoir Alternative

Mitigation measure MM-TRAF-1 would also be required under the San Vicente Reservoir Alternative.

6.16.5 ISSUE 2

Would the North City Project create alterations to present circulation movements in the area including effects on existing public access points?

6.16.5.1 Impacts

No Project/No Action Alternative

The No Project/No Action Alternative would not alter traffic patterns or transportation facilities, and therefore would have no adverse effects on circulation and public access points.

Miramar Reservoir Alternative

As described in Section 5.16.2, circulation and traffic impacts are identified using LOS under multiple scenarios, which are described above in Section 6.16.3.

Existing with Project

The roadway network and geometries under Existing with Project Conditions is assumed to be identical to Existing Conditions. Existing with Project traffic volumes were derived by combining the existing traffic volumes (displayed in Figure 5.16-2) with the Project trip assignment volumes (displayed in Figure 3-2 of Appendix I). The resulting daily roadway volumes are displayed in Figure 6.16-10. Table 6.16-13 shows the LOS analysis results for roadway segments under Existing with Project Conditions.

As shown in the Table 6.16-13, all of the roadways within the study area would continue to operate at acceptable LOS D or better under Existing with Project Conditions, with the following three exceptions:

- Eastgate Mall, between Eastgate Drive and Miramar Road – LOS E
- Miramar Road, between I-805 southbound (SB) ramps and I-805 northbound (NB) ramps – LOS F
- Miramar Road, between Nobel Drive and Eastgate Mall – LOS E

However, these roadways operate at unacceptable conditions without the Project as well. The Project only slightly changes the volume to capacity (V/C) ratio, but does not meet the threshold criteria for a significant impact as described in Section 6.16.2 and Table 6.16-1. Therefore, the Project would not have an adverse effect.

**Table 6.16-13
Roadway Segment LOS Existing Conditions North City Project Operations**

Roadway	Segment	Functional Classification	Threshold (LOS E)	Existing + Project			Existing			V/C Increase with Project
				ADT	V/C	LOS	ADT	V/C	LOS	
Towne Center Drive	Eastgate Mall and Executive Drive	Four-lane Major Arterial	40,000	20,190	0.505	B	20,120	0.503	B	0.002
	Executive Drive and La Jolla Village Drive	Four-lane Major Arterial	40,000	20,190	0.505	B	20,120	0.503	B	0.002
Eastgate Mall	Towne Center Drive and Judicial Drive	Four-lane Major Arterial	40,000	11,210	0.280	A	11,120	0.278	A	0.002
	Judicial Drive and 280 feet west of I-805 Overpass	Four-lane Major Arterial	40,000	10,190	0.255	A	10,100	0.253	A	0.002
	280 feet west of I-805 Overpass and NCWRP driveway	Two-lane Collector w/ CLTL	15,000	10,190	0.679	D	10,100	0.673	D	0.006
	NCWRP driveway and Eastgate Drive	Two-lane Collector w/ CLTL	15,000	10,190	0.679	D	10,100	0.673	D	0.006
	Eastgate Drive and Miramar Road	Two-lane Collector w/ CLTL	15,000	14,760	0.984	E	14,670	0.978	E	0.006 <0.02
La Jolla Village Drive	Towne Center Drive and I-805 SB ramps	Eight-lane Prime Arterial	80,000	58,900	0.736	C	58,830	0.735	C	0.001

**Table 6.16-13
Roadway Segment LOS Existing Conditions North City Project Operations**

Roadway	Segment	Functional Classification	Threshold (LOS E)	Existing + Project			Existing			V/C Increase with Project
				ADT	V/C	LOS	ADT	V/C	LOS	
Miramar Road	I-805 SB ramps and I-805 NB ramps	Six-lane Prime Arterial	60,000	66,210	1.104	F	66,140	1.102	F	0.001 <0.01
	I-805 NB ramps and Nobel Drive	Eight-lane Prime Arterial	80,000	48,040	0.601	C	47,990	0.600	C	0.001
	Nobel Drive and Eastgate Mall	Seven-lane Prime Arterial ¹	70,000	64,610	0.923	E	64,560	0.922	E	0.001 <0.02

Source: Appendix I.

Notes: ADT = Average Daily Traffic; V/C = Volume to Capacity Ratio; NB = northbound; SB = southbound; CLTL = controlled left-turn lane.

Bold indicates substandard LOS E or F.

¹ Capacity for the seven-lane arterial is based on an eight-lane prime arterial calculated as follows: $7/8 * 80,000 = 70,000$.

Near-Term (2022) Conditions

As described in Section 6.16.3, Near Term without Project traffic volumes were obtained by adding traffic from cumulative projects. Figure 6.16-11 shows the Near-Term traffic volumes without the North City Project. Near Term with Project scenario traffic volumes are shown in Figure 6.16-12 and were obtained by adding the North City Project traffic to the Near-Term traffic volumes.

As shown in Table 6.16-14, all of the roadways within the study area are projected to operate at acceptable LOS D or better under Near Term without Project Conditions and Near Term with Project Conditions, except for the following three roadway segments:

- Eastgate Mall, between Eastgate Drive and Miramar Road – LOS F
- Miramar Road, between I-805 SB ramps and I-805 NB ramps – LOS F
- Miramar Road, between Nobel Drive and Eastgate Mall – LOS E

However, these roadways operate at unacceptable conditions without the Project as well. The Project only slightly changes the volume to capacity (V/C) ratio, but does not meet the threshold criteria for a significant impact as described in Section 6.16.2 and Table 6.16-1. Therefore, the Project would not have an adverse effect.

**Table 6.16-14
Roadway Segment LOS Near-Term Conditions North City Project Operations**

Roadway	Segment	Functional Classification	Threshold (LOS E)	Near Term + Project			Near Term			V/C Increase with Project
				ADT	V/C	LOS	ADT	V/C	LOS	
Towne Center Drive	Eastgate Mall and Executive Drive	Four-lane Major Arterial	40,000	20,870	0.522	B	20,800	0.520	B	0.002
	Executive Drive and La Jolla Village Drive	Four-lane Major Arterial	40,000	21,480	0.537	C	21,410	0.535	C	0.002
Eastgate Mall	Towne Center Drive and Judicial Drive	Four-lane Major Arterial	40,000	13,330	0.333	A	13,240	0.331	A	0.002
	Judicial Drive and 280 feet west of I-805 Overpass	Four-lane Major Arterial	40,000	11,680	0.292	A	11,590	0.290	A	0.002
	280 feet west of I-805 Overpass and NCWRP Driveway	Two-lane Collector w/ CLTL	15,000	11,680	0.779	D	11,590	0.773	D	0.006
	NCWRP Driveway and Eastgate Drive	Two-lane Collector w/ CLTL	15,000	11,680	0.779	D	11,590	0.773	D	0.006
	Eastgate Drive and Miramar Road	Two-lane Collector w/ CLTL	15,000	16,900	1.127	F	16,810	1.121	F	0.006 <0.01
La Jolla Village Drive	Towne Center Drive and I-805 SB ramps	Eight-lane Prime Arterial	80,000	71,220	0.890	D	71,150	0.889	D	0.001

**Table 6.16-14
Roadway Segment LOS Near-Term Conditions North City Project Operations**

Roadway	Segment	Functional Classification	Threshold (LOS E)	Near Term + Project			Near Term			V/C Increase with Project
				ADT	V/C	LOS	ADT	V/C	LOS	
Miramar Road	I-805 SB ramps and I-805 NB ramps	Six-lane Prime Arterial	60,000	73,200	1.220	F	73,130	1.219	F	0.001 <0.01
	I-805 NB ramps and Nobel Drive	Eight-lane Prime Arterial	80,000	49,650	0.621	C	49,600	0.620	C	0.001
	Nobel Drive and Eastgate Mall	Seven-lane Prime Arterial ¹	70,000	66,420	0.949	E	66,370	0.948	E	0.001 <0.02

Source: Appendix I.

Notes: ADT = Average Daily Traffic; V/C = Volume to Capacity Ratio; NB = northbound; SB = southbound; CLTL = controlled left-turn lane.

Bold indicates substandard LOS E or F.

¹ Capacity for the seven-lane arterial is based on an eight-lane prime arterial calculated as follows: $7/8 * 80,000 = 70,000$.

Horizon Year (2035) Conditions

As described in Section 6.16.3, Horizon Year traffic volumes were assumed to be identical to the University Community Plan Amendment effective December 5, 2016, traffic volumes (City of San Diego 2016b). Figure 6.16-13 shows the Horizon Year traffic volumes without the North City Project. Horizon Year with Project scenario traffic volumes are shown in Figure 6.16-14 and were obtained by adding the North City Project traffic to the Horizon Year traffic volumes.

As shown in Table 6.16-15, all of the roadways within the study area are projected to operate at acceptable LOS D or better under Horizon Year Conditions with and without the Project, except for the following five roadway segments:

- Eastgate Mall, between 280 feet west of I-805 Overpass and NCWRP driveway – LOS F
- Eastgate Mall, between NCWRP driveway and Eastgate Drive – LOS F
- Eastgate Mall, between Eastgate Drive and Miramar Road – LOS F
- Miramar Road, between I-805 SB ramps and I-805 NB ramps – LOS F
- Miramar Road, between Nobel Drive and Eastgate Mall – LOS E

However, these roadways operate at unacceptable conditions without the Project as well. The Project only slightly changes the volume to capacity (V/C) ratio, but does not meet the threshold criteria for a significant impact as described in Section 6.16.2 and Table 6.16-1. Therefore, the Project would not have an adverse effect.

**Table 6.16-15
Roadway Segment LOS Horizon Year Conditions North City Project Operations**

Roadway	Segment	Designated Classification	Threshold (LOS E)	Horizon Year + Project			Horizon Year			V/C Increase with Project
				ADT	V/C	LOS	ADT	V/C	LOS	
Towne Center Drive	Eastgate Mall and Executive Drive	Four-lane Major Arterial	40,000	21,670	0.542	C	21,600	0.540	C	0.002
	Executive Drive and La Jolla Village Drive	Four-lane Major Arterial	40,000	21,670	0.542	C	21,600	0.540	C	0.002
Eastgate Mall	Towne Center Drive and Judicial Drive	Four-lane Major Arterial	40,000	14,390	0.360	A	14,300	0.358	A	0.002
	Judicial Drive and 280 feet west of I-805 Overpass	Four-lane Major Arterial	40,000	19,590	0.490	B	19,500	0.488	B	0.002
	280 feet west of I-805 Overpass and NCWRP driveway	Two-lane Collector w/ CLTL	15,000	19,590	1.306	F	19,500	1.300	F	0.006 <i><0.01</i>
	NCWRP driveway and Eastgate Drive	Two-lane Collector w/ CLTL	15,000	19,590	1.306	F	19,500	1.300	F	0.006 <i><0.01</i>
	Eastgate Drive and Miramar Road	Two-lane Collector w/ CLTL	15,000	29,290	1.953	F	29,200	1.947	F	0.006 <i><0.01</i>
La Jolla Village Drive	Towne Center Drive and I-805 SB ramps	Eight-lane Prime Arterial	80,000	69,570	0.870	D	69,500	0.869	D	0.001

**Table 6.16-15
Roadway Segment LOS Horizon Year Conditions North City Project Operations**

Roadway	Segment	Designated Classification	Threshold (LOS E)	Horizon Year + Project			Horizon Year			V/C Increase with Project
				ADT	V/C	LOS	ADT	V/C	LOS	
Miramar Road	I-805 SB ramps and I-805 NB ramps	Six-lane Prime Arterial	60,000	66,070	1.101	F	66,000	1.100	F	0.001 <0.01
	I-805 NB ramps and Nobel Drive	Eight-lane Prime Arterial	80,000	50,350	0.629	C	50,300	0.629	C	0.001
	Nobel Drive and Eastgate Mall	Seven-lane Prime Arterial	70,000	69,150	0.988	E	69,100	0.987	E	0.001 <0.02

Source: Appendix I.

Notes: ADT = Average Daily Traffic; V/C = Volume to Capacity Ratio; NB = northbound; SB = southbound; CLTL = controlled left-turn lane.

Bold indicates substandard LOS E or F.

Parking

As stated in Section 5.1, “zoning ordinances of a county or city do not apply to the location of construction of facilities for the production, generation, storage, treatment, or transmission of water” (Government Code Section 53091(e)). Therefore, the following presents expected parking demand and the number of proposed parking spaces at each facility.

The primary North City Project facilities that will have regular employees are the Morena Pump Station, the NCPWF (Miramar Reservoir and San Vicente Reservoir), and the NCWRP Expansion. Note, that the Morena Pump Station is considered an unmanned facility, but would have regular visits by employees. Relocation and addition of parking at the NCWRP is also anticipated; however, total parking spaces would not be reduced at the NCWRP.

**Table 6.16-16
Project Parking**

Building	Gross Floor Area (square feet)	Proposed Number of Parking Spaces in Addition to Existing at NCWRP	Expected Number of Parking Spaces Demanded¹
NCPWF – Miramar Reservoir and NCWRP	15,000	82	60
NCPWF – San Vicente Reservoir and NCWRP	17,000	92	60
Morena Pump Station	6,000	5	No permanent staff

Source: City of San Diego 2016c.

Notes:

¹ Expected parking demand based on number of employees at each facility as discussed in Chapter 3, Alternatives.

Site Access

Heavy vehicles will be entering, exiting, and crossing between the NCPWF and NCWRP. Staff will also need to cross Eastgate Mall to access both facilities during the day. However, the closest controlled pedestrian crossings are located approximately 500 feet to the east of the NCPWF and NCWRP driveways at the signalized intersection of Eastgate Mall/Eastgate Drive, and approximately 2,200 feet to the west at the signalized intersection of Eastgate Mall/Judicial Drive.

In order to provide a protected crossing for staff two tunnel options were considered. Both options would require extensive excavation and require a new basement in the NCPWF's operations and maintenance building. Since both options would be prohibitively costly, a traffic signal is proposed at the NCWRP driveway to provide a protected crossing for pedestrians.

It is important to note that the NCWRP driveway would not meet the peak hour traffic signal warrant nor the ADT traffic signal warrant per California's Manual on Uniform Traffic Control Devices 2014 Edition, Revision 1 – Section 4C.01 due to low volumes on the minor approach. However, considering that heavy vehicles will be entering, exiting, and crossing between the two plants, and that the closest controlled pedestrian crossing is located approximately 500 feet to the east, the City of San Diego Public Utilities Department would like to signalize the NCWRP driveway. Appendix I provides traffic signal warrant analysis worksheets.

The NCWRP driveway would be designed in accordance to the City of San Diego standards and would provide sufficient storage for traffic entering the two plants. The intersection would be signalized and would require the appropriate signing and striping plans per City of San Diego standards.

Access to Public and Private Lands

All pipeline facilities would be located within public rights-of-way where available corridors exist. Pipeline staging areas would be located within developed parking lots or other developed and disturbed areas to minimize traffic and road disruptions and would move frequently as construction progresses along the alignment. In all cases, pipeline construction within roadways would result only in temporary partial closures, with movement along the roadway and access to surrounding properties, both public and private, maintained at all times. Additionally, all construction contracts have conditions mandating emergency access into and through the site at all times. Staging areas for facilities and pump stations would be located within the facility footprints. Therefore, construction of the Miramar Reservoir Alternative would not restrict access to any public or private lands.

Once operational, all pipelines would be located underground. Components comprising the facilities and pump stations would all be contained within each respective site. Therefore, operation of the Miramar Reservoir Alternative would not restrict access to any public or private lands.

San Vicente Reservoir Alternative

The operational traffic for the San Vicente Reservoir Alternative is the same as the Miramar Reservoir Alternative: both Project Alternatives include the same operational facilities. Therefore, the operations of the North City Project would not have an adverse effect in Near Term with Project Conditions and Horizon Year with Project Conditions as described above. Similarly, the San Vicente Reservoir Alternative would not substantially restrict access to private and public lands.

6.16.5.2 Significance of Impacts Under CEQA

No Project/No Action Alternative

The No Project/No Action Alternative would not alter traffic patterns or transportation facilities and therefore would have **no impact** on parking, circulation, and public or private access points.

Miramar Reservoir Alternative

Based upon the significance criteria presented in Section 6.16.2, the Miramar Reservoir Alternative would result in **less-than-significant** impacts to parking, traffic patterns, access, or transportation facilities.

San Vicente Reservoir Alternative

Based upon the significance criteria presented in Section 6.16.2, the San Vicente Reservoir Alternative would result in **less-than-significant** impacts to parking, traffic patterns, access, or transportation.

6.16.5.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

There is no impact under the No Project/No Action Alternative; therefore, no mitigation measures are required.

Miramar Reservoir Alternative

There is no impact under the Miramar Reservoir Alternative; therefore, no mitigation measures are required.

San Vicente Reservoir Alternative

There is no impact under the San Vicente Reservoir Alternative; therefore, no mitigation measures are required.

6.16.6 LEVEL OF IMPACT AFTER MITIGATION

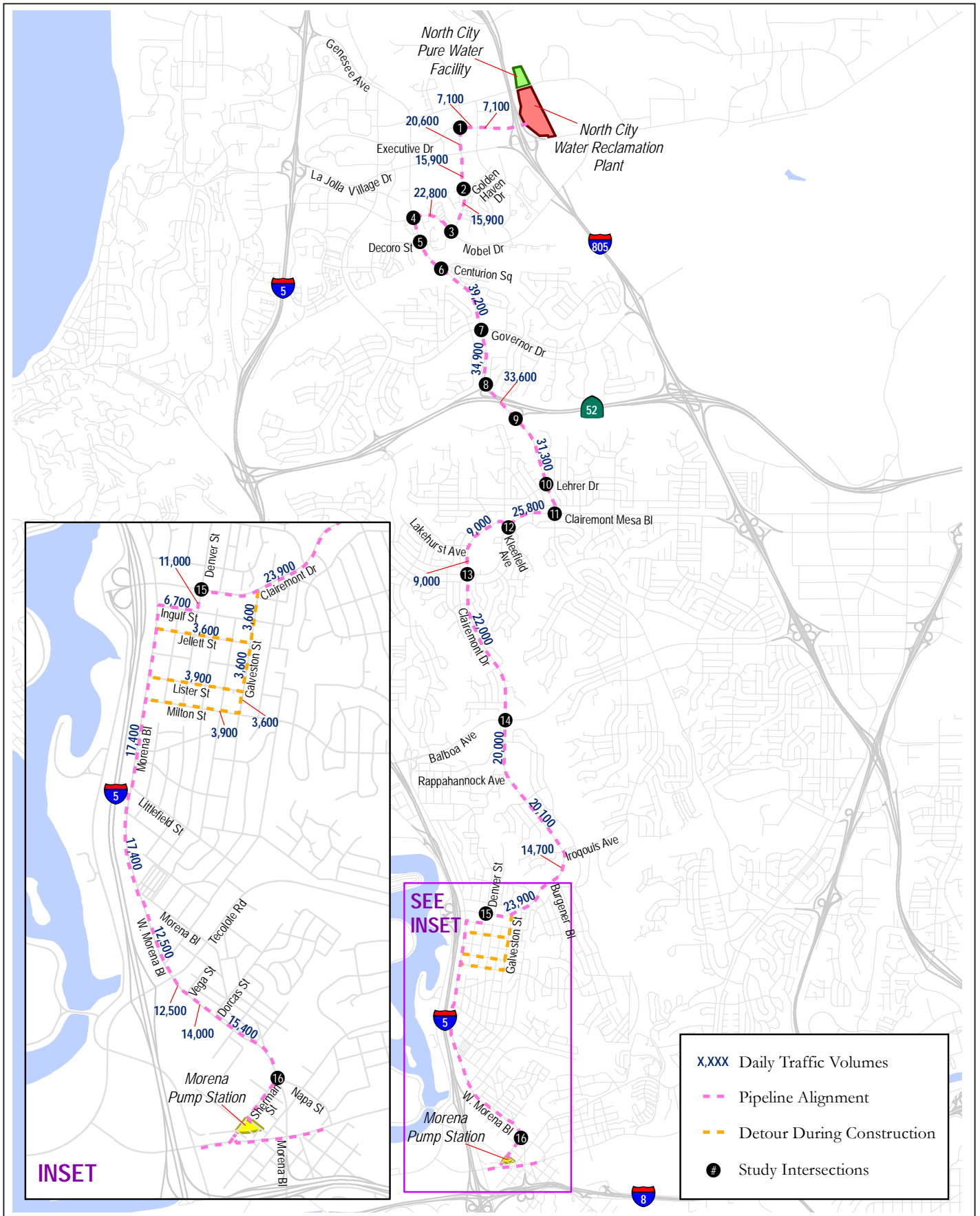
The applicability of the mitigation measures provided above to each Project component is summarized below in Table 6.16-17.

Table 6.16-17
Applicability of Transportation, Circulation, and
Parking Mitigation Measure to Project Components

Project Component	MM-TRAF-1
<i>Components Common to Project Alternatives</i>	
Morena Pump Station	
Morena Pipelines	X
NCWRP Expansion	
NCPWF Influent Pump Station	
North City Pump Station	
North City Renewable Energy Facility	
Landfill Gas Pipeline	
Metro Biosolids Center Improvements	
<i>Miramar Reservoir Alternative</i>	
NCPWF - Miramar Reservoir	
North City Pipeline	X
Dechlorination Facility	
Miramar Water Treatment Plant Improvements	
<i>San Vicente Reservoir Alternative</i>	
NCPWF - San Vicente Reservoir	
San Vicente Pipeline	X
Mission Trails Booster Station	

Under the Miramar Reservoir Alternative, impacts to 14 roadway segments and 6 intersections would exceed significance thresholds. Under the San Vicente Reservoir Alternative, impacts to 15 roadway segments and 6 intersections would exceed significance thresholds. Impacts to traffic patterns during construction would remain **significant and unavoidable** even with implementation of mitigation measure MM-TRAF-1.

Impacts related to traffic patterns, transportation facilities, and parking for the operations of both Project Alternatives would be **less than significant**, and no mitigation is required.



SOURCE: Chen Ryan, 2017

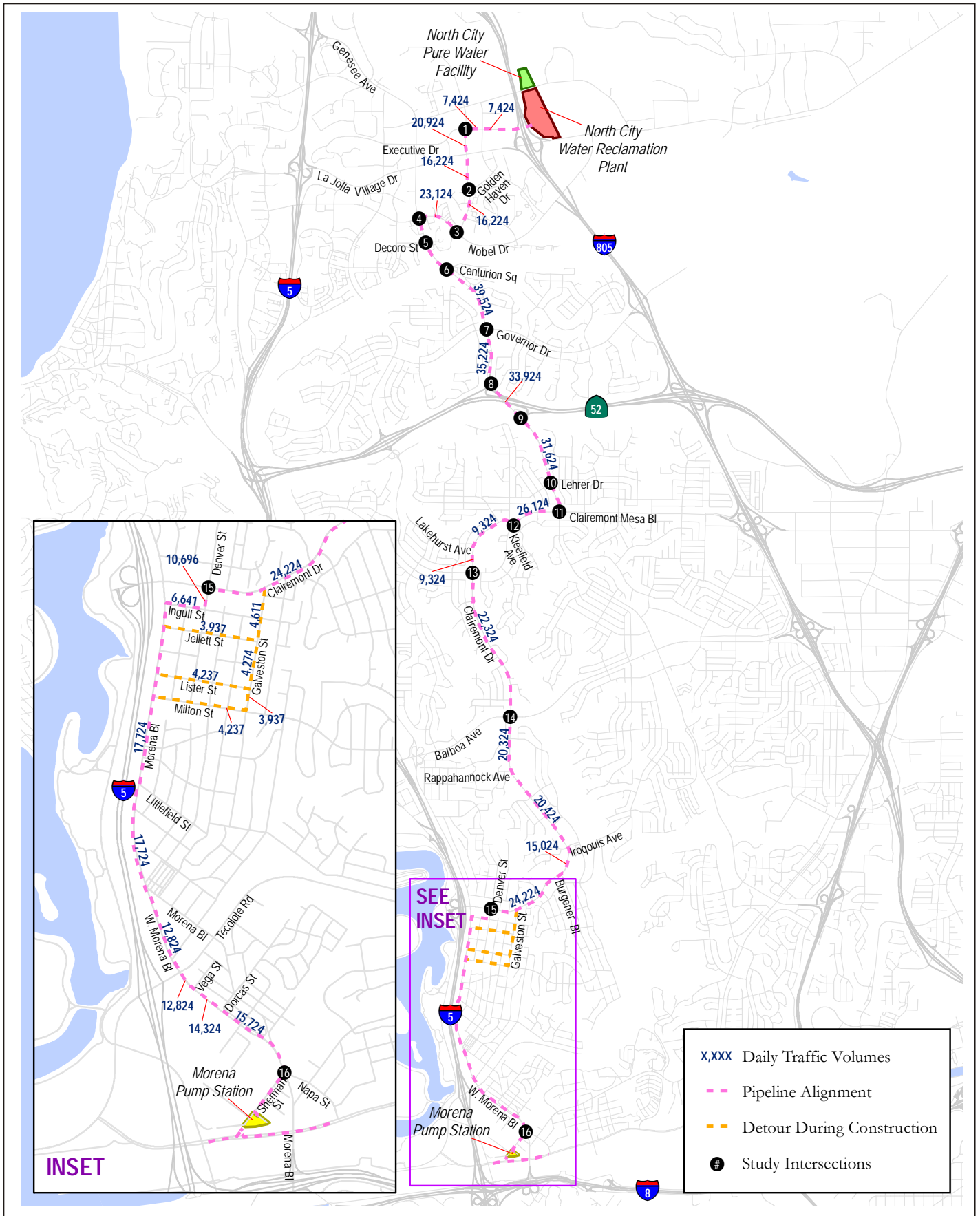
FIGURE 6.16-1



Near-Term Roadway Traffic Volumes without Construction of Morena Pipelines

Pure Water San Diego Program North City Project EIR/EIS

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SOURCE: Chen Ryan, 2017

FIGURE 6.16-2

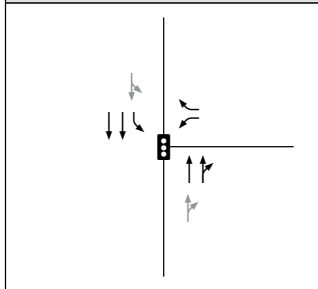
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Near-Term Roadway Traffic Volumes with Construction of Morena Pipelines

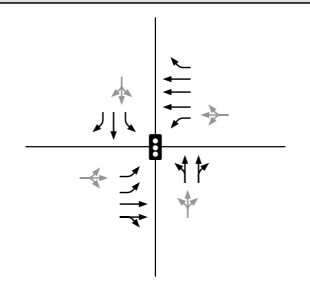
Pure Water San Diego Program North City Project EIR/EIS

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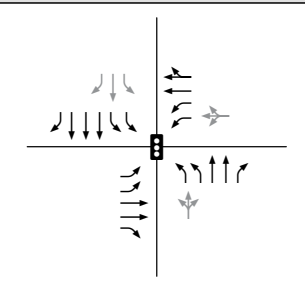
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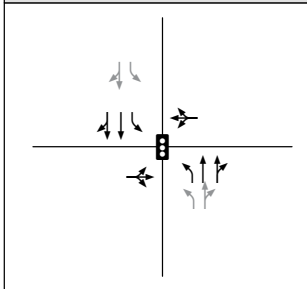
2 Towne Centre Dr & Nobel Dr



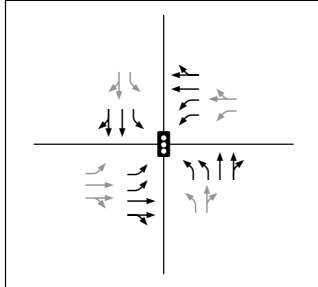
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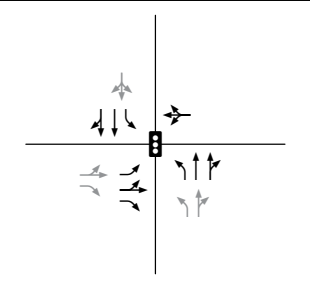
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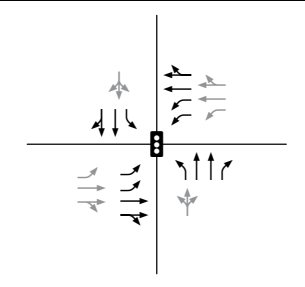
5 Genesee Ave & Clairemont Mesa Bl



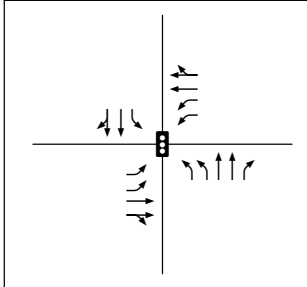
6 Clairemont Mesa Bl & Clairemont Dr/Kleeefeld Ave



7 Clairemont Dr & Clairemont Mesa Bl



8 Clairemont Dr & Balboa Ave



Legend	
	Study Intersection
	Lane Geometry
	Lane Geometry during Construction
	Signalized Intersection
*Names of North-South cross-streets always listed first	
 NORTH NOT TO SCALE	

SOURCE: Chen Ryan, 2017

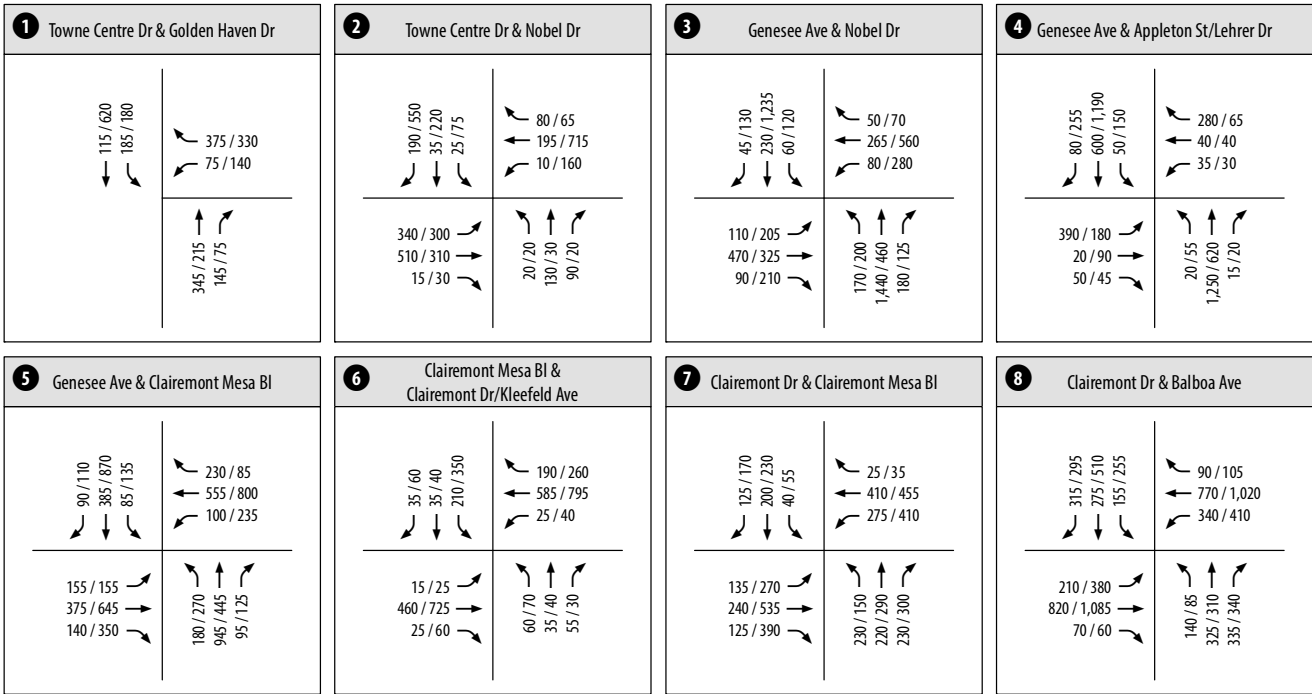
FIGURE 6.16-3



Near-Term Intersection Geometries with and without Construction of Morena Pipelines

Pure Water San Diego Program North City Project EIR/EIS

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Legend

- Study Intersection
- Turn Movements
- AM / PM Peak Hour Volumes
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH
NOT TO SCALE

SOURCE: Chen Ryan, 2017

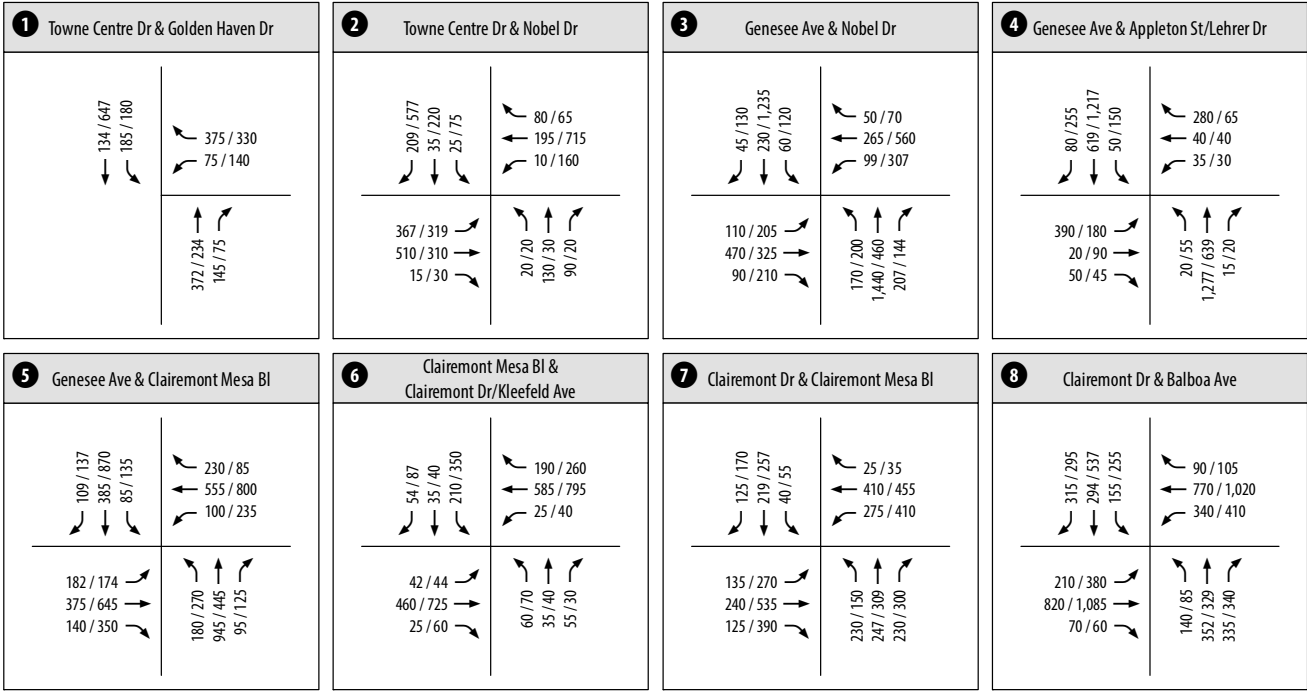
FIGURE 6.16-4



Near Term Intersection Traffic Volumes without Construction of Morena Pipelines

Pure Water San Diego Program North City Project EIR/EIS

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Legend

- X** Study Intersection
- ↘ ↙ ↗ ↖ Turn Movements
- AM / PM Peak Hour Volumes
- ▶ One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH
 NOT TO SCALE

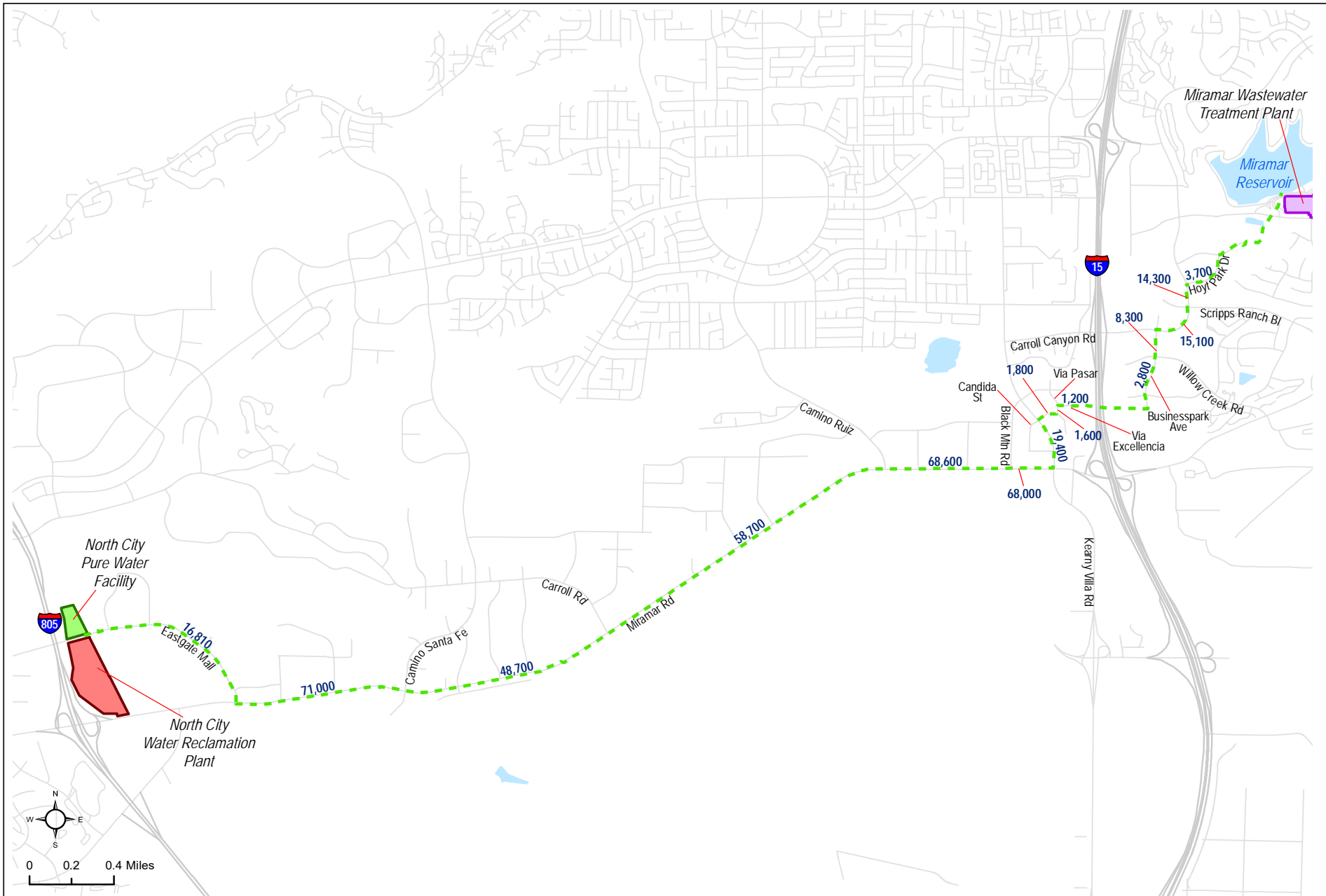
SOURCE: Chen Ryan, 2017

FIGURE 6.16-5



Near Term Intersection Traffic Volumes with Construction of Morena Pipelines

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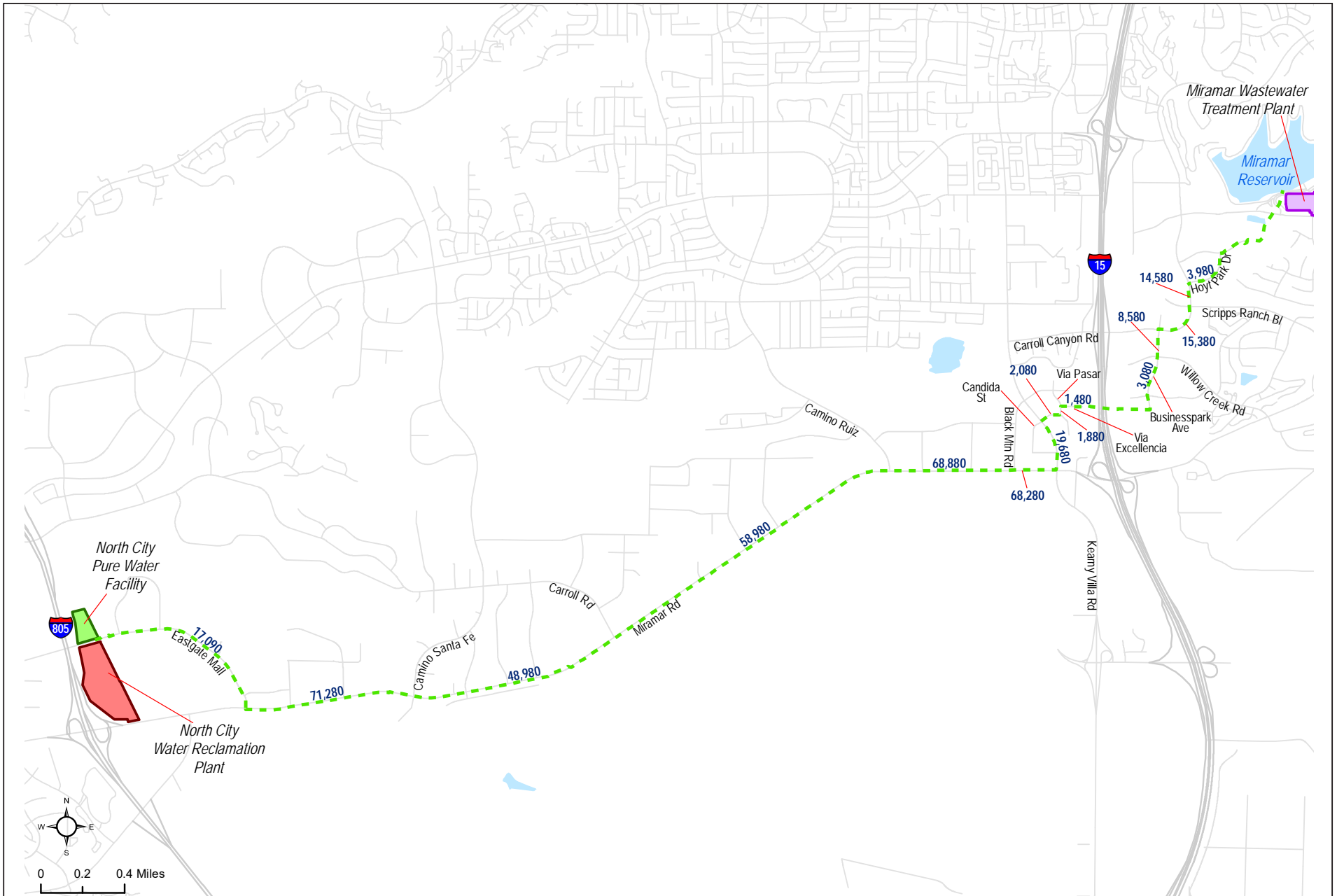
SOURCE: Chen Ryan, 2017

DUDEK

FIGURE 6.16-6
Near-Term Roadway Traffic Volumes without Construction of North City Pipeline

Pure Water San Diego Program North City Project EIR/EIS

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SOURCE: Chen Ryan, 2017

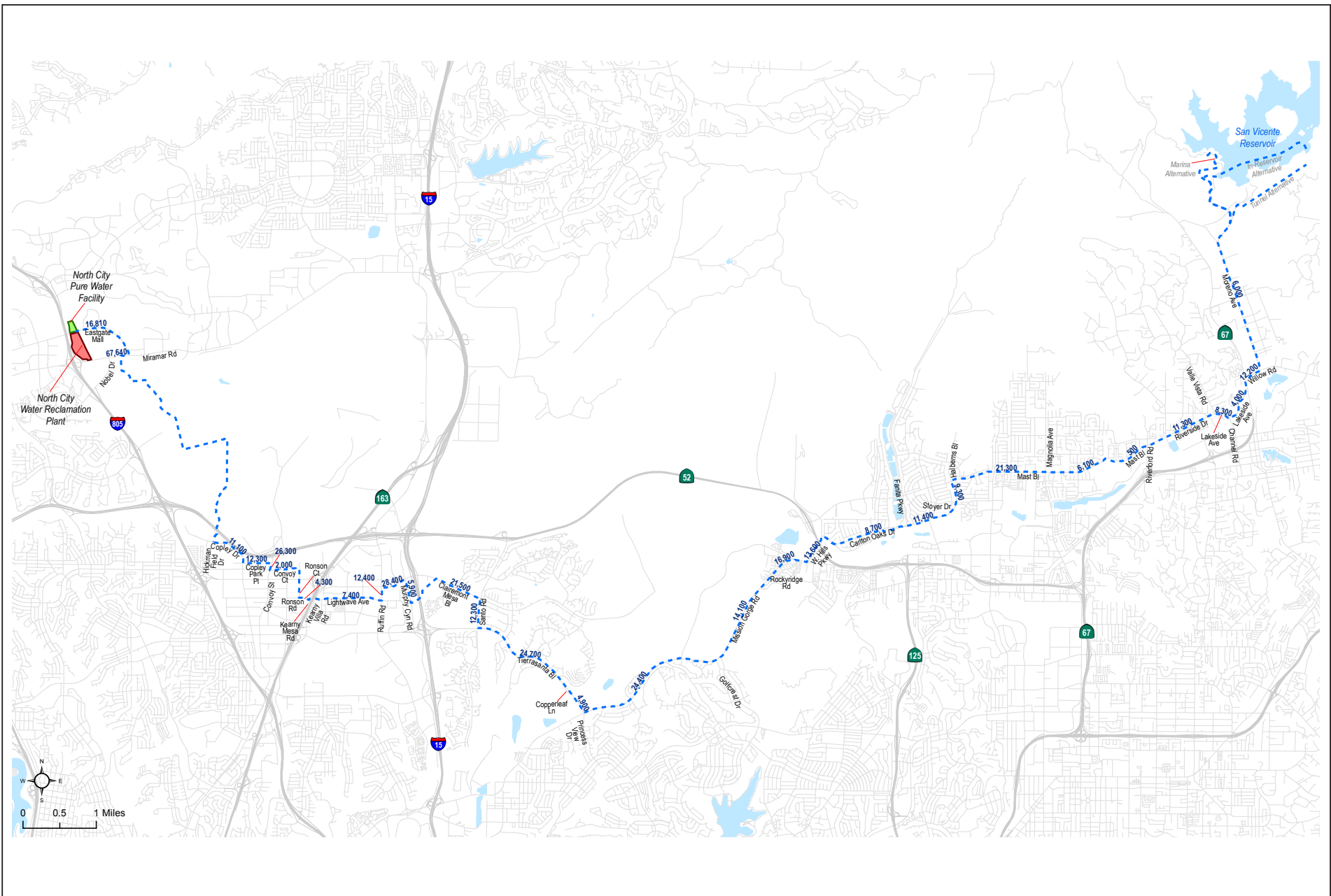
FIGURE 6.16-7

Near-Term Roadway Traffic Volumes with Construction of North City Pipeline

DUDEK

Pure Water San Diego Program North City Project EIR/EIS

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SOURCE: Chen Ryan, 2017

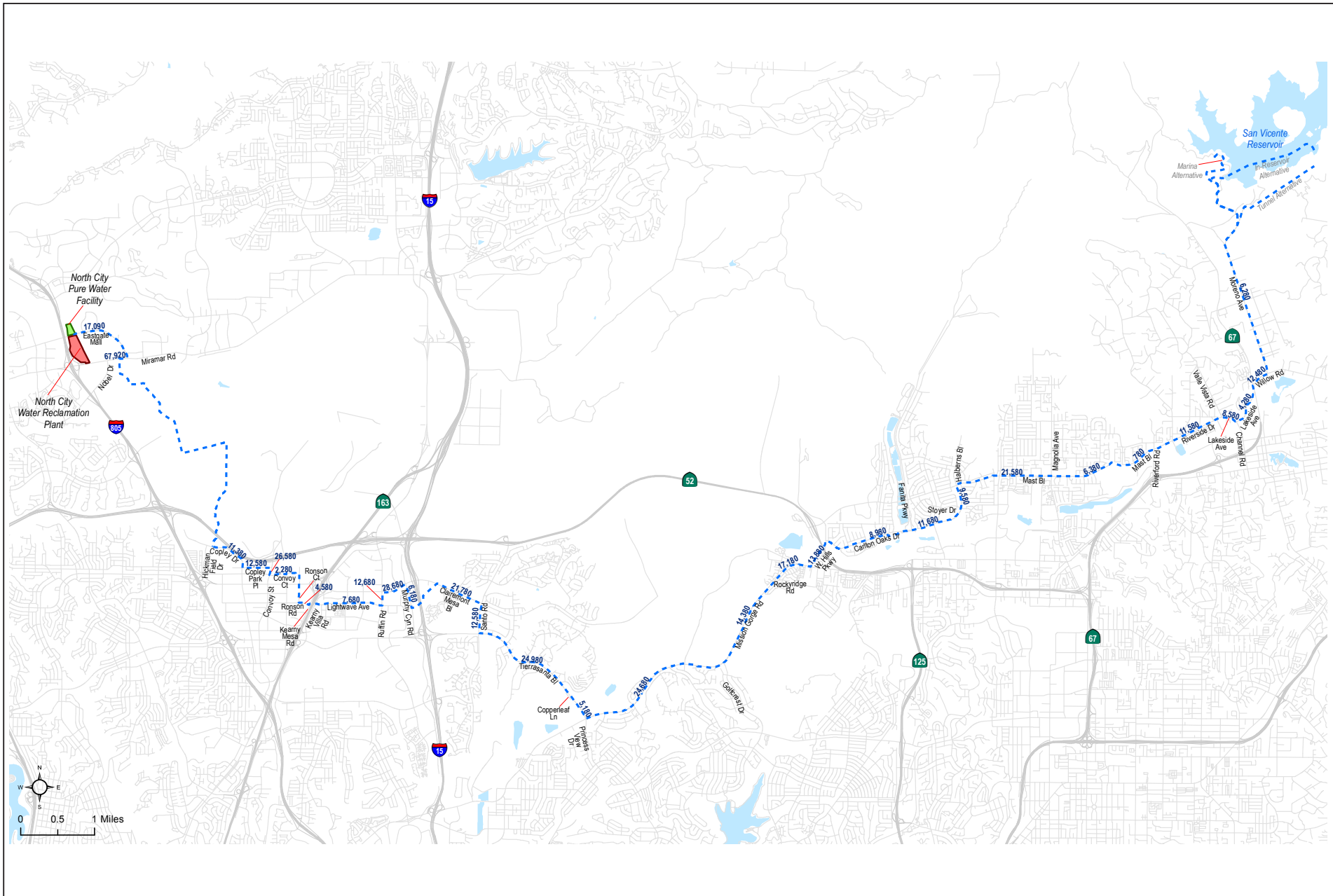
DUDEK

Near Term Roadway Traffic Volumes without Construction of San Vicente Pipeline

Pure Water San Diego Program North City Project EIR/EIS

FIGURE 6.16-8

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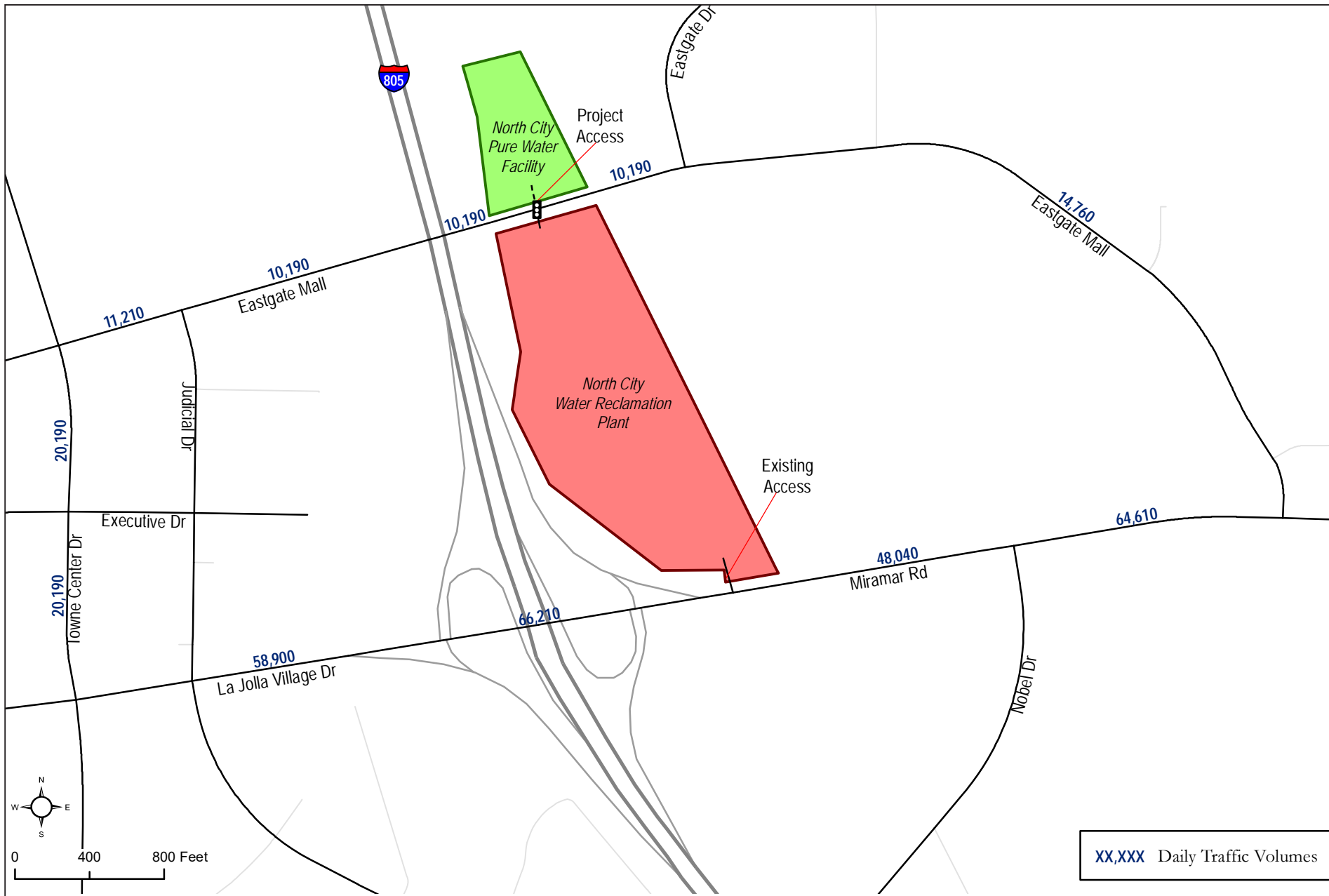
SOURCE: Chen Ryan, 2017

DUDEK

FIGURE 6.16-9
Near Term Roadway Traffic Volumes with Construction of San Vicente Pipeline

Pure Water San Diego Program North City Project EIR/EIS

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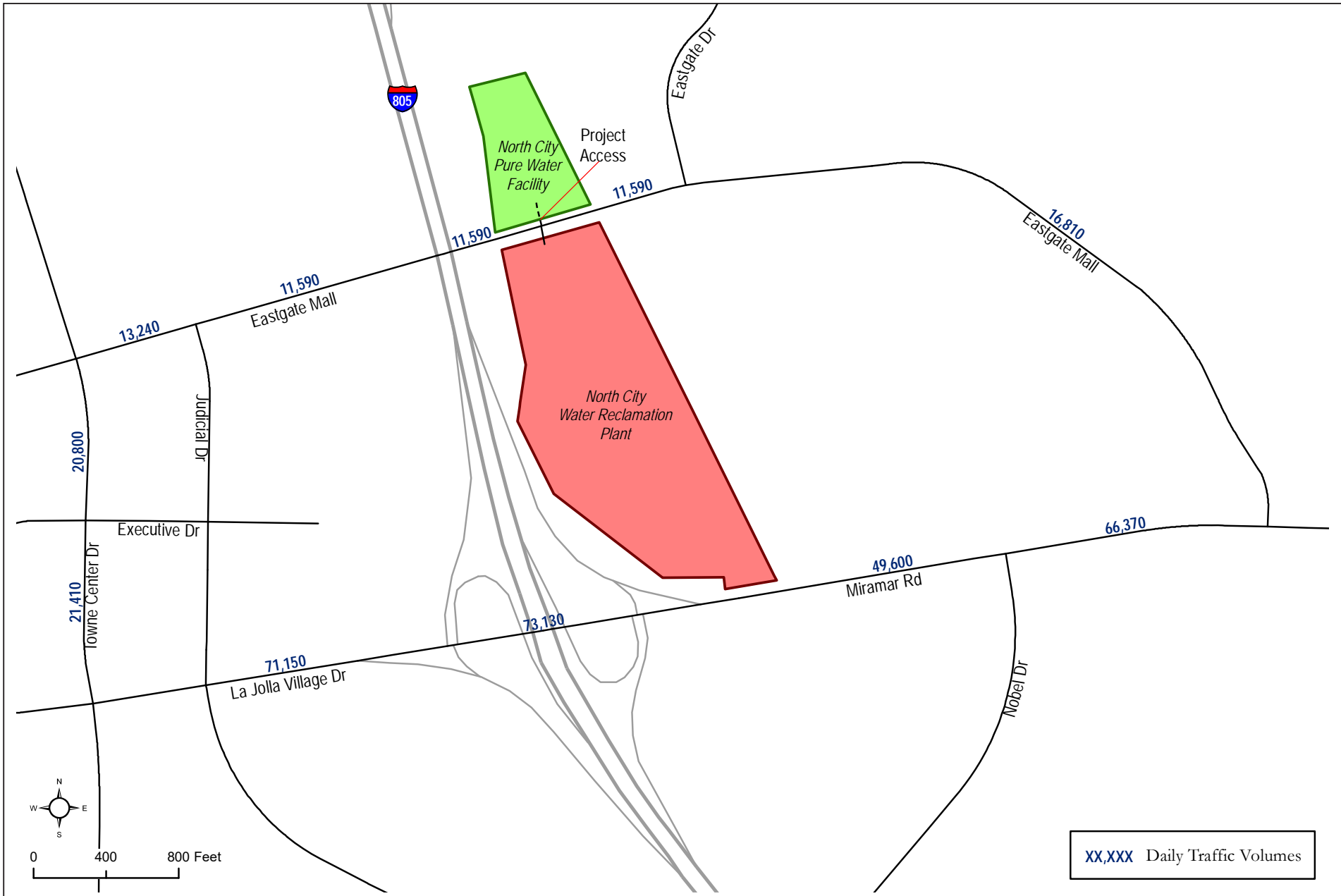
SOURCE: Chen Ryan, 2017

DUDEK

Pure Water San Diego Program North City Project EIR/EIS

FIGURE 6.16-10
Existing Traffic Volumes with Project Operations

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XX,XXX Daily Traffic Volumes

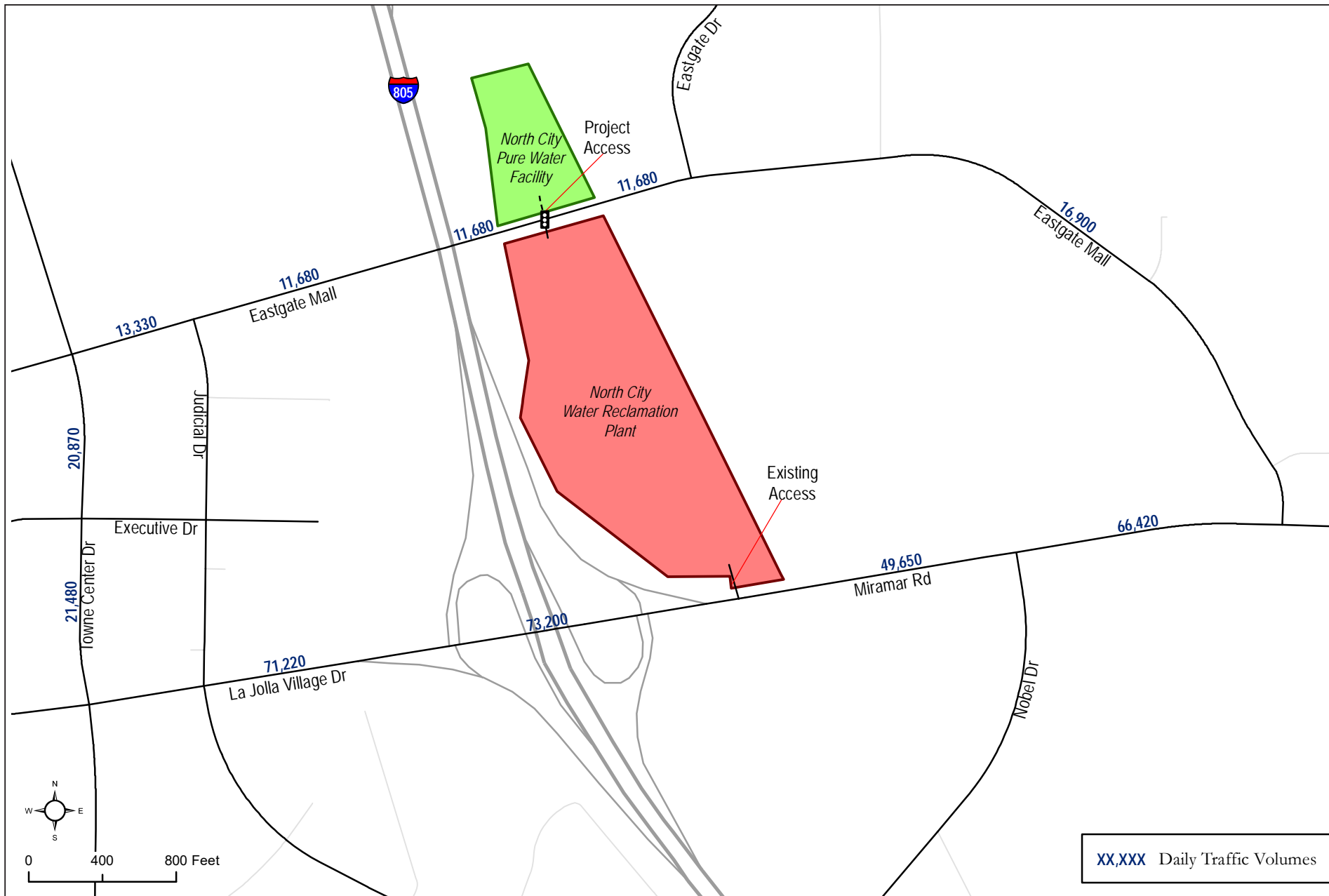
SOURCE: Chen Ryan, 2017

DUDEK

Pure Water San Diego Program North City Project EIR/EIS

FIGURE 6.16-11
Near Term Traffic Volumes without Project Operations

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SOURCE: Chen Ryan, 2017

DUDEK

Pure Water San Diego Program North City Project EIR/EIS

FIGURE 6.16-12
Near Term Traffic Volumes with Project Operations

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XX,XXX Daily Traffic Volumes

SOURCE: Chen Ryan, 2017

DUDEK

FIGURE 6.16-13
Horizon Year Traffic Volumes without Project Operations

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SOURCE: Chen Ryan, 2017

DUDEK

Pure Water San Diego Program North City Project EIR/EIS

FIGURE 6.16-14
Horizon Year Traffic Volumes with Project Operations

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6.17 WATER SUPPLY

6.17.1 INTRODUCTION

The following section examines the impacts of the North City Project on existing and future water supply sources within the North City Project area. Potential impacts related to water quality are discussed in Section 6.11, Hydrology and Water Quality.

6.17.2 CEQA THRESHOLDS OF SIGNIFICANCE

The City of San Diego's (City's) California Environmental Quality Act (CEQA) Significance Determination Thresholds (City of San Diego 2016a) and Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) contain significance guidelines related to the physical impacts associated with the extension, expansion, rerouting, and construction of new public or private water supply utilities. The North City Project Alternatives (Project Alternatives) involve the construction of new water and sewer facilities; therefore, the impacts of such are discussed throughout Chapter 6 of this Environmental Impact Report/Environmental Impact Statement (EIR/EIS).

Significance thresholds or standards for impacts related to water supply are not generally provided under CEQA and there are no federal regulations or indicators of adverse effect under the National Environmental Policy Act (NEPA) for water supply. However, due to concerns raised by the public during the scoping period, especially related to the Project Alternatives' potential impacts on non-potable recycled water supply, the following discussion is provided.

6.17.3 ISSUE 1

Would the North City Project affect the ability of water serving agencies to provide water?

6.17.3.1 Impacts

No Project/No Action Alternative

Under the No Project/No Action Alternative, the North City Project would not be implemented. The North City Pure Water Facility and the associated improvements at other treatment, pumping, and conveyance facilities would not be constructed. Therefore, 30 million gallons per day (MGD) of purified water and additional non-potable recycled water would not be produced.

The City anticipates a potable water demand of 264,840 acre-feet per year (AFY) in 2030 and 273,408 AFY in 2040, accounting for future water conservation. The City's 2015 Urban Water Management Plan (UWMP) includes the Pure Water Program, of which the North City Project is the first phase, in its conceptual future water supply, estimating approximately 33,630 AFY in 2030 and 92,998 AFY in 2040 of local water supplied by the Pure Water Program. However, the City also concludes in the 2015 UWMP that a combination of verifiable local water supplies and San Diego County Water Authority water purchases would meet projected water demand in 2030 and 2040 with no anticipated shortages. Nonetheless, reliability concerns remain, in addition to concerns regarding the increasing cost of imported water. Climate change may also reduce rainfall levels and shift monthly runoff patterns, reducing both the availability of imported water and local water supplies (City of San Diego 2016b). Therefore, it is anticipated that potable water demand would be met under the No Project/No Action Alternative, but with greater uncertainty and less reliability than under the proposed North City Project.

Miramar Reservoir Alternative

Potable Water

The Miramar Reservoir Alternative would create a new supply of locally sourced potable water for the City of San Diego. Specifically, the Miramar Reservoir Alternative would produce 30 MGD of locally controlled potable water. The North City Project has been designed to ensure that purified water produced at the North City Pure Water Facility would meet all water quality standards established by the California Department of Public Health and would be suitable for human consumption (see additional discussion in Chapter 2, Environmental Setting). The production of purified water under this Project Alternative would increase the reliability of water supplies in the San Diego region and would reduce uncertainties associated with the provision of imported water.

As discussed in Section 9.3, Growth Inducing Impacts, the Miramar Reservoir Alternative is not anticipated to represent additional water supplies in excess of what is already contemplated for the San Diego region. This alternative merely expands the City's potable water production capacity to meet projected water demands within the City's service area, which might potentially reduce the demand on other previously available water supplies, and would convey a beneficial impact related to water supply.

Non-potable Recycled Water

The North City Water Reclamation Plant currently treats municipal wastewater to tertiary standards to produce non-potable recycled water. Under implementation of the Miramar Reservoir Alternative, additional wastewater would be diverted to the North City Water Reclamation Plant such that it would ~~retain~~increase its ~~current~~ production levels of non-potable recycled water to serve ~~existing~~ recycled water customers. In order to continue serving existing customers, the North City Pure Water Facility 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.

San Vicente Reservoir Alternative

Potable Water

Similar to the Miramar Reservoir Alternative, the San Vicente Reservoir Alternative would produce 31.4 MGD AADF of locally controlled potable water (of which 30 MGD AADF would be delivered to the San Vicente Reservoir), increasing the reliability of water supplies in the San Diego region and reducing uncertainties associated with the provision of imported water.

Similar to the Miramar Reservoir Alternative, the San Vicente Reservoir Alternative is not anticipated to represent additional water supplies in excess of what is already contemplated for the San Diego region. Rather, this alternative merely expands the City's potable water production capacity to meet projected water demands within the City's service area, which might potentially reduce the demand on other previously available water supplies, and would convey a beneficial impacts related to water supply.

Non-potable Recycled Water

Under implementation of the San Vicente Reservoir Alternative, the North City Water Reclamation Plant would ~~retain~~increase its ~~current~~ production levels of non-potable recycled water to serve ~~existing~~ recycled water customers. In order to continue serving existing customers, the North City Pure Water Facility 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.

6.17.3.2 Significance of Impacts under CEQA

No Project/No Action Alternative

Although the reliability of water supply to communities and customers served by the North City Project would diminish under the No Project/No Action Alternative, it is anticipated that the City would be able to meet future water demand; therefore, **no significant impacts** under CEQA would occur on water supply. However, under the No Project/No Action Alternative, the reliability of water supply to communities and customers served by the North City Project would diminish and the likelihood and duration of water shortages may increase. The No Project/No Action Alternative would also mean more reliance on the regional water supply system, potentially exacerbating system overloads. Consequently, the beneficial impact under CEQA related to the availability and reliability of local potable water supplies would not occur.

Miramar Reservoir Alternative

The Miramar Reservoir Alternative would result in a **beneficial impact** under CEQA related to the ability of the City to provide potable water because the Miramar Reservoir Alternative would increase the availability and reliability of local water supplies. The City would retain its current production levels of non-potable recycled water to serve existing customers; therefore, **no impacts** under CEQA would occur on the non-potable recycled water supply.

San Vicente Reservoir Alternative

The San Vicente Reservoir Alternative would result in a **beneficial impact** under CEQA related to the ability of the City to provide water because the San Vicente Reservoir Alternative would increase the availability and reliability of local water supplies. The City's continued capacity to provide non-potable recycled water to existing customers would not be affected and therefore **no impacts** under CEQA would occur on the non-potable recycled water supply.

6.17.3.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No significant or adverse impacts would occur on water supply; therefore, no mitigation is required.

Miramar Reservoir Alternative

Impacts to water supply under the Miramar Reservoir Alternative would be beneficial; therefore, no mitigation is required.

San Vicente Reservoir Alternative

Impacts to water supply under the San Vicente Reservoir Alternative would be beneficial; therefore, no mitigation is required.

6.17.4 LEVEL OF IMPACT AFTER MITIGATION

Without mitigation, impacts related to water supply for the No Project/No Action Alternative would be less than significant.

Without mitigation, impacts related to water supply for both the Miramar Reservoir Alternative and San Vicente Reservoir Alternative would be beneficial.

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6.18 RECREATION

6.18.1 INTRODUCTION

The following section examines the impacts of the North City Project on recreational opportunities within the North City Project area. Potential impacts related to water quality and limnology at City reservoirs are discussed in Section 6.11, Hydrology and Water Quality.

6.18.2 CEQA THRESHOLDS OF SIGNIFICANCE

Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.) contains significance guidelines related to physical impacts parks and recreation facilities:

- Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
- Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

In addition, information is presented to address potential long-term impacts to recreational opportunities at City recreation facilities including City open space parks and reservoirs, refer to Section 6.18.6.

6.18.3 ISSUE 1

Would the North City Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

6.18.3.1 Impacts

No Project/No Action Alternative

No impacts to existing neighborhood and regional parks or other recreational facilities would result from the No Project/No Action Alternative.

Miramar Reservoir Alternative

Construction

During construction of linear Project components in City streets, construction activities could result in short-term diminished access to local area parks and recreation facilities. More specifically, construction activities within City streets would create impediments to the movement of traffic that could increase public travel time to specific parks and recreational facilities and encourage and increase use of other parks and facilities. However, access to the majority of parks and recreational facilities would be maintained during construction and diminished access would be addressed through implementation of traffic control plans (where necessary; see Section 6.16, Transportation, Circulation, and Parking, for additional detail). Construction of the Morena Wastewater Forcemain and Brine/Centrates Line (Morena Pipelines) would require the temporary closure of the Marian Bear Memorial Park parking lot located east of Genesee Avenue and south of State Route 52 (SR-52) for 6 months (during which the lot would be used for construction staging). In addition, construction of the final segment of the North City Pure Water Pipeline (North City Pipeline; i.e., the subaqueous pipeline) would require the temporary closure of Miramar Reservoir to boating and other permitted in-water uses (i.e., kayaks and float tubes) for approximately 9 months. In addition and depending on proximity, the generation of air quality pollutants and noise during active construction activities associated with both linear and non-linear Project components could deter recreationists from using nearby parks and recreational facilities and encourage temporary use of other more distant parks and recreation facilities.

During construction of the Morena Pipelines, the Marian Bear Memorial Park parking located east of Genesee Avenue and south of SR-52 would be closed on weekdays for approximately 6 months. Portions of Rose Canyon trails located north of the Metropolitan Transit System/North County Transit District (MTS/NCTD) railroad and immediately west of Genesee Avenue may also be temporarily closed on weekdays to accommodate construction vehicle access. Marian Bear Memorial Park and the San Clemente Canyon and Rose Canyon trail systems receive the majority of use on weekends. The City is intending to make available the majority of the Marian Bear Memorial Park parking lot for weekend use. While the parking lot would be closed during the week, all trails in Marian Bear Memorial Park would remain open and the park would continue to be accessible via parking lots located south of SR-52 and east and west of Regents Road and at Stadley Community Park. Rose Canyon trails

located east of Genesee Avenue and west of Genesee Avenue to the south of the MTS/NCTD railroad would remain open during construction and more specifically, during proposed open trenching and installation of the Morena Pipelines to cross the railroad right-of-way.

Recreational opportunities (primarily hiking) at Marian Bear Memorial Park and in Rose Canyon would remain available during construction of the Morena Pipelines. The temporary (i.e., 6 months) closure of the Genesee Avenue parking lot for Marian Bear Memorial Park and portions of trails in Rose Canyon to weekday use is not anticipated to deter recreationists from visiting the park and the San Clemente Canyon trail system. It should also be noted that Marian Bear Memorial Park and Rose Canyon are surrounded by urban uses and trail-based recreationists within the park boundaries are routinely subjected to the same types of secondary effects (i.e., noise, air quality pollutants) that would be generated during construction of the North City Project. Given the urban characteristics of surrounding uses and the continued availability of recreational opportunities and staging/parking areas at Marian Bear Memorial Park and in Rose Canyon, recreationists are not anticipated to temporarily suspend their use of the park in favor of recreating elsewhere. Therefore, the use of Marian Bear Memorial Park or other nearby parks and recreational facilities including trails in Rose Canyon would not increase such that substantial physical deterioration of the facility would occur or be accelerated. Impacts would be less than significant.

Construction of the final segment of the North City Pipeline (i.e., the subaqueous pipeline) would require the temporary closure of Miramar Reservoir to boating and other permitted in-water uses (i.e., kayaks and float tubes) and a portion of the parking lot for approximately 9 months. While in-water recreation uses would not be permitted in the reservoir during this period, observation of recreation at the reservoir indicates that non-water based recreation (i.e., cycling, running, picnicking, etc.) is the dominant recreation use of the reservoir area. A section of the reservoir's perimeter trail would be rerouted and a portion of the parking lot would be closed during construction for visitor safety. Despite the temporary reroute, a perimeter trail would be accessible to visitors and non-water based recreational opportunities currently available at the reservoir including cycling, running, and picnicking would remain available for use during construction activities and during normal hours of operation. In addition, shore-fishing opportunities would continue to be available during construction of the final segment of the North City Pipeline. A number of parking spaces would be unavailable during construction (spaces would accommodate construction vehicles

and equipment) but access to and recreational opportunities at Miramar Reservoir would largely be maintained. Overall, construction activities near Miramar Reservoir would not increase recreational use of amenities at the reservoir. Also, construction activities are not anticipated to deter recreational activities at the reservoir such that usage of nearby parks and recreational facilities would significantly increase and result in substantial physical deterioration. Impacts would be less than significant.

Operation

Once construction activities are complete, the temporary closure of the Marian Bear Memorial Park parking lot and temporary restriction of in-water uses at Miramar Reservoir would cease. Access to and recreational opportunities at these City parks and recreational facilities would be fully restored during operation of the North City Project.

Existing non-water based recreational opportunities at Miramar Reservoir, including running/jogging, cycling, walking, and picnicking, would not be affected or diminished by Project operations. Recreation that is currently available at the reservoir would continue to be available during operations. In addition, new or expanded recreational amenities at the reservoir are not proposed by the North City Project. Therefore, operation of the Miramar Reservoir Alternative would not result in increased use of Miramar Reservoir such that substantial physical deterioration of existing facilities would occur.

As further discussed in Section 6.11, Hydrology and Water Quality, a functioning aquatic community is expected to continue to exist in the reservoir after the changeover from Colorado River and/or the State Water Project source water to purified water, albeit at likely a reduced level of productivity. Although the anticipated changes in nutrients (total phosphorous (TP) in particular) are expected to result in a decrease in primary productivity within the Miramar Reservoir, the magnitude of the change is expected to be minor. While TP would be lower, all of the phosphorus would be soluble reactive phosphorous (SRP; which is directly available for uptake by plants); as a result, SRP concentrations are expected to be only slightly lower and more consistent under future conditions when compared to existing conditions. Additionally, since SRP levels under a purified water regime are expected to be only slightly lower than existing conditions, chlorophyll-*a* (which is directly linked to SRP) concentrations are also expected to be only slightly lower than existing conditions. With regular deliveries of purified water, nutrient levels

would still continue to support the reservoir's overall aquatic ecosystem and a relatively productive warm water fishery ~~given the California Department of Fish and Wildlife's (CDFW's) existing and continuing stocking of the reservoir with rainbow trout~~. Therefore, the fishery would not be substantially affected during operation of the North City Project. Further, the City would continue to allow fishing at the reservoir and would continue to support California Department of Fish and Wildlife (CDFW) stocking during Project operations. The anticipated reduced level of productivity associated with small changes in nutrients would not substantially affect the fishery such that anglers would be deterred from visiting the reservoir and would, in turn, substantially increase use of other waterbodies in the region.

As demonstrated above, the Miramar Reservoir Alternative would not increase the use of existing parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. Impacts would be less than significant.

San Vicente Reservoir Alternative

Construction

During construction, similar short-term impacts associated with potential diminished accessed to parks and recreation facilities because of construction in City streets as discussed above for the Miramar Reservoir Alternative would occur under the San Vicente Reservoir Alternative. Similar short-term impacts as discussed above for the Miramar Reservoir Alternative regarding the generation of noise, air quality pollutants, and other secondary effects of construction and potential effects on use of nearby parks and recreational facilities would occur under the San Vicente Reservoir Alternative.

With the exception of San Vicente Reservoir, construction of the San Vicente Pipeline is not anticipated to result in the temporary closure of parks and recreational facilities (including associated staging and parking areas) which might in turn increase usage of nearby parks and facilities such that such that substantial physical deterioration of the facilities would occur or be accelerated. The final segments of the San Vicente Pipeline – In-Reservoir Terminus (IRAT) and San Vicente Pipeline – Marina Alternative Terminus (MAT) would be installed in Morena Avenue and the San Vicente Reservoir marina access road via open trenching. The San Vicente Pipeline – Tunnel Alternative Terminus (TAT) would follow a different alignment and would not be installed in the reservoir's marina

access road. During construction of the San Vicente Pipeline - IRAT and San Vicente Pipeline - MAT, the San Vicente Reservoir would be closed for all recreation use for approximately 18 months. Recreational use of the reservoir would remain available during construction of the San Vicente Pipeline - TAT. Despite the temporary closure of the reservoir for 18 months during construction of the San Vicente Pipeline - IRAT and San Vicente Pipeline - MAT, recreational fishing opportunities would remain available elsewhere in the region and the potential temporary increase in usage of regional lakes and reservoirs is not anticipated to result in substantial physical deterioration of the facilities. Use of reservoirs in the region is managed through permit and fees systems and boat rentals are typically available on a first come first serve basis. As such, recreational usage of reservoirs are managed in a manner that reduces opportunities for accelerated deterioration due to increases in use associated with the temporary closure of similar facilities. Therefore, closure of the San Vicente Reservoir during construction of the San Vicente Pipeline - IRAT and San Vicente Pipeline - MAT may trigger increased usage of similar recreational facilities in the region however; temporary increased usage is not anticipated to result in substantial physical deterioration of the facilities or accelerated deterioration. Impacts would be less than significant.

Operation

Once construction of the San Vicente Reservoir Alternative is complete, recreation opportunities and amenities at San Vicente Reservoir would be restored and reopened for public use. As further discussed below the San Vicente Reservoir is much larger and has a much larger watershed than the Miramar Reservoir, and it is less sensitive to the effects of inputs of purified water. Because discharges of purified water to the San Vicente Reservoir are not anticipated to have an adverse effect on consumers of phytoplankton and zooplankton, it is highly unlikely that existing fisheries management that occurs at San Vicente Reservoir would require adjustments to minimize food web effects and potential diminished opportunities for recreational fishing. Therefore, operation of the San Vicente Reservoir Alternative would not increase the use of existing neighborhood and regional parks or other recreational facilities and would not deter recreational use of the San Vicente Reservoir due to diminished opportunities for fishing that might result in increased usage of similar facilities elsewhere in the region. Impacts would be less than significant.

6.18.3.2 Significance of Impacts under CEQA

No Project/No Action Alternative

No impacts would occur because of No Project/No Action Alternative.

Miramar Reservoir Alternative

Impacts would be **less than significant** under CEQA.

San Vicente Reservoir Alternative

Impacts would be **less than significant** under CEQA.

6.18.3.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No significant or adverse impacts would occur to parks and recreational facilities; therefore, no mitigation is required.

Miramar Reservoir Alternative

No mitigation is required.

San Vicente Reservoir Alternative

No mitigation is required.

6.18.4 ISSUE 2

Does the North City Project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

6.18.4.1 Impacts

No Project/No Action Alternative

Similar to the North City Project, the No Project/No Action Alternative does not propose recreational facilities and would not require the construction or expansion of recreational facilities. Therefore, no adverse physical effects on the environment

resulting from new or expanded recreational facilities would occur and no impacts would result from the No Project/No Action Alternative.

Miramar Reservoir Alternative

The Miramar Reservoir Alternative does not include the construction and operation of recreational facilities. Rather, the North City Project consists of the design and construction of a new North City Pure Water Facility, upgrades to an existing water reclamation facility, and design and construction of new pump stations and pipelines. Construction of the Morena Pipelines would require the temporary closure of the Marian Bear Memorial Park parking lot located east of Genesee Avenue and south of the SR-52 (the parking lot would be used for construction staging for approximately 6 months). In addition, construction of the final segment of the North City Pipeline (i.e., the subaqueous pipeline) would require the temporary closure of Miramar Reservoir to boating and other permitted in-water uses (i.e., kayaks and float tube) and a portion of the parking lot for approximately 9 months. All other parks and recreation facilities near North City Project components identified in Section 5.18 would be largely unaffected (physically or indirectly such as through reduced access) by Project construction and operations. Construction activities in City streets (such as anticipated with construction of Morena Pipelines) may slightly increase travel times to parks and recreational facilities but where necessary, traffic control plans would be implemented to maintain traffic flow (see Section 6.16, Transportation, Circulation, and Parking for additional detail) and the vast majority of parks and recreational facilities would remain available to the public during Project construction. See Section 6.18.3.1, above, for additional detail.

While construction would temporarily reduce access to Marian Bear Memorial Park, trails in San Clemente Canyon/Marian Bear Memorial Park located east of the parking lot and west of Genesee Avenue would remain open and would be available for trail-based recreation. Further, existing parking lots located off Clairemont Mesa Boulevard and at Stadley Community Park that provide access to the park would continue to be available to recreationists during construction of the North City Project. As stated in Section 5.18, the trail system in San Clemente Canyon connects to the Rose Canyon hiking trail near the confluence of I-5 and SR-52 and opportunities for longer, trail-based recreation would continue to be available during construction. Due to the continued availability of trails and access points/parking areas to San Clemente Canyon/Marian Bear Memorial Park and opportunities for longer, trail-based recreation within the San Clemente Canyon and Rose Canyon systems, the expansion of recreational facilities would not be required. Similarly, boating and other allowable

in water uses would not be permitted at Miramar Reservoir for approximately 9 months but opportunities for fishing would continue to be available during this time. During construction of the subaqueous pipeline, recreationists would be able to fish from the reservoir's shore and the reservoir's concession would remain open for bait purchases. In addition, it should be noted that non-water based recreational opportunities are available at the reservoir including cycling, running, and picnicking would remain available for use during normal hours of operation. Construction activities would not require the temporary closure of the reservoir's perimeter road (a portion of the trail would be rerouted for visitor safety) and picnic areas. As with Marian Bear Memorial Park, the continued availability of recreational opportunities at Miramar Reservoir during construction of the North City Pipeline would provide a robust range of activities for recreationists and would not require the expansion of recreational facilities. Adverse physical effects on the environment resulting from new or expanded recreational facilities would not occur and no impacts would result from the Miramar Reservoir Alternative.

San Vicente Reservoir Alternative

With the exception of the North City Pipeline, the impacts described above under the Miramar Reservoir Alternative would also be applicable to this alternative. The San Vicente Pipeline Alternative does not include recreational facilities and would not require the construction or expansion of recreational facilities. Construction of the San Vicente Pipeline - IRAT and San Vicente Pipeline - MAT would require the temporary closure of the San Vicente Reservoir to all public recreational use for approximately 18 months. During this time, it is anticipated that anglers and other recreationists that currently recreate at the reservoir would seek recreational opportunities at nearby reservoir facilities and parks in the region including El Capitan Reservoir, Lake Murray, and Sutherland Reservoir. Once construction of the San Vicente Pipeline - IRAT (or San Vicente Pipeline - MAT) are complete, recreational opportunities and amenities at San Vicente Reservoir would be restored and reopened to the public. During construction of the San Vicente Pipeline - TAT, all recreational opportunities and amenities at the San Vicente Reservoir would remain available and open to the public. Since the San Vicente Reservoir (and the Miramar Reservoir Alternative) would not result in population growth or the influx of persons to the region, the construction or expansion of recreational facilities to accommodate new populations would not be required. Therefore, no impacts regarding adverse physical effects on the environment resulting from the construction and expansion of recreational facilities would not occur.

6.18.4.2 Significance of Impacts under CEQA

No Project/No Action Alternative

No impacts would occur because of No Project/No Action Alternative.

Miramar Reservoir Alternative

No impacts would occur under CEQA.

San Vicente Reservoir Alternative

No impacts would occur under CEQA.

6.18.4.3 Mitigation, Monitoring, and Reporting

No Project/No Action Alternative

No significant or adverse physical effects on the environment resulting from new or expanded recreational facilities would occur; therefore, no mitigation is required.

Miramar Reservoir Alternative

No mitigation is required.

San Vicente Reservoir Alternative

No mitigation is required.

6.18.5 LEVEL OF IMPACT AFTER MITIGATION

No impacts to parks and recreation facilities would result from the No Project/No Action Alternative.

Impacts to parks and recreation facilities for both the Miramar Reservoir Alternative and San Vicente Reservoir Alternative would be less than significant, and no mitigation would be required.

6.18.6 SUPPLEMENTARY INFORMATION REGARDING RECREATIONAL RESOURCES

The following information is provided to disclose potential impacts to recreational resources at City recreation facilities, including City open space parks and reservoirs.

Neither the City's Significance Determination Thresholds nor CEQA Appendix G require lead agencies to provide project impacts on existing recreational facilities beyond the issue areas analyzed above in Sections 6.18.3 and 6.18.4; this information is presented for the sake of disclosure to the public and resource agencies.

6.18.6.1 No Project/No Action Alternative

There would be no change to existing recreational opportunities at City recreational facilities under this alternative. Bicycling, jogging, walking, picnicking, and fishing opportunities would not be changed or modified.

6.18.6.2 Miramar Reservoir Alternative

Construction

Potential short-term loss of recreational opportunities at City recreational facilities and bicycling, jogging, walking, picnicking, and fishing opportunities at and around the Miramar Reservoir during construction of the Miramar Reservoir Alternative are discussed above in Sections 6.18.3.1 and 6.18.4.1. As discussed above, diminished access to local area parks and recreation facilities attributed to construction of Project components within City streets would be addressed through implementation of traffic control plans. Temporary secondary and indirect effects to recreational experiences and opportunities associated with construction including the generation of air quality pollutants and noise during active construction activities are addressed elsewhere in this document (see Section 6.3, Air Quality and Odor, and Section 6.12, Noise). Also, during construction of the Morena Pipelines, trails and access points/parking areas to San Clemente Canyon/Marian Bear Memorial Park and the majority of trails in Rose Canyon would remain available. Long-term loss of trail-based recreation opportunities in San Clemente Canyon and Rose Canyon would not occur. Construction of the Morena Pipelines would require the temporary closure (i.e., for approximately 6 months) of the Marian Bear Memorial Park parking lot located east of Genesee Avenue and south of SR-52, and following construction, the parking lot would be reopened for public use. Construction activities associated installation of the Morena Pipelines below the MTS/NCTD railroad may temporarily close portions of trails in Rose Canyon located immediately west of Genesee Avenue. Access to the trails would be fully restored following completion of construction activities in the immediate area. Lastly, once construction of the North City Pipelines is completed, the Miramar Reservoir would be reopened for in-water recreational use.

Operation

No long-term impacts to recreational resources at City recreation facilities, including City open space parks and reservoirs, would occur during project operations. Access to and use of City recreation facilities would be available, and recreational resources would not be affected.

At the Miramar Reservoir, a functioning aquatic community is expected to continue to exist after the changeover from Colorado River and/or the State Water Project source water to purified water, albeit at likely a reduced level of productivity. As further discussed in Section 6.11, Hydrology and Water Quality, anticipated changes in nutrients (TP in particular) are expected to result in a minor decrease and change in primary productivity within the Miramar Reservoir. With regular deliveries of purified water, nutrient levels in the reservoir would still continue to support the overall aquatic ecosystem and a relatively productive warm water fishery given CDFW's existing and continuing stocking of the reservoir with rainbow trout. The fishery and recreational fishing opportunities would not be substantially affected during operation of the North City Project, and the City would continue to allow fishing at the reservoir and would continue to support CDFW stocking. The anticipated reduced level of productivity associated with small changes in nutrients would not substantially affect the fishery or opportunities for fishing at Miramar Reservoir. Stocking of fish and management of recreational resources is based on public demand and use, as well as budgetary considerations. Fish stocking would continue to appropriately manage the fishery as a recreational resource during operation of the Project.

In addition to bass and other resident game fish, rainbow trout fishing is popular at the reservoir and is particularly important during the late fall through early spring when spikes in the catch occurs associated with trout stocking events. Because the rainbow trout fishery is dependent on stocking that occurs regularly from the late fall through early spring and would not be affected by changes associated with the Project, the quantity and quality of trout fishing in the reservoir is expected to remain the same. CDFW would continue to stock the reservoir with trout during project operations.

Running, cycling walking, picnicking, and other non-water based recreational opportunities at Miramar Reservoir would not be affected or diminished by project operations. A portion of the reservoir's perimeter trail would be temporarily rerouted around a construction staging area for the safety and protection of

visitors, however, running, cycling walking, and rollerblading opportunities would be maintained. No picnic areas would be closed to the public during construction. Further, Miramar Reservoir is a drinking water reservoir first, and provides recreational benefits as a secondary use.

6.18.6.3 San Vicente Reservoir Alternative

Construction of the San Vicente Pipeline - IRAT and San Vicente Pipeline - MAT would require the temporary closure of the San Vicente Reservoir to all public recreational use for approximately 18 months. During this time, it is anticipated that anglers and other recreationists that currently recreate at the reservoir would seek recreational opportunities at nearby reservoir facilities and parks in the region, including El Capitan Reservoir, Lake Murray, and Sutherland Reservoir. During construction of the San Vicente Pipeline - TAT, all recreational opportunities and amenities at the San Vicente Reservoir would remain available and open to the public. Once construction of the San Vicente Pipeline - IRAT (or San Vicente Pipeline - MAT) are complete, recreational opportunities and amenities at San Vicente Reservoir would be restored and reopened to the public.

As further discussed in Section 6.11, Hydrology and Water Quality, the San Vicente Reservoir is much larger and has a much larger watershed, and as a result, it is less sensitive to the effects of inputs of purified water. The City conducted extensive studies of San Vicente Reservoir to investigate its limnology and water quality characteristics and found that the addition of purified water would not affect any aspect of water quality in San Vicente Reservoir. Therefore, discharges of purified water to the San Vicente Reservoir are not anticipated to have an adverse effect on consumers of phytoplankton and zooplankton. As such, it is highly unlikely that existing fish stocking that occurs at San Vicente Reservoir would require adjustments to minimize food web effects and potential diminished opportunities for recreational fishing.

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CHAPTER 7 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.” Similarly, the Council on Environmental Quality regulations for implementing the National Environmental Policy Act (NEPA) define cumulative effects as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions (40 CFR 1508.7).

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 Section 15130(b)(1) of the CEQA Guidelines, the evaluation of cumulative impacts is to be based on either:

- 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
- 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 (GHG) 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).”

For the analysis of cumulative impacts associated with the North City Project, the cumulative geographic area primarily includes the City of San Diego, since the new North City Pure Water Facility (NCPWF) and the majority of ancillary facilities and pipelines would be located within its corporate boundaries, but would also include the City of Santee, as well as the community of Lakeside in unincorporated San Diego County, as pipelines would traverse these local jurisdictions. Due to the broad geographical extent of the North City Project area, this cumulative impact analysis relies primarily on adopted planning documents consistent with Section 15130(b)(1)(B) of the CEQA Guidelines as well as NEPA requirements. In addition, certain projects have been determined to have a high potential for cumulative impacts due to their nature, location or scale, and therefore, are also discussed below.

7.1 PLANS AND PROGRAMS EVALUATED FOR CUMULATIVE IMPACTS

As stated above, and consistent with Section 15130(b)(1)(B) of the CEQA Guidelines and NEPA requirements, this cumulative impact analysis relies primarily on the cumulative impact analysis of the City of San Diego General Plan Program Environmental Impact Report, which concluded that implementation of the General Plan would result in significant and unavoidable 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 City of Santee and 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 MSCP Subarea Plan; the City of San Diego Land Development Code; the Draft San Diego Association of Governments (SANDAG) San Diego Forward: The Regional Plan; the San Diego International Airport – Airport Land Use Compatibility Plan; the Padre Dam Master Plan; and the Integrated Natural Resources Management Plan 2011-2015 were used to evaluate cumulative impacts. A summary of anticipated significant impacts identified for the plans evaluated is included in Table 7-1.

Table 7-1
Plans and Programs Used for the Cumulative Analysis

Planning Document	Jurisdiction	CEQA Document (as of September 2016)	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; GHG 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; historical resources; paleontological resources
City of Santee General Plan	City of Santee	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

Table 7-1
Plans and Programs Used for the Cumulative Analysis

Planning Document	Jurisdiction	CEQA Document (as of September 2016)	Significant Impacts by Resource Issue Areas
			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/Environmental Impact Statement (EIS) certified and plan adopted in March 1997	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
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
SANDAG San Diego Forward: The Regional Plan	SANDAG	Final EIR and Plan released October 2015	Aesthetics; agricultural and forestry resources; air quality; biology; cultural and paleontological resources; energy; geology, soils, and mineral resources; GHG emissions; hazards and hazardous materials; land use; noise and vibration; population and housing; public services and utilities; transportation; and water supply

**Table 7-1
Plans and Programs Used for the Cumulative Analysis**

Planning Document	Jurisdiction	CEQA Document (as of September 2016)	Significant Impacts by Resource Issue Areas
San Diego International Airport – Airport Land Use Compatibility Plan (ALUCP)	San Diego County Regional Airport Authority	Final EIR certified and plan adopted in April 2014	Land use and planning, population and housing
Padre Dam <u>Comprehensive Facilities Master Plan</u>	Padre Dam Municipal Water District	Draft Program EIR released December 2016 <u>Final Program EIR certified May 2017</u>	Aesthetics; air quality; biological resources; cultural and paleontological resources; geology; hazards and hazardous materials; hydrology and water quality; land use and planning; noise; and transportation/traffic
Integrated Natural Resources Management Plan 2011-2015	Marine Corps Air Station Miramar	Finding of No Significant Impact adopted August 2011	None

7.2 CUMULATIVE PROJECTS

In addition to the plans and programs listed above, the East County Advanced Water Purification Program (ECAWPP), ~~and the Mid-Coast Corridor Transit Project (MCCTP),~~ City of San Diego AC Water Group 1038 Capital Improvement Project, City of San Diego Morena Water Pipeline Capital Improvement Project, the North Torrey Pines Living and Learning Neighborhood Project, the Westfield Redevelopment Project, Mesa Housing Nuevo West and East Project, the Carroll Canyon Mixed-Use project, and Pipeline Safety and Reliability Project (PSRP) have been included in the cumulative analysis for specific resource areas. Specifically, the ECAWPP has been determined to have high potential for cumulative impacts with regards to energy and water supply. The MCCTP has been determined to have a high potential for cumulative impacts with regards to aesthetics, air quality, energy, noise and vibration, and transportation (transit, traffic, and parking) during overlapping construction schedules.

7.2.1 EAST COUNTY ADVANCED WATER PURIFICATION PROGRAM

The Padre Dam Municipal Water District's (District's) proposed ECAWPP is expected to produce up to 15.5 million gallons per day (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). ~~An new-existing 3-mile-long, 20-inch-diameter wastewater forcemain would transport wastewater flows from the Influent Ppump Sstation to the Ray Stoyer WRF, and a new 3.5-mile-long, 30-inch-diameter wastewater forcemain would transport wastewater flows from 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 advanced water purification facility. A new 24-inch-diameter advanced water purification pipeline will run 10-miletransport purified water from the new advanced water purification facility to Lake Jennings to deliver purified water. A new solids handling facility would be located at Sycamore Landfill or at the Ray Stoyer WRF; a new 6-inch-diameter sludge pipeline and a 3-inch-diameter 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 advanced water purification facility, and upgrades at the Padre Dam influent pump station (Padre Dam Municipal Water District 2015). A draft Program EIR was released in December 2016 for the Padre Dam Municipal Water District Comprehensive Facilities Master Plan, and a Final Program EIR was certified in May 2017. ~~The draft~~ Program EIR considers 173 projects identified in the Master Plan which would meet existing and future potable water system demands. The ECAWPP is a key component of the Master Plan. ~~The draft~~ Program EIR identified potentially significant impacts related to aesthetics, air quality, biological resources, cultural and paleontological resources, geology, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, and transportation/traffic. All impacts would be reduced to less than significant with mitigation.

7.2.2 MID-COAST CORRIDOR TRANSIT PROJECT

The MCCTP will extend the Trolley Blue Line service from the Santa Fe Depot in Downtown San Diego north to the University City community, serving major activity centers such as Old Town, the University of California – San Diego (UCSD), and Westfield UTC (SANDAG 2014). The proposed project would be funded in partnership by SANDAG and the Federal Transit Administration (FTA). The MCCTP is included in the 2030 San Diego Regional Transportation Plan: Pathways for the Future (2030 RTP; SANDAG 2007).

The FTA and SANDAG prepared a Final Supplemental Environmental Impact Statement/Environmental Impact Report (SEIS/SEIR) for the MCCTP which was accepted in fall of 2014. The Final SEIS/SEIR includes the Refined Build Alternative, which presents the final design for the MCCTP.

The trolley extension route begins just north of the Old Town Transit Center and travels in existing railroad right-of-way and alongside Interstate 5 (I-5) to Gilman Drive. It crosses to the west side of I-5 just south of Nobel Drive and continues on to the UCSD campus, crosses back to the east side of I-5 near Voigt Drive to serve the UCSD east campus and Scripps Memorial Hospital, transitions into the median of Genesee Avenue, and continues down Genesee Avenue to the Westfield UTC transit center.

Nine new stations will be constructed at Tecolote Road, Clairemont Drive, Balboa Avenue, Nobel Drive, VA Medical Center, Pepper Canyon (serving UCSD west campus), Voigt Drive (serving UCSD east campus), Executive Drive, and the Terminus Station at the Westfield UTC Transit Center.

Pre-construction activities – consisting of the relocation of underground utilities out of the way of the project alignment – began in early 2016. Construction began in fall 2016 and service is anticipated to begin in 2021.

As identified in the Final SEIR/SEIS (SANDAG 2014), the Refined Build Alternative would result in significant and unavoidable short-term (construction) impacts related to transportation (transit, traffic, and parking), air quality, and noise and vibration. Construction would also contribute to cumulatively significant impacts to economic and fiscal, air quality, and paleontological resources. The Refined Build Alternative would result in long-term adverse and/or significant and unavoidable impacts on transportation (traffic). Adverse and significant cumulative impacts to communities and businesses in UCSD and University City may occur due to concurrent construction activity.

7.2.3 CITY OF SAN DIEGO CAPITAL IMPROVEMENT PROJECT: AC WATER GROUP 1038

The City of San Diego Asbestos Cement (AC) Water Group 1038 project will replace approximately 32,123 linear feet (6.08 miles) of 12-inch and 16-inch AC pipe water distribution mains. The project will also replace all water services and fire hydrants, resurface/slurry streets impacted by construction activities, and install new curb ramps that will improve mobility access for people with physical disabilities.

The AC Water Group 1038 project is part of the City's ongoing program for the replacement of all aging and deteriorating water mains currently in service. These replacements will reduce future water main breaks and reduce maintenance requirements. The program will also bring the existing water mains up to current City Standards.

The proposed pipe will be constructed concurrently with the North City Pure Water Pipeline (North City Pipeline) within the same construction easement. The proposed pipe follows the same alignment as the North City Pipeline from the NCPWF along Miramar Road until Scripps Ranch Boulevard.

7.2.4 CITY OF SAN DIEGO CAPITAL IMPROVEMENT PROJECT: MORENA WATER PIPELINE

The City of San Diego Morena Water Pipeline project includes installation of approximately 19,113 linear feet -of a new, 36-inch--diameter cement-mortar-lined and tape-coated steel pipe, as well as the replacement for approximately 16,051 linear feet of existing 16-inch--diameter polyvinyl chloride (PVC) pipe within the same trench at the same or shallower depth than existing. The project also includes some or all of the following improvements: installation of curb ramps, fire hydrants, valves, water meters, water boxes, water services, and slurry and street resurfacing.

The Morena Water Pipeline project is part of the City of San Diego's ongoing Sewer Main and Water Main Replacement Program. Construction of the project will reduce maintenance requirements, correct hydraulic deficiencies, improve reliability and accessibility, and bring the sewer and water main systems up to current design standards.

The Morena Water Pipelines would follow the same alignment as the Morena Wastewater Forcemain and Brine/Centrated Line (Morena Pipelines) along West

Morena Boulevard and Morena Boulevard from Napa Street to Clairemont Drive and would be constructed concurrently.

The Morena Water Pipelines project would have potentially significant impacts related to archaeological and paleontological resources, which would be reduced to less than significant with incorporation of mitigation (City of San Diego 2017).

7.2.5 NORTH TORREY PINES LIVING AND LEARNING NEIGHBORHOOD PROJECT

UCSD has proposed a mixed-use development containing undergraduate housing, academic and administrative space, community and open space, and underground parking in the west campus of UCSD. Three of the buildings would be primarily residential and three would contain a mix of educational, community, and residential uses (UCSD 2017a).

The proposed project site is located southeast of Muir College Drive from North Torrey Pines Road. It is adjacent to Marshall College to the north and east, and Muir College to the south. The site is bounded by North Torrey Pines Road to the west and an internal campus circulation network, or Loop Road, on the other three sides (Muir College Drive, Muir Lane, and Scholars Drive). Ridge Walk, a cross-campus north–south pedestrian connection, is located along the eastern boundary of the project site, currently co-located with Scholars Drive.

UCSD prepared a Draft Tiered Environmental Impact Report (Tiered EIR) in October 2017 for the North Torrey Pines Living and Learning Neighborhood Project. The proposed project would redevelop an approximately 13-acre site containing existing surface parking lots, the Center for Nuclear Magnetic Resonance Spectroscopy and Imaging of Proteins (Bubble Building) research facility, a domestic water booster pump station, the portions of Muir College Drive and Scholars Drive adjacent to the project site, and adjacent landscape and hardscape areas. All construction activities are anticipated to be completed by late summer 2020. Additionally, the proposed project is planned to be partially occupied by the summer of 2020, with full occupancy anticipated by the end of 2020.

As identified in the Tiered EIR, the proposed project would result in significant and unavoidable impacts related to transportation and traffic, and would also contribute to cumulatively significant impacts to transportation and traffic. Adverse and significant cumulative impacts to communities and businesses may occur due to increased traffic in the project area.

7.2.6 WESTFIELD UNIVERSITY TOWNE CENTER REVITALIZATION PROJECT

Westfield Corporation, Inc. (Westfield) is currently in the process of redeveloping and renovating the existing 1,061,400-square-foot Westfield University Towne Center (UTC) regional shopping center. The project includes the renovation and expansion of retail uses by 750,000 square feet of new retail and the development of 250 multi-family residential units. Alternatively, the applicant has the option to implement a mix of land use scenarios that could include a reduction in new retail and the addition of up to 725 residential dwelling units, up to 250 hotel rooms, and/or up to 35,000 square feet of office space. Additional project features would include a relocated and expanded bus transit center and reservation of right-of-way for the proposed transit center and planned extension of a light rail transit line, and certification under the LEED Green Building Rating System (City of San Diego 2008).

The City of San Diego prepared a Final Environmental Impact Report (FEIR) for the UTC Revitalization Project in April 2008, and the project was approved by the San Diego City Council in July 2008. The project is a Master Priority Development Project which divides the property into seven land use districts that are located southeast of the intersection of La Jolla Village Drive and Genesee Avenue, north of Nobel Drive, and west of Towne Centre Drive.

Project construction would occur in two phases. The first phase of construction was completed in 2011 and was opened to the public in fall 2012. The second phase features an additional 90 new shops (251,000 square feet) of first-to-market retail and high-end, chef-driven restaurants and a 149,000-square-foot two-level Nordstrom department store. Openings began in October 2017 and will continue into 2018. A residential development will include 300 luxury apartments on the southwest corner of the property; a 22-story tower and 4-story tower joined by a 26,000-square-foot amenity deck and pool area. The residential development is anticipated to open in winter 2019 (Westfield 2018).

As identified in the FEIR, the project would result in direct significant and unavoidable impacts related to aesthetics and visual quality, transportation and circulation, and air quality. Additionally, construction and operation of the project would result in significant and unavoidable cumulative impacts to transportation and circulation, air quality, and public utilities.

7.2.7 MESA HOUSING NUEVO WEST AND EAST PROJECT

UCSD is proposing to construct two campus student housing developments (Nuevo West and Nuevo East) and a parking structure, located on separate but proximate sites within the east campus Mesa Housing Neighborhood. Nuevo West would redevelop an approximately 6.2-acre site, replacing existing low-density housing with 802 new student beds and 82 new beds for the UCSD Family House. The parking structure would be developed on an adjacent 3.2-acre site. Nuevo East would redevelop an approximately 13.2-acre site, replacing existing low-density student housing with 1,374 new beds. Utility and roadway improvements associated with the project are also proposed along and in the vicinity of Miramar Street and Athena Circle and include constructing an internal campus connection between Miramar St and Athena Circle (UCSD 2017b).

Construction of Nuevo West began in late 2017 and is estimated to take approximately 24 months to complete, with occupancy by winter 2019. Construction for Nuevo East is anticipated to begin in spring 2018, and is estimated to take approximately 24 months to complete. It is estimated that construction of Nuevo East would be completed by spring 2020. Construction of the proposed Miramar Street and Athena Circle roadway and utility improvements began in late 2017, and all construction is anticipated to be completed prior to occupancy of Nuevo East.

UCSD prepared a Final Tiered Environmental Impact Report (Final Tiered EIR) for project in October 2017. The Final Tiered EIR identified potentially significant impacts related to biological resources, hydrology and water quality, and transportation/traffic. All impacts would be reduced to less than significant with mitigation.

7.2.8 CARROLL CANYON MIXED-USE PROJECT

The proposed Carroll Canyon Mixed-Use project is located in the northeast quadrant of I-15 and Carroll Canyon Road and encompasses approximately 9.52 gross acres. The Carroll Canyon Mixed-Use project proposes redevelopment of the existing office complex with a mixed-use development that would include multi-family residential units, small retail shops, and restaurants. The existing 76,241 square feet of office buildings and associated facilities would be demolished and replaced with up to 260 multi-family residential units and approximately 10,700 square feet of commercial retail space.

The project requires a General Plan Amendment to change the current land use designation from Industrial Employment to Multiple Use and a Community Plan Amendment to change the current land use designation from Industrial Park to Residential (15 to 29 dwelling units per net acre) and Community Shopping. The proposed project also requires a Rezone for the project site from IP-2-1 (Industrial-Park) to RM-3-7 (Residential – Multiple Unit) and CC-2-3 (Commercial – Community); a Planned Development Permit to allow deviations to maximum wall heights, setbacks, lot frontage, and maximum building height and to allow restaurant use within the RM-3-7 zone with limitations on size, location, and hours; and a Vesting Tentative Map.

A Final EIR for the Carroll Canyon Mixed-Use project was certified by the City of San Diego on June 22, 2017.

7.2.9 PIPELINE SAFETY AND RELIABILITY PROJECT

SDG&E is currently proposing the Pipeline Safety and Reliability Project (PSRP), which originates in the community of Rainbow; travels south through the cities of Escondido, Poway, and other communities; travels along Pomerado Road before turning southeast at Willow Creek Road/Avenue of the Nations; and then follows an unpaved aqueduct road before terminating on MCAS Miramar. The California Public Utilities Commission is in the process of preparing a Draft EIR for PSRP that is anticipated to be released in mid-2018 (SDG&E 2017).

7.3 CUMULATIVE IMPACT ANALYSIS

This section presents the analysis of the potential for Project Alternatives to create cumulatively considerable effects when the impacts described in Section 7.1 and projects listed in Section 7.2 are considered together with the impacts of the proposed Project Alternatives. Table 7-2 presents a summary of cumulative impacts as a comparison by Alternative.

Table 7-2
Cumulative Impacts Comparison of Alternatives

	No Project/No Action Alternative	Miramar Reservoir Alternative	San Vicente Reservoir Alternative
Land Use	No impact	Not cumulatively considerable	Not cumulatively considerable
Aesthetics	No impact	Not cumulatively considerable	Not cumulatively considerable

**Table 7-2
Cumulative Impacts Comparison of Alternatives**

	No Project/No Action Alternative	Miramar Reservoir Alternative	San Vicente Reservoir Alternative
Air Quality and Odor	No impact	Not cumulatively considerable	Cumulatively considerable
Biological Resources	No impact	Not cumulatively considerable	Not cumulatively considerable
Environmental Justice	No impact	No impact	No impact
Energy	Not cumulatively considerable	Not cumulatively considerable	Not cumulatively considerable
Geology and Soils	No impact	Not cumulatively considerable	Not cumulatively considerable
Greenhouse Gas Emissions	No impact	Not cumulatively considerable	Not cumulatively considerable
Health and Safety/Hazards	No impact	Not cumulatively considerable	Not cumulatively considerable
Historical Resources	No impact	Not cumulatively considerable	Not cumulatively considerable
Hydrology and Water Quality	No impact	Not cumulatively considerable	Not cumulatively considerable
Noise	No impact	Cumulatively considerable	Cumulatively considerable
Paleontological Resources	No impact	Not cumulatively considerable	Not cumulatively considerable
Public Services	No impact	No impact	No impact
Public Utilities	No impact	Not cumulatively considerable	Not cumulatively considerable
Transportation	No impact	Cumulatively considerable	Cumulatively considerable
Water Supply	Not cumulatively considerable	Beneficial impact	Beneficial impact
Recreation	No impact	Not cumulatively considerable	Not cumulatively considerable

7.3.1 NO PROJECT/NO ACTION ALTERNATIVE

While the No Project/No Action Alternative would result in no significant/adverse environmental effects over existing conditions, 30 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 Point Loma Wastewater Treatment Plant. These ongoing conditions would result in the following cumulative effects:

Energy

Regional plans and programs have identified cumulative energy impacts from regional growth. All future projects in the San Diego Region 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.

Under the No Project/No Action Alternative, no changes to energy use would occur over existing conditions. However, the North City Renewable Energy Facility would not be constructed; and therefore, a local, renewable energy source would not be created and excess landfill gas would not be consumed. Energy consumption associated with importing water would continue, and would continue to increase in the future as additional water supplies are required. As such, the No Project/No Action Alternative would result in cumulative energy impacts; however, this incremental impact to energy use is **not cumulatively considerable**.

Water Supply

Under the No Project/No Action Alternative, potable water demand would continue to be met through imported water supplies; however, this demand would be met with greater uncertainty and less reliability. A new, local source of potable water would not be created. Cumulative projects, such as the ECAWPP, are anticipated to result in a cumulative benefit with regards to water supply. The No Project/No Action Alternative would not contribute to this cumulative benefit.

7.3.2 MIRAMAR RESERVOIR ALTERNATIVE

The Miramar Reservoir Alternative's contribution to land use, aesthetics/visual resources, air quality, biology, environmental justice, energy, geology and soils, GHG emissions, health and safety, historical resources, hydrology and water quality, paleontological resources, public services, public utilities, and recreation would not be cumulatively considerable. The Miramar Reservoir Alternative's contribution to noise and transportation, circulation, and parking impacts would be cumulatively considerable. The Miramar Reservoir Alternative would result in a beneficial cumulative impact with regards to water supply.

Land Use

Applicable regional land use plans identified cumulatively significant and unavoidable land use impacts related to incremental adverse physical changes to the environment. The Miramar Reservoir Alternative would not be incompatible with any applicable land use plans, habitat conservation plans, and adopted Airport Land Use Compatibility Plans (ALUCPs), and would **not result in a cumulatively considerable contribution** to cumulative impacts related to the compatibility of the Miramar Reservoir Alternative with applicable land use plans.

Aesthetics/Visual Effects and Neighborhood Character

The Miramar Reservoir Alternative would 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.

Compliance with the City's and other jurisdictions' design 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 Miramar Reservoir Alternative, 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.

The only project component of the Miramar Reservoir Alternative within the same viewshed as the MCCTP is the Wastewater Forcemain and Brine/Centrates Line (Morena Pipelines). Although construction of the Morena Pipelines would result in short-term changes to the visual environment, these impacts would be less than significant, and once constructed, there would be no changes to the visual environment.

Therefore, the Miramar Reservoir Alternative's contribution to impacts associated with visual effects and neighborhood character **would not be cumulatively considerable**.

Air Quality and Odor

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 Miramar Reservoir Alternative 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 Miramar Reservoir Alternative would occur. Additionally, the Miramar Reservoir Alternative would not include a residential component that would increase local population growth, nor would the Miramar Reservoir Alternative provide additional water supplies that would result in growth-inducing effects; rather, the Miramar Reservoir Alternative would provide a replacement water source for the City of San Diego's existing water supply.

The Miramar Reservoir Alternative is anticipated to exceed the City of San Diego's significance thresholds for oxides of nitrogen (NO_x), a nonattainment pollutant, during construction. Emissions are expected to be reduced to less than significant with implementation of mitigation measures (MM-AQ-1 and MM-AQ-2). Odor impacts are similarly expected to be reduced to less than significant with implementation of mitigation measure MM-AQ-3. The AC Water Group 1038 project and Morena Water Pipeline project would be constructed concurrently with the Project and would not result in additional air quality impacts. While construction of the MCCTP, North Torrey Pines Living and Learning Neighborhood Project, Westfield UTC Redevelopment Project (residential tower), Mesa Housing Nuevo West and East project, Carroll Canyon Mixed-Use project, and PSRP would likely overlap construction of the Miramar Reservoir Alternative, the short-term contribution to this impact after mitigation from the Miramar Reservoir Alternative **would not be cumulatively considerable.**

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 and County of San Diego MSCP Subarea Plans.

The MSCP is a long-term regional conservation plan established to protect sensitive species and habitats in San Diego County. The MSCP is divided into subarea plans that are implemented separately from one another. The North City Project site is within the City of San Diego Subarea Plan and inside the MSCP Preserve area (i.e., the Multi-Habitat Planning Area (MHPA)).

In an effort to eliminate cumulative impacts to sensitive biological resources throughout San Diego, the City is participating in a regional conservation planning effort—the San Diego MSCP. This planning effort is designed to address cumulative impacts through development of a regional plan that addresses impacts to covered

species and habitats in a manner that assures their conservation despite impacts of cumulative projects over the long term. The ultimate goal of this plan is the establishment of biological reserve areas in conformance with the State of California Natural Community Conservation Planning Act.

As previously discussed, the Miramar Reservoir Alternative lies within the Northern and Urban Areas of the City's MSCP boundary. The MHPA is a "hard line" preserve developed by the City in cooperation with the wildlife agencies, property owners, developers, and environmental groups. The MHPA identifies biological core resource areas and corridors targeted for conservation, in which only limited development may occur (City of San Diego 1997).

Preservation of habitat, planning in accordance with the biological resource conservation goals of the MSCP, and limitation of impacts in accordance with the MSCP is intended to mitigate cumulative biological resource impacts. The Miramar Reservoir Alternative would result in impacts to 0.05 acre of MHPA. Impacts would be within developed roadway right-of-way and are anticipated to be consistent with the MSCP, and therefore **would not contribute in a cumulatively considerable** manner to biological resource impacts including uplands, sensitive plants, and sensitive wildlife.

Two projects have been identified which may result in cumulative impacts to biological resources on Marine Corps Air Station (MCAS) Miramar: the West Coast Basing of the MV-22 and the F-35 West Coast Basing at MCAS Miramar. Biological resources impacted by these projects include coastal California gnatcatcher (*Polioptila californica californica*) and vernal pools (Department of the Navy 2009, USMC 2017). The North City Project would avoid direct impacts to vernal pools on MCAS Miramar through the use of trenchless construction methods and indirect impacts would be mitigated to less than significant. Similarly, no direct impacts would occur to coastal California gnatcatchers, and any direct impacts to suitable habitat would be mitigated to less than significant. As such, the Miramar Reservoir Alternative **would not contribute in a cumulatively considerable** manner to biological resource impacts on MCAS Miramar.

Environmental Justice

The Miramar Reservoir Alternative project components would not be located within a community that qualifies as an environmental justice community, nor would the service area of the Miramar Water Treatment Plant be considered an environmental

justice community. As such, no disproportionate environmental effects would result from the Alternative, and the Miramar Reservoir Alternative's contribution to environmental justice effects **would not be cumulatively considerable**.

Energy

The study area for the energy conservation cumulative effects analysis is defined as the San Diego region as the Miramar Reservoir Alternative 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 Miramar Reservoir Alternative, the Miramar Reservoir Alternative would implement the North City Renewable Energy Facility, which would use landfill gas to provide sufficient energy to power the North City Water Reclamation Plant Expansion, NCPWF, and North City Pump Station. The Miramar Reservoir Alternative also includes a 1-megawatt solar photovoltaic system that will completely offset the electricity demands at the Miramar Water Treatment Plant. Additionally, all buildings and operations associated with the Miramar Reservoir Alternative 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 Miramar Reservoir Alternative would replace the supply and conveyance component associated with typical urban water systems, resulting in electrical savings.

The ECAWPP is similarly expected to replace an imported water supply, resulting in a net reduction in electrical usage. The Refined Build Alternative of the MCCTP is also expected to reduce overall energy use and costs as compared to the No-Build Alternative.

Other related projects, such as the North Torrey Pines Living and Learning Neighborhood Project, Westfield UTC Redevelopment Project (residential tower), Mesa Housing Nuevo West and East project, Carrol; Canyon Mixed-Use project, and PSRP, 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 Miramar Reservoir Alternative's contribution to impacts associated with energy consumption **would not be cumulatively considerable**.

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 Miramar Reservoir Alternative and all future projects in the region 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 Miramar Reservoir Alternative and reasonably foreseeable cumulative projects would increase the potential for erosion and loss of topsoil. The Miramar Reservoir Alternative, 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, the Miramar Reservoir Alternative would be required to adhere to the State Water Resources Control Board's Construction General Permit and implement best management practices (BMPs). Through compliance with applicable standards and implementation of the required BMPs, erosion impacts would be minimized under the Miramar Reservoir Alternative. Each cumulative project is similarly expected to comply with applicable standards and implement BMPs. Therefore, the Miramar Reservoir Alternative's contribution to impacts associated with geology and soils **would not be cumulatively considerable**.

Greenhouse Gas Emissions

Because of the broad nature of 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 6.8, Greenhouse Gas Emissions, the Miramar Reservoir Alternative's construction and operation GHG emissions were evaluated to determine whether they would have a significant cumulative impact on the environment.

The Miramar Reservoir Alternative would be consistent with the City's Climate Action Plan (CAP) as shown using the CAP Consistency Checklist and through the five CAP strategies. Additionally, the Miramar Reservoir Alternative would include the North City Renewable Energy Facility, which would produce its own source of renewable energy and reduce methane emissions from landfill gas. The Miramar Reservoir Alternative would also produce solar power to completely offset the electricity demand at the Miramar Water Treatment Plant, further reducing GHG emissions from the project. Therefore, the Miramar Reservoir Alternative **would not contribute in a cumulatively considerable manner** to GHG emissions.

Health and Safety

The Miramar Reservoir Alternative 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 with implementation of mitigation. Other related projects located within the broader project area 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, 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 Miramar Reservoir Alternative's contribution to impacts associated with health and safety **would not be cumulatively considerable**.

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. While other future projects may result in potentially significant impacts to historical resources, the Miramar Reservoir Alternative, with implementation of mitigation measures MM-HIS-1 through MM-HIS-4, would not contribute to the potential loss of significant cultural resources and therefore **would not contribute in a cumulatively considerable manner** to cultural resource impacts.

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 Clean Water Act Section 303(d). These segments are identified in Section 5.11.2 and Figure 5.11-2. Most of the major water bodies adjacent to or crossed by the components of the North City Project, including the San Diego River, Miramar Reservoir, and San Vicente Reservoir, and the bays estuaries into which they discharge, are listed under Clean Water Act Section 303(d) as impaired for one or more pollutants.

For short-term effects, the North City Project, along with other projects occurring in the area, would be required to comply with applicable federal, state, and local water quality regulations. The North City Project, 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 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 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 project components exacerbate this issue, especially in proximity to water quality-sensitive areas such as impaired waters, it could result in a cumulatively significant impact. As discussed under Issues 1 and 2 (Section 6.11.3), the Miramar Reservoir Alternative would not contribute in a cumulatively considerable manner to these existing impacts.

The various NPDES permits required are aimed at maintaining the beneficial uses of the water bodies in the Regional Water Quality Control Board 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, required program compliance with the City's Stormwater Standards Manual, Construction General Permit, and the Regional Municipal Separate Storm Sewer System (MS4) Permit (San Diego Regional Water Quality Control Board Order No. R9-2015-001) ensure that the Miramar Reservoir Alternative would not contribute in a cumulatively considerable manner to water quality impacts.

Furthermore, the Miramar Reservoir Alternative would not violate the water quality objectives as designated in the Basin Plan with regard to purified water discharges to Miramar Reservoir. Construction-related stormwater impacts, groundwater dewatering impacts, and Off-Spec water discharges impacts **would not be cumulatively considerable**.

Noise

The Miramar Reservoir Alternative could potentially result in cumulative impacts associated with noise resources when combined with other past, present, and reasonably foreseeable future projects in the project area. Noise levels decrease as the distance from the noise source to the receiver increases. Therefore, only noise sources in the immediate vicinity of the project components would have the potential to combine with the Miramar Reservoir Alternative to cause a cumulative noise impact.

The Miramar Reservoir Alternative is generally anticipated to result in less-than-significant construction and operational noise impacts with implementation of mitigation. However, short-term construction impacts related to nighttime construction of the North City Pipeline and Morena Pipelines would result in an adverse/significant and unavoidable impact. The AC Water Group 1038 project and Morena Water Pipeline project would be constructed concurrently with the Project and would not result in additional noise impacts. The MCCTP would be located very close to portions of the Morena Pipelines alignment. The MCCTP identified potentially significant impacts related to construction noise and nighttime work. If construction of the MCCTP, or other cumulative projects, were to overlap construction of the Morena Pipelines, it is likely that cumulative noise impacts **would be cumulatively considerable**.

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. Paleontological resources within the project area are finite and are viewed on a regional scale. Effects on paleontological resources depend on both the paleontological sensitivity of the formation and the depth/extent of excavation required for each cumulative project. The AC Water Group 1038 project and Morena Water Pipeline project would result in potentially significant impacts to paleontological resources that would be mitigated to below a level of significance; however, they would be constructed concurrently with the Project within the same alignment and would not result in additional impacts to paleontological resources. While other cumulative future—projects may result in potentially significant impacts to paleontological resources, the Miramar Reservoir Alternative, with implementation of mitigation measures MM-PALEO-1, would not contribute to the potential loss of significant paleontological resources and therefore **would not contribute in a cumulatively considerable manner** to paleontological resource impacts.

Public Services

The Miramar Reservoir Alternative's individual impacts related to public services and facilities would be less than significant. On an individual basis, the Miramar Reservoir Alternative 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 project area would be required to contribute their fair share of Development Impact Fees (DIFs) or other mitigation fees, including those established by such state laws as the Quimby Act. Those projects 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. Therefore, the Miramar Reservoir Alternative's contribution to impacts associated with public services and facilities **would not be cumulatively considerable.**

Public Utilities

The Miramar Reservoir Alternative is not expected to result in a substantial increase in solid waste production beyond the capacity of local landfills. The Miramar Reservoir Alternative would require ongoing waste management and diversion of a minimum of 75% of the waste stream. On an individual basis, the Miramar Reservoir Alternative will not significantly impact communication systems. Additionally, while new and/or improved storm drainage facilities would be required as part of the North City Project, these improvements, and the potential environmental impacts associated with such improvements, are already analyzed within this EIR/EIS.

Impacts to utilities as a result of concurrent construction activities in the Project area would be reduced through ongoing coordination with utility companies. With the implementation of mitigation measure MM-PU-1, the Miramar Reservoir Alternative **would not result in a cumulatively considerable** impact.

Transportation, Circulation, and Parking

A cumulative traffic impact could occur if the Miramar Reservoir Alternative, together with other reasonably foreseeable cumulative projects, adds a substantial amount of traffic to existing and planned roadways in relation to 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 6.16, Transportation, Circulation, and Parking, the Miramar Reservoir Alternative's potential effects on the circulation system would be limited to the construction phase. However, impacts would be short-term and primarily related to lane closures which would occur at nighttime, and therefore, roadways are expected to continue operating at reasonable function.

Significant temporary cumulative traffic circulation impacts could result if multiple projects were under construction simultaneously and in the same general location. The AC Water Group 1038 project and Morena Water Pipeline project would be constructed concurrently with the Project and would not result in additional traffic impacts. The MCCTP, North Torrey Pines Living and Learning Neighborhood Project, Westfield UTC Redevelopment Project (residential tower), and Mesa Housing Nuevo West and East project is/are all located near/in the general vicinity of the Morena Pipelines alignment; the Carroll Canyon Mixed-Use project and PSRP are in the general vicinity of the North City Pipeline alignment. The MCCTP is anticipated to result in adverse/significant and unavoidable construction traffic impacts from

continuous closures as well as intermittent off-peak and/or nighttime closures (SANDAG 2014). Construction of the MCCTP would impact roadways also impacted by the Miramar Reservoir Alternative, including Genesee Avenue. Construction-related vehicles and equipment would also be expected to travel along the same routes, including residential streets. Similarly, other cumulative projects could also impact roadways also impacted by the Miramar Reservoir Alternative. As such, adverse/significant cumulative impacts associated with transportation, circulation, and parking would result and the Miramar Reservoir Alternative’s contribution to these impacts **would be cumulatively considerable**.

Water Supply

The City’s 2015 Urban Water Management Plan (UWMP), adopted in 2016, is the most recent iteration of the UWMP and provides actual water use data for the year 2015 and projections through 2035 (City of San Diego 2016). The City’s 2015 UWMP describes historic and projected 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.

Future private projects located within the broader North City Project 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.

The Miramar Reservoir Alternative 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 Miramar Reservoir Alternative 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 2015 UWMP, it is anticipated to be consistent with water supply projections. As such, the Miramar Reservoir Alternative when combined with the ECAWPP, would result in a **cumulative benefit** regarding water supply.

Recreation

The Miramar Reservoir Alternative's individual impacts related to recreation would be less than significant. The Miramar Reservoir Alternative would only result in short-term temporary reductions in access to recreational opportunities and would not result in a long-term loss of recreational opportunities at City recreational facilities. Other cumulative projects are not expected to reduce access to recreational facilities and would be required to comply with the requirements of CEQA by analyzing the potential environmental impacts associated with implementation of any public facilities. Therefore, the Miramar Reservoir Alternative's contribution to impacts associated with recreation **would not be cumulatively considerable**.

7.3.3 SAN VICENTE RESERVOIR ALTERNATIVE

The San Vicente Reservoir Alternative would result in similar cumulative impacts as discussed above under the Miramar Reservoir Alternative, except where additional information is provided below. The San Vicente Reservoir Alternative's contribution to land use, biology, environmental justice, energy, geology and soils, GHG emissions, health and safety, historical resources, hydrology and water quality, paleontological resources, public services, public utilities, and recreation would similarly **not be cumulatively considerable**. Additionally, the San Vicente Reservoir Alternative's contribution to transportation, circulation and parking impacts would similarly be **cumulatively considerable**. The San Vicente Reservoir Alternative would also result in a beneficial cumulative impact with regards to water supply.

Aesthetics/Visual effects and Neighborhood Character

The San Vicente Reservoir Alternative's individual impacts related to visual effects and neighborhood character would generally be less than significant and would 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. However, the Mission Trails Booster Station (MTBS) would require substantial grading and would result in short-term adverse/significant and unavoidable construction impacts related to substantial grading and changes in natural topography.

However, because the MTBS is located in a developed residential area, other cumulative projects are not anticipated to be located within the vicinity of the MTBS such that visual impacts associated with those projects would cumulatively contribute to impacts during the same construction period. Other cumulative projects would be subject to design review prior to discretionary approvals or permit issuance, which reduces the opportunity for significant cumulative visual effects and neighborhood character impacts. Therefore, the San Vicente Reservoir Alternative's contribution to impacts associated with visual effects and neighborhood character **would not be cumulatively considerable**.

Air Quality and Odor

The San Vicente Reservoir Alternative is anticipated to exceed the City of San Diego's significance thresholds for oxides of nitrogen (NO_x), a nonattainment pollutant, during construction. With implementation of mitigation measures (MM-AQ-1 and MM-AQ-2) short-term NO_x emissions would still be significant and unavoidable. Construction of ~~both the ECAWPP, and MCCTP, North Torrey Pines Living and Learning Neighborhood Project, Westfield UTC Redevelopment Project (residential tower), and Mesa Housing Nuevo West and East project~~ would likely overlap construction of the San Vicente Reservoir Alternative. The PSRP could also potentially overlap the San Vicente Reservoir Alternative. The San Vicente Reservoir Alternative's contribution to impacts associated with air quality is considered **cumulatively considerable**.

Noise

The San Vicente Reservoir Alternative could potentially result in cumulative impacts associated with noise resources when combined with other past, present, and reasonably foreseeable future projects in the project area. Noise levels decrease as the distance from the noise source to the receiver increases. Therefore, only noise sources in the immediate vicinity of the project components would have the potential to combine with the San Vicente Reservoir Alternative to cause a cumulative noise impact.

The San Vicente Reservoir Alternative is generally anticipated to result in less-than-significant construction and operational noise impacts with implementation of mitigation. However, short-term construction impacts related to nighttime construction of the Morena Pipelines and San Vicente Pipeline would result in an adverse/significant and unavoidable impact. Additionally, construction of the MTBS would result in short-term adverse/significant and unavoidable impacts from vibration. The MCCTP would be located proximate to portions of the Morena Pipelines alignment. The MCCTP identified potentially significant impacts related to construction noise and nighttime work. Similarly, the ECAWPP Phase I pipeline to Santee Basin or Lake Jennings could follow some of the same roadways as the San Vicente Pipeline. If construction of ~~the MCCTP cumulative projects were to overlap~~ construction of the Morena Pipelines and San Vicente Pipeline, it is likely that cumulative noise impacts would be **cumulatively considerable**.

CHAPTER 8 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. In addition, these effects were also determined not to be significant issues by the Bureau of Reclamation (Bureau of Reclamation 2012; 40 CFR 1502.16).

8.1 AGRICULTURAL RESOURCES

The majority of the North City Project components would be located within previously disturbed or developed sites, including roadway rights-of-way and urban areas. These areas included land designated as “Urban and Built-Up Land” and “Other Land,” neither of which supports agricultural resources (Department of Conservation 2016). The proposed pipeline alignments would be located within roadways that traverse land designated as “Grazing Land,” “Farmland of Local Importance,” and “Unique Farmland” (Department of Conservation 2016). However, the construction and operation of these pipelines within roadways would not preclude or impede the operation of existing, planned, or future agricultural resources. The North City Pure Water Facility would be located on land designated as “Grazing Land,” which is defined as “land on which the existing vegetation is suited to the grazing of livestock” (Department of Conservation 2016). While this site is designated as such, it is currently not used for grazing purposes, and its location within a highly urbanized area would likely preclude feasible operation of livestock grazing. Portions of the Landfill Gas (LFG) Pipeline and the repurposed recycled water pipeline would be located adjacent to “Unique Farmland,” which is generally located on the existing Village Nurseries wholesale plant nursery property (Department of Conservation 2016). The repurposing of the existing recycled water pipeline would not affect the continued operations of Village Nurseries. Additionally, the construction and operation of the LFG Pipeline (a portion of which would be located underground) would not affect the continued operations of Village Nurseries. Therefore, no substantial adverse effects to agricultural resources resulting from the North City Project would occur, and under CEQA impacts would be less than significant.

8.2 MINERAL RESOURCES

The majority of the North City Project components would be located on previously disturbed or developed sites, including roadway rights-of-way and urban areas. The majority of these areas are designated as Mineral Resource Zone (MRZ) 1, MRZ 2, MRZ 3 (Department of Conservation 1996). MRZ 1 is defined as areas where information indicated that no significant mineral deposits are present or there is little likelihood for their presence; MRZ 2 is defined as areas where information indicates that significant mineral deposits are present or there is a high likelihood of their presence; and MRZ 3 is defined as areas containing mineral deposits the significance of which cannot be evaluated from available information (Department of Conservation 1996). Given that the locations of the North City Pure Water Facility, improvements to existing 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, despite some of these locations designated as MRZ 3 (unknown significance of mineral deposits). Additionally, portions of the LFG Pipeline and pipelines would travel through areas designated as MRZ 2. However, the LFG Pipeline would be located along an existing underground utility corridor that has previously been excavated, and pipelines would be located primarily within developed roadways. Additionally, the extent of excavation required for both the LFG Pipeline and pipelines would likely render extraction of potentially important mineral resources infeasible. Therefore, no substantial adverse effects to mineral resources resulting from the North City Project would occur, and under CEQA impacts would be less than significant.

8.3 POPULATION AND HOUSING

The North City Project would not result in the displacement of people or housing, as the construction of project components do not necessitate the removal of existing residential land uses, housing, or other occupied dwelling units. Therefore, it would not necessitate the construction of housing elsewhere and under CEQA impacts would be less than significant. For discussion of potential growth-inducing impacts resulting from the North City Project, refer to Section 9.3, Growth-Inducing Impacts, of this EIR/EIS. As concluded in Section 9.3, the North City Project would not result in substantial direct or indirect growth-inducing effects in the San Diego region.

8.4 MARINE FISHERIES

The Project Alternative would reduce flows to the Point Loma Wastewater Treatment Plant by 20 million gallons per day, which would reduce total suspended solids discharged and recycle a valuable and limited resource that is currently discharged to the Pacific Ocean.

According to the National Pollutant Discharge Elimination System (NPDES) CA0107409 and 301(h) Modified Secondary Treatment Requirements for the Point Loma Ocean Outfall, the City incorporates provisions into the renewed Point Loma Wastewater Treatment Plant 301(h) permit (City of San Diego 2015a). The current Order No. R9-2017-0007 establishes requirements that limit Point Loma ocean outfall total suspended solids mass emissions to 12,000 metric tons per year for years 1 through 4 of the renewed permit, and to 11,999 metric tons per year during year 5 of the renewed NPDES permit. In addition, the permit requires total suspended solids in the plant effluent to have a concentration no greater than 60 milligrams per liter and a system-wide removal percentage of at least 80%. Diversions of treated wastewater away from the ocean outfalls to the North City Pure Water Facility (and eventually after advanced treatment, to Miramar Reservoir) would reduce the rate and volume of discharge through the ocean outfalls, which would ultimately continue to reduce the mass loading of total suspended solids through the ocean outfall to the Pacific Ocean. As such, the North City Project would result in a beneficial effect to marine fisheries.

8.5 WILDERNESS

None of the proposed components would be located on land designated as wilderness land. The majority of the project components would be located on previously disturbed or developed sites, including roadway rights-of-way and urban areas, none of which contain wilderness characteristics. Therefore, no adverse effects would occur.

8.6 SOCIOECONOMIC EFFECTS

Construction of pipelines and portions of the LFG Pipeline would occur within roadways, resulting in partial temporary closures along businesses. However, adequate movement and access to adjacent properties would be maintained at all times during construction. Work would primarily occur at nighttime to avoid peak travel times and would be temporary. Therefore, construction would not adversely affect the ongoing operations of businesses along the pipeline alignments. After the completion of construction, which

would result in a temporary increase in local employment, there would be a permanent increase through the local employment 60 new workers.

Water rate increases due to the construction and operation costs of the North City Project would affect all customers, not only the customers in the service area of the Project Alternatives. This rate increase could have a disproportionate effect on low income customers. However, it is reasonable to assume that cost of water with or without the North City Project would increase with time due to the historical trend of increased costs of imported water. The cost of purified water is estimated to be \$1,700 to \$1,900 per acre-foot. This equates to less than one penny per gallon. With the current cost of imported water (\$1,200 to \$1,400) expected to double in the next 10 years, the North City Project would become the more cost-effective option (City of San Diego 2015b). Therefore, the increased cost of water from the North City Project would not result in an adverse effect.

8.7 INDIAN TRUST ASSETS

Indian Trust Assets are legal interests in property held in trust by the United States for Indian tribes or individuals. The Secretary of the Interior, acting as the trustee, holds many assets in trust. Examples of objects that may be trust assets are lands, minerals, hunting and fishing rights, and water rights. Although most Indian Trust Assets are on reservations, they may also be found off reservations. The United States has an Indian Trust responsibility to protect and maintain rights reserved by or granted to Indian tribes or Indian individuals by treaties, statutes, and executive orders.

Components of the North City Project would not be sited on and would not traverse tribal reservation lands. Project components are proposed within roadways and/or developed lands within the jurisdiction of the City of San Diego, the federal government (MCAS Miramar), the City of Santee, and the County of San Diego. A portion of the San Vicente Pure Water Pipeline – Tunnel Alternative Terminus would tunnel beneath undeveloped, City and County mountainous terrain located along the southern shore of the San Vicente Reservoir, and at its closest point, the tunnel would be within 0.75 mile of the Barona Reservation. In addition to avoiding tribal reservation lands, components of the North City Project (components common to the Project Alternatives—the Miramar Reservoir Alternative and the San Vicente Reservoir Alternative) would avoid Indian lands held in trust by the Bureau of Indian Affairs (Hall, pers. comm. 2016). As such, there are no Indian Trust Assets located in the North City Project area of potential effect.

CHAPTER 9 MANDATORY DISCUSSION AREAS

9.1 SIGNIFICANT/ADVERSE EFFECTS WHICH CANNOT BE AVOIDED

Section 15126.2 of the California Environmental Quality Act (CEQA) Guidelines requires a discussion of significant environmental effects which cannot be avoided if the project is implemented (14 CCR 15000 et seq.). In Chapters 6 and 7, direct, indirect, and cumulative impacts of the North City Project were analyzed to determine if the Project would cause significant and unavoidable impacts under CEQA and unavoidable adverse impacts under the National Environmental Policy Act (NEPA) in each environmental issue area. The analysis found that both the Miramar and San Vicente Reservoir Alternatives would result in adverse and unavoidable effects related to construction noise and vibration and construction traffic, which under CEQA could not be mitigated to below a level of significance, and that the San Vicente Reservoir Alternative would result in adverse and unavoidable effects related to air quality (temporary, construction impacts) and aesthetics (temporary, construction impacts).

9.2 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES THAT CANNOT BE AVOIDED IF THE NORTH CITY PROJECT IS IMPLEMENTED

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.

NEPA also requires that an Environmental Impact Statement (EIS) analysis include discussion of potential irreversible and irretrievable commitments of environmental resources as a consequence of project approval (40 CFR 1502.16).

The predominant irreversible environmental changes that would occur as a result of the North City Project implementation would be the introduction of a new source of water at the Miramar Reservoir or San Vicente Reservoir, the reduction in discharge

at the Point Loma ocean outfall, and the commitment of land resources to develop the North City Pure Water Facility, North City Renewable Energy Facility, pump stations, Landfill Gas Pipeline, pipelines, and improvements to existing facilities. The North City Project would irreversibly alter the sites identified for these facilities to water reclamation and conveyance 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 North City Pure Water Facility site, as well as the Mission Trails Booster Station site, are currently vacant and do not generate traffic or noise. Permanent changes as a result of North City Project implementation would include traffic, noise, and an increased human presence in the area. 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, gas, sand and gravel, petrochemicals, and other materials, would occur. Construction would also incrementally reduce existing supplies of fuel oil, natural gas, and gasoline.

9.3 GROWTH-INDUCING IMPACTS

CEQA Guidelines Section 15126.2(d) and NEPA Regulations (40 CFR 1508.8(b)) require a discussion of the ways in which a proposed project could be an inducement to growth. CEQA Guidelines Section 15126.2(d) 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. As an example, population growth resulting from proposed residential development projects and new employees hired for proposed commercial and industrial development projects can 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 (such as utilities). 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, a project would be considered to be growth inducing 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). Growth inducement 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 (City's) CEQA Significance Determination Thresholds (City of San Diego 2016a) 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.

The North City Project's growth-inducement potential considers to what extent the Project 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 Project might also contribute to serving additional growth within the City service area. As such, the key issue related to growth inducement for the North City Project is whether or to what extent water supplies provided by the Project 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 North City Project would provide a catalyst for further development in San Diego, as compared to the extent to which the Project have 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 North City Project's service area. It is also important to consider water supply in the context of other growth-related catalysts and constraints.

9.3.1 GROWTH CATALYSTS AND CONSTRAINTS

Generally speaking, catalysts and constraints to growth can affect (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.

9.3.2 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 et seq.). 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.

9.3.3 CITY OF SAN DIEGO GENERAL PLAN

The City of San Diego General Plan was most recently updated in 2008 (and most recently amended in 2015), 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.

9.3.4 EXISTING WATER SUPPLIES

As discussed in Sections 5.17 and 6.17, Water Supply, current water supplies in San Diego are comprised primarily of imported water purchased from the Metropolitan Water District of Southern California (Metropolitan). Metropolitan is a consortium of 26 public agencies (14 cities, 11 water districts, and 1 county water authority) that delivers an average of 1.5 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 (Metropolitan 2015). Metropolitan 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 Metropolitan 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 2016a).

In addition to imported water, local water supplies comprise a portion of water delivered by SDCWA member agencies. On average, approximately 20% of all water used within the SDCWA service area comes from local sources (recycled water, seawater desalination, groundwater, and local surface water) (SDCWA 2016b). Seven major stream systems originate in the mountains of San Diego County and drain into the Pacific Ocean. Twenty-four (24) surface reservoirs are located within the SDCWA service area, with a combined capacity of approximately 746,000 acre-feet (AF) to capture and store runoff from these watersheds. Groundwater is also a component of local water supplies (SDCWA 2016c). Total existing groundwater production within the SDCWA service area is approximately 31,100 AF per year (AFY).

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 AFY by 2020 (SDCWA 2016d). 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 Metropolitan, SDCWA, and the City. In December 2015, the Carlsbad Desalination Plan began operation, providing approximately 56,000 AF to the SDCWA in a 30-year Water Purchase Agreement, which will meet approximately 8% of demand in 2020 (SDCWA 2016e).

Metropolitan, SDCWA, and the City 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 Metropolitan’s 2015 Integrated Water Resources Plan (IRP), SDCWA’s 2015 Urban Water Management Plan (SDCWA 2015 UWMP), 2013 Regional Water Facilities Optimization and Master Plan Update (2013 Master Plan), and the City’s 2015 Urban Water Management Plan (City 2015 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 2040. In 2014, non-potable and indirect potable reuse projects in the Metropolitan service area collectively produced a total of approximately 414,000 AF. 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 509,000 AF by 2040 (this projection only includes existing facilities and those currently under construction) (Metropolitan 2016). 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 2015 UWMP and City 2015 UWMP.

9.3.5 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. According to the SANDAG

Regional Growth Forecast, the County's population is projected to grow from approximately 3.1 million in 2012 to approximately 3.9 million by 2035 and to approximately 4 million by 2050, which equates to an increase of approximately 29% from 2012 to 2050 (SANDAG 2013). 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 October 2015, SANDAG adopted the most recent regional plan, San Diego Forward: The Regional Plan, and certified the accompanying Final Environmental Impact Report (EIR). San Diego Forward does not directly address water supply demands, supplies, and projections; instead, it relies on the responsibility of the SDCWA and continued interagency coordination in long-term planning efforts, specifically in the development of SDCWA's water management plans (discussed in Section 9.3.6 below).

SDCWA and SANDAG have entered into a Memorandum of Agreement 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. SDCWA uses the most current Regional Growth Forecast to develop demand projections to be used in its water supply planning. The Memorandum of Agreement ensures that the water demand projections for the San Diego region are linked with SANDAG's Regional Growth Forecast 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.

9.3.6 URBAN WATER MANAGEMENT PLANS

SDCWA 2015 UWMP provides multiple scenarios of water supply reliability forecasting. The assessment must compare the total projected water supply and demands over the next 20 years in 5-year increments under normal, single dry, and multiple dry water years. The assessment contained in the SCWA 2015 UWMP evaluates reliability through the next 25 years. Verifiable supplies are included in water supply assessments, and verifications prepared by retail water agencies and are used by the cities and county in their land-use decisions regarding available water supplies. The SDCWA 2015 UWMP does not consider any phase of the City's Pure Water Program, including the North City Project, as a verifiable supply. Instead, the SDCWA 2015 UWMP acknowledges the North City Project under the category of "additional planned projects [that] can further reduce the region's reliance on sources of supply from Metropolitan" (SDCWA 2016f). These additional planned projects are further defined as water supplies "that have not yet achieved the same level of certainty as the verifiable supplies, but have progressed to a point where the Water Authority or a member agency has taken significant financial actions to pursue the project" (SDCWA 2016f). As a result, the SDCWA 2015 UWMP provides projections accounting for the North City Project, in conjunction with numerous other "additional planned projects," showing an increase in local member agency supplies and a decrease in imported Metropolitan supplies from 2020 to 2040 (SDCWA 2016f).

The City of San Diego maintains a UWMP, as required under state law (California Water Code Sections 10631, 10633, 10634, and 10635). The 2015 UWMP is required to identify and quantify existing and future water supplies and must be updated every 5 years. The San Diego UWMP identifies the Pure Water Program, including the North City Project Alternatives, 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. While the City 2015 UWMP identifies the Pure Water Program as a potential future source of

potable water, it does not include potable reuse in future water supply projections because final regulations regarding potable reuse via reservoir augmentation are not yet adopted (City of San Diego 2016b).

9.3.7 POTENTIAL GROWTH-INDUCING IMPACTS

The North City Project is consistent with California State Law mandates concerning long-term water supply strategy and are not expected to directly induce growth in a predictable manner or defined location. The North City Project merely expands the City's capacity to produce potable water to meet projected potable water demands within the City's service area, which might potentially reduce demand on other previously available supplies. However, no direct growth constraint would be removed, nor would a direct stimulus to growth be added. As noted earlier, the City of San Diego 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.

Moreover, with respect to the question of whether the North City Project represents a new water supply or a replacement water supply within the region, as previously discussed, the North City Project contributes to the new supplies identified in the 2013 Master Plan and the SDCWA 2015 UWMP, and as such, constitute a portion of the new water supplies that have been considered and analyzed on a regional level. However, the North City Project 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 North City Project 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. The replacement of imported water supplies with recycled water supplies produced by the North City Project 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. This reduction would most likely occur in its most expensive supplemental water supplies. Any growth-inducement effect could only occur if and where other necessary growth-

supporting services are available and could occur anywhere in Metropolitan’s 5,200-square-mile service area. Any attempt to predict if or where that would occur would be speculative, and therefore, in accordance with guidance provided in Section 15145 of the CEQA Guidelines, beyond the scope of the environmental analysis for the North City Project.

9.4 SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY OF THE ENVIRONMENT

NEPA requires consideration of the relationship between short-term uses of the environment and long-term productivity associated with the North City Project (42 U.S.C. Section 4332(C)(iv)). This involves the consideration of whether the North City Project would sacrifice a resource value that might benefit the environment in the long-term for some short-term value to the applicant or the public. The North City Project does not involve short-term uses, outside of necessary temporary impacts that would occur within the construction period. Plant and wildlife species in the area would be lost along with changes in the existing visual environment associated with new above ground facilities. However, this loss would be offset by the improved long-term water supply reliability and decreased dependence on imported water. Therefore, there would be no permanent loss of the overall productivity of the environment from the North City Project.

9.5 COMPLIANCE WITH APPLICABLE FEDERAL ENVIRONMENTAL REGULATIONS AND POLICIES

Table 9-1 lists applicable federal environmental regulations and policies, brief descriptions of how these are addressed, and the locations in the EIR/EIS where a full discussion can be found.

Table 9-1
Compliance with Applicable Federal Environmental Regulation and Policies

Federal Environmental Regulation or Policy	Brief Discussion	EIR/EIS Section of Detailed Discussion
Endangered Species Act (16 U.S.C. 1531 et seq.)	Implementation of the North City Project will not jeopardize the survival and recovery of any species listed or proposed as federally threatened or endangered, or result in the destruction or adverse modification of any critical habitat areas.	Sections 5.4 and 6.4, Biological Resources, of this EIR/EIS

**Table 9-1
Compliance with Applicable Federal Environmental Regulation and Policies**

Federal Environmental Regulation or Policy	Brief Discussion	EIR/EIS Section of Detailed Discussion
	<p>The North City Pure Water Facility site contains vernal pool habitat. Surveys have not identified any federally listed species at the site. The proposed gas pipeline across Marine Corps Air Station (MCAS) Miramar will affect sage scrub habitat used by the threatened coastal California gnatcatcher, and will be installed within 100 feet of vernal pools. The U.S. Fish and Wildlife Service has been requested to concur with a “not likely to adversely affect” determination by the Bureau of Reclamation, under section 7(a)(2) of the Endangered Species Act.</p>	
<p>Migratory Bird Treaty Act and Executive Order 13186</p>	<p>Vegetation clearing will be scheduled outside of the bird nesting season. Biological monitoring is required before any construction activities during the nesting season.</p>	<p>Sections 5.4 and 6.4, Biological Resources, of this EIR/EIS</p>
<p>Fish and Wildlife Coordination Act</p>	<p>The requirements of the Fish and Wildlife Coordination Act are not triggered by the federal financial assistance. The Fish and Wildlife Coordination Act applies to projects implemented by any department or agency of the United States, or by any public or private agency under federal permit or license, where the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified.</p> <p>The North City Project will install a purified water pipeline across the bottom of Miramar Reservoir and will modify reservoir water quality by replacing current imported supplies with purified water that will be lower in dissolved solids and nutrient levels. The City will continue to communicate and coordinate with the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife throughout the lifespan of the Project.</p>	<p>Sections 5.4 and 6.4, Biological Resources, of this EIR/EIS</p>

**Table 9-1
Compliance with Applicable Federal Environmental Regulation and Policies**

Federal Environmental Regulation or Policy	Brief Discussion	EIR/EIS Section of Detailed Discussion
Clean Air Act, as amended (42 U.S.C. 7401 et seq.)	The San Diego air basin is nonattainment/moderate for 2008 8-hour ozone, maintenance for 1997 8-hour ozone, maintenance for ozone 1-hour, maintenance for carbon monoxide, and attainment for lead, NO ₂ , PM _{2.5} and PM ₁₀ . The Project would not exceed the federal de minimis thresholds during construction or operation. No conformity determination is required.	Sections 5.3 and 6.3, Air Quality and Odor, of this EIR/EIS
Clean Water Act, as amended (33 U.S.C. 1251 et seq.)	The Project will comply with the general construction stormwater National Pollutant Discharge Elimination System (NPDES) permit and will implement a Stormwater Pollution Prevention Plan. The City made a commitment to begin implementing the Pure Water Program in their application to renew the Clean Water Act Section 301(h) modified ocean discharge permit for the Point Loma Wastewater Treatment Plant (NPDES permit no. CA0107409). The Environmental Protection Agency has issued a tentative decision to grant a variance from secondary treatment requirements.	Sections 5.11 and 6.11, Hydrology and Water Quality, of this EIR/EIS
Executive Order 11990 – Protection of Wetlands; as amended by Executive Order 12608	Construction of the North City Purified Water Facility will result in direct permanent impacts to a total of 0.38 acre of vernal pool wetlands; impacts would be mitigated through the restoration of 0.75 acre of vernal pools and adjacent upland habitats. Applicable wetland permits will also be obtained. A subaqueous discharge pipeline will also be installed at the bottom of the Miramar Reservoir. Placement of pipes at the bottom of the reservoir will not result in the net loss of aquatic resources function or services, nor would it reduce habitat for wildlife.	Sections 5.4 and 6.4, Biological Resources, of this EIR/EIS

Table 9-1
Compliance with Applicable Federal Environmental Regulation and Policies

Federal Environmental Regulation or Policy	Brief Discussion	EIR/EIS Section of Detailed Discussion
National Historic Preservation Act, Pub. L. 89-655, as amended	Consultation with the California State Historic Preservation Officer is required under Section 106 of the National Historic Preservation Act. No adverse effects to any properties eligible for listing in the National Register of Historic Places have been identified.	Sections 5.10 and 6.10, Historical Resources/Indian Trust Assets, of this EIR/EIS
Resource Conservation and Recovery Act, or Solid Waste Disposal Act (42 U.S.C. 6901 et seq.)	The Project would be in compliance with hazardous materials and non-hazardous solid waste management as outlined in the Resource Conservation and Recovery Act and the Solid Waste Disposal Act.	Sections 5.9 and 6.9, Health and Safety Hazards, of this EIR/EIS
Comprehensive Environmental Response, Compensation, and Liability Act, as amended (42 U.S.C. 9601 et seq.)	The Project would be in compliance with the guidelines and requirements as set forth in the Comprehensive Environmental Response, Compensation, and Liability Act.	Sections 5.9 and 6.9, Health and Safety Hazards, of this EIR/EIS
Toxic Substances Control Act, as amended (15 U.S.C. 2601 et seq.)	The Project would be in compliance with the guidelines and requirements as set forth in Toxic Substances Control Act.	Sections 5.9 and 6.9, Health and Safety Hazards, of this EIR/EIS
Federal Wildland Fire Management Policy	Various components are located adjacent to, or in the case of pipelines, traverse open space areas with potentially flammable materials such as brush, grass, or trees. The Project would implement a Construction Fire Prevention/ Protection Plan.	Sections 5.9 and 6.9, Health and Safety Hazards, of this EIR/EIS
National Fire Plan	The Project would be in compliance with the National Fire Plan requirements with the development and implementation of a Construction Fire Prevention/ Protection Plan.	Sections 5.9 and 6.9, Health and Safety Hazards, of this EIR/EIS
Safe Drinking Water Act (SDWA), as amended (42 U.S.C 300f et seq.)	The Project would be in compliance with the guidelines and requirements as set forth by SDWA. The Project would not produce potable water, but rather would augment supplies at an existing drinking water reservoir that would be treated at an existing treatment plant.	Sections 5.11 and 6.11, Hydrology and Water Quality, of this EIR/EIS

**Table 9-1
Compliance with Applicable Federal Environmental Regulation and Policies**

Federal Environmental Regulation or Policy	Brief Discussion	EIR/EIS Section of Detailed Discussion
Executive Order 13112 – Invasive Species	The Project may introduce invasive species into natural open space areas within temporary construction areas where pipelines cross through native habitat or where facilities are constructed adjacent to native habitat. Impacts would be adverse, but mitigated.	Sections 5.4 and 6.4, Biological Resources, of this EIR/EIS
Executive Order 12898— Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations	The EIS includes an analysis of racial and income statistics within the construction impact areas and the water service areas for both Project Alternatives. No environmental justice communities were identified. Neither adverse short-term construction effects nor adverse operational effects would be borne disproportionately by a minority or low-income population.	Sections 5.5 and 6.5, Environmental Justice, of this EIR/EIS
National Environmental Policy Act	An EIS has been prepared.	Entire Document
Coastal Zone Management Act	The North City Project is entirely outside the coastal zone, with the exception of one overflow pipe from the Morena Pump Station that is approximately 200 feet within the boundary. The City has received concurrence that the overflow pipe is within the City's jurisdiction (and the California Coastal Commission's Coastal Development Permit appealable jurisdiction), and coastal development permits can be processed locally.	Sections 5.4 and 6.4, Biological Resources, of this EIR/EIS
Floodplain Management, Executive Order 11988, 42 FR 26951, May 24, 1977, as amended by Executive Order 13690, 80 FR 6425, February 4, 2015	<p>Several project pipelines would cross areas located within a 1500-year floodplain or floodway. No aboveground facilities will be installed within or partially within a flood zone. The Project will not place structures that would impede or redirect flood flows. There is no practicable alternative to locating the pipelines in the floodplain. The action conforms to local floodplain protection standards.</p> <p>Under the Federal Flood Risk Management Standard mandated by Executive Order 13690, agencies are required to expand management</p>	Sections 5.11 and 6.11, Hydrology and Water Quality, of this EIR/EIS

**Table 9-1
Compliance with Applicable Federal Environmental Regulation and Policies**

Federal Environmental Regulation or Policy	Brief Discussion	EIR/EIS Section of Detailed Discussion
	<p>from the base flood elevation to a higher vertical flood elevation and corresponding horizontal floodplain for federally funded projects. One option provided in the Guidelines for Implementing Executive Orders 11988 and 13690 (October 8, 2015) allows the use of the 0.2% annual chance flood approach (also known as the 500-year flood elevation).</p>	
<p>Archaeological and Historic Preservation Act, Pub. L. 93-291, as amended</p>	<p>This law is only applicable on federal land and the proposed Project would be covered by existing MCAS Miramar permit requirements.</p>	<p>N/A</p>
<p>Coastal Barrier Resources Act</p>	<p>The federal expenditure will not tend to encourage development or modification of coastal barriers. The Project is not within any units of the Coastal Barrier Resources System. The Coastal Barrier Resource Act applies on the Atlantic, Gulf, and Great Lakes coasts. No system units are located along the Pacific coast.</p>	<p>N/A</p>
<p>Farmland Protection Policy Act</p>	<p>The Project will not convert farmland to non-agricultural use. The proposed Landfill Gas Pipeline alignment will avoid Unique Farmland mapped at the west end of MCAS Miramar. The alignment crosses locally important farmland along Miramar Road, but the pipeline will be installed within the paved roadway. No other Prime, Unique, or Statewide farmland is mapped within or near the Project. Except for the undeveloped land on MCAS Miramar, nearly all of the Project is within land already in urban development, mapped as developed by the California Farmland and Monitoring Program, and identified as “urbanized area” on the Census Bureau Map.</p>	<p>N/A</p>
<p>Magnuson-Stevens Fishery Conservation and Management Act, Pub. L. 94-265</p>	<p>The North City Project will have no adverse effect to Essential Fish Habitat. No consultation under the Magnuson-Stevens Act is required.</p>	<p>N/A</p>

Table 9-1
Compliance with Applicable Federal Environmental Regulation and Policies

Federal Environmental Regulation or Policy	Brief Discussion	EIR/EIS Section of Detailed Discussion
Wild and Scenic Rivers Act	The Project does not involve any river designated in the National Wild and Scenic Rivers System or any river listed in the National River Inventory. No river in San Diego County is designated in the National Wild and Scenic Rivers System or listed in the National River Inventory. The nearest Wild and Scenic River is Bautista Creek, in the San Jacinto Mountains, Riverside County, 50 miles north of the Project.	N/A

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CHAPTER 10 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 North City Project; (2) the individual/agency responsible for that implementation; and (3) criteria for completion or monitoring of the specific measures.

The Environmental Impact Report/Environmental Impact Statement (EIR/EIS), 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 mitigation measures that would reduce potentially significant impacts for the following issue areas: air quality; biological resources; health and safety/hazards; historical resources; noise; paleontological resources; public utilities; and transportation, circulation, and parking.

10.1 GENERAL

1. Prior to issuance of a Notice to Proceed (NTP) or any construction permits, including but not limited to, the first Demolition Plans/Permits, and Building Plans/Permits, the Assistant Deputy Director (ADD) Environmental Designee of the Land Development Review Division shall verify that all mitigation measures listed in this EIR/EIS have been included in entirety on the submitted construction documents and contract specifications, and included under the heading, "Environmental Mitigation Requirements." In addition, the requirements for a Preconstruction Meeting shall be noted on all construction documents.
2. Prior to the commencement of work, a Preconstruction Meeting (Pre-con) shall be conducted and include the City of San Diego's Mitigation Monitoring Coordination (MMC) Section, Construction Manager (CM), Resident Engineer, Building Inspector, Project Consultant, Applicant and other parties of interest.

3. Evidence of compliance with other permitting authorities is required, if applicable. Evidence shall include either copies of permits issued, letters of resolution issued by the Responsible Agency documenting compliance, or other evidence documenting compliance and deemed acceptable by the ADD Environmental Designee.
4. Pursuant to Section 1600 et seq. of the State of California Fish & Game Code, evidence of compliance with Section 1602 is required, if applicable. Evidence shall include either copies of permits issued, letters of resolution issued by the Responsible Agency documenting compliance, or other evidence documenting compliance and deemed acceptable by the ADD Environmental Designee.

10.2 SPECIFIC MMRP ISSUE AREA CONDITIONS/REQUIREMENTS

10.2.1 AIR QUALITY

Miramar Reservoir Alternative

The following mitigation measures outline the steps necessary to reduce the construction emissions from all components of the Miramar Reservoir Alternative.

MM-AQ-1 The following best management practices shall be implemented during construction to comply with applicable San Diego Air Pollution Control District (SDAPCD) rules and regulations and to further reduce daily construction emissions:

- Best management practices that could 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 (City of San Diego 2016a), 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.

MM-AQ-2 The following measures shall be adhered to during construction activities associated with the North City Project to reduce oxides of nitrogen (NO_x):

- a. All diesel-fueled construction equipment shall be equipped with Tier 3 or better (i.e., Tier 4 Interim or Tier 4 Final) diesel engines.
- b. The engine size of construction equipment shall be the minimum size suitable for the required job.

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 2016a).

- c. Construction equipment shall be maintained in accordance with the manufacturer's specifications.

Mitigation measure MM-AQ-3 is provided to reduce odor impacts for the Miramar Reservoir Alternative.

MM-AQ-3 The City shall implement odor control systems at the NCWRP Expansion, Morena Pump Station, and Morena Wastewater Forcemain specifically designed to abate the potential odors of the facility. Odor control systems would be similar to those currently employed at City of San Diego wastewater treatment facilities to reduce odor impacts. The following odor control systems or equivalent measures shall be implemented to mitigate nuisance odors:

- a. North City Water Reclamation Plant Expansion and the Morena Pump Station: NaOCl/NaOH Wet Scrubber plus carbon or Biofilter plus carbon.
- b. Air/vacuum relief valves at high points along the wastewater forcemain: ferric chloride and/or High Purity Oxygen injection.

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.

San Vicente Reservoir Alternative

Potential impacts to air quality would be reduced with implementation of MM-AQ-1 through MM-AQ-3.

10.2.2 BIOLOGICAL RESOURCES

Miramar Reservoir Alternative

Refer to Section 6.4, Biological Resources, for specific impact summary tables for the Miramar Reservoir Alternative.

MM-BIO-1a Mitigation for Upland Impacts. In order to offset the permanent impacts to sensitive upland vegetation communities, 6.61 acres of

mitigation would be required for the Miramar Reservoir Alternative and 8.14 acres of mitigation would be required for the San Vicente Reservoir Alternative. Mitigation would be provided through restoration and preservation of uplands at the SANDER Vernal Pool and Upland Mitigation Site. All mitigation would occur within the Multiple Species Conservation Program's (MSCP's) Multi-Habitat Planning Area (MHPA). Additionally, in order to satisfy the cumulative impacts requirement, a Native Grassland Creation Mitigation Plan – Pueblo South (Appendix S, of Appendix C) would be implemented for mitigation of impacts to 1.30 acres of native grassland. Native grassland creation would be conducted at Pueblo South, which is outside the MHPA and would be required for either Project Alternative.

MM-BIO-1b Mitigation for Vernal Pool Impacts. In order to offset permanent impacts to vernal pools, 0.75 acre of mitigation would be required for both Project Alternatives. Mitigation would be provided through restoration of vernal pools and adjacent uplands at the SANDER Vernal Pool and Upland Mitigation site, which is within the Vernal Pool Habitat Conservation Plan (VPHCP) hard line preserve. The SANDER Vernal Pool and Upland Mitigation site is within MHPA lands; therefore all mitigation would occur within the MSCP's MHPA and would be implemented in accordance with City/U.S. Army Corps of Engineers (ACOE)/California Department of Fish and Wildlife (CDFW)/Regional Water Quality Control Board (RWQCB) guidelines. The SANDER Vernal Pool and Upland Mitigation Plan (Appendix R, of Appendix C) would be developed and implemented at the SANDER Vernal Pool and Upland Mitigation Site. Both upland vegetation, including in Tier mitigation, and vernal pool impacts would be mitigated at the SANDER site.

MM-BIO-2 Habitat Revegetation. Habitat revegetation and erosion control treatments will be installed within temporary disturbance areas in native habitat, in accordance with the San Diego Municipal Code, Land Development Code—Biology Guidelines (City of San Diego 2012) and the San Diego Municipal Code, Land Development Code—Landscape Standards (City of San Diego 2016). The Conceptual Revegetation Plan (Appendix P, of Appendix C) was prepared by a Restoration Specialist. Habitat revegetation will feature native species that are typical of the area, and erosion control features will include silt fence and straw fiber rolls, where appropriate. The revegetation

areas will be monitored and maintained for 25 months to ensure adequate establishment and sustainability of the plantings/seedings.

Revegetation Plan(s) and Specifications:

1. Landscape Construction Documents (LCD) shall be prepared on D-sheets and submitted to the City of San Diego Development Services Department, Landscape Architecture Section (LAS) for review and approval. LAS shall consult with Mitigation Monitoring Coordination (MMC) and obtain concurrence prior to approval of LCD. The LCD shall consist of revegetation, planting, irrigation and erosion control plans; including all required graphics, notes, details, specifications, letters, and reports as outlined below.
2. Landscape Revegetation Planting and Irrigation Plans shall be prepared in accordance with the San Diego Land Development Code (LDC) Chapter 14, Article 2, Division 4, the LDC Landscape Standards submittal requirements, and Attachment "B" (General Outline for Revegetation/ Restoration Plans) of the City of San Diego's LDC Biology Guidelines (April 2012). The Principal Qualified Biologist (PQB) shall identify and adequately document all pertinent information concerning the revegetation goals and requirements, such as but not limited to, plant/seed palettes, timing of installation, plant installation specifications, method of watering, protection of adjacent habitat, erosion and sediment control, performance/ success criteria, inspection schedule by City staff, document submittals, reporting schedule, etc. The LCD shall also include comprehensive graphics and notes addressing the ongoing maintenance requirements (after final acceptance by the City). For areas where a water source is not available irrigation can be completed by a water truck. Additionally, it is recommended that planting/seeding occur in the fall or early winter, to the maximum extent practical, in order to minimize the amount of water truck visits needed.
3. The Revegetation Installation Contractor (RIC), Revegetation Maintenance Contractor (RMC), Construction Manager (CM) and Grading Contractor (GC), where applicable shall be responsible to insure that for all grading and contouring, clearing and grubbing, installation of plant materials, and any necessary maintenance activities or remedial actions required during installation and the

120-day plant establishment period are done per approved LCD. The following procedures at a minimum, but not limited to, shall be performed:

- a. The RMC shall be responsible for the maintenance of the upland mitigation area for a minimum period of 120 days.
- b. At the end of the 120-day period the PQB shall review the revegetation area to assess the completion of the short-term plant establishment period and submit a report for approval by MMC. If the 120-day plant establishment period success criteria has not been met, an extension may be warranted at the discretion of the PQB.
- c. MMC would provide approval in writing to begin the 25-month maintenance and monitoring program.
- d. Existing indigenous/native species shall not be pruned, thinned, or cleared in the revegetation/mitigation area.
- e. The revegetation site shall not be fertilized.
- f. The RIC is responsible for reseeding (if applicable) if weeds are not removed, within one week of written recommendation by the PQB.
- g. Weed control measures shall include the following: (1) hand removal, (2) cutting, with power equipment, and (3) chemical control. Hand removal of weeds is the most desirable method of control and would be used wherever possible.
- h. Damaged areas shall be repaired immediately by the RIC/RMC. Insect infestations, plant diseases, herbivory, and other pest problems would be closely monitored throughout the 25-month maintenance period. Protective mechanisms such as metal wire netting shall be used as necessary. Diseased and infected plants shall be immediately disposed of off site in a legally acceptable manner at the discretion of the PQB or Qualified Biological Monitor (City approved). Where possible, biological controls would be used instead of pesticides and herbicides.

MM-BIO-3 Nesting Birds. To avoid any direct impacts 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 CDFW or

USFWS, removal of habitat that supports active nests in the proposed area of disturbance should occur outside of the breeding season for these species (February 1 to September 15). If removal of habitat in the proposed area of disturbance must occur during the breeding season, the Qualified Biologist shall conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey shall be conducted within 10 calendar days prior to the start of construction activities (including removal of vegetation). The applicant shall submit the results of the pre-construction survey to the City's Development Services Department for review and approval prior to initiating any construction activities. If nesting birds are detected, a letter report or mitigation plan in conformance with the City's Biology Guidelines and applicable State and Federal Law (i.e. appropriate follow up surveys, monitoring schedules, and construction barriers/buffers, etc.) shall be prepared and include proposed measures to be implemented to ensure that take of birds or eggs is avoided. The report or mitigation plan shall be submitted to the City for review and approval and implemented to the satisfaction of the City. The City's MMC Section and Biologist shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction.

MM-BIO-4a Coastal California Gnatcatcher. Prior to the preconstruction meeting, the Assistant Deputy Director (ADD) or MMC shall verify that the MHPA boundaries and the Project requirements regarding the coastal California gnatcatcher, as specified below, are shown on the construction plans.

No clearing, grubbing, grading, or other construction activities shall occur during the coastal California gnatcatcher breeding season (March 1 to August 15), until the following requirements have been met to the satisfaction of the ADD/MMC:

1. A Qualified Biologist (possessing a valid Endangered Species Act Section 10(a)(1)(a) Recovery Permit) shall survey those habitat areas within the MHPA that would be subject to construction noise levels exceeding 60 decibels [dB(A)] hourly average for the presence of the coastal California gnatcatcher. Surveys for coastal California

gnatcatcher shall be conducted pursuant to the protocol survey guidelines established by the USFWS within the breeding season prior to the commencement of any construction. If coastal California gnatcatchers are present, then the following conditions must be met:

- a. Between March 1 and August 15, no clearing, grubbing, or grading of occupied coastal California gnatcatcher habitat shall be permitted. Areas restricted from such activities shall be staked or fenced under the supervision of a Qualified Biologist; and
- b. Between March 1 and August 15, no construction activities shall occur within any portion of the site where construction activities would result in noise levels exceeding 60 dB(A) hourly average at the edge of occupied coastal California gnatcatcher habitat. An analysis showing that noise generated by construction activities would not exceed 60 dB(A) hourly average at the edge of occupied habitat must be completed by a Qualified Acoustician (possessing current noise engineer license or registration with monitoring noise level experience with listed animal species) and approved by the ADD/MMC at least 2 weeks prior to the commencement of construction activities. Prior to the commencement of construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under the supervision of a Qualified Biologist; or
- c. At least 2 weeks prior to the commencement of construction activities, under the direction of a Qualified Acoustician, noise attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities would not exceed 60 dB(A) hourly average at the edge of habitat occupied by the coastal California gnatcatcher. Concurrent with the commencement of construction activities and the construction of necessary noise attenuation facilities, noise monitoring shall be conducted at the edge of the occupied habitat area to ensure that noise levels do not exceed 60 dB(A) hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the Qualified Acoustician or Biologist, then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (August 16). Construction noise monitoring shall

continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. If not, other measures shall be implemented in consultation with the biologist and the ADD/MMC, as necessary, to reduce noise levels to below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

2. If coastal California gnatcatchers are not detected during the protocol survey, the Qualified Biologist shall submit substantial evidence to the ADD/MMC and applicable resource agencies which demonstrates whether or not mitigation measures such as noise walls are necessary between March 1 and August 15 as follows:
 - a. If this evidence indicates that the potential is high for coastal California gnatcatcher to be present based on historical records or site conditions, then Condition 1(a) shall be adhered to as specified above.
 - b. If this evidence concludes that no impacts to this species are anticipated, no mitigation measures would be necessary.

MM-BIO-4b Coastal California Gnatcatcher. Ambient noise levels on MCAS Miramar, in particular in the vicinity of the airfield, exceed typical construction noise level. On MCAS Miramar, construction noise levels are not anticipated to exceed ambient noise levels. Potential impacts associated with construction activities on MCAS Miramar would be mitigated through the following:

1. Qualified Biologist (possessing a valid federal Endangered Species Act (FESA) Section 10(a)(1)(a) Recovery Permit) shall conduct a pre-construction survey within suitable habitat. Between February 15 and August 31, no clearing, grubbing, or grading of occupied coastal California gnatcatcher habitat shall be permitted. Areas restricted from such activities shall be staked or fenced under the supervision of a Qualified Biologist; and

2. For potential impacts associated with construction noise, presence or absence of coastal California gnatcatcher would be determined by pre-construction surveys conducted by a Qualified Biologist adjacent to the Project area. Coastal sage scrub outside of the impact area would be flagged to protect it from construction equipment as directed by the Project Biologist. Between February 15 and August 31, no noise-generating construction activities that exceed ambient noise levels would occur in close proximity to occupied habitat. If necessary, other measures shall be implemented in consultation with the Project Biologist as necessary, to reduce noise levels. Measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

MM-BIO-5 Burrowing Owl. Species Specific Mitigation (required to meet MSCP Subarea Plan Conditions of Coverage) for Potential Impacts to Burrowing Owl and Associated Habitat located outside the MHPA (burrowing owl and associated habitat impacts within the MHPA must be avoided).

Prior to Permit or Notice to Proceed Issuance:

1. As this project has been determined to have burrowing owl occupation potential, the Permit Holder shall submit evidence to the Assistant Deputy Director of the City's Entitlements verifying that a Biologist possessing qualifications pursuant to the "Staff Report on Burrowing Owl Mitigation, State of California Natural Resources Agency, California Department of Fish and Game" (hereafter referred as CDFG 2012, Staff Report), has been retained to implement a burrowing owl construction impact avoidance program.
2. The Qualified Biologist shall attend the pre-construction meeting to inform construction personnel about the City's burrowing owl requirements and subsequent survey schedule.

Prior to Start of Construction:

1. The Permit Holder and Qualified Biologist must ensure that initial pre-construction/take avoidance surveys of the Project "site" are completed between 14 and 30 days before initial construction activities, including brushing, clearing, grubbing, or grading of the

Project site; regardless of the time of the year. “Site” means the Project site and the area within a radius of 450 feet of the Project site. A report detailing the results of the surveys shall be submitted and approved by the Wildlife Agencies and/or City MSCP staff prior to construction or burrowing owl eviction(s) and shall include maps of the Project site and burrowing owl locations on aerial photos.

2. The pre-construction survey shall follow the methods described in CDFG 2012, Staff Report, Appendix D (please note, in 2013, CDFG became California Department of Fish and Wildlife or CDFW).
3. 24 hours prior to commencement of ground disturbing activities, the Qualified Biologist shall ~~verify~~ update and report results of preconstruction/take avoidance surveys. Verification shall be provided to the City’s MMC Section. If results of the preconstruction surveys have changed and burrowing owl are present in areas not previously identified, immediate notification to the City and Wildlife Agencies shall be provided prior to ground disturbing activities.

During Construction:

1. Best Management Practices shall be employed as burrowing owls are known to use open pipes, culverts, excavated holes, and other burrow-like structures at construction sites. Legally permitted active construction projects which are burrowing owl occupied and have followed all protocol in this mitigation section, or sites within 450 feet of occupied burrowing owl areas, should undertake measures to discourage burrowing owls from recolonizing previously occupied areas or colonizing new portions of the site. Such measures include, but are not limited to, ensuring that the ends of all pipes and culverts are covered when they are not being worked on, and covering rubble piles, dirt piles, ditches, and berms.
2. Ongoing burrowing owl detection—If burrowing owls or active burrows are not detected during the pre-construction surveys, Section “a” below shall be followed. If burrowing owls or burrows are detected during the pre-construction surveys, Section “b” shall be followed. Neither the MSCP Subarea Plan nor this mitigation section allows for any burrowing owls to be injured or killed outside or within the MHPA; in addition, impacts to burrowing owls within the MHPA must be avoided.

- a. Post Survey Follow Up if Burrowing Owls and/or Signs of Active Natural or Artificial Burrows Are Not Detected During the Initial Preconstruction Survey. Monitoring the site for new burrows is required using the protocol in Appendix D of the Burrowing Owl Staff Report (CDFG 2012) for the period following the initial pre-construction survey, until construction is scheduled to be complete and is complete. (NOTE: Using a projected completion date (that is amended if needed) will allow development of a monitoring schedule which adheres to the required number of surveys in the detection protocol)
 - i. If no active burrows are found but burrowing owls are observed to occasionally (1—3 sightings) use the site for roosting or foraging, they should be allowed to do so with no changes in the construction or construction schedule.
 - ii. If no active burrows are found but burrowing owls are observed during follow up monitoring to repeatedly (4 or more sightings), using the site for roosting or foraging, the City's MMC Section shall be notified and any portion of the site where owls have been sighted and that has not been graded or otherwise disturbed shall be avoided until further notice.
 - iii. If a burrowing owl begins using a burrow on the site at any time after the initial pre-construction survey, procedures described in Section b must be followed.
 - iv. Any actions other than these require the approval of the City and the Wildlife Agencies.
- b. Post-Survey Follow Up if Burrowing Owls and/or Active Natural or Artificial Burrows are detected during the Initial Pre-Construction Survey. Monitoring the site for new burrows is required using the protocol in Appendix D of the Burrowing Owl Staff Report (CDFG 2012) for the period following the initial pre-construction survey, until construction is scheduled to be complete and is complete. (NOTE: Using a projected completion date (that is amended if needed) will allow development of a monitoring schedule which adheres to the required number of surveys in the detection protocol.)

- i. This section (b) applies only to sites (including biologically defined territory) wholly outside of the MHPA; all direct and indirect impacts to burrowing owls within the MHPA SHALL be avoided.
- ii. If one or more burrowing owls are using any burrows (including pipes, culverts, debris piles etc.) on or within 300 feet of the proposed construction area, the City's MMC Section shall be contacted. The City's MMC Section shall contact the Wildlife Agencies regarding eviction/collapsing burrows and enlist the appropriate City biologist for on-going coordination with the Wildlife Agencies and the qualified consulting burrowing owl biologist. No construction shall occur within 300 feet of an active burrow without written concurrence from the Wildlife Agencies. This distance may increase or decrease, depending on the burrow's location in relation to the site's topography, and other physical and biological characteristics.
 1. Outside the Breeding Season: If the burrowing owl is using a burrow on site outside the breeding season (i.e. September 1 – January 31), the burrowing owl may be evicted after the qualified burrowing owl biologist has determined via fiber optic camera or other appropriate device, that no eggs, young, or adults are in the burrow and written concurrence from the Wildlife Agencies for eviction is obtained prior to implementation.
 2. During Breeding Season: If a burrowing owl is using a burrow on-site during the breeding season (February 1 to August 31), construction shall not occur within 300 feet of the burrow until the young have fledged and are no longer dependent on the burrow, at which time the burrowing owls can be evicted. Eviction requires written concurrence from the Wildlife Agencies prior to implementation.
3. Survey Reporting During Construction: Details of construction surveys and evictions (if applicable) carried out shall be immediately (within 5 working days or sooner) reported to the City's MMC Section and the Wildlife Agencies and must be provided in writing (as by e-mail) and acknowledged to have been

received by the required Wildlife Agencies and Development Services Department Staff member(s).

Post Construction:

Details of all the surveys and actions undertaken on-site with respect to burrowing owls (i.e., occupation, eviction, locations etc.) shall be reported to the City's MMC Section and the Wildlife Agencies within 21 days post-construction and prior to the release of any grading bonds. This report must include summaries of all previous reports for the site; and maps of the Project site and burrowing owl locations on aerial photos.

Introduction to MM-BIO-6

Project construction within 500 feet of the San Diego River, Rose Creek, San Clemente Creek and any other sensitive riparian areas may have adverse indirect impacts on least Bell's vireo and southwestern willow flycatcher if construction occurs during the breeding season from March 15 through September 15 for least Bell's vireo and May 1 through September 1 for southern willow flycatcher and the species are determined to be present.

MM-BIO-6 Riparian Birds. Prior to the preconstruction meeting, the Assistant Deputy Director (ADD) or MMC shall verify that MHPA boundaries and the Project requirements regarding the least Bell's vireo and southwestern willow flycatcher, as specified below, are shown on the construction plans.

No clearing, grubbing, grading, or other construction activities shall occur during the least Bell's vireo breeding season (March 15 to September 15) and southwestern willow flycatcher breeding season (May 1 to September 1), until the following requirements have been met to the satisfaction of the ADD/MMC:

1. A Qualified Biologist (possessing a valid Endangered Species Act Section 10(a)(1)(a) Recovery Permit) shall survey those habitat areas within the MHPA that would be subject to construction noise levels exceeding 60 decibels [dB(A)] hourly average for the presence of the least Bell's vireo and southwestern willow flycatcher. Surveys for least Bell's vireo and southwestern willow flycatcher shall be

conducted pursuant to the protocol survey guidelines established by the USFWS within the breeding season prior to the commencement of any construction. If least Bell's vireo, and/or southwestern willow flycatcher are present, then the following conditions must be met:

- a. Between March 15 to September 15 for least Bell's vireo and May 1 to September 1 for southwestern willow flycatcher, no clearing, grubbing, or grading of occupied habitat shall be permitted. Areas restricted from such activities shall be staked or fenced under the supervision of a Qualified Biologist; and
- b. Between March 15 to September 15 for least Bell's vireo and/or May 1 to September 1 for southwestern willow flycatcher no construction activities shall occur within any portion of the site where construction activities would result in noise levels exceeding 60 dB(A) hourly average at the edge of occupied habitat. An analysis showing that noise generated by construction activities would not exceed 60 dB(A) hourly average at the edge of occupied habitat must be completed by a Qualified Acoustician (possessing current noise engineer license or registration with monitoring noise level experience with listed animal species) and approved by the ADD/MMC at least 2 weeks prior to the commencement of construction activities. Prior to the commencement of construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under the supervision of a Qualified Biologist; or
- c. At least 2 weeks prior to the commencement of construction activities, under the direction of a Qualified Acoustician, attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities would not exceed 60 dB(A) hourly average at the edge of habitat occupied by the least Bell's vireo, and/or southwestern willow flycatcher. Concurrent with the commencement of construction activities and the construction of necessary noise attenuation facilities, noise monitoring shall be conducted at the edge of the occupied habitat area to ensure that levels do not exceed 60 dB(A) hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the Qualified

Acoustician or Biologist, then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (August 16). Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. If not, other measures shall be implemented in consultation with the biologist and the ADD/MMC, as necessary, to reduce noise levels to below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

2. If least Bell's vireo and/or southwestern willow flycatcher are not detected during the protocol survey, the Qualified Biologist shall submit substantial evidence to the ADD/MMC and applicable resource agencies which demonstrates whether or not mitigation measures such as noise walls are necessary between March 15 to September 15 for least Bell's vireo and/or May 1 to September 1 for southwestern willow flycatcher adherence to the following is required:
 - a. If this evidence indicates that the potential is high for least Bell's vireo and/or southwestern willow flycatcher to be present based on historical records or site conditions, then Condition 1(a) shall be adhered to as specified above.
 - b. If this evidence concludes that no impacts to this species are anticipated, no mitigation measures would be necessary.

~~A monitoring and adaptive management plan within the reservoir would be contradictory to the drinking water reservoir goals, objectives and mandates, warm water fishery maintenance, and other human related recreational objectives; therefore, a trapping and relocation plan is proposed for this already threatened and apparent non-natural pond turtle population. Trapping and relocation is proposed to avoid potentially adverse indirect effects to western pond turtle populations. The USGS-advocated trapping and relocation program, which can~~

~~successfully establish new populations or maintain extant populations (Harmsworth Associates & Goodman 2002, 2003), would help increase and expand western pond turtle populations into areas that have higher habitat quality than the Miramar Reservoir, which has high human access and is an artificial reservoir within a park setting (USGS 2005).~~

~~**MM-BIO-7 Western Pond Turtle.** Since the Miramar Reservoir is maintained and operated as a drinking water reservoir which creates conditions that provide less than optimal habitat for western pond turtles and because an adaptive management program for this species would be contradictory to water quality benefits, the City prepared a conceptual trapping and relocation plan for this species (Appendix U, of Appendix C). Relocation would be conducted in accordance with the plan and in consultation with the California Department of Fish and Wildlife (CDFW) with input from the U.S. Geological Survey and approved by the Development Services Department and by MSCP Planning. The relocation plan provides the methods for the trapping of western pond turtles and relocation to the most proximate suitable habitat that would not be affected by the proposed project.~~

~~Specific trapping timing and methodology/recurrence intervals would be in consultation with CDFW and would be performed by a Qualified Biologist operating under an active California State Scientific Collecting Permit. However, trapping would be performed in late April through early August to remove egg-laying females from the reservoir prior to egg deposition, thus eliminating the potential for stranding of eggs or hatchlings.~~

~~**MM-BIO-89 Wetland Permits.** The owner/permittee shall provide evidence that all required regulatory permits, such as those required under Section 404 of the federal Clean Water Act, Section 1600 of the California Fish and Game Code, and the Porter-Cologne Water Quality Control Act, has been obtained.~~

Introduction to MM-BIO-910

Mitigation measure MM-BIO-910 will be included in the design and construction documents for each Project component and will reduce the potential for short-term and long-term indirect impacts to sensitive vegetation communities. A biological

monitor will be present during construction within or adjacent to sensitive resources and would ensure that the Project adheres to and implements the appropriate measures to protect sensitive resources.

MM-BIO-910 The following measures will be included in the design and construction documents for each Project component to reduce potential impacts to sensitive resources:

- a. **Qualified Biologist.** The owner/permittee shall provide a letter to the City's Mitigation Monitoring Coordination (MMC) section stating that a Project Biologist (Qualified Biologist) as defined in the City of San Diego Municipal Code, Land Development Code—Biology Guidelines (City of San Diego 2012), has been retained to implement the Project's biological monitoring program. The letter shall include the names and contact information of all persons involved in the biological monitoring of the Project.
- b. **Preconstruction Meeting.** The Qualified Biologist shall attend the preconstruction meeting, discuss the Project's biological monitoring program, and arrange to perform any follow up mitigation measures and reporting including site-specific monitoring, restoration or revegetation, and additional fauna/flora surveys/salvage.
- c. **Documentation.** The Qualified Biologist shall submit all required documentation to MMC verifying that any special mitigation reports including but not limited to, maps, plans, surveys, survey timelines, or buffers are completed or scheduled per City Biology Guidelines, Multiple Species Conservation Program (MSCP), Environmentally Sensitive Lands Ordinance, project permit conditions; California Environmental Quality Act (CEQA); National Environmental Policy Act (NEPA); endangered species acts (federal Endangered Species Act and California Endangered Species Act); and/or other local, state or federal requirements.
- d. **Biological Construction Mitigation/Monitoring Exhibit.** The Qualified Biologist shall present a Biological Construction Mitigation/Monitoring Exhibit (BCME), which includes the biological documents above. In addition, the BCME would include restoration/revegetation plans, plant salvage/relocation requirements (e.g., burrowing owl exclusions, etc.), avian or other

wildlife surveys/survey schedules (including general avian nesting and U.S. Fish and Wildlife (USFWS) protocol), timing of surveys, wetland buffers, avian construction avoidance areas/noise buffers/barriers, other impact avoidance areas, and any subsequent requirements determined by the Qualified Biologist and the City Assistant Deputy Director (ADD)/MMC. The BCME shall include a site plan, written and graphic depiction of the Project's biological mitigation/monitoring program, and a schedule. The BCME shall be approved by MMC and referenced in the construction documents.

- e. **Construction Fencing.** Prior to construction activities, the Qualified Biologist shall supervise the placement of orange construction fencing or equivalent along the limits of disturbance adjacent to sensitive biological habitats and verify compliance with any other project conditions as shown on the BCME. This phase shall include flagging plant specimens and delineating buffers to protect sensitive biological resources (e.g., habitats/flora and fauna species, including nesting birds) during construction. Appropriate steps/care should be taken to minimize attraction of nest predators to the site.
- f. **On-site Education.** Prior to commencement of construction activities, the Qualified Biologist shall meet with the owner/permittee or designee and the construction crew and conduct an on-site educational session regarding the need to avoid impacts outside of the approved construction area and to protect sensitive flora and fauna (e.g., explain the avian and wetland buffers, flag system for removal of invasive species or retention of sensitive plants, and clarify acceptable access routes/methods and staging areas).
- g. **Biological Monitoring.** During construction, a Qualified Biologist would be present to assist in the avoidance of impacts to native vegetation, jurisdictional aquatic resources, sensitive plants and wildlife, and nesting birds. Specific biological monitoring and or mitigation measures for sensitive wildlife, sensitive vegetation communities, and jurisdictional aquatic resources are described further in the mitigation measures.
- h. **Cover Trenches.** General biological monitoring shall include verifying that the contractor has covered all steep-walled trenches or

excavations over night or after shift. If trenches or excavations cannot be covered, the monitor would verify that the contractor has installed exclusionary fencing (e.g., silt fence) around the trenches or excavation areas or installed ramps to prevent entrapment of wildlife (e.g., reptiles and mammals). If animals are encountered within any trenches or excavated areas, they would be removed by the biological monitor, if possible, or provided with a means of escape (e.g., a ramp or sloped surface) and allowed to disperse. In addition, the biological monitor would provide training to construction personnel to increase awareness of the possible presence of wildlife beneath vehicles and equipment and to use best judgment to avoid killing or injuring wildlife. The biological monitor would be available to assist with moving wildlife, if necessary.

- i. **Nighttime Construction.** To reduce impacts to nocturnal species in those areas where they have a potential to occur, nighttime construction activity within undeveloped areas containing sensitive biological resources would be minimized whenever feasible and shielded lights would be utilized when necessary. Construction nighttime lighting would be subject to City Outdoor Lighting Regulations per San Diego Land Development Code (LDC) Section 142.0740.
- j. **Best Management Practices/Erosion/Runoff.** The City will incorporate methods to control runoff, including a Stormwater Pollution Prevention Plan (SWPPP) to meet National Pollutant Discharge Elimination System (NPDES) regulations or batch discharge permit from the City. Implementation of stormwater regulations are expected to substantially control adverse edge effects (e.g., erosion, sedimentation, habitat conversion) during and following construction both adjacent and downstream from the study area. Typical construction Best Management Practices (BMPs) specifically related to reducing impacts from dust, erosion, and runoff generated by construction activities would be implemented. During construction, material stockpiles shall be placed such that they cause minimal interference with on-site drainage patterns. This will protect sensitive vegetation from being inundated with sediment-laden runoff. Dewatering shall be conducted in accordance with standard regulations of the

Regional Water Quality Control Board (RWQCB). An NPDES permit, issued by RWQCB to discharge water from dewatering activities, shall be required prior to start of dewatering. This will minimize erosion, siltation, and pollution within sensitive communities. Design of drainage facilities shall incorporate long-term control of pollutants and stormwater flow to minimize pollution and hydrologic changes.

- k. **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 impactful 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. Where applicable, this requirement shall be incorporated into leases on publicly owned property when applications for renewal occur. Provide a note in/on the CDs 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."
- l. **Silt Fencing.** Covered projects shall require temporary fencing (with silt barriers) of the limits of Project impacts (including construction staging areas and access routes) to prevent additional vernal pool impacts and prevent the spread of silt from the construction zone into adjacent vernal pools. Fencing shall be installed in a manner that does not impact habitats to be avoided. Final construction plans shall include photographs that show the fenced limits of impact and all areas of vernal pools to be impacted or avoided. If work inadvertently occurs beyond the fenced or demarcated limits of impact, all work shall cease until the problem has been remedied to the satisfaction of the City. Temporary construction fencing shall be removed upon project completion.

- m. **Dust.** Impacts from fugitive dust that may occur during construction grading shall be avoided and minimized through watering and other appropriate measures.
- n. **Vernal Pool Biologist.** A qualified monitoring biologist that has been approved by the City shall be on site during Project construction activities to ensure compliance with all mitigation measures identified in the CEQA environmental document. The biologist shall be knowledgeable of vernal pool species biology and ecology. The biologist shall perform the following duties:

 - a. Oversee installation of and inspect the fencing and erosion control measures within or upslope of vernal pool restoration and/or preservation areas a minimum of once per week and daily during all rain events to ensure that any breaks in the fence or erosion control measures are repaired immediately.
 - b. Periodically monitor the work area to ensure that work activities do not generate excessive amounts of dust.
 - c. Train all contractors and construction personnel on the biological resources associated with this project and ensure that training is implemented by construction personnel. At a minimum, training shall include (1) the purpose for resource protection; (2) a description of the vernal pool species and their habitat(s); (3) the conservation measures that must be implemented during Project construction to conserve the vernal pool species, including strictly limiting activities, and vehicles, equipment, and construction materials to the fenced Project footprint to avoid sensitive resource areas in the field (i.e., avoided areas delineated on maps or on the Project site by fencing); (4) environmentally responsible construction practices as outlined in measures 5, 6, and 7; (5) the protocol to resolve conflicts that may arise at any time during the construction process; and (6) the general provisions of the project's mitigation monitoring and reporting program (MMRP), the need to adhere to the provisions of FESA, and the penalties associated with violating FESA.
 - d. Halt work, if necessary, and confer with the City to ensure the proper implementation of species and habitat protection

measures. The biologist shall report any violation to the City within 24 hours of its occurrence.

- e. Submit regular (e.g., weekly) letter reports to the City during Project construction and a final report following completion of construction. The final report shall include as-built construction drawings with an overlay of habitat that was impacted and avoided, photographs of habitat areas that were avoided, and other relevant summary information documenting that authorized impacts were not exceeded and that general compliance with all conservation measures was achieved.
- o. **Limits of Work.** The following conditions shall be implemented during Project construction:
 - a. Employees shall strictly limit their activities, vehicles, equipment, and construction materials to the fenced Project footprint.
 - b. The Project site shall be kept as clean of debris as possible. All food-related trash items shall be enclosed in sealed containers and regularly removed from the site.
 - c. Disposal or temporary placement of excess fill, brush, or other debris shall be limited to areas within the fenced Project footprint.
- p. **Equipment Staging.** All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities shall occur in designated areas within the fenced Project impact limits. These designated areas shall be located in previously compacted and disturbed areas to the maximum extent practicable in such a manner as to prevent any runoff from entering the vernal pools or their watersheds, and shall be shown on the construction plans. Fueling of equipment shall take place within existing paved areas greater than 100 feet from the vernal pools or their watersheds. Contractor equipment shall be checked for leaks prior to operation and repaired as necessary. A spill kit for each piece of construction equipment shall be on site and must be used in the event of a spill. "No-fueling zones" shall be designated on construction plans.
- q. **Grading Activities.** Grading activities immediately adjacent to vernal pools shall be timed to avoid wet weather to minimize potential impacts (e.g., siltation) to the vernal pools unless the area

to be graded is at an elevation below the pools. To achieve this goal, grading adjacent to avoided pools shall comply with the following:

- a. Grading shall occur only when the soil is dry to the touch both at the surface and 1 inch below. A visual check for color differences (i.e., darker soil indicating moisture) in the soil between the surface and 1 inch below indicates whether the soil is dry.
- b. After a rain of greater than 0.2 inch, grading shall occur only after the soil surface has dried sufficiently as described above, and no sooner than 2 days (48 hours) after the rain event ends.
- c. To prevent erosion and siltation from stormwater runoff due to unexpected rains, best management practices (i.e., silt fences) shall be implemented as needed during grading.
- d. If rain occurs during grading, work shall stop and resume only after soils are dry, as described above.
- e. Grading shall be done in a manner to prevent runoff from entering preserved vernal pools.
- f. If necessary, water spraying shall be conducted at a level sufficient to control fugitive dust but not to cause runoff into vernal pools.
- g. If mechanized grading is necessary, grading shall be performed in a manner to minimize soil compaction (i.e., use the smallest type of equipment needed to feasibly accomplish the work).

San Vicente Reservoir Alternative

Refer to Section 6.4, Biological Resources for specific impact summary tables for the San Vicente Reservoir Alternative.

Potential impacts to biological resources would be reduced by implementation of mitigation measures MM-BIO-1a, MM-BIO-1b, MM-BIO-2 through MM-BIO-6, MM-BIO-89, and MM-BIO-940, in addition to the following measures:

MM-BIO-1c Mitigation for Impacts to Jurisdictional Aquatic Resources. In order to offset permanent impacts to jurisdictional resources (excluding vernal pools), 1.12 acres of mitigation would be required for the San Vicente

Reservoir Alternative. Mitigation would be provided at the SANDER Mitigation site (subject to the satisfaction of ACOE and RWQCB) or through allocation of credit at the San Diego River Mitigation Site subject to ACOE and RWQCB approval. All mitigation would occur within the MSCP's MHPA and is in accordance with City/ACOE/CDFW/RWQCB guidelines.

MM-BIO-78 Vernal Pool Watershed. There would be permanent indirect impacts within the PW36, VP697, and VP699 watersheds from air and blow-off valves associated with the San Vicente Pipeline - Repurposed 36-inch Recycled Water Line only if the San Vicente Alternative is implemented. As required under the Integrated Natural Resources Management Plan (INRMP), mitigation for permanent indirect impacts from the San Vicente Reservoir Alternative to an occupied watershed (PW36, VP697, and VP699) within the Level I and Level V Management Areas (MAs) would include enhancement of remaining portions of watershed (protection by temporary fencing or other means, enlarge another portion); monitoring of species in the feature may be necessary to document extent of actual impacts to threatened or endangered species; if impacts are documented to threatened or endangered species, then additional action would be required for indirect impacts to the threatened or endangered species by habitat enhancement, possibly elsewhere; and no work around the vernal pool during the rainy season or when ground is wet (about November 1 to June 1). The City typically applies a 100-foot-wide avoidance buffer surrounding wetland resources; however, the width of the buffer may be determined on a case-by-case basis depending on the need and value. Therefore, no work would occur within a 100-foot buffer around the vernal pool during rainy season or when ground is wet (about November 1 to June 1), unless it is determined that a reduced buffer is more appropriate.

10.2.3 HEALTH AND SAFETY/HAZARDS

Miramar Reservoir Alternative

Potential impacts due to fire hazards would be reduced with implementation of the following mitigation measure:

MM-HAZ-1 A Construction Fire Prevention/Protection Plan shall be prepared by the City of San Diego or its contractors prior to construction of the North City

Project, as determined necessary by the City of San Diego. Construction within or immediately adjacent to areas of dense foliage during periods of low humidity and/or high winds (Red Flag Warning periods) shall be prohibited. During all other non-Red Flag Warning periods, necessary brush fire prevention and management practices shall be incorporated and shall address common construction-related ignition prevention and hot-works (any spark-, heat-, or flame-producing activity) policies, as well as necessary fire prevention equipment to be on site during all construction activities. Details of the Construction Fire Prevention/Protection Plan shall be determined as site plans for each component are finalized to the satisfaction of the City of San Diego Fire Marshal. Plans shall also contain fire safety information to be disseminated to construction crews during regular safety meetings. Fire prevention techniques shall be applied during construction as deemed necessary by the City of San Diego Fire Marshal based on the vegetation (fuels) within the site and surrounding areas.

Potential impacts due to hazardous materials release would be reduced by implementation of the following mitigation measures:

MM-HAZ-2 A Hazardous Materials Reporting Form shall be prepared, as determined necessary by the City of San Diego, and a Hazardous Materials Review conducted by the Development Services Department for each North City Project component in compliance with the City of San Diego's Information Bulletin 116.

MM-HAZ-3 A Spill Prevention and Emergency Response Plan shall be completed, as determined necessary by the City of San Diego, for each North City Project component which includes on-site storage of hazardous materials (i.e., Morena Pump Station, NCWRP Expansion, North City Renewable Energy Facility, NCPWF, and Dechlorination Facility) prior to the commencement of operation. 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.

Potential impacts due to hazardous materials sites would be reduced by implementation of the following mitigation measures:

MM-HAZ-4 In the event that hazardous substances are encountered during construction, construction activities in the area shall immediately cease. All applicable procedures outlined in the City of San Diego “WHITEBOOK” Part 1 – General Provisions (A), Section 7-22, Encountering or Releasing Hazardous Substances shall be followed (City of San Diego 2015). In the case that groundwater contaminated with petroleum is encountered, the requirements of Section 7-8.6.6 of the “WHITEBOOK” shall be followed.

These procedures and requirements include, but are not limited to:

1. Comply with all applicable federal, state, and local laws and regulations and notification requirements.
2. Follow the guidelines of the current edition of the County of San Diego Department of Environmental Health (DEH) SAM Manual in the event that contaminated soil is encountered.
3. Immediately notify the Engineer, who in turn shall contact the City’s Environmental Services Department, Hazardous Materials Management Program.
4. In areas of known petroleum-contaminated soil, monitoring for the presence of contamination shall be the contractor’s responsibility, and an operational Photo Ionization Device shall be used at all times.
5. All suspected contaminated soil shall be stockpiled at a location approved by the Engineer and the HMMP on a relatively impervious surface.
6. Contaminated soil shall be disposed of dependent on classification and as approved by the Hazardous Substances Management Plan.

MM-HAZ-5 Prior to construction, the City shall conduct a survey where excavation is proposed to occur outside of roadway right-of-way for trenchless construction of the Morena Pipelines at Rose Canyon within the Camp Matthews Formerly Used Defense Site – Range Complex No.1 to identify potential munitions impacts. If the survey results indicate a potential risk for encountering munitions during excavation, an

unexploded ordnances (UXO) identification, training, and reporting plan will be prepared and implemented during construction.

San Vicente Reservoir Alternative

Potential impacts due to fire hazards, hazardous materials release, and hazardous materials sites would be reduced with implementation of MM-HAZ-1 through MM-HAZ-5.

10.2.4 HISTORICAL RESOURCES

Miramar Reservoir Alternative

The mitigation measures (MMs) provided in this section have been designed to fulfill the requirements of Section 106 of the National Historic Preservation Act, the CEQA Guidelines, and the City of San Diego Historic Resource Guidelines. The City of San Diego will be the lead agency implementing cultural resource mitigation measures and will provide information to the Bureau of Reclamation for their ongoing Section 106 oversight and consultation obligations. The interagency relationship shall be detailed in a Cultural Resources Monitoring and Treatment Plan, specified in MM-HIS-1:

MM-HIS-1 Cultural Resources Monitoring and Treatment Plan (CRMTP)

I. Prior to Start of Construction

A. Preparation of CRMTP

1. Prior to the start of construction, the Principal Investigator (PI) archaeologist shall prepare a CRMTP that specifies and describes:
 - The cultural resources area of potential effect (APE)
 - The chains of authority and communication, including interagency relationships for the purposes of compliance with Section 106 of the National Historic Preservation Act (NHPA), California Environmental Quality Act (CEQA), and City of San Diego (City) Historic Resource Guidelines
 - Roles and responsibilities
 - Construction monitoring methods

- Reporting protocol
 - Avoidance and protective measures for cultural resources
 - Procedures for evaluating resource significance and/or data recovery for significant resources that cannot be avoided (known and unanticipated discoveries)
 - Consultation obligations and timelines for providing feedback
 - Post construction requirements
2. The PI will prepare the draft CRMTP and submit it to the City of San Diego Point of Contact, who will then distribute to interagency contacts as appropriate for review and to facilitate stakeholder consultation obligations.

MM-HIS-2 The following shall be implemented to protect known archaeological resources that have not been evaluated for significance or that have been evaluated as significant under Section 106 and CEQA:

I. Prior to Start of Construction

- A. Identified cultural resources that have not been evaluated for significance or that have been evaluated as significant under Section 106 of the NHPA and CEQA, will be avoided through project design. These include resources that were either found outside of the work limits or for which significance evaluation did not identify significant archaeological deposits within the work limits.
 1. Prior to the start of construction, the PI archaeologist shall ensure that resource-specific avoidance measures are implemented to prevent unanticipated impacts. These measures may include exclusionary fencing, environmentally sensitive areas (ESA) signage, or other measures deemed appropriate and as specified in the CRMTP.
 2. Only one resource, P-37-013630, overlaps the impact area. This resource was evaluated, and a small portion of the site located on a rocky knoll was identified as significant under Criterion D of Section 106 and Criterion 4 of CEQA. The remainder of the site area did not contain significant

deposits. Therefore, avoidance of significant impacts/adverse effects to this resource will include exclusion of construction-related activities within or immediately near to the area containing significant deposits.

MM-HIS-3 To reduce potential impacts to unknown archaeological resources and/or grave sites during construction of all Project components (i.e., Components Common to the Project Alternatives, Miramar Reservoir Alternative, and San Vicente Reservoir Alternative) the following measures shall be implemented:

I. Prior to Permit Issuance or Bid Opening/Bid Award

A. Entitlements Plan Check

1. Prior to permit issuance or bid opening/bid award, whichever is applicable, the Assistant Deputy Director (ADD) environmental designee shall verify that the requirements for archaeological monitoring and Native American monitoring have been noted on the applicable construction documents through the plan check process.

B. Letters of Qualification have been submitted to ADD

1. Prior to bid award, the applicant shall submit a letter of verification to Mitigation Monitoring Coordinator (MMC) identifying the Principal Investigator (PI) for the Project and the names of all persons involved in the archaeological monitoring program, as defined in the City Historical Resources Guidelines (HRG). If applicable, individuals involved in the archaeological monitoring program must have completed the 40-hour HAZWOPER training with certification documentation.
2. MMC will provide a letter to the applicant confirming the qualifications of the PI and all persons involved in the archaeological monitoring of the Project meet the qualifications established in the City Historical Resources Guidelines.
3. Prior to the start of work, the applicant must obtain written approval from MMC for any personnel changes associated with the monitoring program.

II. Prior to Start of Construction

A. Verification of Records Search

1. The PI shall provide verification to MMC that a site-specific records search (0.25-mile radius) has been completed. Verification includes, but is not limited to a copy of a confirmation letter from South Coastal Information Center, or, if the search was in-house, a letter of verification from the PI stating that the search was completed.
2. The letter shall introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities.
3. The PI may submit a detailed letter to MMC requesting a reduction to the 0.25-mile radius.

B. PI Shall Attend Preconstruction Meetings

1. Prior to beginning any work that requires monitoring, the applicant shall arrange a Preconstruction Meeting that shall include the PI, Native American consultant/monitor (where Native American resources may be impacted), Construction Manager (CM), Grading Contractor, Resident Engineer (RE), Building Inspector (BI), if appropriate, and MMC. The qualified archaeologist and Native American monitor shall attend any grading/excavation related Preconstruction Meetings to make comments and/or suggestions concerning the archaeological monitoring program with the CM and/or Grading Contractor.
 - a. If the PI is unable to attend the Preconstruction Meeting, the applicant shall schedule a focused Preconstruction Meeting with MMC, the PI, RE, CM, if appropriate, prior to the start of any work that requires monitoring.
2. Acknowledgment of Responsibility for Curation (Capital Improvement Program or Other Public Projects)

The applicant shall submit a letter to MMC acknowledging their responsibility for the cost of curation associated with all phases of the archaeological monitoring program.

3. Identify Areas to be Monitored

- a. Prior to the start of any work that requires monitoring, the PI shall submit an Archaeological Monitoring Exhibit (AME) (with verification that the AME has been reviewed and approved by the Native American consultant/monitor when Native American resources may be impacted) based on the appropriate construction documents (reduced to 11×17) to MMC identifying the areas to be monitored, including the delineation of grading/excavation limits.
- b. The AME shall be based on the results of a site-specific records search as well as information regarding the age of existing pipelines, laterals and associated appurtenances, and/or any known soil conditions (native or formation).
- c. MMC shall notify the PI that the AME has been approved.

4. When Monitoring Will Occur

- a. Prior to the start of any work, the PI shall also submit a construction schedule to MMC through the RE indicating when and where monitoring will occur.
- b. The PI may submit a detailed letter to MMC prior to the start of work or during construction requesting a modification to the monitoring program. This request shall be based on relevant information such as review of final construction documents which indicate conditions such as age of existing pipe to be replaced, depth of excavation and/or site graded to bedrock, etc., which may reduce or increase the potential for resources to be present.

5. Approval of AME and Construction Schedule

After approval of the AME by MMC, the PI shall submit to MMC written authorization of the AME and Construction Schedule from the CM.

III. During Construction

A. Monitor Shall be Present During Grading/Excavation/Trenching

1. The Archaeological Monitor shall be present full-time during all soil-disturbing and grading/excavation/trenching activities that could result in impacts to archaeological resources as identified on the AME. **The CM is responsible for notifying the RE, PI, and MMC of changes to any construction activities such as in the case of a potential safety concern within the area being monitored. In certain circumstances Occupational Safety and Health Administration safety requirements may necessitate modification of the AME.**
2. The Native American consultant/monitor shall determine the extent of their presence during soil-disturbing and grading/excavation/trenching activities based on the AME and provide that information to the PI and MMC. If prehistoric resources are encountered during the Native American consultant/monitor's absence, work shall stop, and the Discovery Notification Process detailed in Section III.B–III.C and IV.A–IV.D shall commence.
3. The PI may submit a detailed letter to MMC during construction requesting a modification to the monitoring program when a field condition such as modern disturbance post-dating the previous grading/trenching activities, presence of fossil formations, or when native soils are encountered that may reduce or increase the potential for resources to be present.
4. The archaeological and Native American consultant/monitor shall document field activity via the Consultant Site Visit Records. The Consultant Site Visit Records shall be emailed by the CM to the RE the first day of monitoring, the last day of monitoring, monthly (Notification of Monitoring Completion), and in the case of ANY discoveries. The RE shall forward copies to MMC.

B. Discovery Notification Process

1. In the event of a discovery, the Archaeological Monitor shall direct the contractor to temporarily divert all soil-disturbing activities, including but not limited to digging, trenching, excavating, or grading activities in the area of discovery and in the area reasonably suspected to overlay adjacent resources and immediately notify the RE or CM, as appropriate.
2. The Archaeological Monitor shall immediately notify the PI (unless monitor is the PI) of the discovery.
3. The PI shall immediately notify MMC by phone of the discovery, and shall also submit written documentation to MMC within 24 hours by email with photos of the resource in context, if possible.
4. No soil shall be exported off site until a determination can be made regarding the significance of the resource specifically if Native American resources are encountered.

C. Determination of Significance

1. The PI and Native American consultant/monitor, where Native American resources are discovered shall evaluate the significance of the resource. If Human Remains are involved, follow protocol in Section IV below.
 - a. The PI shall immediately notify MMC by phone to discuss significance determination and shall also submit a letter to MMC indicating whether additional mitigation is required.
 - b. If the resource is significant, the PI shall submit an Archaeological Data Recovery Program (ADRP) and obtain written approval of the program from MMC, CM, and RE. The ADRP and any mitigation must be approved by MMC, RE, and/or CM before ground-disturbing activities in the area of discovery will be allowed to resume. **Note: If a unique archaeological site is also an historical resource as defined in CEQA Guidelines Section 15064.5, then the limits on the amount(s) that a Project applicant may be**

required to pay to cover mitigation costs as indicated in CEQA Section 21083.2 shall not apply.

- (1) Note: For pipeline trenching and other linear projects in the public Right-of-Way, the PI shall implement the Discovery Process for Pipeline Trenching projects identified below under “D.”
- c. If the resource is not significant, the PI shall submit a letter to MMC indicating that artifacts will be collected, curated, and documented in the Final Monitoring Report. The letter shall also indicate that that no further work is required.
 - (1) Note: For pipeline trenching and other linear projects in the public right-of-way, if the deposit is limited in size, both in length and depth; the information value is limited and is not associated with any other resource; and there are no unique features/artifacts associated with the deposit, the discovery should be considered not significant.
 - (2) Note: For pipeline trenching and other linear projects in the public right-of-way, if significance cannot be determined, the Final Monitoring Report and Site Record (DPR Form 523A/B) shall identify the discovery as potentially significant.
- D. Discovery Process for Significant Resources – Pipeline Trenching and Other Linear Projects in the Public Right-of-Way

The following procedure constitutes adequate mitigation of a significant discovery encountered during pipeline trenching activities or for other linear project types within the public right-of-way, including but not limited to excavation for jacking pits, receiving pits, laterals, and manholes to reduce impacts to below a level of significance:

- 1. Procedures for documentation, curation, and reporting
 - a. One hundred percent (100%) of the artifacts within the trench alignment and width shall be documented in situ, to include photographic records, plan view of the trench

and profiles of side walls, recovered, photographed after cleaning and analyzed and curated. The remainder of the deposit within the limits of excavation (trench walls) shall be left intact.

- b. The PI shall prepare a Draft Monitoring Report and submit to MMC via the RE as indicated in Section VI-A.
- c. The PI shall be responsible for recording (on the appropriate State of California Department of Parks and Recreation forms DPR 523 A/B) the resource(s) encountered during the Archaeological Monitoring Program in accordance with the City's HRG. The DPR forms shall be submitted to the South Coastal Information Center for either a Primary Record or SDI Number and included in the Final Monitoring Report.
- d. The Final Monitoring Report shall include a recommendation for monitoring of any future work in the vicinity of the resource.

IV. Discovery of Human Remains

If human remains are discovered, work shall halt in that area, and no soil shall be exported off site until a determination can be made regarding the provenance of the human remains; and the following procedures as set forth in CEQA Guidelines Section 15064.5(e), the California Public Resources Code Section 5097.98, and the California Health and Safety Code Section 7050.5, shall be undertaken:

A. Notification

1. Archaeological Monitor shall notify the RE or CM as appropriate, MMC, and the PI, if the monitor is not qualified as a PI. MMC will notify the appropriate Senior Planner in the Environmental Analysis Section of the Development Services Department to assist with the discovery notification process.
2. The PI shall notify the Medical Examiner after consultation with the RE, either in person or via telephone.

B. Isolate discovery site

1. Work shall be directed away from the location of the discovery and any nearby area reasonably suspected to overlay adjacent human remains until a determination can be made by the Medical Examiner in consultation with the PI concerning the provenience of the remains.
2. The Medical Examiner, in consultation with the PI, will determine the need for a field examination to determine the provenience.
3. If a field examination is not warranted, the Medical Examiner will determine with input from the PI, if the remains are or are most likely to be of Native American origin.

C. If human remains are determined to be Native American

1. The Medical Examiner will notify the Native American Heritage Commission (NAHC) within 24 hours. By law, only the Medical Examiner can make this call.
2. NAHC will immediately identify the person or persons determined to be the Most Likely Descendant (MLD) and provide contact information.
3. The MLD will contact the PI within 24 hours or sooner after the Medical Examiner has completed coordination, to begin the consultation process in accordance with CEQA Guidelines Section 15064.5(e) and the California Public Resources and Health and Safety Codes.
4. The MLD will have 48 hours to make recommendations to the property owner or representative, for the treatment or disposition with proper dignity, of the human remains and associated grave goods.
5. Disposition of Native American human remains will be determined between the MLD and the PI, and, if:
 - a. The NAHC is unable to identify the MLD, OR the MLD failed to make a recommendation within 48 hours after being notified by the Commission, OR

- b. The landowner or authorized representative rejects the recommendation of the MLD and mediation in accordance with California Public Resources Code Section 5097.94(k), by the NAHC fails to provide measures acceptable to the landowner, THEN
 - c. To protect these sites, the landowner shall do one or more of the following:
 - (1) Record the site with the NAHC,
 - (2) Record an open space or conservation easement, or
 - (3) Record a document with the County.
 - d. Upon the discovery of multiple Native American human remains during a ground-disturbing land development activity, the landowner may agree that additional conferral with descendants is necessary to consider culturally appropriate treatment of multiple Native American human remains. Culturally appropriate treatment of such a discovery may be ascertained from review of the site utilizing cultural and archaeological standards. Where the parties are unable to agree on the appropriate treatment measures, the human remains and items associated and buried with Native American human remains shall be reinterred with appropriate dignity, pursuant to Section 5.c.
- D. If human remains are not Native American
- 1. The PI shall contact the Medical Examiner and notify them of the historic era context of the burial.
 - 2. The Medical Examiner will determine the appropriate course of action with the PI and City staff (California Public Resources Code, Section 5097.98).
 - 3. If the remains are of historic origin, they shall be appropriately removed and conveyed to the San Diego Museum of Man for analysis. The decision for internment of the human remains shall be made in consultation with MMC, Environmental

Analysis Section, the applicant/landowner, any known descendant group, and the San Diego Museum of Man.

V. Night and/or Weekend Work

- A. If night and/or weekend work is included in the contract
 - 1. When night and/or weekend work is included in the contract package, the extent and timing shall be presented and discussed at the Preconstruction Meeting.
 - 2. The following procedures shall be followed.
 - a. No Discoveries

In the event that no discoveries were encountered during night and/or weekend work, the PI shall record the information on the Consultant Site Visit Record and submit to MMC by email by 8 a.m. of the next business day.
 - b. Discoveries

All discoveries shall be processed and documented using the existing procedures detailed in Sections III – During Construction, and IV – Discovery of Human Remains. Discovery of human remains shall always be treated as a significant discovery.
 - c. Potentially Significant Discoveries

If the PI determines that a potentially significant discovery has been made, the procedures detailed under Section III – During Construction and IV – Discovery of Human Remains shall be followed.
 - d. The PI shall immediately contact the RE and MMC, or by 8 a.m. of the next business day to report and discuss the findings as indicated in Section III-B, unless other specific arrangements have been made.
- B. If night and/or weekend work becomes necessary during the course of construction
 - 1. The CM shall notify the RE, as appropriate, a minimum of 24 hours before the work is to begin.

2. The RE, or CM, as appropriate, shall notify MMC immediately.
- C. All other procedures described above shall apply, as appropriate.

VI. Post Construction

A. Submittal of Draft Monitoring Report

1. The PI shall submit two copies of the Draft Monitoring Report (even if negative), prepared in accordance with the HRG (Appendix C/D) that describes the results, analysis, and conclusions of all phases of the Archaeological Monitoring Program (with appropriate graphics) to MMC via the RE for review and approval within 90 days following the completion of monitoring. **It should be noted that if the PI is unable to submit the Draft Monitoring Report within the allotted 90-day time frame as a result of delays with analysis, special study results or other complex issues, a schedule shall be submitted to MMC establishing agreed due dates and the provision for submittal of monthly status reports until this measure can be met.**
 - a. For significant archaeological resources encountered during monitoring, the ADRP or Pipeline Trenching Discovery Process shall be included in the Draft Monitoring Report.
 - b. Recording Sites with State of California Department of Parks and Recreation

The PI shall be responsible for recording (on the appropriate State of California Department of Parks and Recreation forms DPR 523 A/B) any significant or potentially significant resources encountered during the Archaeological Monitoring Program in accordance with the City's HRG, and submittal of such forms to the South Coastal Information Center with the Final Monitoring Report.
2. MMC shall return the Draft Monitoring Report to the PI via the RE for revision or for preparation of the Final Report.
3. The PI shall submit revised Draft Monitoring Report to MMC via the RE for approval.

4. MMC shall provide written verification to the PI of the approved report.
5. MMC shall notify the RE or CM, as appropriate, of receipt of all Draft Monitoring Report submittals and approvals.

B. Handling of Artifacts

1. The PI shall be responsible for ensuring that all cultural remains collected are cleaned and catalogued
2. The PI shall be responsible for ensuring that all artifacts are analyzed to identify function and chronology as they relate to the history of the area; that faunal material is identified as to species; and that specialty studies are completed, as appropriate.

C. Curation of artifacts: Accession Agreement and Acceptance Verification

1. The PI shall be responsible for ensuring that all artifacts associated with the survey, testing and/or data recovery for this project are permanently curated with an appropriate institution. This shall be completed in consultation with MMC and the Native American representative, as applicable.
2. When applicable to the situation, the PI shall include written verification from the Native American consultant/monitor indicating that Native American resources were treated in accordance with state law and/or applicable agreements. If the resources were reinterred, verification shall be provided to show what protective measures were taken to ensure no further disturbance occurs in accordance with Section IV – Discovery of Human Remains, Subsection C.
3. The PI shall submit the Accession Agreement and catalogue record(s) to the RE or CM, as appropriate for donor signature with a copy submitted to MMC.
4. The RE or CM, as appropriate shall obtain signature on the Accession Agreement and shall return to PI with copy submitted to MMC.

5. The PI shall include the Acceptance Verification from the curation institution in the Final Monitoring Report submitted to the RE or CM and MMC.

D. Final Monitoring Report(s)

1. The PI shall submit one copy of the approved Final Monitoring Report to the RE or CM as appropriate, and one copy to MMC (even if negative), within 90 days after notification from MMC of the approved report.
2. The RE shall in no case issue the Notice of Completion until receiving a copy of the approved Final Monitoring Report from MMC which includes the Acceptance Verification from the curation institution.

MM-HIS-4 For construction activities associated with the North City Pipeline occurring within 1,000 feet of inventoried CR 450 (HRB 450) features, a qualified historic preservation specialist shall prepare a Protection and Stabilization Plan for the stone wall associated with the Scripps Meanley Stables and House Complex (HRB 450). The plan shall detail the methods that will be used to protect the structure during construction activities. This includes attachment methods for installing temporary protection to stabilize the wall, fencing around the wall, and an analysis of vibration source amplitudes. The vibration test shall be conducted by a qualified vibration engineer to determine if nearby construction-related vibration has the potential to damage the wall or further degrade its condition. If the engineer determines that vibration source amplitudes will not reach damaging levels, no additional protection will be required beyond stabilization and fencing. However, if the engineer determines that the wall could be damaged by construction-related vibration, additional protection measures would be required prior to the start of construction. Such measures would include rehabilitation of the wall in conformance with the Secretary of the Interior's Standards to repair existing cracks in the mortar and replace missing stones to strengthen the structure, and daily construction monitoring of the wall by a qualified historic preservation specialist during periods of construction that utilize equipment known to be significant sources of vibration. If the specialist identifies a need for further protection of the

resource, construction methods in the vicinity of the wall will be modified to avoid any damaging levels of vibration.

The final Protection and Stabilization Plan shall be appended to the final set of construction plans and brought to the attention of contractors prior to the start of any construction activities occurring within 1,000 feet of the stone wall.

San Vicente Reservoir Alternative

Potential impacts to historical and cultural resources would be reduced by implementation of mitigation measures MM-HIS-2 and MM-HIS-3.

10.2.5 NOISE

Miramar Reservoir Alternative

Potential impacts due to construction noise would be reduced by implementation of the following mitigation measures:

MM-NOI-1 The following best management practices shall be implemented to reduce noise associated with construction of the North City Project:

1. 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.
2. All mobile or fixed noise-producing equipment used on the Project facilities that are regulated for noise output by a local, state, or federal agency shall comply with such regulation while in the course of project activity.
3. Idling equipment shall be kept to a minimum and moved as far as practicable from noise-sensitive land uses.
4. Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where feasible.

5. Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.
6. Construction site and access road speed limits shall be established and enforced during the construction period.
7. The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.
8. Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow surrounding property owners to contact the job superintendent if necessary. In the event the City receives a complaint, appropriate corrective actions shall be implemented and a report of the action provided to the reporting party.
9. Pumps and associated equipment (e.g., portable generators etc.) 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 will be determined in conjunction with construction plans for individual projects.

MM-NOI-2 Construction activities shall not occur between the hours of 7:00 p.m. and 7:00 a.m. or on legal holidays or on Sundays unless a permit has been applied for and granted beforehand by the Noise Abatement and Control Administrator, in accordance with City of San Diego Municipal Code Section 59.5.0404. All terms and conditions of said permit shall be complied with.

MM-NOI-3 In order to avoid daytime traffic jams or service outages, nighttime work will be planned 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.

MM-NOI-4 A noise and vibration study shall be conducted during the final design phase for the NCPWF Influent Pump Station, Morena Pump Station, North City Pump Station, North City Renewable Energy Facility (both Project Alternatives), and the Mission Trails Booster Station (San

Vicente Reservoir Alternative only). Pump station machinery and/or generators shall be housed within concrete structures with acoustically absorptive treatments where necessary, and additional measures such as sound enclosures, separate rooms for high noise equipment, etc. shall be incorporated into the final project design as necessary to assure that noise and vibration produced by operation of the facility shall not exceed the applicable limits in the municipal code.

San Vicente Reservoir Alternative

Potential impacts due to construction noise would be reduced by implementation of mitigation measures MM-NOI-1 through MM-NOI-4.

10.2.6 PALEONTOLOGICAL RESOURCES

Miramar Reservoir Alternative

Potential impacts paleontological resources would be reduced by implementation of the following mitigation measure:

MM-PALEO-1 If construction of a project would occur within a formation with a moderate to high resource potential, monitoring during construction would be required, and a paleontological resources mitigation program consisting of the following components shall be implemented:

I. Prior to Permit Issuance or Bid Opening/Bid Award

A. Entitlements Plan Check

1. Prior to permit issuance or Bid Opening/Bid Award, whichever is applicable, the Assistant Deputy Director (ADD) Environmental designee shall verify that the requirements for Paleontological Monitoring have been noted on the appropriate construction documents.

B. Letters of Qualification have been submitted to ADD

1. Prior to Bid Award, the applicant shall submit a letter of verification to Mitigation Monitoring Coordinator (MMC) identifying the Principal Investigator (PI) for the Project and the names of all persons involved in the paleontological

monitoring program, as defined in the City of San Diego Paleontology Guidelines.

2. MMC will provide a letter to the applicant confirming the qualifications of the PI and all persons involved in the paleontological monitoring of the Project.
3. Prior to the start of work, the applicant shall obtain approval from MMC for any personnel changes associated with the monitoring program.

II. Prior to Start of Construction

A. Verification of Records Search

1. The PI shall provide verification to MMC that a site-specific records search has been completed. Verification includes, but is not limited to, a copy of a confirmation letter from San Diego Natural History Museum, other institution or, if the search was in-house, a letter of verification from the PI stating that the search was completed.
2. The letter shall introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities.

B. PI Shall Attend Precon Meetings

1. Prior to beginning any work that requires monitoring, the applicant shall arrange a Precon Meeting that shall include the PI, Construction Manager (CM), Grading Contractor, Resident Engineer (RE), Building Inspector (BI), if appropriate, and MMC. The qualified paleontologist shall attend any grading/excavation related Precon Meetings to make comments and/or suggestions concerning the Paleontological Monitoring program with the Construction Manager and/or Grading Contractor.
 - a. If the PI is unable to attend the Precon Meeting, the applicant shall schedule a focused Precon Meeting with MMC, the PI, RE, CM or BI, if appropriate, prior to the start of any work that requires monitoring.

2. Acknowledgement of Responsibility for Curation (CIP or Other Public Projects)

The applicant shall submit a letter to MMC acknowledging their responsibility for the cost of curation associated with all phases of the paleontological monitoring program.

3. Identify Areas to be Monitored

- a. Prior to the start of any work that requires monitoring, the PI shall submit a Paleontological Monitoring Exhibit (PME) based on the appropriate construction documents (reduced to 11x17) to MMC for approval identifying the areas to be monitored including the delineation of grading/excavation limits. Monitoring shall begin at depths below 10 feet from existing grade or as determined by the PI in consultation with MMC. The determination shall be based on site-specific records search data which supports monitoring at depths less than 10 feet.
- b. The PME shall be based on the results of a site-specific records search as well as information regarding existing known soil conditions (native or formation).
- c. MMC shall notify the PI that the PME has been approved.

4. When Monitoring Will Occur

- a. Prior to the start of any work, the PI shall also submit a construction schedule to MMC through the RE indicating when and where monitoring will occur.
- b. The PI may submit a detailed letter to MMC prior to the start of work or during construction requesting a modification to the monitoring program. This request shall be based on relevant information such as review of final construction documents which indicate conditions such as depth of excavation and/or site graded to bedrock, presence or absence of fossil resources, etc., which may reduce or increase the potential for resources to be present.

5. Approval of PME and Construction Schedule

After approval of the PME by MMC, the PI shall submit to MMC written authorization of the PME and Construction Schedule from the CM.

III. During Construction

A. Monitor Shall be Present During Grading/Excavation/Trenching

1. The monitor shall be present full-time during grading/excavation/trenching activities including, but not limited to mainline, laterals, jacking and receiving pits, services and all other appurtenances associated with underground utilities as identified on the PME that could result in impacts to formations with high and/or moderate resource sensitivity. The Construction Manager is responsible for notifying the RE, PI, and MMC of changes to any construction activities such as in the case of a potential safety concern within the area being monitored. In certain circumstances Occupational Safety and Health Administration safety requirements may necessitate modification of the PME.
2. The PI may submit a detailed letter to MMC during construction requesting a modification to the monitoring program when a field condition such as trenching activities that do not encounter formational soils as previously assumed, and/or when unique/unusual fossils are encountered, which may reduce or increase the potential for resources to be present.
3. The monitor shall document field activity via the Consultant Site Visit Record (CSV). The CSV shall be emailed by the CM to the RE the first day of monitoring, the last day of monitoring, monthly (Notification of Monitoring Completion), and in the case of ANY discoveries. The RE shall forward copies to MMC.

B. Discovery Notification Process

1. In the event of a discovery, the Paleontological Monitor shall direct the contractor to temporarily divert trenching activities in the area of discovery and immediately notify the RE or CM, as appropriate.

2. The Monitor shall immediately notify the PI (unless Monitor is the PI) of the discovery.
3. The PI shall immediately notify MMC by phone of the discovery, and shall also submit written documentation to MMC within 24 hours by email with photos of the resource in context, if possible.

C. Determination of Significance

1. The PI shall evaluate the significance of the resource.
 - a. The PI shall immediately notify MMC by phone to discuss significance determination and shall also submit a letter to MMC indicating whether additional mitigation is required. The determination of significance for fossil discoveries shall be at the discretion of the PI.
 - b. If the resource is significant, the PI shall submit a Paleontological Recovery Program (PRP) and obtain written approval of the program from MMC, MC and/or RE. PRP and any mitigation must be approved by MMC, RE, and/or CM before ground-disturbing activities in the area of discovery will be allowed to resume.
 - (1) Note: For pipeline trenching projects only, the PI shall implement the Discovery Process for Pipeline Trenching projects identified below under “D.”
 - c. If resource is not significant (e.g., small pieces of broken common shell fragments or other scattered common fossils) the PI shall notify the RE, or CM as appropriate, that a non-significant discovery has been made. The Paleontologist shall continue to monitor the area without notification to MMC unless a significant resource is encountered.
 - d. The PI shall submit a letter to MMC indicating that fossil resources will be collected, curated, and documented in the Final Monitoring Report. The letter shall also indicate that no further work is required.
 - (1) Note: For Pipeline Trenching Projects Only. If the fossil discovery is limited in size, both in length and depth; the information value is limited and there are no unique fossil features associated with the

discovery area, then the discovery should be considered not significant.

- (2) Note, for Pipeline Trenching Projects Only: If significance can not be determined, the Final Monitoring Report and Site Record shall identify the discovery as Potentially Significant.

D. Discovery Process for Significant Resources - Pipeline Trenching Projects

The following procedure constitutes adequate mitigation of a significant discovery encountered during pipeline trenching activities including but not limited to excavation for jacking pits, receiving pits, laterals, and manholes to reduce impacts to below a level of significance.

1. Procedures for documentation, curation, and reporting
 - a. One hundred percent (100%) of the fossil resources within the trench alignment and width shall be documented in-situ photographically, drawn in plan view (trench and profiles of side walls), recovered from the trench and photographed after cleaning, then analyzed and curated consistent with Society of Invertebrate Paleontology Standards. The remainder of the deposit within the limits of excavation (trench walls) shall be left intact and so documented.
 - b. The PI shall prepare a Draft Monitoring Report and submit to MMC via the RE as indicated in Section VI-A.
 - c. The PI shall be responsible for recording (on the appropriate forms for the San Diego Natural History Museum) the resource(s) encountered during the Paleontological Monitoring Program in accordance with the City's Paleontological Guidelines (PG). The forms shall be submitted to the San Diego Natural History Museum and included in the Final Monitoring Report.
 - d. The Final Monitoring Report shall include a recommendation for monitoring of any future work in the vicinity of the resource.

IV. Night and/or Weekend Work

- A. If night and/or weekend work is included in the contract
 - 1. When night and/or weekend work is included in the contract package, the extent and timing shall be presented and discussed at the precon meeting.
 - 2. The following procedures shall be followed.
 - a. No Discoveries

In the event that no discoveries were encountered during night and/or weekend work, the PI shall record the information on the CSVR and submit to MMC via the RE by email by 8AM on the next business day.
 - b. Discoveries

All discoveries shall be processed and documented using the existing procedures detailed in Sections III - During Construction.
 - c. Potentially Significant Discoveries

If the PI determines that a potentially significant discovery has been made, the procedures detailed under Section III - During Construction shall be followed.
 - d. The PI shall immediately contact the RE and MMC, or by 8:00 a.m. on the next business day to report and discuss the findings as indicated in Section III-B, unless other specific arrangements have been made.
- B. If night and/or weekend work becomes necessary during the course of construction
 - 1. The Construction Manager shall notify the RE, as appropriate, a minimum of 24 hours before the work is to begin.
 - 2. The RE, or CM, as appropriate, shall notify MMC immediately.
- C. All other procedures described above shall apply, as appropriate.

V. Post Construction

A. Preparation and Submittal of Draft Monitoring Report

1. The PI shall submit two copies of the Draft Monitoring Report (even if negative), prepared in accordance with the PG, which describes the results, analysis, and conclusions of all phases of the Paleontological Monitoring Program (with appropriate graphics) to MMC via the RE for review and approval within 90 days following the completion of monitoring.
 - a. For significant paleontological resources encountered during monitoring, the Paleontological Recovery Program or Pipeline Trenching Discovery Process shall be included in the Draft Monitoring Report.
 - b. Recording Sites with the San Diego Natural History Museum

The PI shall be responsible for recording (on the appropriate forms) any significant or potentially significant fossil resources encountered during the Paleontological Monitoring Program in accordance with the City's PG, and submittal of such forms to the San Diego Natural History Museum with the Final Monitoring Report.
2. MMC shall return the Draft Monitoring Report to the PI via the RE for revision or for preparation of the Final Report.
3. The PI shall submit revised Draft Monitoring Report to MMC via the RE for approval.
4. MMC shall provide written verification to the PI of the approved report.
5. MMC shall notify the RE or CM, as appropriate, of receipt of all Draft Monitoring Report submittals and approvals.

B. Handling of Fossil Remains

1. The PI shall be responsible for ensuring that all fossil remains collected are cleaned and catalogued.

- C. Curation of Fossil Remains: Deed of Gift and Acceptance Verification
1. The PI shall be responsible for ensuring that all fossil remains associated with the monitoring for this project are permanently curated with an appropriate institution.
 2. The PI shall submit the Deed of Gift and catalogue record(s) to the RE or CM, as appropriate for donor signature with a copy submitted to MMC.
 3. The RE or CM, as appropriate shall obtain signature on the Deed of Gift and shall return to PI with copy submitted to MMC.
 4. The PI shall include the Acceptance Verification from the curation institution in the Final Monitoring Report submitted to the RE or CM and MMC.
- D. Final Monitoring Report(s)
1. The PI shall submit two copies of the Final Monitoring Report to MMC (even if negative), within 90 days after notification from MMC of the approved report.
 2. The RE shall, in no case, issue the Notice of Completion until receiving a copy of the approved Final Monitoring Report from MMC which includes the Acceptance Verification from the curation institution.

San Vicente Reservoir Alternative

Potential impacts to paleontological resources would be reduced by implementation of mitigation measure MM-PALEO-1.

10.2.7 PUBLIC UTILITIES

Miramar Reservoir Alternative

Potential impacts due to utility conflicts would be reduced by implementation of the following mitigation measure:

MM-PU-1 The City of San Diego Public Utilities Department shall consult with other City departments and other utility service providers to avoid interference with facilities. Special design considerations, such as a

casing, may be necessary if the interfering utility is a sewer or reclaimed water line to ensure protection of utility lines.

San Vicente Reservoir Alternative

Potential impacts due to utility conflicts would be reduced by implementation of mitigation measure MM-PU-1.

10.2.8 TRANSPORTATION, CIRCULATION AND PARKING

Miramar Reservoir Alternative

Potential impacts to traffic would be reduced by implementation of the following mitigation measure:

MM-TRAF-1 A Transportation Demand Management (TDM) Plan shall be prepared to limit the number of construction worker trips that travel through the impacted intersections or roadways during peak periods. The following lists a series of TDM strategies that may be appropriate during Project construction.

- Implement a ride-sharing program to encourage carpooling among workers.
- Adjust work schedules so workers do not access the site during the peak hours.
- Provide off-site parking locations for workers outside of the area with shuttle services to bring them on site.
- Provide subsidized transit passes for construction workers.

San Vicente Reservoir Alternative

Potential impacts to traffic would be reduced by implementation of mitigation measure MM-TRAF-1.

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10.3 MITIGATION SUMMARY

The applicability of mitigation measures to each Project component is outlined below in Table 10-1.

**Table 10-1
Summary of Mitigation Measures**

Mitigation Measure	Components Common To Project Alternatives								Miramar Reservoir Alternative				San Vicente Reservoir Alternative		
	Morena Pump Station	Morena Pipelines	NCWRP Expansion	NCPWF Influent Pump Station	North City Pump Station	North City Renewable Energy Facility	Landfill Gas Pipeline	MBC Improvements	NCPWF-MR	North City Pipeline	Dechlorination Facility	Miramar Water Treatment Plant Improvements	NCPWF-SVR	San Vicente Pipeline	Mission Trails Booster Station
<i>Air Quality</i>															
MM-AQ-1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MM-AQ-2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MM-AQ-3	X	X	X												
<i>Biological Resources</i>															
MM-BIO-1a					X				X				X	X	X
MM-BIO-1b					X				X				X		
MM-BIO-1c														X	
MM-BIO-2		X			X		X		X	X			X	X	
MM-BIO-3		X	X	X	X	X	X	X	X	X	X	X	X	X	X
MM-BIO-4		X	X	X		X	X	X		X				X	
MM-BIO-5														X	
MM-BIO-6	X	X												X	
MM-BIO-7										X					
MM-BIO-78														X	
MM-BIO-89		X			X				X	X			X	X	
MM-BIO-9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Health and Safety/Hazards</i>															
MM-HAZ-1	X	X	X		X		X	X	X	X	X		X	X	X
MM-HAZ-2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MM-HAZ-3	X		X			X			X		X		X		
MM-HAZ-4	X	X								X				X	
MM-HAZ-5		X													
<i>Historical Resources</i>															
MM-HIS-1										X					
MM-HIS-2		X					X			X		X		X	
MM-HIS-3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MM-HIS-4										X					
<i>Noise</i>															
MM-NOI-1		X								X				X	X
MM-NOI-2		X								X				X	X

**Table 10-1
Summary of Mitigation Measures**

Mitigation Measure	Components Common To Project Alternatives								Miramar Reservoir Alternative				San Vicente Reservoir Alternative		
	Morena Pump Station	Morena Pipelines	NCWRP Expansion	NCPWF Influent Pump Station	North City Pump Station	North City Renewable Energy Facility	Landfill Gas Pipeline	MBC Improvements	NCPWF-MR	North City Pipeline	Dechlorination Facility	Miramar Water Treatment Plant Improvements	NCPWF-SVR	San Vicente Pipeline	Mission Trails Booster Station
MM-NOI-3		X								X				X	X
MM-NOI-4	X			X	X	X									X
<i>Paleontological Resources</i>															
MM-PALEO-1	X		X	X	X	X		X	X		X	X	X	X	X
<i>Public Utilities</i>															
MM-PU-1		X					X			X				X	
<i>Transportation and Traffic</i>															
MM-TRAF-1		X								X				X	

The timing of mitigation, responsible person, and applicable location along the pipeline alignments or within the facility sites are outlined below in Tables 10-2 through 10-15 for each Project component.

**Table 10-2
Mitigation Measures – Morena Pump Station**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-AQ-1 (construction BMPs)		X		Construction Manager	Entire site
MM-AQ-2 (construction NO _x)		X		Construction Manager	Entire site
MM-AQ-3 (odor reduction)			X	City of San Diego	Entire site
MM-BIO-6 (riparian birds)	X	X		City of San Diego	San Diego River at Friars Road
MM-BIO-940a (qualified biologist)	X			Owner/Permittee	Overflow pipe near San Diego River at Friars Road
MM-BIO-940b (preconstruction meeting)	X			City of San Diego	San Diego River at Friars Road
MM-BIO-940c (documentation)	X	X	X	Owner/Permittee	San Diego River at Friars Road
MM-BIO-940d (biological construction mitigation/monitoring exhibit)	X			City of San Diego	San Diego River at Friars Road
MM-BIO-940e (construction fencing)	X			City of San Diego	San Diego River at Friars Road
MM-BIO-940f (on-site education)	X			City of San Diego	San Diego River at Friars Road
MM-BIO-940g (biological monitoring)		X		City of San Diego	San Diego River at Friars Road
MM-BIO-940j (BMPs/erosion/runoff)		X	X	City of San Diego	San Diego River at Friars Road
MM-BIO-940k (toxics/project staging areas/equipment storage)	X	X	X	Construction Manager/owner	San Diego River at Friars Road
MM-HAZ-1 (construction fire protection plan)	X	X		Construction Contractor/ City of San Diego Fire Marshal	Overflow Pipes adjacent to undeveloped areas of San Diego River Valley
MM-HAZ-2 (hazardous material reporting form)			X	City of San Diego	Entire site

**Table 10-2
Mitigation Measures – Morena Pump Station**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-HAZ-3 (spill prevention and emergency response plan)			X	City of San Diego	Entire site
MM-HAZ-4 (hazardous substances encounter)		X		Construction Manager	Entire site
MM-HIS-3 (archaeological monitoring)	X	X	X	Principal Investigator (Archaeologist)	Entire site
MM-NOI-4 (noise and vibration study)	X			Construction Contractor	Entire site
MM-PALEO-1 (paleontological monitoring)	X	X	X	Principal Investigator (Paleontologist)	Entire site

**Table 10-3
Mitigation Measures – Morena Wastewater Forcemain and Brine/Centrates Line**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-AQ-1 (construction BMPs)		X		Construction Manager	Entire pipeline alignment
MM-AQ-2 (construction NO _x)		X		Construction Manager	Entire pipeline alignment
MM-AQ-3 (odor reduction)			X	City of San Diego	At air/vacuum relief valves at high points along forcemain.
MM-BIO-2 (habitat revegetation)	X	X	X	City of San Diego	Coastal sage scrub in Rose Canyon east of Genesee Road and north of the railroad tracks
MM-BIO-3 (nesting birds)	X	X		Project Applicant/City of San Diego	Coastal sage scrub in Rose Canyon east of Genesee Road and north of the railroad tracks
MM-BIO-4 (Coastal California Gnatcatcher)	X	X		City of San Diego	Coastal sage scrub within MHPA in Rose Canyon east of Genesee Road and north of the railroad tracks and within San Clemente Canyon, just south of State Route 52 (SR-52) and east of Genesee Avenue.
MM-BIO-6 (riparian birds)	X	X		City of San Diego	Within riparian habitat near Mission Bay at W Morena Boulevard and Tecolote Road; San Clemente Canyon at SR-52; Rose Canyon Open Space Park and Nobel Drive
MM-BIO-89 (wetland permits)	X			City of San Diego	Within the concrete lined portion of Tecolote Creek
MM-BIO-940a (qualified biologist)	X			Owner/Permittee	Coastal sage scrub in Rose Canyon east of Genesee Road and north of the railroad tracks; Mission Bay at W Morena Blvd and Tecolote Road; San Clemente Canyon at SR-52; Rose Canyon Open Space Park and Nobel Dr
MM-BIO-940b (preconstruction meeting)	X			City of San Diego	Coastal sage scrub in Rose Canyon east of Genesee Road and north of the railroad tracks; Mission Bay at W Morena Boulevard and Tecolote Road; San Clemente Canyon at SR-52; Rose Canyon Open Space Park and Nobel Drive

**Table 10-3
Mitigation Measures – Morena Wastewater Forcemain and Brine/Centrates Line**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-BIO-940c (documentation)	X	X	X	City of San Diego	Coastal sage scrub in Rose Canyon east of Genesee Road and north of the railroad tracks; Mission Bay at W Morena Boulevard and Tecolote Road; San Clemente Canyon at SR-52; Rose Canyon Open Space Park and Nobel Drive
MM-BIO-940d (Biological Construction Mitigation/Monitoring Exhibit)	X			City of San Diego	Coastal sage scrub in Rose Canyon east of Genesee Road and north of the railroad tracks; Mission Bay at W Morena Boulevard and Tecolote Road; San Clemente Canyon at SR-52; Rose Canyon Open Space Park and Nobel Drive
MM-BIO-940e (construction fencing)	X			City of San Diego	Coastal sage scrub in Rose Canyon east of Genesee Road and north of the railroad tracks; Mission Bay at W Morena Boulevard and Tecolote Road within disturbed wetlands; Coastal sage scrub within Tecolote Canyon Natural Park; San Clemente Canyon at SR-52 within sensitive vegetation including coastal sage scrub (including disturbed), coast live oak woodland, and non-native grassland; Rose Canyon Open Space Park and Nobel Drive within coastal sage scrub (including disturbed)
MM-BIO-940f (on-site education)	X			City of San Diego	Coastal sage scrub in Rose Canyon east of Genesee Road and north of the railroad tracks; Mission Bay at W Morena Boulevard and Tecolote Road; San Clemente Canyon at SR-52; Rose Canyon Open Space Park and Nobel Drive
MM-BIO-940g (biological monitoring)		X		City of San Diego	Coastal sage scrub in Rose Canyon east of Genesee Road and north of the railroad tracks; Mission Bay at W Morena Boulevard and Tecolote Road; San Clemente Canyon at SR-52; Rose Canyon Open Space Park and Nobel Drive
MM-BIO-940h (cover trenches)		X		City of San Diego	Coastal sage scrub in Rose Canyon east of Genesee Road and north of the railroad tracks; Mission Bay at W Morena Boulevard and Tecolote Road; San Clemente Canyon at SR-52; Rose Canyon Open Space Park and Nobel Drive
MM-BIO-940i (nighttime construction)		X		Construction Manager	Coastal sage scrub in Rose Canyon east of Genesee Road and north of the railroad tracks; Mission Bay at W Morena Boulevard and Tecolote Road; San Clemente Canyon at SR-52; Rose Canyon Open Space Park and Nobel Drive
MM-BIO-940j (BMPs/Erosion/Runoff)	X	X	X	City of San Diego	Coastal sage scrub in Rose Canyon east of Genesee Road and north of the railroad tracks; a concrete-lined channel north of the intersection of Morena Boulevard and Tecolote Road; San Clemente Canyon at Genesee and SR-52; Rose Canyon Open Space Park and Nobel Drive.
MM-BIO-940k (toxics/project staging areas/equipment storage)		X	X	Construction Manager/owner	Coastal sage scrub in Rose Canyon east of Genesee Road and north of the railroad tracks; Mission Bay at W Morena Boulevard and Tecolote Road; San Clemente Canyon at SR-52; Rose Canyon Open Space Park and Nobel Drive

**Table 10-3
Mitigation Measures – Morena Wastewater Forcemain and Brine/Centrated Line**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-HAZ-1 (construction fire protection plan)	X	X		Construction Contractor/ City of San Diego Fire Marshal	Genesee Avenue between Appleton Street and WB on-ramp of I-52 (Figure 5.4-1F); Genesee Avenue from Governor Drive to Decoro Street (Figure 5.4-1G); Towne Center Drive between Nobel Drive and Renaissance Ave (Figure 5.4-1H); Executive Drive at entrance pit to trenchless segment across I-805 (Figure 5.4-1H).
MM-HAZ-2 (hazardous material reporting form)			X	City of San Diego	Entire pipeline alignment
MM-HAZ-4 (hazardous substances encounter)		X		Construction Manager	Entire pipeline alignment, with special consideration at: Intersection of Governor Drive and Genesee Avenue; Intersection of Clairemont Drive and Clairemont Mesa Boulevard; Intersection of Clairemont Drive and Balboa Avenue; Intersections of Morena Boulevard with Jellet Street, Cushman Avenue, and between the intersections of Napa Street and Linda Vista Road.
MM-HAZ-5 (munitions survey and UXO identification and response plan)	X	X		Construction Contractor/City of San Diego	The access shafts located outside roadway right-of-way east of Genesee Avenue where the pipeline alignment crosses Rose Canyon.
MM-HIS-2 (Section 106)	X	X		Principal Investigator (Archaeologist)	Entire pipeline alignment (specific location is confidential)
MM-HIS-3 (archaeological monitoring)	X	X	X	Principal Investigator (Archaeologist)	Entire pipeline alignment
MM-NOI-1 (construction noise best management practices)		X		Construction Manager	Entire pipeline alignment
MM-NOI-2 (Noise Abatement and Control permit)	X			Construction Contractor	Where nighttime work will occur: W Morena Boulevard/Morena Boulevard between Vega Street and Ingulf Street; Ingulf Street between W Morena Boulevard and Denver Street; Denver Street between Ingulf Street and Clairemont Drive; Clairemont Drive between Denver Street and Iriquois Avenue; Genesee Avenue between Appleton Street and Nobel Drive; Towne Centre Drive between La Jolla Village Drive and Executive Drive; Executive Drive between Towne Centre Drive and end of cul-de-sac.
MM-NOI-3 (night work measures)		X		Construction Manager	Where nighttime work will occur adjacent to sensitive receptors: W Morena Boulevard/Morena Boulevard between Vega Street and Ingulf Street; Ingulf Street between W Morena Boulevard and Denver Street; Denver Street between Ingulf Street and Clairemont Drive; Clairemont Drive between Denver Street and Burgener Boulevard; Genesee Avenue between Appleton Street and Nobel Drive; Towne Centre Drive between La Jolla Village Drive and Executive Drive.
MM-PU-1 (coordination with utility providers)	X			Construction Contractor	Entire pipeline alignment
MM-TRAF-1 (Transportation Demand Management Plan)		X		Construction Manager	Entire pipeline alignment

**Table 10-4
Mitigation Measures – North City Water Reclamation Plant Expansion**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-AQ-1 (construction BMPs)		X		Construction Manager	Entire site
MM-AQ-2 (construction NO _x)		X		Construction Manager	Entire site
MM-AQ-3 (odor reduction)			X	City of San Diego	Entire site
MM-BIO-3 (nesting birds)	X	X		Project Applicant/ City of San Diego	Areas of coastal sage-scrub and non-native grassland within the site
MM-BIO-4 (Coastal California Gnatcatcher)	X	X		City of San Diego	Coastal sage scrub within the facility within MCAS Miramar
MM-BIO-940a (qualified biologist)	X			Owner/Permittee	Coastal sage scrub within the site
MM-BIO-940b (preconstruction meeting)	X			City of San Diego	Coastal sage scrub within the site
MM-BIO-940c (documentation)	X	X	X	Owner/Permittee	Coastal sage scrub within the site y
MM-BIO-940d (Biological Construction Mitigation/Monitoring Exhibit)	X			City of San Diego	Coastal sage scrub within the site
MM-BIO-940e (Construction fencing)	X			City of San Diego	Coastal sage scrub within the site
MM-BIO-940f (on-site education)	X			City of San Diego	Coastal sage scrub within the site
MM-BIO-940g (biological monitoring)		X		City of San Diego	Coastal sage scrub within the site
MM-BIO-940j (BMPs/Erosion/Runoff)	X	X	X	City of San Diego	Mulefat scrub located immediately east of the site
MM-BIO-940k (toxics/project staging areas/equipment storage)		X	X	Construction Manager/owner	Coastal sage scrub within the site
MM-HAZ-2 (hazardous material reporting form)			X	City of San Diego	Entire site
MM-HAZ-3 (spill prevention and emergency response plan)			X	City of San Diego	Entire site
MM-HIS-3 (archaeological monitoring)	X	X	X	Principal Investigator (Archaeologist)	Entire site
MM-PALEO-1 (paleontological monitoring)	X	X	X	Principal Investigator (Paleontologist)	Entire site

**Table 10-5
Mitigation Measures – North City Pure Water Facility Influent Pump Station**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-AQ-1 (construction BMPs)		X		Construction Manager	Entire site
MM-AQ-2 (construction NO _x)		X		Construction Manager	Entire site
MM-BIO-3 (nesting birds)	X	X		Project Applicant/City of San Diego	Areas of coastal sage-scrub and non-native grassland within the site
MM-BIO-4 (Coastal California Gnatcatcher)	X	X		City of San Diego	Coastal sage scrub within the facility within MCAS Miramar and within the MHPA south of Miramar Road.
MM-BIO-940a (Qualified biologist)	X			Owner/permittee	Entire site

**Table 10-5
Mitigation Measures – North City Pure Water Facility Influent Pump Station**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-BIO-940b (preconstruction meeting)	X			City of San Diego	Entire site
MM-BIO-940c (documentation)	X	X	X	Owner/Permittee	Entire site
MM-BIO-940d (biological construction mitigation/monitoring exhibit)	X			City of San Diego	Entire site
MM-BIO-940e (construction fencing)	X			City of San Diego	Entire site
MM-BIO-940f (on-site education)	X			City of San Diego	Entire site
MM-BIO-940g (biological monitoring)		X		City of San Diego	Entire site
MM-BIO-940j (BMPs/erosion/runoff)	X	X	X	City of San Diego	Entire site
MM-BIO-940k (toxics/project staging areas/equipment storage)		X	X	Construction Manager/owner	Entire site
MM-HAZ-2 (hazardous material reporting form)			X	City of San Diego	Entire site
MM-HIS-3 (archaeological monitoring)	X	X	X	Principal Investigator (Archaeologist)	Entire site
MM-NOI-4 (noise and vibration study)	X			Construction Contractor	Entire site
MM-PALEO-1 (paleontological monitoring)	X	X	X	Principal Investigator (Paleontologist)	Entire site

**Table 10-6
Mitigation Measures – North City Pure Water Pump Station**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-AQ-1 (construction BMPs)		X		Construction Manager	Entire site
MM-AQ-2 (construction NO _x)		X		Construction Manager	Entire site
MM-BIO-1a (upland impacts)	X		X	City of San Diego	Entire site
MM-BIO-1b (mitigation for vernal pool impacts)			X	City of San Diego	Vernal pools within the facility site
MM-BIO-2 (habitat revegetation)	X	X	X	City of San Diego	Temporary impact to non-native grassland within the facility site
MM-BIO-3 (nesting birds)	X	X		Project Applicant/City of San Diego	Entire site
MM-BIO-89 (wetland permits)	X			City of San Diego	Vernal pools within the facility site
MM-BIO-940a (qualified biologist)	X			Owner/Permittee	Entire site
MM-BIO-940b (preconstruction meeting)	X			City of San Diego	Entire site
MM-BIO-940c (documentation)	X	X	X	Owner/Permittee	Entire site
MM-BIO-940d (biological construction mitigation/monitoring exhibit)	X			City of San Diego	Entire site
MM-BIO-940e (construction fencing)	X			City of San Diego	Entire site

**Table 10-6
Mitigation Measures – North City Pure Water Pump Station**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-BIO-940f (on-site education)	X			City of San Diego	Entire site
MM-BIO-940g (biological monitoring)		X		City of San Diego	Entire site
MM-BIO-940j (BMPs/erosion/runoff)	X	X	X	City of San Diego	Entire site
MM-HAZ-1 (construction fire protection plan)	X	X		Construction Contractor/ City of San Diego Fire Marshal	Entire site
MM-HAZ-2 (hazardous material reporting form)			X	City of San Diego	Entire site
MM-HIS-3 (archaeological monitoring)	X	X	X	Principal Investigator (Archaeologist)	Entire site
MM-NOI-4 (noise and vibration study)	X			Construction Contractor	Entire site
MM-PALEO-1 (paleontological monitoring)	X	X	X	Principal Investigator (Paleontologist)	Entire site

**Table 10-7
Mitigation Measures – North City Renewable Energy Facility**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-AQ-1 (construction BMPs)		X		Construction Manager	Entire site
MM-AQ-2 (construction NO _x)		X		Construction Manager	Entire site
MM-BIO-3 (nesting birds)	X	X		Project Applicant/City of San Diego	Areas of coastal sage scrub and non-native grassland within the site
MM-BIO-4 (Coastal California Gnatcatcher)	X	X		City of San Diego	Coastal sage scrub within the facility within MCAS Miramar and within the MHPA south of Miramar Road.
MM-BIO-940a (qualified biologist)	X			Owner/Permittee	Coastal sage scrub within the site
MM-BIO-940b (preconstruction meeting)	X			City of San Diego	Coastal sage scrub within the site
MM-BIO-940c (documentation)	X	X	X	Owner/Permittee	Coastal sage scrub within the site
MM-BIO-940d (biological construction mitigation/monitoring exhibit)	X			City of San Diego	Coastal sage scrub within the site
MM-BIO-940e (construction fencing)	X			City of San Diego	Coastal sage scrub within the site
MM-BIO-940f (on-site education)	X			City of San Diego	Coastal sage scrub within the site
MM-BIO-940g (biological monitoring)		X		City of San Diego	Coastal sage scrub within the site
MM-BIO-940j (BMPs/erosion/runoff)	X	X	X	City of San Diego	Mulefat scrub located immediately east of the site
MM-BIO-940k (toxics/project staging areas/equipment storage)		X	X	Construction Manager/Owner	Coastal sage scrub within the site
MM-HAZ-2 (hazardous material reporting form)			X	City of San Diego	Entire site
MM-HAZ-3 (spill prevention and emergency response plan)			X	City of San Diego	Entire site

**Table 10-7
Mitigation Measures – North City Renewable Energy Facility**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-HIS-3 (archaeological monitoring)	X	X	X	Principal Investigator (Archaeologist)	Entire site
MM-NOI-4 (noise and vibration study)	X			Construction Contractor	Entire site
MM-PALEO-1 (paleontological monitoring)	X	X	X	Principal Investigator (Paleontologist)	Entire site

**Table 10-8
Mitigation Measures – Landfill Gas Pipeline**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-AQ-1 (construction BMPs)		X		Construction Manager	Entire pipeline alignment
MM-AQ-2 (construction NO _x)		X		Construction Manager	Entire pipeline alignment
MM-BIO-2 (habitat revegetation)	X	X	X	City of San Diego	Entire pipeline alignment
MM-BIO-3 (nesting birds)	X	X		Project Applicant/City of San Diego	Entire pipeline alignment
MM-BIO-4 (Coastal California Gnatcatcher)	X	X		City of San Diego	Coastal sage scrub along the alignment within MCAS Miramar and within the MHPA south of Miramar Road
MM-BIO-940a (qualified biologist)	X			Owner/Permittee	Entire pipeline alignment
MM-BIO-940b (preconstruction meeting)	X			City of San Diego	Entire pipeline alignment
MM-BIO-940c (documentation)	X	X	X	Owner/Permittee	Entire pipeline alignment
MM-BIO-940d (biological construction mitigation/monitoring exhibit)	X			City of San Diego	Entire pipeline alignment
MM-BIO-940e (construction fencing)	X			City of San Diego	Entire pipeline alignment
MM-BIO-940f (on-site education)	X			City of San Diego	Entire pipeline alignment
MM-BIO-940g (biological monitoring)		X		City of San Diego	Entire pipeline alignment
MM-BIO-940h (cover trenches)		X		City of San Diego	Entire pipeline alignment
MM-BIO-940j (BMPs/erosion/runoff)	X	X	X	City of San Diego	Entire pipeline alignment
MM-BIO-940k (toxics/project staging areas/equipment storage)		X	X	Construction Manager/Owner	Entire pipeline alignment
MM-BIO-9l (silt fencing)	X	X		City of San Diego	Vernal pools located in MCAS Miramar including the features within the Miramar National Cemetery, three other seasonally ponded features (OSPFs) (VP653, VP654, and VP656), three basins (VP657, VP1859, and VP2480), and vernal pool PW36.
MM-BIO-9m (dust)		X		City of San Diego	Vernal pools located in MCAS Miramar including the features within the Miramar National Cemetery, three OSPFs (VP653, VP654, and VP656), three basins (VP657, VP1859, and VP2480), and vernal pool PW36.

**Table 10-8
Mitigation Measures – Landfill Gas Pipeline**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-BIO-9n (vernal pool biologist)		X		City of San Diego	Vernal pools located in MCAS Miramar including the features within the Miramar National Cemetery, three OSPFs (VP653, VP654, and VP656), three basins (VP657, VP1859, and VP2480), and vernal pool PW36.
MM-BIO-9o (limits of work)		X		City of San Diego	Vernal pools located in MCAS Miramar including the features within the Miramar National Cemetery, three OSPFs (VP653, VP654, and VP656), three basins (VP657, VP1859, and VP2480), and vernal pool PW36.
MM-BIO-9p (equipment staging)		X		City of San Diego	Vernal pools located in MCAS Miramar including the features within the Miramar National Cemetery, three OSPFs (VP653, VP654, and VP656), three basins (VP657, VP1859, and VP2480), and vernal pool PW36.
MM-BIO-9q (grading activities)		X		City of San Diego	Vernal pools located in MCAS Miramar including the features within the Miramar National Cemetery, three OSPFs (VP653, VP654, and VP656), three basins (VP657, VP1859, and VP2480), and vernal pool PW36.
MM-HAZ-1 (construction fire protection plan)	X	X		Construction Contractor/ City of San Diego Fire Marshal	Entire pipeline alignment
MM-HAZ-2 (hazardous material reporting form)			X	City of San Diego	Entire pipeline alignment
MM-HIS-2 (Section 106)	X	X		Principal Investigator (Archaeologist)	Entire pipeline alignment (specific location is confidential)
MM-HIS-3 (archaeological monitoring)	X	X	X	Principal Investigator (Archaeologist)	Entire pipeline alignment
MM-PU-1 (coordination with utility providers)	X			Construction Contractor	Entire pipeline alignment

**Table 10-9
Mitigation Measures – Metro Biosolids Center Improvements**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-AQ-1 (construction BMPs)		X		Construction Manager	Entire site
MM-AQ-2 (construction NO _x)		X		Construction Manager	Entire site
MM-BIO-3 (Nesting Birds)	X	X		Project Applicant/City of San Diego	Sensitive vegetation within the site
MM-BIO-4 (Coastal California Gnatcatcher)	X	X		City of San Diego	Sensitive vegetation within the site within MCAS Miramar
MM-BIO-940a (Qualified biologist)	X			Owner/Permittee	Sensitive vegetation within the site
MM-BIO-940b (preconstruction meeting)	X			City of San Diego	Sensitive vegetation within the site
MM-BIO-940c (documentation)	X	X	X	Owner/Permittee	Sensitive vegetation within the site
MM-BIO-940d (biological construction mitigation/monitoring exhibit)	X			City of San Diego	Sensitive vegetation within the site
MM-BIO-940e (construction fencing)	X			City of San Diego	Sensitive vegetation within the site

**Table 10-9
Mitigation Measures – Metro Biosolids Center Improvements**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-BIO-940f (on-site education)	X			City of San Diego	Sensitive vegetation within the site
MM-BIO-940g (biological monitoring)		X		City of San Diego	Sensitive vegetation within the site
MM-BIO-940j (BMPs/Erosion/Runoff)	X	X	X	City of San Diego	Sensitive vegetation within the site
MM-BIO-940k (Toxics/Project Staging Areas/Equipment Storage)		X	X	Construction manager/owner	Sensitive vegetation within the site
MM-BIO-9l (silt fencing)	X	X		City of San Diego	Vernal pool PW8
MM-BIO-9m (dust)		X		City of San Diego	Vernal pool PW8
MM-BIO-9n (vernal pool biologist)		X		City of San Diego	Vernal pool PW8
MM-BIO-9o (limits of work)		X		City of San Diego	Vernal pool PW8
MM-BIO-9p (equipment staging)		X		City of San Diego	Vernal pool PW8
MM-BIO-9q (grading activities)		X		City of San Diego	Vernal pool PW8
MM-HAZ-1 (construction fire protection plan)	X	X		Construction Contractor/ City of San Diego Fire Marshal	Entire site
MM-HAZ-2 (hazardous material reporting form)			X	City of San Diego	Entire site
MM-HIS-3 (archaeological monitoring)	X	X	X	Principal Investigator (Archaeologist)	Entire site
MM-PALEO-1 (paleontological monitoring)	X	X		City of San Diego	Entire site

**Table 10-10
Mitigation Measures – North City Pure Water Facility-Miramar Reservoir and San Vicente Reservoir**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-AQ-1 (construction BMPs)		X		Construction Manager	Entire site
MM-AQ-2 (construction NO _x)		X		Construction Manager	Entire site
MM-BIO-1a (upland impacts)	X		X	City of San Diego	Entire site
MM-BIO-1b (vernal pools)	X		X	City of San Diego	Vernal pools within the facility site
MM-BIO-2 (habitat revegetation)	X	X	X	City of San Diego	Temporary impact to non-native grassland within the facility site
MM-BIO-3 (nesting birds)	X	X		City of San Diego	Entire site
MM-BIO-89 (wetland permits)	X			City of San Diego	Vernal pools within the facility site
MM-BIO-940a (qualified biologist)	X			Owner/Permittee	Entire site
MM-BIO-940b (preconstruction meeting)	X			City of San Diego	Entire site
MM-BIO-940c (documentation)	X	X	X	Owner/Permittee	Entire site
MM-BIO-940d (biological construction mitigation/monitoring exhibit)	X			City of San Diego	Entire site
MM-BIO-940e (construction fencing)	X			City of San Diego	Entire site

**Table 10-10
Mitigation Measures – North City Pure Water Facility-Miramar Reservoir and San Vicente Reservoir**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-BIO-940f (on-site education)	X			City of San Diego	Entire site
MM-BIO-940g (Biological monitoring)		X		City of San Diego	Entire site
MM-BIO-940j (BMPs/Erosion/Runoff)	X	X	X	City of San Diego	Entire site
MM-HAZ-1 (construction fire protection plan)	X	X		Construction Contractor/ City of San Diego Fire Marshal	Entire site
MM-HAZ-2 (hazardous material reporting form)			X	City of San Diego	Entire site
MM-HAZ-3 (spill prevention and emergency response plan)			X	City of San Diego	Entire site
MM-HIS-3 (archaeological monitoring)	X	X	X	Principal Investigator (Archaeologist)	Entire site
MM-PALEO-1 (paleontological monitoring)	X	X	X	Principal Investigator (Paleontologist)	Entire site

**Table 10-11
Mitigation Measures – North City Pure Water Pipeline**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-AQ-1 (construction BMPs)		X		Construction Manager	Entire pipeline alignment
MM-AQ-2 (construction NO _x)		X		Construction Manager	Entire pipeline alignment
MM-BIO-2 (habitat revegetation)	X	X	X	City of San Diego	West of Eastgate Mall and north of Miramar Road; east of I-15 north of Pomerado Road; south of Evans Pond; south of Miramar Reservoir
MM-BIO-3 (nesting birds)	X	X		City of San Diego	Eucalyptus woodland within the alignment
MM-BIO-4 (Coastal California Gnatcatcher)	X	X		City of San Diego	Coastal sage scrub within the MHPA east of Eastgate Mall and within MCAS Miramar south of Miramar Road
MM-BIO-7 (Western Pond Turtle)	X	X	X	City of San Diego	Miramar Reservoir
MM-BIO-8 (wetland permits)	X			City of San Diego	Placement of pipeline within the Miramar Reservoir
MM-BIO-940a (qualified biologist)	X			Owner/Permittee	West of Eastgate Mall and north of Miramar Road within coastal sage scrub; east of I-15 north of Pomerado Road within non-native grassland; south of Evans Pond within non-native grassland; south of Miramar Reservoir within non-native grassland, coastal sage scrub (including disturbed), coastal sage-chaparral transition, and southern mixed chaparral
MM-BIO-940b (preconstruction meeting)	X			City of San Diego	West of Eastgate Mall and north of Miramar Road; east of I-15 north of Pomerado Road; south of Evans Pond; south of Miramar Reservoir
MM-BIO-940c (documentation)	X	X	X	Owner/Permittee	West of Eastgate Mall and north of Miramar Road; east of I-15 north of Pomerado Road; south of Evans Pond; south of Miramar Reservoir

**Table 10-11
Mitigation Measures – North City Pure Water Pipeline**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-BIO-940d (biological construction mitigation/monitoring exhibit)	X			City of San Diego	West of Eastgate Mall and north of Miramar Road; east of I-15 north of Pomerado Road; south of Evans Pond; south of Miramar Reservoir
MM-BIO-940e (construction fencing)	X			City of San Diego	West of Eastgate Mall and north of Miramar Road; east of I-15 north of Pomerado Road; south of Evans Pond; south of Miramar Reservoir
MM-BIO-940f (on-site education)	X			City of San Diego	West of Eastgate Mall and north of Miramar Road; east of I-15 north of Pomerado Road; south of Evans Pond; south of Miramar Reservoir
MM-BIO-940g (biological monitoring)		X		City of San Diego	West of Eastgate Mall and north of Miramar Road; east of I-15 north of Pomerado Road; south of Evans Pond; south of Miramar Reservoir
MM-BIO-940h (cover trenches)		X		City of San Diego	West of Eastgate Mall and north of Miramar Road; east of I-15 north of Pomerado Road; south of Evans Pond; south of Miramar Reservoir
MM-BIO-940i (nighttime construction)		X		City of San Diego	West of Eastgate Mall and north of Miramar Road; east of I-15 north of Pomerado Road; south of Evans Pond; south of Miramar Reservoir
MM-BIO-940j (BMPs/erosion/runoff)	X	X	X	City of San Diego	Sensitive habitat west of Eastgate Mall and north of Miramar Road; east of I-15 north of Pomerado Road; a non-vegetated channel along Via Pasar; work easement adjacent to Evans Pond; staging area south of Miramar Reservoir
MM-BIO-940k (toxics/project staging areas/equipment storage)		X	X	Construction Manager/Owner	West of Eastgate Mall and north of Miramar Road; east of I-15 north of Pomerado Road; south of Evans Pond; south of Miramar Reservoir
MM-BIO-9l (silt fencing)	X	X		City of San Diego	<u>Vernal pools or road ruts (not assigned identifiers) in MCAS Miramar south of Miramar Road.</u>
MM-BIO-9m (dust)		X		City of San Diego	<u>Vernal pools or road ruts (not assigned identifiers) in MCAS Miramar south of Miramar Road.</u>
MM-BIO-9n (vernal pool biologist)		X		City of San Diego	<u>Vernal pools or road ruts (not assigned identifiers) in MCAS Miramar south of Miramar Road.</u>
MM-BIO-9o (limits of work)		X		City of San Diego	<u>Vernal pools or road ruts (not assigned identifiers) in MCAS Miramar south of Miramar Road.</u>
MM-BIO-9p (equipment staging)		X		City of San Diego	<u>Vernal pools or road ruts (not assigned identifiers) in MCAS Miramar south of Miramar Road.</u>
MM-BIO-9q (grading activities)		X		City of San Diego	<u>Vernal pools or road ruts (not assigned identifiers) in MCAS Miramar south of Miramar Road.</u>
MM-HAZ-1 (construction fire protection plan)	X	X		Construction Contractor/ City of San Diego Fire Marshal	Eastgate Mall from NCPWF to Miramar Road (Figure 5.4-1I); Miramar Road from Eastgate Mal to west of Camino Santa Fe (Figure 5.4-1I and 5.4-1J); Miramar Road east of Distribution Avenue to east of Cabot Drive (Figure 5.4-1J and 5.4-1K); along Via Pasar and Via Excelencia (Figure 5.4-1L); entire alignment from east of I-15 to Miramar Reservoir (Figure 5.4-1L and 5.4-1M).
MM-HAZ-2 (hazardous material reporting form)			X	City of San Diego	Entire pipeline alignment

**Table 10-11
Mitigation Measures – North City Pure Water Pipeline**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-HAZ-4 (hazardous substances encounter)		X		Construction Manager	Entire pipeline alignment, with special consideration at: Miramar Road between Eastgate Mall and Carroll Road and Miramar Road between Black Mountain Road and Kearny Villa Road.
MM-HIS-1 (Cultural Resources Monitoring and Treatment Plan)	X	X		Principal Investigator (Archaeologist)	Near site CR 450 (HRB 450) (portion of alignment between Meanley Drive and Scripps Lake Drive)
MM-HIS-2 (Section 106)	X	X		Principal Investigator (Archaeologist)	Entire pipeline alignment (specific location is confidential)
MM-HIS-3 (archaeological monitoring)	X	X	X	Principal Investigator (Archaeologist)	Entire pipeline alignment
MM-HIS-4 (CR 450 [HRB 450] monitoring)	X	X		Construction Manager	Within 100 feet of inventoried CR 450 (HRB 450) features (portion of alignment between Meanley Drive and Scripps Lake Drive)
MM-NOI-1 (construction noise best management practices)		X		Construction Manager	Entire pipeline alignment
MM-NOI-2 (Noise Abatement and Control permit)	X			Construction Contractor	Where nighttime work will occur (entire alignment)
MM-NOI-3 (night work measures)		X		Construction Manager	Where nighttime work will occur adjacent to sensitive receptors: Eastgate Mall at NCPWF and NCWRP driveways and intersection with Miramar Road; Miramar Road from Distribution Avenue to Kearny Villa Road; Carroll Canyon Road from Scripps Ranch Boulevard to Hoyt Park Drive; Hoyt Park Drive from Carroll Canyon Road to Meanley Drive.
MM-PU-1 (coordination with utility providers)	X			Construction Contractor	Entire pipeline alignment
MM-TRAF-1 (Transportation Demand Management Plan)		X		Construction Manager	Entire pipeline alignment

**Table 10-12
Mitigation Measures – Pure Water Dechlorination Facility**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-AQ-1 (construction BMPs)		X		Construction Manager	Entire site
MM-AQ-2 (construction NO _x)		X		Construction Manager	Entire site
MM-BIO-3 (nesting birds)	X	X		Project Applicant/City of San Diego	Eucalyptus woodland within the facility site
MM-BIO-940c (documentation)	X	X	X	Owner/Permittee	Entire site
MM-BIO-940d (biological construction mitigation/monitoring exhibit)	X			City of San Diego	Entire site
MM-BIO-940j (BMPs/Erosion/Runoff)	X	X		City of San Diego	Entire site
MM-HAZ-1 (construction fire protection plan)	X	X		Construction Contractor/ City of San Diego Fire Marshal	Entire site

Table 10-12
Mitigation Measures – Pure Water Dechlorination Facility

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-HAZ-2 (hazardous material reporting form)			X	City of San Diego	Entire site
MM-HAZ-3 (spill prevention and emergency response plan)			X	City of San Diego	Entire site
MM-HIS-3 (archaeological monitoring)	X	X	X	Principal Investigator (Archaeologist)	Entire site
MM-PALEO-1 (paleontological monitoring)	X	X	X	Principal Investigator (Paleontologist)	Entire site

Table 10-13
Mitigation Measures – Miramar Water Treatment Plant Improvements

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-AQ-1 (construction BMPs)		X		Construction Manager	Entire site
MM-AQ-2 (construction NO _x)		X		Construction Manager	Entire site
MM-BIO-3 (nesting birds)	X	X		Project Applicant/City of San Diego	Eucalyptus woodland within the site
MM-BIO-940a (qualified biologist)	X			Owner/Permittee	Coastal sage scrub within the site
MM-BIO-940b (preconstruction meeting)	X			City of San Diego	Coastal sage scrub within the site
MM-BIO-940c (documentation)	X	X	X	Owner/Permittee	Coastal sage scrub within the site
MM-BIO-940d (biological construction mitigation/monitoring exhibit)	X			City of San Diego	Coastal sage scrub within the site
MM-BIO-940e (construction fencing)	X			City of San Diego	Coastal sage scrub within the site
MM-BIO-940f (on-site education)	X			City of San Diego	Coastal sage scrub within the site
MM-BIO-940g (biological monitoring)		X		City of San Diego	Coastal sage scrub within the site
MM-BIO-940j (BMPs/erosion/runoff)	X	X	X	City of San Diego	Coastal sage scrub within the site
MM-BIO-940k (toxics/project staging areas/equipment storage)		X	X	Construction manager/owner	Coastal sage scrub within the site
MM-HAZ-2 (hazardous material reporting form)			X	City of San Diego	Entire site
MM-HIS-2 (Section 106)	X	X		Principal Investigator (Archaeologist)	Entire site (specific location is confidential)
MM-HIS-3 (archaeological monitoring)	X	X	X	Principal Investigator (Archaeologist)	Entire site
MM-PALEO-1 (paleontological monitoring)	X	X	X	Principal Investigator (Paleontologist)	Entire site

**Table 10-14
Mitigation Measures – San Vicente Reservoir Pure Water Pipeline**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-AQ-1 (construction BMPs)		X		Construction Manager	Entire pipeline alignment
MM-AQ-2 (construction NO _x)		X		Construction Manager	Entire pipeline alignment
MM-BIO-1a (upland impacts)	X		X	City of San Diego	San Vicente Pipeline: Not applicable San Vicente Pipeline – TAT: Entire alignment San Vicente Pipeline – IRAT: Entire alignment San Vicente Pipeline – MAT: Entire alignment San Vicente Pipeline - Repurposed Pipeline: At air and blow-off valve locations along repurposed pipeline
MM-BIO-1c (jurisdictional aquatic resources)	X		X	City of San Diego	San Vicente Pipeline: Not applicable San Vicente Pipeline – TAT: Impacts to open water and intermittent stream southeast of San Vicente Reservoir and north of Lake Vicente Drive San Vicente Pipeline – IRAT: Impacts to open water southwest and within San Vicente Reservoir San Vicente Pipeline – MAT: Impacts to open water southwest of San Vicente Reservoir San Vicente Pipeline - Repurposed Pipeline: Within impact areas near the Miramar National Cemetery and Marine Corps Air Station (MCAS) Miramar north of SR-52
MM-BIO-2 (habitat revegetation)	X	X	X	City of San Diego	San Vicente Pipeline: East of I-15 and south of Clairemont Mesa Boulevard within disturbed coastal sage scrub; along Tierrasanta Boulevard north of Mission Gorge Road within coastal sage scrub and open water; along Mission Gorge Road through Mission Trails Regional Park within non-native grassland; within Critical Habitat that crosses SR-52 north of Mission Gorge Road San Vicente Pipeline – TAT: Not applicable San Vicente Pipeline – IRAT: Entire alignment San Vicente Pipeline – MAT: Entire alignment San Vicente Pipeline – Repurposed Pipeline: Not applicable

**Table 10-14
Mitigation Measures – San Vicente Reservoir Pure Water Pipeline**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-BIO-3 (nesting birds)	X	X		Project Applicant/City of San Diego	<p>San Vicente Pipeline: East of I-15 and south of Clairemont Mesa Boulevard within disturbed coastal sage scrub; crosses the San Diego River south of SR-52 and west of Santo Road within non-native grassland and coastal sage scrub; along Mission Gorge Road through Mission Trails Regional Park within coastal sage scrub; urban environments along Mission Gorge Road within eucalyptus woodland; within Critical Habitat that crosses SR-52 north of Mission Gorge Road; north of the San Diego River along Mission Gorge Road within eucalyptus woodland; along Mast Boulevard north of Lakeside Baseball Park within coastal sage scrub and non-native grassland; along the San Diego River and crosses SR-67 within non-native grassland, coastal sage scrub, southern cottonwood-willow riparian forest, southern arroyo willow riparian forest, and eucalyptus woodland; along Moreno Avenue south of San Vicente Reservoir within eucalyptus woodland, non-native grassland, coastal sage scrub, and coast live oak woodland</p> <p>San Vicente Pipeline – TAT: Entire alignment San Vicente Pipeline – IRAT: Entire alignment San Vicente Pipeline – Mat: Entire alignment San Vicente Pipeline - Repurposed Pipeline: At all air and blow-off valve locations along the alignment</p>
MM-BIO-4 (Coastal California Gnatcatcher)	X	X		City of San Diego	<p>San Vicente Pipeline: Within MHPA areas containing coastal sage scrub along the alignment: east of I-15 and south of Clairemont Mesa Boulevard; crosses the San Diego River south of SR-52 and west of Santo Road; along Mission Gorge Road through Mission Trails Regional Park; urban environments along Mission Gorge Road; north of the San Diego River along Mission Gorge Road; along Mast Boulevard north of Lakeside Baseball Park; along the San Diego River and crosses SR-67; along Moreno Avenue south of San Vicente Reservoir</p> <p>San Vicente Pipeline – TAT: Not applicable San Vicente Pipeline – IRAT: Within MHPA areas with coastal sage scrub along the alignment San Vicente Pipeline – MAT: Within MHPA areas with coastal sage scrub along the alignment San Vicente Pipeline – Repurposed Pipeline: Coastal sage scrub impacted by air and blow-off valve locations along the alignment within MCAS Miramar</p>

**Table 10-14
Mitigation Measures – San Vicente Reservoir Pure Water Pipeline**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-BIO-5 (Burrowing Owl)	X	X	X	City of San Diego	San Vicente Pipeline: North of the San Diego River and along Tierrasanta Boulevard within coastal sage scrub (including disturbed), disturbed habitat, non-native vegetation, eucalyptus woodland, coast live oak woodland, and southern willow scrub; crosses the San Diego river at SR-52 north of Mission Gorge Road within coastal sage scrub (including disturbed), disturbed habitat, non-native grassland, and coast live oak woodland; along SR-52 west of Carlton Oaks Drive within non-native vegetation, non-native grassland, and non-native woodland; north of SR-67 along Mast Boulevard, along Moreno Avenue south of San Vicente Reservoir within non-native grassland and general agriculture San Vicente Pipeline – TAT, IRAT, MAT, Repurposed Pipeline: Not applicable
MM-BIO-6 (riparian birds)	X	X		City of San Diego	San Vicente Pipeline: San Clemente Canyon south of SR-52; Murphy Canyon at I-15; Mission Trails Regional Park along Mission Gorge Road and at SR-52; San Diego River along Carlton Oaks Drive; San Diego River south of Mast Boulevard; San Diego River at SR-67; south of San Vicente Reservoir at SR-67 San Vicente Pipeline – TAT, IRAT, MAT: Not applicable San Vicente Pipeline - Repurposed Pipeline: At air and blow-off valve locations within riparian habitat in both San Clemente Canyon and the Veteran’s Administration property at the Miramar National Cemetery
MM-BIO-78 (vernal pool watershed)	X			City of San Diego	San Vicente Pipeline – Repurposed Pipeline: At air and blow-off valve locations along the alignment within the watersheds of vernal pools PW36, VP697, and VP699. San Vicente Pipeline, TAT, IRAT, MAT: Not applicable
MM-BIO-89 (wetland permits)	X			Owner/Permittee	San Vicente Pipeline: Along the San Diego River, crosses I-15, and along Clairemont Mesa Boulevard within coastal sage scrub (including disturbed); along the San Diego River, crosses SR-52, north of Mission Gorge Road within coastal sage scrub and non-native grassland; north of SR-52 along Carlton Oaks Drive within non-native grassland; east of SR-67 along Willow Road within coastal sage scrub, non-native grassland, and open water San Vicente Pipeline – TAT: Open water impact areas San Vicente Pipeline – IRAT: Open water impact areas San Vicente Pipeline – Mat: Open water impact areas San Vicente Pipeline – Repurposed Pipeline: At air and blow-off valve locations within riparian habitat in both San Clemente Canyon and the Veteran’s Administration property at the Miramar National Cemetery

**Table 10-14
Mitigation Measures – San Vicente Reservoir Pure Water Pipeline**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-BIO-940a (qualified biologist)	X			Owner/Permittee	<p>San Vicente Pipeline: East of I-15 and south of Clairemont Mesa Boulevard within coastal sage scrub; crosses the San Diego River south of SR-52 and west of Santo Road within southern arroyo willow riparian forest; San Clemente Canyon south of SR-52 within coastal sage scrub; Murphy Canyon at I-15 within coastal sage scrub (including disturbed), non-native grassland, and southern arroyo willow riparian forest; San Diego River along Carlton Oaks Drive within coastal sage scrub; San Diego River south of Mast Boulevard within non-native grassland and coastal sage scrub; along Mission Gorge Road through Mission Trails Regional Park within coastal sage scrub; urban environments along Mission Gorge Road; within Critical Habitat that crosses SR-52 north of Mission Gorge Road; north of the San Diego River along Mission Gorge Road within southern willow scrub (including disturbed); along Mast Boulevard north of Lakeside Baseball Park within non-native grassland and coastal sage scrub; north of the San Diego River and along Tierrasanta Boulevard within non-native grassland and coastal sage scrub; along the San Diego River and crosses SR-67 within non-native grassland and coastal sage scrub; along Moreno Avenue south of San Vicente Reservoir within coastal sage scrub</p> <p>San Vicente Pipeline – TAT: Entire alignment San Vicente Pipeline—IRAT: Entire alignment San Vicente Pipeline – MAT: Entire alignment San Vicente Pipeline – Repurposed Pipeline: At all air and blow-off valve locations along the alignment</p>
MM-BIO-940b (preconstruction meeting)	X			City of San Diego	<p>San Vicente Pipeline: East of I-15 and south of Clairemont Mesa Boulevard; crosses the San Diego River south of SR-52 and west of Santo Road; San Clemente Canyon south of SR-52; Murphy Canyon at I-15; San Diego River along Carlton Oaks Drive; San Diego River south of Mast Boulevard; along Mission Gorge Road through Mission Trails Regional Park; urban environments along Mission Gorge Road; within Critical Habitat that crosses SR-52 north of Mission Gorge Road; north of the San Diego River along Mission Gorge Road; along Mast Boulevard north of Lakeside Baseball Park; north of the San Diego River and along Tierrasanta Boulevard; along the San Diego River and crosses SR-67; along Moreno Avenue south of San Vicente Reservoir</p> <p>San Vicente Pipeline – TAT: Entire alignment San Vicente Pipeline – IRAT: Entire alignment San Vicente Pipeline – MAT: Entire alignment San Vicente Pipeline – Repurposed Pipeline: At all air and blow-off valve locations along the alignment</p>

**Table 10-14
Mitigation Measures – San Vicente Reservoir Pure Water Pipeline**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-BIO-910c (documentation)	X	X	X	Owner/Permittee	<p>San Vicente Pipeline: East of I-15 and south of Clairemont Mesa Boulevard; crosses the San Diego River south of SR-52 and west of Santo Road; San Clemente Canyon south of SR-52; Murphy Canyon at I-15; San Diego River along Carlton Oaks Drive; San Diego River south of Mast Boulevard; along Mission Gorge Road through Mission Trails Regional Park; urban environments along Mission Gorge Road; within Critical Habitat that crosses SR-52 north of Mission Gorge Road; north of the San Diego River along Mission Gorge Road; along Mast Boulevard north of Lakeside Baseball Park; north of the San Diego River and along Tierrasanta Boulevard; along the San Diego River and crosses SR-67; along Moreno Avenue south of San Vicente Reservoir</p> <p>San Vicente Pipeline – TAT: Entire alignment</p> <p>San Vicente Pipeline – IRAT: Entire alignment</p> <p>San Vicente Pipeline – MAT: Entire alignment</p> <p>San Vicente Pipeline – Repurposed Pipeline: At all air and blow-off valve locations along the alignment</p>
MM-BIO-910d (biological construction mitigation/monitoring exhibit)	X			City of San Diego	<p>San Vicente Pipeline: East of I-15 and south of Clairemont Mesa Boulevard; crosses the San Diego River south of SR-52 and west of Santo Road; San Clemente Canyon south of SR-52; Murphy Canyon at I-15; San Diego River along Carlton Oaks Drive; San Diego River south of Mast Boulevard; along Mission Gorge Road through Mission Trails Regional Park; urban environments along Mission Gorge Road; within Critical Habitat that crosses SR-52 north of Mission Gorge Road; north of the San Diego River along Mission Gorge Road; along Mast Boulevard north of Lakeside Baseball Park; north of the San Diego River and along Tierrasanta Boulevard; along the San Diego River and crosses SR-67; along Moreno Avenue south of San Vicente Reservoir</p> <p>San Vicente Pipeline – TAT: Entire alignment</p> <p>San Vicente Pipeline – IRAT: Entire alignment</p> <p>San Vicente Pipeline – MAT: Entire alignment</p> <p>San Vicente Pipeline – Repurposed Pipeline: At all air and blow-off valve locations along the alignment</p>

**Table 10-14
Mitigation Measures – San Vicente Reservoir Pure Water Pipeline**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-BIO-940e (construction fencing)	X			City of San Diego	<p>San Vicente Pipeline: East of I-15 and south of Clairemont Mesa Boulevard; crosses the San Diego River south of SR-52 and west of Santo Road; San Clemente Canyon south of SR-52; Murphy Canyon at I-15; San Diego River along Carlton Oaks Drive; San Diego River south of Mast Boulevard; along Mission Gorge Road through Mission Trails Regional Park; urban environments along Mission Gorge Road; within Critical Habitat that crosses SR-52 north of Mission Gorge Road; north of the San Diego River along Mission Gorge Road; along Mast Boulevard north of Lakeside Baseball Park; north of the San Diego River and along Tierrasanta Boulevard; along the San Diego River and crosses SR-67; along Moreno Avenue south of San Vicente Reservoir</p> <p>San Vicente Pipeline – TAT: Entire alignment, southeast of San Vicente Reservoir and north of Lake Vicente Drive</p> <p>San Vicente Pipeline – IRAT: Entire alignment, south, southwest and within San Vicente Reservoir</p> <p>San Vicente Pipeline – MAT: Entire alignment</p> <p>San Vicente Pipeline – Repurposed Pipeline: At all air and blow-off valve locations along the alignment</p>
MM-BIO-940f (on-site education)	X			City of San Diego	<p>San Vicente Pipeline: East of I-15 and south of Clairemont Mesa Boulevard; crosses the San Diego River south of SR-52 and west of Santo Road; San Clemente Canyon south of SR-52; Murphy Canyon at I-15; San Diego River along Carlton Oaks Drive; San Diego River south of Mast Boulevard; along Mission Gorge Road through Mission Trails Regional Park; urban environments along Mission Gorge Road; within Critical Habitat that crosses SR-52 north of Mission Gorge Road; north of the San Diego River along Mission Gorge Road; along Mast Boulevard north of Lakeside Baseball Park; north of the San Diego River and along Tierrasanta Boulevard; along the San Diego River and crosses SR-67; along Moreno Avenue south of San Vicente Reservoir</p> <p>San Vicente Pipeline – TAT: Entire alignment</p> <p>San Vicente Pipeline – IRAT: Entire alignment</p> <p>San Vicente Pipeline – MAT: Entire alignment</p> <p>San Vicente Pipeline – Repurposed Pipeline: At all air and blow-off valve locations along the alignment</p>

Table 10-14
Mitigation Measures – San Vicente Reservoir Pure Water Pipeline

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-BIO-940g (biological monitoring)		X		City of San Diego	San Vicente Pipeline: East of I-15 and south of Clairemont Mesa Boulevard; crosses the San Diego River south of SR-52 and west of Santo Road; San Clemente Canyon south of SR-52; Murphy Canyon at I-15; San Diego River along Carlton Oaks Drive; San Diego River south of Mast Boulevard; along Mission Gorge Road through Mission Trails Regional Park; urban environments along Mission Gorge Road; within Critical Habitat that crosses SR-52 north of Mission Gorge Road; north of the San Diego River along Mission Gorge Road; along Mast Boulevard north of Lakeside Baseball Park; north of the San Diego River and along Tierrasanta Boulevard; along the San Diego River and crosses SR-67; along Moreno Avenue south of San Vicente Reservoir San Vicente Pipeline –TAT: Entire alignment San Vicente Pipeline – IRAT: Entire alignment San Vicente Pipeline – MAT: Entire alignment San Vicente Pipeline – Repurposed Pipeline: At all air and blow-off valve locations along the alignment
MM-BIO-940h (cover trenches)		X		City of San Diego	San Vicente Pipeline: East of I-15 and south of Clairemont Mesa Boulevard; crosses the San Diego River south of SR-52 and west of Santo Road; San Clemente Canyon south of SR-52; Murphy Canyon at I-15; San Diego River along Carlton Oaks Drive; San Diego River south of Mast Boulevard; along Mission Gorge Road through Mission Trails Regional Park; urban environments along Mission Gorge Road; within Critical Habitat that crosses SR-52 north of Mission Gorge Road; north of the San Diego River along Mission Gorge Road; along Mast Boulevard north of Lakeside Baseball Park; north of the San Diego River and along Tierrasanta Boulevard; along the San Diego River and crosses SR-67; along Moreno Avenue south of San Vicente Reservoir San Vicente Pipeline – TAT: Entire alignment San Vicente Pipeline – IRAT: Entire alignment San Vicente Pipeline –MAT: Entire alignment San Vicente Pipeline – Repurposed Pipeline: Not applicable
MM-BIO-940i (nighttime construction)		X		Construction Manager	San Vicente Pipeline: East of I-15 and south of Clairemont Mesa Boulevard; crosses the San Diego River south of SR-52 and west of Santo Road; San Clemente Canyon south of SR-52; Murphy Canyon at I-15; San Diego River along Carlton Oaks Drive; San Diego River south of Mast Boulevard; along Mission Gorge Road through Mission Trails Regional Park; urban environments along Mission Gorge Road; within Critical Habitat that crosses SR-52 north of Mission Gorge Road; north of the San Diego River along Mission Gorge Road; along Mast Boulevard north of Lakeside Baseball Park; north of the San Diego River and along Tierrasanta Boulevard; along the San Diego River and crosses SR-67; along Moreno Avenue south of San Vicente Reservoir San Vicente Pipeline – Repurposed Pipeline, TAT, IRAT, MAT: Not applicable

Table 10-14
Mitigation Measures – San Vicente Reservoir Pure Water Pipeline

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-BIO-910j (BMPs/erosion/runoff)	X	X	X	City of San Diego	San Vicente Pipeline: East of I-15 and south of Clairemont Mesa Boulevard; crosses the San Diego River south of SR-52 and west of Santo Road; San Clemente Canyon south of SR-52; Murphy Canyon at I-15; San Diego River along Carlton Oaks Drive; San Diego River south of Mast Boulevard; along Mission Gorge Road through Mission Trails Regional Park; urban environments along Mission Gorge Road; within Critical Habitat that crosses SR-52 north of Mission Gorge Road; north of the San Diego River along Mission Gorge Road; along Mast Boulevard north of Lakeside Baseball Park; north of the San Diego River and along Tierrasanta Boulevard; along the San Diego River and crosses SR-67; along Moreno Avenue south of San Vicente Reservoir San Vicente Pipeline – TAT: Entire alignment San Vicente Pipeline – IRAT: Entire alignment San Vicente Pipeline – MAT: Entire alignment San Vicente Pipeline – Repurposed Pipeline: At all air and blow-off valve locations along the alignment
MM-BIO-910k (toxics/project staging areas/equipment)		X	X	Construction manager/owner	San Vicente Pipeline: East of I-15 and south of Clairemont Mesa Boulevard; crosses the San Diego River south of SR-52 and west of Santo Road; San Clemente Canyon south of SR-52; Murphy Canyon at I-15; San Diego River along Carlton Oaks Drive; San Diego River south of Mast Boulevard; along Mission Gorge Road through Mission Trails Regional Park; urban environments along Mission Gorge Road; within Critical Habitat that crosses SR-52 north of Mission Gorge Road; north of the San Diego River along Mission Gorge Road; along Mast Boulevard north of Lakeside Baseball Park; north of the San Diego River and along Tierrasanta Boulevard; along the San Diego River and crosses SR-67; along Moreno Avenue south of San Vicente Reservoir San Vicente Pipeline – TAT: Entire alignment San Vicente Pipeline – IRAT: Entire alignment San Vicente Pipeline – MAT: Entire alignment San Vicente Pipeline – Repurposed Pipeline: At all air and blow-off valve locations along the alignment
MM-BIO-91l (silt fencing)	X	X		City of San Diego	San Vicente Pipeline – Repurposed Pipeline: At OSPFs (VP697 and VP699) and vernal pool PW36 located in MCAS Miramar.
MM-BIO-9m (dust)		X		City of San Diego	San Vicente Pipeline – Repurposed Pipeline: At OSPFs (VP697 and VP699) and vernal pool PW36 located in MCAS Miramar.
MM-BIO-9n (vernal pool biologist)		X		City of San Diego	San Vicente Pipeline – Repurposed Pipeline: At OSPFs (VP697 and VP699) and vernal pool PW36 located in MCAS Miramar.
MM-BIO-9o (limits of work)		X		City of San Diego	San Vicente Pipeline – Repurposed Pipeline: At OSPFs (VP697 and VP699) and vernal pool PW36 located in MCAS Miramar.

**Table 10-14
Mitigation Measures – San Vicente Reservoir Pure Water Pipeline**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-BIO-9p (equipment staging)		X		City of San Diego	San Vicente Pipeline – Repurposed Pipeline: At OSPFs (VP697 and VP699) and vernal pool PW36 located in MCAS Miramar.
MM-BIO-9q (grading activities)		X		City of San Diego	San Vicente Pipeline – Repurposed Pipeline: At OSPFs (VP697 and VP699) and vernal pool PW36 located in MCAS Miramar.
MM-HAZ-1 (construction fire protection plan)	X	X		Construction Contractor/ City of San Diego Fire Marshal	Copley Drive from commercial driveways (Road Runner Sports, REI) to Copley Park Place; the intersection of Copley Park Place and Convoy Street; east of I-15 trenchless crossing to Santo Road along Clairemont Mesa Boulevard; Tjerrras-Santa Boulevard beginning at Ducos Place to Mission Gorge Road; Mission Gorge Road to Carlton Oaks Drive; Carlton Oaks Drive adjacent Sycamore Canyon; Mast Boulevard between Bilter Court and Park Center Drive; Mast Boulevard from Hinsdale Street to Marathon Parkway; Lakeside Drive to Willow Road; Morena Avenue from north of San Vicente Avenue to approximately the Heartland Ranch Equestrian Center; Morena Avenue from Vigilante Road to San Vicente Reservoir
MM-HAZ-2 (hazardous material reporting form)			X	City of San Diego	Entire pipeline alignment
MM-HAZ-4 (hazardous substances encounter)		X		Construction Manager	Entire pipeline alignment, with special consideration at: Mast Boulevard at Cuyamaca Street; Willow Road at SR-67; Mast Boulevard at Park Center Drive; Mast Boulevard at Magnolia Avenue; Mast Boulevard at Riverford Road; Riverside Drive at Palm Row Drive; Carlton Oaks Drive at Carlton Hills Boulevard; and Clairemont Mesa Boulevard at Santo Road
MM-HIS-2 (Section 106)	X	X		Principal Investigator (Archaeologist)	Entire pipeline alignment (specific location is confidential)
MM-HIS-3 (archaeological monitoring)	X	X	X	Principal Investigator (Archaeologist)	Entire pipeline alignment
MM-NOI-1 (construction noise best management practices)		X		Construction Manager	Entire pipeline alignment
MM-NOI-2 (Noise Abatement and Control permit)	X			Construction Contractor	Where nighttime work will occur (entire alignment)
MM-NOI-3 (night work measures)		X		Construction Manager	Where nighttime work will occur adjacent to sensitive receptors: from the I-15 crossing to Golfcrest Drive; Mission Gorge Road at Highridge Road to Mast Boulevard at the eastern boundary of the City of Santee; Mast Boulevard from west of Marathon Parkway to Riverford Road; Riverside Drive from west of Palm Road Drive to Lakeside Avenue; SR-67 from Lakeside Avenue to Willow Road
MM-PALEO-1 (paleontological monitoring)	X	X	X	Principal Investigator (Paleontologist)	Near the San Vicente Reservoir, west of Cowles Mountain, and at the east edge of the City of Santee.
MM-PU-1 (coordination with utility providers)	X			Construction Contractor	Entire pipeline alignment
MM-TRAF-1 (Transportation Demand Management Plan)		X		Construction Manager	Entire pipeline alignment

**Table 10-15
Mitigation Measures – Mission Trails Booster Station**

Mitigation Measure	Timing of Mitigation			Responsible Person	Location/Notes
	Pre Const.	During Const.	Post Const.		
MM-AQ-1 (construction BMPs)		X		Construction Manager	Entire site
MM-AQ-2 (construction NO _x)		X		Construction Manager	Entire site
MM-BIO-1a (upland impacts)	X		X	City of San Diego	Entire site
MM-BIO-3 (nesting birds)	X	X		Project Applicant/City of San Diego	Entire site
MM-BIO-940a (qualified biologist)	X			Owner/Permittee	Entire site
MM-BIO-940b (Preconstruction Meeting)	X			City of San Diego	Entire site
MM-BIO-940c (documentation)	X	X	X	Owner/Permittee	Entire site
MM-BIO-940d (biological construction mitigation/monitoring exhibit)	X			City of San Diego	Entire site
MM-BIO-940e (construction fencing)	X			City of San Diego	Entire site
MM-BIO-940f (on-site education)	X			City of San Diego	Entire site
MM-BIO-940g (biological monitoring)		X		City of San Diego	Entire site
MM-BIO-940j (BMPs/erosion/runoff)	X	X	X	City of San Diego	Entire site
MM-BIO-940k (toxics/project staging areas/equipment storage)		X	X	Construction manager/owner	Entire site
MM-HAZ-1 (construction fire protection plan)	X	X		Construction Contractor/ City of San Diego Fire Marshal	Entire site
MM-HAZ-2 (hazardous material reporting form)			X	City of San Diego	Entire site
MM-HIS-3 (archaeological monitoring)	X	X	X	Principal Investigator (Archaeologist)	Entire site
MM-NOI-1 (construction noise best management practices)		X		Construction Manager	Entire site
MM-NOI-2 (Noise Abatement and Control permit)	X			Construction Contractor	Entire site
MM-NOI-3 (night work measures)		X		Construction Manager	Entire site
MM-NOI-4 (noise and vibration study)	X			Construction Contractor	Entire site
MM-PALEO-1 (paleontological monitoring)	X	X	X	Principal Investigator (Paleontologist)	Entire site

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CHAPTER 11 REFERENCES CITED

RTC RESPONSES TO COMMENTS

Allied Geotechnical Engineers Inc. 2015a. *Draft Phase I Environmental Site Assessment, Pure Water Program Task 7, Morena Pump Station, Wastewater Force Main and Brine Conveyance Pre-Design (NC05)*. Prepared for the City of San Diego.

Allied Geotechnical Engineers Inc. 2015b. *Final Phase I Environmental Site Assessment, Pure Water Program Task 8, Miramar Pipeline/Pump Station Pre-Design (NC04B)*. Prepared for the City of San Diego.

Allied Geotechnical Engineers Inc. 2016. *Phase I Environmental Site Assessment, North City to San Vicente Reservoir Pipeline Project*. Prepared for the City of San Diego.

BAAQMD (Bay Area Air Quality Management District). 2017. *California Environmental Quality Act Air Quality Guidelines*. May 2017.

Bauder, E.T. 2000. "Recovery and Management of Orcutt's Spineflower (*Chorizanthe orcuttiana*)."
Prepared for the California Department of Fish and Game, South Coast Region. Contract # FG7643R5. November 2000. Accessed February 5, 2018. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=64832&inline>.

Bohonak, A. 2004. "Conservation Genetics of the Endangered Fairy Shrimp Species *Branchinecta Sandiegonensis*."
Prepared for the MSCP Vernal Pool Inventory, City of San Diego (USFWS). May 17, 2004. <https://www.sandiego.gov/sites/default/files/legacy/planning/programs/mscp/biomonitor/vpi/pdf/27appH.pdf>.

Bohonak, A. 2017. "City of San Diego Vernal Pool Inventory and Presence of *B. lindahli* at the NCPWF."
Email between A. Bohonak (San Diego State University Professor of Biology) and D. Mullen (Dudek). December 29, 2017.

Brown and Caldwell. 2015. *10% Engineering Design Report: North City Plant to San Vicente Reservoir Pipeline*. Prepared by Brown and Caldwell. Prepared for The City of San Diego Public Utilities Water & Wastewater. June 2015.

Caltrans (California Department of Transportation). 2017. "Request for Information: Pipelines Installed in Caltrans' ROW."
Email from M. Peinado (Caltrans) to V. Bianes (City of San Diego). November 16, 2017.

- Caltrans. 2018a. *Encroachment Permits Manual*. Updated January 2018. Accessed February 16, 2018. <http://www.dot.ca.gov/trafficops/ep/manual.html>.
- Caltrans. 2018b. *Project Development Procedures Manual*. Continuously updated. Accessed February 16, 2018. <http://www.dot.ca.gov/design/manuals/pdpm.html>.
- CAPCOA (California Air Pollution Control Officers Association). 2017. *California Emissions Estimator Model, User's Guide, version 2016.3.2*. November 2017. <http://www.caleemod.com/>.
- CARB (California Air Resources Board). 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*. April 2005.
- CARB. 2009. "Written Idling Policy Guidelines." June 2009. Accessed February 2, 2018. <https://www.arb.ca.gov/msprog/ordiesel/guidance/writtenidlingguide.pdf>
- CARB 2016 <https://www.arb.ca.gov/msprog/truck-idling/factsheet.pdf>.
- CDFW (California Department of Fish and Wildlife). 2014. *Lake Miramar General Fish Survey Fall 2014*. Prepared by D. Russell Black (Environmental Scientist, CDFW). December 18, 2014.
- CDPH (California Department of Public Health). 2013. "Preventing Work-Related Coccidioidomycosis (Valley Fever)." June 2013. Accessed February 2, 2018. <https://www.cdph.ca.gov/Programs/CCDC/DEODC/OHB/HESIS/CDPH%20Document%20Library/CocciFact.pdf>.
- CEC (California Energy Commission). 2015. 2016 Building Energy Efficiency Standards for Residential and Nonresidential Buildings." CEC-400-2015-037-CMF. June 2015. Accessed February 2, 2018. <http://www.energy.ca.gov/title24/2016standards/index.html>.
- City of San Diego. 1993. *North City Water Reclamation Plan Environmental Impact Report*. SCH no. 91111018. DEP No. 91-0516. September 27, 1993.
- City of San Diego. 1996. *Miramar Landfill General Development Plan/Fiesta Island Replacement Project/Northern Sludge Processing Facility/West Miramar Landfill: Overburden Disposal Environmental Impact Report*. SCH no. 91121022. DEP no. 91-0653. March 18, 1996.

- City of San Diego. 1997. *City of San Diego Final MSCP Subarea Plan*. Prepared by the City of San Diego Community and Economic Development Department. March 1997. <https://www.sandiego.gov/sites/default/files/legacy//planning/programs/mscp/pdf/subareafullversion.pdf>.
- City of San Diego. 2002a. "Planning for Management of Sewer Facilities Located in Canyons and Other Environmentally Sensitive Lands." Policy No. 400-13. January 22, 2002. Accessed January 29, 2018. http://docs.sandiego.gov/councilpolicies/cpd_400-13.pdf.
- City of San Diego. 2002b. "Planning for Redirection of Sewage Discharge Away from Canyons and Other Environmentally Sensitive Lands." Policy No. 400-14. January 22, 2002. Accessed January 29, 2018. http://docs.sandiego.gov/councilpolicies/cpd_400-14.pdf.
- City of San Diego 2002c. *Miramar Water Treatment Plant Upgrade and Expansion Environmental Impact Report*. SCH no. 99091067. LDR No. 99-0704. October 21, 2002.
- City of San Diego. 2003. *City of San Diego Vernal Pool Inventory 2002-2003*. <https://www.sandiego.gov/sites/default/files/legacy//planning/programs/mscp/biomonitor/vpi/pdf/vpifullversion.pdf>.
- City of San Diego. 2012. *San Diego Municipal Code, Land Development Code—Biology Guidelines*. Amended April 23, 2012 by Resolution No. R-307376. https://www.sandiego.gov/sites/default/files/ldc_biology_guidelines_vphcp_wildlife-city_draft_july_2016.pdf.
- City of San Diego. 2014. *Sewer System Management Plan*. June 2014.
- City of San Diego. 2015a. *Sewer Design Guide*. City of San Diego, Public Utilities Department. May 2015. <https://www.sandiego.gov/sites/default/files/legacy/mwwd/pdf/sewerdesign.pdf>.
- City of San Diego. 2015b. *The "Whitebook": Standard Specifications for Public Works Construction*. 2015 Edition. City of San Diego Supplement to the 2015 Greenbook by the Public Works Department, Project Implementation Division, Standards & Contract Documents Section. https://www.sandiego.gov/sites/default/files/2015_whitebook.pdf.

City of San Diego. 2016b. *Draft City of San Diego Vernal Pool Habitat Conservation Plan*. September 2016. https://www.sandiego.gov/sites/default/files/vphcp_public_draft.pdf.

City of San Diego. 2016. *California Environmental Quality Act Significance Determination Thresholds*. Revised July 2016. San Diego, California: City of San Diego, Development Services Department. Accessed December 8, 2016. https://www.sandiego.gov/sites/default/files/july_2016_ceqa_thresholds_final_0.pdf.

City of San Diego. 2017a. "North City Pure Water Pipeline Alignment Analysis." October 2017.

City of San Diego. 2017b. "SDCWA Pipelines & Property Ownership." PowerPoint presentation. November 2, 2017.

City of San Diego. 2017c. "SSO Detail Report from 01/01/2010 to 11/14/2017." City of San Diego Public Utilities Water & Wastewater, Wastewater Collection Division.

City of San Diego. 2017d. *Final City of San Diego Vernal Pool Habitat Conservation Plan*. October 2017. <https://www.sandiego.gov/sites/default/files/vph-cp.pdf>.

Department of Conservation. 1996. "Generalized Mineral and Classification Map of Western San Diego County, California; Aggregate Resources Only" [map]. 1:100,000. Department of Conservation, Division of Mines and Geology. Accessed November 30, 2016. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/OFR_96-04/OFR_96-04_Plate1.pdf.

Danger, M., G. Lacroix, C. Oumarou, and J. Meriguet. 2008. "Effects of Food-Web Structure on Periphyton Stoichiometry in Eutrophic Lakes: A Mesocosm Study." *Freshwater Biology*. 53: 2089–2100. DOI 10.1111/j.1365-2427.2008.02031.x.

Dickman, E.M., M.J. Vanni, and M.J. Horgan. 2006. "Interactive Effects of Light and Nutrients on Phytoplankton Stoichiometry." *Oecologia*. DOI 10.1007/s00442-006-0473-5.

Downing, J.A., and E. McCauley. 1992. "The Nitrogen:Phosphorus Relationship in Lakes." *Limnology and Oceanography* 37 (5): 936–945.

- Downing, J.A. 1997. "Marine Nitrogen: Phosphorus Stoichiometry and Global N:P Cycle." *Biogeochemistry* 37: 237–252.
- Frost, P.C., H. Hillebrand, and M. Kehlert. 2005. "Low Algal Carbon Content and Its Effect On the C:P Stoichiometry of Phytoplankton." *Freshwater Biology* 50: 1800–1807.
- Hall, S.R., V.H. Smith, D.A. Lytle, and M.A. Leibold. 2005. "Constraints on Primary Producer N:P Stoichiometry Along N:P Supply Ratio Gradients." *Ecology* 86(7): 1894–1904.
- Healey, F.P. 1985. "Interacting Effects of Light and Nutrient Limitation On the Growth Rate of *Synechococcus linearis* (Cyanophyceae)." *Journal of Phycology* 21:134–146.
- Hillebrand, H., P. Frost, and A. Liess. 2008. "Ecological Stoichiometry of Indirect Grazer Effects on Periphyton Nutrient Content." *Oecologia*, 155:619-630. doi: 10.1007/s00442-007-0930-9.
- KEH & Associates. 2017. *60% Design Submittal for the Morena Pump Station and Conveyance System Project.*
- Klausmeier, C.A., E. Litchman, and S.A. Levin. 2004. "Phytoplankton Growth and Stoichiometry Under Multiple Nutrient Limitation." *Limnological Oceanography* 49(4): 1463–1470.
- Li, Y., A.M. Waite, G. Gal, and M.R. Hipsey. 2012. "Do Phytoplankton Nutrient Ratios Reflect Patterns of Water Column Nutrient Ratios?" *Procedia Environmental Sciences* 13(2012): 1630–1640.
- Makino, W., J.B. Cotner, R.W. Sterner, and J.J. Elser. 2003. "Are Bacteria More Like Plants or Animals? Growth Rate and Resource Dependence of Bacterial C:N:P Stoichiometry." *Functional Ecology* 17: 121–130.
- Mulhollem, J.J., C.D. Suski, and D.H. Wahl. 2015 "Response of Largemouth bass (*Micropterus salmoides*) from Different Thermal Environments to Increased Water Temperature." *Fish Physiology and Biochemistry* 41: 833. <https://doi.org/10.1007/s10695-015-0050-0>

- MWH Americas Inc. and Brown and Caldwell. 2016. "Final Draft Technical Memorandum Development of the North City Pure Water Project." November 18, 2016.
- NOAA (National Oceanic and Atmospheric Administration). 2017. National Weather Service Forecast Office: San Diego, California. NOWData – NOAA Online Weather Data. Accessed November 2017. <http://w2.weather.gov/climate/xmacis.php?wfo=sgx>.
- OEHHA (Office of Environmental Health Hazard Assessment). 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines, Guidance Manual for the Preparation of Health Risk Assessments. February 2015. http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf.
- Sanches, L.F., R.D. Guariento, A. Climan, R.L. Bozelli, and F.A. Esteves. 2011. "Effect of Nutrients and Light on Periphytic Biomass and Nutrient Stoichiometry in a Tropical Black-Water Aquatic Ecosystem." *Hydrobiologia* 669: 35–44.
- San Diego RWQCB and EPA (San Diego Regional Water Quality Control Board and U.S. Environmental Protection Agency). 2017. "Waste Discharge Requirements and National Pollutant Discharge Elimination System Permit for the City of San Diego E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant Discharge to the Pacific Ocean through the Point Loma Ocean Outfall." Order No. R9-2017-0007; NPDES Permit No. CA0107409. Permit issued August 4, 2017. Permit effective October 1, 2017. Permit expires September 30, 2020.
- SDAPCD (San Diego Air Pollution Control District). 2015. *Supplemental Guidelines for Submission of Air Toxics "Hot Spots" Program Health Risk Assessments (HRAs)*. June 2015. Accessed May 2017. http://www.sdapcd.org/content/dam/sdc/apcd/PDF/Misc/APCD_HRA_Guidelines.pdf.
- South County Citizens for Smart Growth versus County of Nevada*, 221 Cal.App.4th 316 (2013). <https://www.perkinscoie.com/en/news-insights/ceqa-year-in-review-2013.html#recirculation>.
- Sterner, R.W. and J.J. Elser. 2002. *Ecological Stoichiometry*. Princeton, New Jersey: Princeton University Press.

- SWRCB (State Water Resources Control Board). 2016. *Final 2012 California Integrated Report (Clean Water Act Section 303(d) List /305(b) Report)*. Web-based interactive tool. Accessed November 30, 2016. http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2012.shtml.
- USFWS (U.S. Fish and Wildlife Service) 2008. *San Diego Fairy Shrimp (Branchinecta sandiegonensis) 5-Year Review: Summary and Evaluation*. Carlsbad, California. September 2008. https://www.fws.gov/carlsbad/SpeciesStatusList/5YR/20080930_5YR_SDFS.pdf.
- Walberg, E. 2011. "Effect of Increased Water Temperature on Warm Water Fish Feeding Behavior and Habitat use." *Journal of Undergraduate Research at Minnesota State University, Mankato* 11, article 13.
- Walker, J.L., Younos, T., Zipper, C.E., 2007. Nutrient in lakes and reservoirs – A literature review for use in nutrient criteria development. Virginia Water Resources Research Center Special Report # SR34-2007.
- Wohlers-Zollner, J., P. Breithaupt, K. Walther, K. Jurgens, and U. Riebesell. 2011. "Temperature and Nutrient Stoichiometry Interactively Modulate Organic Matter Cycling in a Pelagic Algal-Bacterial Community." *Limnology and Oceanography* 56 (2): 599–620.
- Zohary, T. 2004. "Changes to the Phytoplankton Assemblage of Lake Kinneret After Decades of a Predictable, Repetitive Pattern." *Freshwater Biology*, 49: 1355–1371.

1 INTRODUCTION

- 14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.
- 42 U.S.C. 4321-4370F. National Environmental Policy Act of 1969, as amended.
- 43 CFR Part 46. Implementation of the National Environmental Policy Act of 1969.
- California Public Resources Code, Section 21000-21177. California Environmental Quality Act (CEQA), as amended.
- City of San Diego. 2012. *Recycled Water Study*. Prepared by Brown and Caldwell. Prepared for the City of San Diego, Public Utilities Department. Project No. 137921. July 2012.

City of San Diego. 2016a. *Pure Water San Diego Program Final Environmental Impact Report*. SCH No. 2014111068. City Project No. 438188. Prepared by Dudek. Encinitas, California: Dudek. August 2016.

City of San Diego. 2016b. *California Environmental Quality Act Significance Determination Thresholds*. Revised July 2016. San Diego, California: City of San Diego, Development Services Department. Accessed December 8, 2016. https://www.sandiego.gov/sites/default/files/july_2016_ceqa_thresholds_final_0.pdf.

San Diego RWQCB and EPA (San Diego Regional Water Quality Control Board and U.S. Environmental Protection Agency). 2017. "Waste Discharge Requirements and National Pollutant Discharge Elimination System Permit for the City of San Diego E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant Discharge to the Pacific Ocean through the Point Loma Ocean Outfall." Order No. R9-2017-0007; NPDES Permit No. CA0107409. Permit issued August 4, 2017. Permit effective October 1, 2017. Permit expires September 30, 2020.

EPA (U.S. Environmental Protection Agency). 2017. "Public Notice: City of San Diego E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant and Ocean Outfall; NPDES Permit #CA0107409." February 10, 2017. Accessed April 12, 2017. <https://www.epa.gov/ca/city-san-diego-ew-blom-point-loma-metropolitan-wastewater-treatment-plant-and-ocean-outfall-npdes#related>.

Title XVI of Public Law 102–575. Reclamation Wastewater and Groundwater Study and Facilities Act of 1992.

2 ENVIRONMENTAL SETTING

City of San Diego. 2012. *Recycled Water Study*. Prepared by Brown and Caldwell. Prepared for the City of San Diego, Public Utilities Department. Project No. 137921. July 2012.

City of San Diego. 2013. *Advanced Water Purification Facility Study Report*. Indirect Potable Reuse/Reservoir Augmentation Demonstration Project, Advanced Water Purification Facility. City of San Diego Public Utilities Water & Wastewater. January 2013.

City of San Diego. 2015a. Information from D. Stallman (City of San Diego).

- City of San Diego. 2015b. "Water: Overview." Accessed February 7, 2017.
<https://www.sandiego.gov/water/gen-info/overview>.
- City of San Diego. 2016a. *2015 City of San Diego Urban Water Management Plan*. Final. City of San Diego Public Utilities Department. June 2016. https://www.sandiego.gov/sites/default/files/2015_uwmp_report.pdf.
- City of San Diego. 2016b. *Pure Water San Diego Program Final Environmental Impact Report*. SCH No. 2014111068. City Project No. 438188. Prepared by Dudek. Encinitas, California: Dudek. August 2016.
- City of San Diego. 2017a. "Water: Miramar Reservoir." Accessed January 22, 2017.
<https://www.sandiego.gov/water/recreation/reservoirs/miramar>.
- City of San Diego. 2017b. "Distributing Water to You." Accessed April 12, 2017.
<https://www.sandiego.gov/water/quality/watersources/distributingwater>.
- City of San Diego. 2017c. "Water Treatment Plants." Accessed April 12, 2017.
<https://www.sandiego.gov/water/quality/watersources/treatmentprocess/treatmentplants>.
- City of San Diego. 2017d. "Permanent Water Use Restrictions." Accessed April 23, 2017. <https://www.sandiego.gov/water/conservation/drought/prohibitions>.
- City of San Diego. 2017e. "Data Request for NCWRP and SBWRP." Email from T. Lavan (City of San Diego), to M. Lawson (Dudek). April 13, 2017.
- Padre Dam Municipal Water District. 2016. *Comprehensive Facilities Master Plan: Draft Program Environmental Impact Report*. Prepared by HELIX Environmental Planning Inc. Prepared for Padre Dam Municipal Water District. December 2016.
- Rocky Mountain Recreation Company. 2017. "San Vicente Reservoir." Accessed April 12, 2017. <http://rockymountainrec.com/lake-facilities/listing/san-vicente-reservoir>.
- San Diego RWQCB (California Regional Water Quality Control Board – San Diego Region). 2016. *Water Quality Control Plan for the San Diego Basin*. As amended May 17, 2016. Adopted September 8, 1994. http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/.

San Diego RWQCB and EPA (San Diego Regional Water Quality Control Board and U.S. Environmental Protection Agency). 2017. "Waste Discharge Requirements and National Pollutant Discharge Elimination System Permit for the City of San Diego E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant Discharge to the Pacific Ocean through the Point Loma Ocean Outfall." Order No. R9-2017-0007; NPDES Permit No. CA0107409. Permit issued August 4, 2017. Permit effective October 1, 2017. Permit expires September 30, 2020.

SDCWA (San Diego County Water Authority). 2017. "FAQ and Key Facts." Accessed February 27, 2017. <http://www.sdcwa.org/frequently-asked-questions-and-key-facts>.

SWRCB (State Water Resources Control Board). 2013. *Policy for Water Quality Control of Recycled Water (Recycled Water Policy)*. Revised January 22, 2013. Effective April 25, 2013. Accessed February 27, 2017. http://www.waterboards.ca.gov/water_issues/programs/water_recycling_policy/docs/rwp_revtoc.pdf.

SWRCB. 2015. *Safe Drinking Water Plan for California*. Report to the Legislature in Compliance with Health and Safety Code Section 116365. June 2015. Accessed February 27, 2017. http://www.waterboards.ca.gov/publications_forms/publications/legislative/docs/2015/sdwp.pdf.

3 PROJECT DESCRIPTION/ALTERNATIVES

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

40 CFR 1502.1–1502.25. Environmental Impact Statement.

Brown and Caldwell. 2015. *10% Engineering Design Report: North City Plant to San Vicente Reservoir Pipeline*. Prepared by Brown and Caldwell. Prepared for The City of San Diego Public Utilities Water & Wastewater. June 2015.

CH2M. 2017. 30% Design, San Diego NCWRP Expansion and NCPWF Influent Conveyance, Basis of Design Report. 3 vols. Prepared for City of San Diego. May 2017.

City of San Diego. 2012. *Recycled Water Study*. Prepared by Brown and Caldwell. Prepared for the City of San Diego, Public Utilities Department. Project No. 137921. July 2012.

City of San Diego. 2013. *2012 Long-Range Water Resources Plan*. City of San Diego, Public Utilities Department. December 2013. Accessed December 8, 2016. <https://www.sandiego.gov/sites/default/files/legacy/water/pdf/2012lrpwrfinalreport.pdf>.

City of San Diego. 2016a. *Pure Water San Diego Program Final Environmental Impact Report*. SCH No. 2014111068. City Project No. 438188. Prepared by Dudek. Encinitas, California: Dudek. August 2016.

City of San Diego. 2016b. *City of San Diego 2015 Urban Water Management Plan*. Final. City of San Diego Public Utilities Department. June 2016.

City of San Diego. 2017a. "Community Profiles" [maps]. Accessed February 8, 2017. <https://www.sandiego.gov/planning/community/profiles>.

City of San Diego. 2017b. *NC04B Pure Water Pipeline Alignment Alternatives*.

HDR. 2018~~7~~. *60/100% Design Report*. Prepared for the City of San Diego Public Utilities. Prepared by HDR.

MWH Americas Inc. and Brown and Caldwell. 2015. *NC04B Alternatives Analysis 2015 – Miramar Pipeline/Pump Station*.

MWH Americas Inc., Brown and Caldwell, and Trussell Technologies Inc. 2016. *Task 3: North City Pure Water Facility (MR) (NC03B), 30% Engineering Design Report – Supplemental – Rev 1*. Draft. Prepared for City of San Diego Public Utilities Department. October 17, 2016.

5.1 LAND USE

City of San Diego. 1997. *City of San Diego Final MSCP Subarea Plan*. Prepared by the City of San Diego Community and Economic Development Department. March 1997. <https://www.sandiego.gov/sites/default/files/legacy/planning/programs/mscp/pdf/subareafullversion.pdf>.

City of San Diego. 2000. *Land Development Code—Deviations From Environmentally Sensitive Lands Regulations With the Coastal Overlay Zone*. January 2000. Accessed February 27, 2017. <https://www.sandiego.gov/sites/default/files/legacy/development-services/pdf/industry/landdevmanual/ldmdeviations.pdf>.

- City of San Diego. 2006. San Diego Municipal Code, Chapter 14, Article 3, Division 1: Environmentally Sensitive Lands Regulations. As amended March 1, 2006. Accessed February 27, 2017. <http://docs.sandiego.gov/municode/MuniCodeChapter14/Ch14Art03Division01.pdf>.
- City of San Diego 2008. San Diego Municipal Code, Chapter 13, Article 1, Division 4: Residential Base Zones, Section 131.0403(b)(2), Purpose of the RS (Residential—Single Unit) Zones. As amended April 8, 2008. Accessed February 27, 2017. <http://docs.sandiego.gov/municode/MuniCodeChapter13/Ch13Art01Division04.pdf>.
- City of San Diego. 2011a. *Mira Mesa Community Plan*. As amended April 26, 2011. Prepared by Latitude 33 Planning and Engineering. Prepared for the City of San Diego Planning and Development Review Department. Accessed February 15, 2017. <https://www.sandiego.gov/sites/default/files/miramesa042611c.pdf>.
- City of San Diego. 2011b. *Linda Vista Community Plan and Local Coastal Program Land Use Plan*. As amended April 26, 2011. City of San Diego Planning Department. Accessed February 15, 2017. <https://www.sandiego.gov/sites/default/files/legacy/planning/community/profiles/lindavista/pdf/lindavista042611c.pdf>.
- City of San Diego. 2011c. *Kearney Mesa Community Plan*. As amended April 26, 2011. City of San Diego Planning Department. Accessed February 15, 2017. <https://www.sandiego.gov/sites/default/files/legacy/planning/community/profiles/kearnymesa/pdf/kearnymesa042611c.pdf>.
- City of San Diego. 2011d. *Scripps Miramar Ranch Community Plan*. As amended April 26, 2011. Prepared by the City of San Diego Planning Department. Accessed February 27, 2017. https://www.sandiego.gov/sites/default/files/scripps_miramar_ranch_cp_4-26-11.pdf.
- City of San Diego. 2011e. *Tierrasanta Community Plan*. As amended April 26, 2011. Prepared by the City of San Diego Planning Department. Accessed February 15, 2017. https://www.sandiego.gov/sites/default/files/tierrasanta_cp_4-26-11.pdf.
- City of San Diego. 2013. *Mission Valley Community Plan*. As amended May 2013. Prepared by the City of San Diego Planning Department. Accessed February 18, 2018. https://www.sandiego.gov/sites/default/files/mission_valley_cp_060613_0.pdf.

- City of San Diego. 2015a. "Land Use and Community Planning Element." In *City of San Diego General Plan*. June 2015. Accessed February 27, 2017. https://www.sandiego.gov/sites/default/files/lu_2015.pdf.
- City of San Diego. 2015b. *Clairemont Mesa Community Plan*. Prepared by the City of San Diego Planning Department. Accessed February 27, 2017. <https://www.sandiego.gov/sites/default/files/legacy//planning/community/profiles/clairemontmesa/pdf/clairemontmesa042611c.pdf>.
- City of San Diego. 2015c. *Navajo Community Plan*. As amended June 9, 2015. Prepared by the Navajo Community Planners and the City of San Diego Planning Department. Accessed February 15, 2017. https://www.sandiego.gov/sites/default/files/2015_navajo_community_plan.pdf.
- City of San Diego. 2016a. "Water: Miramar Reservoir." Accessed December 8, 2016. <https://www.sandiego.gov/water/recreation/reservoirs/miramar>.
- City of San Diego. 2016b. *University Community Plan*. As amended December 5, 2016. Prepared by the University Community Planning Group and the City of San Diego Planning Department. Accessed February 15, 2017. https://www.sandiego.gov/sites/default/files/university_cp_02-03-17_0.pdf.
- City of Santee. 2003. *General Plan 2020, City of Santee, California*. Adopted August 27, 2003.
- County of San Diego. 1998. *Final Multiple Species Conservation Program: MSCP Plan*. August 1998. <http://www.sdcounty.ca.gov/pds/mscp/docs/SCMSCP/FinalMSCPProgramPlan.pdf>.
- Lawler v. City of Redding* (1992) 7 Cal.App.4th 778, 783-784. 40 Ops.Cal.Atty. Gen. 243 (1962).
- MCAS (Marine Corps Air Station) Miramar INRMP (Integrated Natural Resources Management Plan) 2011. Integrated Natural Resources Management Plan for Marine Corps Air Station Miramar, California.
- SANDAG (San Diego Association of Governments). 2015. *San Diego Forward: The Regional Plan*. October 2015. Accessed April 25, 2017. http://www.sdforward.com/pdfs/RP_final/The%20Plan%20-%20combined.pdf.

5.2 AESTHETICS/VISUAL EFFECTS AND NEIGHBORHOOD CHARACTER

- Caltrans (California Department of Transportation). 2008. California Scenic Highway Program.
- Caltrans. 2016. "San Diego County." Scenic Highways. Accessed December 2, 2016. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/sdiego.htm.
- City of San Diego. 2004. City of San Diego Council Policy 900-11: Inclusion of Public Art in Selected Capital Improvements Program and Redevelopment Agency Projects. April 27, 2004.
- City of San Diego. 2008. "Urban Design Element." In *City of San Diego General Plan*. March 2008. <http://www.sandiego.gov/planning/genplan/pdf/generalplan/publicfacilites2010.pdf>.
- City of San Diego. 2011a. *Mira Mesa Community Plan*. As amended April 26, 2011. Prepared by Latitude 33 Planning and Engineering. Prepared for the City of San Diego Planning and Development Review Department. Accessed February 15, 2017. <https://www.sandiego.gov/sites/default/files/miramesa042611c.pdf>.
- City of San Diego. 2011b. *Linda Vista Community Plan and Local Coastal Program Land Use Plan*. San Diego, California: City of San Diego Planning Department. November 2003. <https://www.sandiego.gov/sites/default/files/legacy/planning/community/profiles/pdf/cp/cplvfullversion.pdf>.
- City of San Diego. 2011c. *Kearny Mesa Community Plan Update*.
- City of San Diego. 2011d. *Scripps Miramar Ranch Community Plan*. As amended April 26, 2011. Prepared by the City of San Diego Planning Department. Accessed February 27, 2017. https://www.sandiego.gov/sites/default/files/scripps_miramar_ranch_cp_4-26-11.pdf.
- City of San Diego. 2011e. *Tierrasanta Community Plan*. As amended April 26, 2011. Prepared by the City of San Diego Planning Department. Accessed February 15, 2017. https://www.sandiego.gov/sites/default/files/tierrasanta_cp_4-26-11.pdf.
- City of San Diego. 2013. *Mission Valley Community Plan*. As amended May 2013. Prepared by the City of San Diego Planning Department. Accessed February 18, 2018. https://www.sandiego.gov/sites/default/files/mission_valley_cp_060613_0.pdf.

City of San Diego. 2015a. "Land Use and Community Planning Element." In *City of San Diego General Plan*. March 2008. <http://www.sandiego.gov/planning/genplan/pdf/generalplan/publicfacilites2010.pdf>.

City of San Diego. 2015b. *Clairemont Mesa Community Plan*. Prepared by the City of San Diego Planning Department. Accessed February 27, 2017. <https://www.sandiego.gov/sites/default/files/legacy//planning/community/profiles/clairemontmesa/pdf/clairemontmesa042611c.pdf>.

City of San Diego. 2015c. *Navajo Community Plan*. Adopted by Ordinance No. O-20510. Prepared by the Navajo Community Planners and the City of San Diego Planning Department. June 2015.

City of San Diego. 2016. *University Community Plan*. Prepared by the University Community Planning Group and City of San Diego Planning Department. October 2014.

County of San Diego. 2011. "Conservation Element." In *County of San Diego General Plan*. August 2011.

FHWA (Federal Highway Administration). 2016. "Guidelines for the Visual Impact Assessment of Highway Projects." Accessed December 7, 2016. https://www.environment.fhwa.dot.gov/guidebook/documents/VIA_Guidelines_for_Highway_Projects.asp.

5.3 AIR QUALITY AND ODOR

17 CCR 93000. Substances Identified As Toxic Air Contaminants.

40 CFR 51, Subpart T. Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved under Title 23 U.S.C. or the Federal Transit Laws.

40 CFR 51, Subpart W. Determining Conformity of General Federal Actions to State or Federal Implementation Plans.

California Health and Safety Code, Section 41700.

CARB (California Air Resources Board). 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. CARB, Stationary Source Division, Mobile Source Control Division. October 2000. Accessed December 2016. <https://www.arb.ca.gov/diesel/documents/rrpFinal.pdf>.

- CARB. 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*. April 2005. Accessed February 9, 2010. <http://www.arb.ca.gov/ch/landuse.htm>.
- CARB. 2014. "Glossary of Air Pollution Terms." CARB website. Accessed April 24, 2014. <https://www.arb.ca.gov/html/gloss.htm>.
- CARB. 2016a. "Ambient Air Quality Standards." May 5, 2016. Accessed October 2016.
- CARB. 2016b. "iAdam: Air Quality Data Statistics." Accessed October 2016. <http://arb.ca.gov/adam>.
- California Department of Public Health. 2017. *Epidemiologic Summary of Coccidioidomycosis in California, 2016*. June 2017. Accessed November 2017. <https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/CocciEpiSummary2016.pdf>.
- City of San Diego. 2000. San Diego Municipal Code Chapter 14, Article 2, Division 7, Section 142.0710, Air Contaminant Regulations.
- City of San Diego. 2016. *California Environmental Quality Act Significance Determination Thresholds*. Revised July 2016. San Diego, California: City of San Diego, Development Services Department. Accessed December 8, 2016. https://www.sandiego.gov/sites/default/files/july_2016_ceqa_thresholds_final_0.pdf.
- County of San Diego (County of San Diego, Health and Human Services Agency, Public Health Services, Epidemiology and Immunization Services Branch). 2017. County of San Diego Communicable Disease Registry. December 13, 2017.
- EPA. 2014. "NAAQS Table." Accessed October 2016. <https://www.epa.gov/criteria-air-pollutants/naaqs-table>.
- EPA. 2016a. "Outdoor Air Quality Data. Last updated September 14, 2016. Accessed October 2016. <https://www.epa.gov/outdoor-air-quality-data>.
- EPA. 2016b. "Criteria Air Pollutants." October 19, 2016. Accessed December 12, 2016. <https://www.epa.gov/criteria-air-pollutants>.
- EPA (U.S. Environmental Protection Agency). 2017. "Criteria Air Pollutants."

- SDAPCD. 2005. Measures to Reduce Particulate Matter in San Diego County. December 2005. Accessed December 12, 2016. <http://www.sandiegocounty.gov/content/dam/sdc/apcd/PDF/Air%20Quality%20Planning/PM-Measures.pdf>.
- SDAPCD. 2007. *Eight-Hour Ozone Attainment Plan for San Diego County*. May 2007. <http://www.sdapcd.org/planning/8-Hour-O3-Attain-Plan.pdf>.
- SDAPCD. 2009a. *2009 Regional Air Quality Strategy Revision*. April 22, 2009. Accessed January 26, 2010. <http://www.sandiegocounty.gov/content/dam/sdc/apcd/PDF/Air%20Quality%20Planning/2009-RAQS.pdf>.
- SDAPCD. 2009b. Regulation IV: Prohibitions; Rule 55: Fugitive Dust. Adopted June 24, 2009; effective December 24, 2009. Accessed December 12, 2016. http://www.sdapcd.org/content/dam/sdc/apcd/PDF/Rules_and_Regulations/Prohibitions/APCD_R55.pdf.
- SDAPCD. 2012. *Redesignation Request and Maintenance Plan for the 1997 National Ozone Standard for San Diego County*. Adopted December 5, 2012. Accessed December 12, 2016. http://www.sandiegocounty.gov/content/dam/sdc/apcd/PDF/Air%20Quality%20Planning/8_Hour_O3_Maint-Plan.pdf.
- SDAPCD. 2015a. *5-Year Air Quality Monitoring Network Assessment 2015*. July 2015. Accessed December 2017. http://www.sdapcd.org/content/dam/sdc/apcd/monitoring/2015_Network_Assessment.pdf.
- SDAPCD. 2015ab. Regulation IV: Prohibitions; Rule 67.0.1: Architectural Coatings. Adopted June 24, 2015. Effective January 1, 2016. Accessed December 12, 2016. http://www.sdapcd.org/content/dam/sdc/apcd/PDF/Rules_and_Regulations/Prohibitions/APCD_R67-0-1.pdf.
- WRCC (Western Regional Climate Center). 2016. "Escondido. Temperature and Precipitation." Accessed November 2016. <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca2862>.

5.4 BIOLOGICAL RESOURCES

16 U.S.C. 703–712. 1918. Migratory Bird Treaty Act, as amended.

16 U.S.C. 1531–1544. Endangered Species Act of 1973, as amended.

66 FR 3853–3856. Executive Order 13186 of January 10, 2001: “Responsibilities of Federal Agencies to Protect Migratory Birds.” Presidential Documents. January 17, 2001.

AOU (American Ornithologists’ Union). 2016. “Checklist of North American Birds: List of the 2,127 Bird Species Known from the A.O.U. Check-List Area.” Accessed October 14, 2016. <http://checklist.aou.org/>.

Barnes, R.S.K. and K.H. Mann, eds. 1991. *Fundamentals of Aquatic Systems*. Blackwell Scientific Publications.

Bohonak, A. 2004. *Conservation Genetics of the Endangered Fairy Shrimp Species Branchinecta Sandiegonensis*. Prepared for the MSCP Vernal Pool Inventory, City of San Diego (USFWS). May 17, 2004. <https://www.sandiego.gov/sites/default/files/legacy/planning/programs/mscp/biomonitor/vpi/pdf/27appH.pdf>.

Bohonak, A. 2017. “City of San Diego Vernal Pool Inventory and Presence of B. lindahli at the NCPWF.” Email between A. Bohonak (San Diego State University Professor of Biology) and D. Mullen (Dudek). December 29, 2017

Carlson, R.E. 1977. “A Trophic State Index for Lakes.” *Limnology and Oceanography* 22:361–368.

CDFW (California Department of Fish and Wildlife). 2014. *Lake Miramar General Fish Survey Fall 2014*. Prepared by D. Russell Black (Environmental Scientist, CDFW). December 18, 2014.

CDFW. 2016. California Natural Diversity Database (CNDDDB). RareFind Version 4.0 (Commercial Subscription). Sacramento, California: CDFW, Biogeographic Data Branch. <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>.

City of San Diego. 1997. *City of San Diego Final MSCP Subarea Plan*. Prepared by the City of San Diego Community and Economic Development Department. March 1997. <https://www.sandiego.gov/sites/default/files/legacy//planning/programs/mscp/pdf/subareafullversion.pdf>.

City of San Diego. 2003. *City of San Diego Vernal Pool Inventory 2002-2003*. <https://www.sandiego.gov/sites/default/files/legacy//planning/programs/mscp/biomonitor/vpi/pdf/vpifullversion.pdf>.

- City of San Diego. 2012. *San Diego Municipal Code, Land Development Code—Biology Guidelines*. Amended April 23, 2012 by Resolution No. R-307376. https://www.sandiego.gov/sites/default/files/ldc_biology_guidelines_vphcp_wildlife-city_draft_july_2016.pdf.
- City of San Diego. 2012–2014. Miramar Reservoir Water Quality Data Collected Weekly at Station A.
- City of San Diego. 2017. *Final City of San Diego Vernal Pool Habitat Conservation Plan. October 2017*. <https://www.sandiego.gov/sites/default/files/vph-cp.pdf>.
- County of San Diego. 1998. *Final Multiple Species Conservation Program: MSCP Plan*. August 1998. <http://www.sdcounty.ca.gov/pds/mscp/docs/SCMSCP/FinalMSCPProgramPlan.pdf>.
- CNPS (California Native Plant Society). 2017~~5~~. *Inventory of Rare and Endangered Plants of California* (online ed., version 8-0~~32~~). Sacramento, California: CNPS, Rare Plant Program. Accessed January 2015. www.rareplants.cnps.org.
- Crother, B.I. 2012. *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in our Understanding*, edited by J.J. Moriarty. 7th ed. Society for the Study of Amphibians and Reptiles (SSAR); Herpetological Circular no. 39. August 2012. http://home.gwu.edu/~rpyron/publications/Crother_et_al_2012.pdf.
- Historic Aerials Online. 2016a. Historical image of Eastgate Mall. Accessed October 18, 2016. <http://historicaerials.com/map/index.php?>.
- Historic Aerials Online. 2016b. Historical image of Clairemont Mesa. Accessed October 18, 2016. <http://historicaerials.com/map/index.php?>.
- Historic Aerials Online. 2016c. Historical images of Miramar Reservoir: 1942, 1953, 1959. Accessed October 18, 2016. <http://historicaerials.com/map/index.php?>.
- Historic Aerials Online. 2016d. Historical image of Vegas Drive. Accessed October 18, 2016. <http://historicaerials.com/map/index.php?>.
- Jepson Flora Project. 2015. Jepson eFlora. Berkeley, California: University of California. Accessed January 27, 2015. http://ucjeps.berkeley.edu/cgi-bin/get_JM_name_data.pl.

Merkel & Associates, Inc. 2001. *Re: 90-day Letter Report of Vernal Pool Branchiopods Wet Season Survey Sampling for the Eastgate Mall Road Property Located in Miramar, San Diego County, California, Conducted under Federal Endangered Species Act Section 10(a)(1)(A) Permit #797999.* San Diego, California. July 16, 2001.

Moyle, P.B. 2002. *Inland Fishes of California*. Revised and expanded. Berkeley and Los Angeles, California, and London, England: University of California Press.

NABA (North American Butterfly Association). 2001. "Checklist of North American Butterflies Occurring North of Mexico." Adapted from North American Butterfly Association (NABA) Checklist and English Names of North American Butterflies, eds. B. Cassie, J. Glassberg, A. Swengel, and G. Tudor. 2nd ed. Morristown, New Jersey: NABA. Accessed May 2012. <http://www.naba.org/pubs/enames2.html>.

NOAA (National Oceanic and Atmospheric Administration). 2017. National Weather Service Forecast Office: San Diego, California. NOWData – NOAA Online Weather Data. Accessed November 2017. <http://w2.weather.gov/climate/xmacis.php?wfo=sgx>.

Oberbauer, T., M. Kelly, and J. Buegge. 2008. *Draft Vegetation Communities of San Diego County*. March 2008. Accessed September 12, 2012. <http://www.sdcanyonlands.org/canyon-groups/canyon-group-resources/canyon-enhancement-guide/189-canyon-enhancement-planning-guide-materials>.

SDNHM (San Diego Natural History Museum). 2002. "Butterflies of San Diego County." Revised September 2002. Accessed May 2012. <http://www.sdnhm.org/archive/research/entomology/sdbutterflies.html>.

Snyder, F.L., M.B. Hilgendorf, and D.W. Garton. 1997. "Zebra Mussels in North America: The Invasion and Its Implications." Ohio Sea Grant, Ohio State University, Columbus, Ohio. http://ohioseagrant.osu.edu/_documents/publications/FS/FS-045%20zebra%20mussels%20in%20North%20America.pdf.

URS. 2006. *Year 2006 90-Day Report Dry Season Vernal Pool Branchiopods Surveys Near the I-805 Right-of-Way URS Project No. 27655065.34000.* San Diego, California. November 6, 2006.

USDA (U.S. Department of Agriculture). 2016. PLANTS Database. USDA Natural Resources Conservation Service. <http://plants.usda.gov/java/>.

USFWS. 2008. *San Diego Fairy Shrimp (Branchinecta sandiegonensis) 5-Year Review: Summary and Evaluation*. Carlsbad, California. September 2008. https://www.fws.gov/carlsbad/SpeciesStatusList/5YR/20080930_5YR_SDFS.pdf.

Wilson, D.E., and D.M. Reeder, eds. 2005. *Mammal Species of the World: A Taxonomic and Geographic Reference*. 3rd ed. Baltimore, Maryland: Johns Hopkins University Press.

5.5 ENVIRONMENTAL JUSTICE

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

59 FR 7629. Executive Order 12898 of February 11, 1994: "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." Presidential Documents. February 16, 1994.

62 FR 19885. Executive Order 13045 of April 23, 1997: "Protection of Children from Environmental Health Risks and Safety Risks."

California Government Code, Section 65040 – 65040.14. Powers and Duties. Ch. 1.5. Office of Planning and Research.

California Public Resources Code, Sections 21000–21177. California Environmental Quality Act (CEQA), as amended.

City of San Diego. 2016. *2015 City of San Diego Urban Water Management Plan*. Final. City of San Diego Public Utilities Department. June 2016. https://www.sandiego.gov/sites/default/files/2015_uwmp_report.pdf.

SANDAG (San Diego Association of Governments). 2008. "rEgion: SANDAG's Electronic Newsletter." July 2008.

SANDAG. 2015. "Demographic & Socio Economic Estimates, Region—San Diego." September 9, 2015.

SANDAG. 2016. SANDAG Data Surfer: Census 2010. Accessed November 18, 2016.

5.6 ENERGY

- 77 FR 62623–63200. Final rule: “2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards.” October 15, 2012.
- CARB (California Air Resources Board). 2015. *Clean Power Plan Compliance Discussion Paper*. September 2015. Accessed October 2016. <http://www.arb.ca.gov/cc/powerplants/meetings/2015whitepaper.pdf>.
- CEC (California Energy Commission). 2005. *Integrated Energy Policy Report*. CEC-100-2005-007CMF. November 2005.
- CEC. 2012. *Building Energy Efficiency Standards for Residential and Nonresidential Buildings*. Title 24, Part 6 and Associated Administrative Regulations in Part 1. CEC-400-2012-004-CMF-REV2. May 2012. Accessed June 2015. <http://www.energy.ca.gov/2012publications/CEC-400-2012-004/CEC-400-2012-004-CMF-REV2.pdf>.
- CEC. 2013. *2013 Integrated Energy Policy Report*. CEC-100-2013-001-CMF. Accessed June 2015. http://www.energy.ca.gov/2013_energypolicy.
- CEC. 2014. *California Energy Demand 2014–2024 Final Forecast: Volume 1: Statewide Electricity Demand, End-User Natural Gas Demand, and Energy Efficiency*. January 2014. Accessed June 2015. <http://www.energy.ca.gov/2013publications/CEC-200-2013-004/CEC-200-2013-004-V1-CMF.pdf>.
- CEC. 2015. *California Energy Demand Updated Forecast 2015–2025*. CEC-200-2014-009-CMF. February 2015.
- CEC. 2016. *2015 Integrated Energy Policy Report*. CEC-100-2015-001. Accessed October 18, 2016. http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-01/TN212017_20160629T154354_2015_Integrated_Energy_Policy_Report_Small_File_Size.pdf.
- City of San Diego. 2008. “Conservation Element.” In *City of San Diego General Plan*. March 2008. Accessed May 4, 2015. <https://www.sandiego.gov/sites/default/files/legacy/environmental-services/pdf/sustainable/conservedgenplan.pdf>.

City of San Diego. 2009. "Energy Strategy for a Sustainable Future." June 2009. Accessed July 2015. <http://www.sandiego.gov/environmental-services/pdf/sustainable/090600energystrategy.pdf>.

CPUC (California Public Utilities Commission). 2013. "Natural Gas and California." September 7, 2013. Accessed June 2015. <http://www.cpuc.ca.gov/puc/energy/gas/natgasandca.htm>.

CPUC. 2016. *Biennial RPS Program Update*. January 1, 2016.

EPA (U.S. Environmental Protection Agency). 2016. "Water – Energy Connection." Accessed December 11, 2016. <https://www3.epa.gov/region9/waterinfrastructure/waterenergy.html>.

SDG&E (San Diego Gas & Electric). 2016. "Company Facts." Accessed November 2016. <http://www.sdge.com/aboutus>.

5.7 GEOLOGY AND SOILS

City of San Diego. 2008. "City of San Diego Seismic Safety Study: Geologic Hazards and Faults." City of San Diego, Development Services Department. Updated 2008. <http://archive.sandiego.gov/development-services/industry/hazards/pdf/seismicstudy.pdf>.

City of San Diego. 2016. Municipal Code, Chapter 14, Article 5, Division 1: Adoption and Applicability of the Building Regulations. Amended April 2016.

5.8 GREENHOUSE GAS EMISSIONS

~~42 U.S.C. 7401–7671q. Clean Air Act.~~

~~42 U.S.C. 13201 et seq. The Energy Policy Act.~~

~~42 U.S.C. 17001–17386. Energy Independence and Security Act.~~

~~74 FR 56260–56373. Final rule: "Mandatory Reporting of Greenhouse Gases." October 30, 2009.~~

80 FR 64510–64660. Final rule: "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units." October 23, 2015.

- 80 FR 64661–65120. Final rule: “Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units.” October 23, 2015.
- 82 FR 16576–16577. Notice: Withdrawal of Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews. April 5, 2017.
- ~~C2ES (Center for Climate and Energy Solutions). 2014. *President Obama’s Climate Action Plan: One Year Later*. June 2014. Accessed December 2016. <http://www.c2es.org/docUploads/climate-action-plan-one-year-later-7-15-14.pdf>.~~
- ~~C2ES. 2016. *Achieving the United States’ Intended Nationally Determined Contribution*. November 2016. Accessed December 2016. <http://www.c2es.org/docUploads/achieving-us-indc-nov-2016.pdf>.~~
- California Public Resources Code, Section 40000–40511. The Integrated Waste Management Act.
- CARB (California Air Resources Board). 2008. *Climate Change Scoping Plan: A Framework for Change*. October 2008. Approved December 12, 2008. <http://www.arb.ca.gov/cc/scopingplan/document/psp.pdf>.
- CARB. 2011a. *Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document*. August 19, 2011. Accessed March 6, 2017. https://www.arb.ca.gov/cc/scopingplan/document/final_supplement_to_sp_fed.pdf.
- CARB. 2011b. “Facts About The Advanced Clean Cars Program.” November 9, 2011. http://www.arb.ca.gov/msprog/zevprog/factsheets/advanced_clean_cars_eng.pdf.
- CARB. 2014. *First Update to the Climate Change Scoping Plan: Building on the Framework*. May 2014. <http://www.arb.ca.gov/cc/scopingplan/document/updatescopingplan2013.htm>.
- CARB. 2015. “Glossary of Terms Used in Greenhouse Gas Inventories.” Last updated May 6, 2015. Accessed February 27, 2017. https://www.arb.ca.gov/cc/inventory/faq/ghg_inventory_glossary.htm.
- CARB. 2016. *California Greenhouse Gas Emission Inventory – 2016 Edition*. June. Accessed November 2016. https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2014/ghg_inventory_trends_00-14_20160617.pdf.

- CARB. 2017. *The 2017 Climate Change Scoping Plan Update—The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target*. January 20, 2017. Accessed February 27, 2017. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.
- CAT. 2010. *Climate Action Team Report to Governor Schwarzenegger and the California Legislature*. Sacramento, California: CAT. December 2010. Accessed February 2014. <http://www.energy.ca.gov/2010publications/CAT-1000-2010-005/CAT-1000-2010-005.PDF>.
- CEC (California Energy Commission). 2014. *2013 Building Energy Efficiency Standards for Residential and Nonresidential Buildings*. Revised July 1, 2014. Accessed October 2016. <http://www.energy.ca.gov/2012publications/CEC-400-2012-004/CEC-400-2012-004-CMF-REV2.pdf>.
- CEC. 2015. *2016 Building Energy Efficiency Standards Frequently Asked Questions*. Accessed October 2016. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf.
- CEQ (Council on Environmental Quality). 2016. *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*. August 1, 2016. Accessed November 2016. https://obamawhitehouse.archives.gov/sites/whitehouse.gov/files/documents/nepa_final_ghg_guidance.pdf.
- City of San Diego. 2005. *Climate Protection Action Plan*. July 2005. Accessed March 6, 2017. https://www.sandiego.gov/sites/default/files/legacy/environmental-services/pdf/sustainable/action_plan_07_05.pdf.
- City of San Diego. 2008. *City of San Diego General Plan*. March 2008. Accessed May 4, 2015. <https://www.sandiego.gov/sites/default/files/legacy//planning/genplan/pdf/2012/ce120100.pdf>.
- City of San Diego. 2015. *City of San Diego Climate Action Plan*. March 2015. http://www.sandiego.gov/planning/genplan/cap/pdf/sd_cap_032515_draft.pdf.
- CNRA (California Natural Resources Agency). 2009. *2009 California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008*. Accessed December 2016. http://resources.ca.gov/docs/climate/Statewide_Adaptation_Strategy.pdf.

- CNRA. 2014. *Safeguarding California: Reducing Climate Risk*. An Update to the 2009 California Climate Adaptation Strategy. July 2014. Accessed February 27, 2017. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.469.6115&rep=rep1&type=pdf>.
- CPUC (California Public Utilities Commission). 2013. *California's Zero Net Energy Policies and Initiatives*. September 18, 2013. <http://www.cpuc.ca.gov/NR/rdonlyres/C27FC108-A1FD-4D67-AA59-7EA82011B257/0/3.pdf>.
- EOP (Executive Office of the President). 2013. *The President's Climate Action Plan*. June 2013. Accessed February 2017. <https://obamawhitehouse.archives.gov/sites/default/files/image/president27sclimateactionplan.pdf>.
- EPA (U.S. Environmental Protection Agency). 2016a. "Glossary of Climate Change Terms." <https://www3.epa.gov/climatechange/glossary.html>.
- EPA. 2016b. *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2014*. April 15, 2016. EPA 430--R-16-002. Accessed February 27, 2017. <https://www.epa.gov/sites/production/files/2016-04/documents/us-ghg-inventory-2016-main-text.pdf>.
- EPA and NHTSA. 2016. "EPA and DOT Finalize Greenhouse Gas and Fuel Efficiency Standards for Heavy-Duty Trucks." August 2016. Accessed February 2017. <https://www.epa.gov/newsreleases/heavydutyaug162016>.
- IPCC (Intergovernmental Panel on Climate Change). 1995. *Climate Change 1995: IPCC Second Assessment Report*. Accessed October 2016. <http://www.ipcc.ch/pdf/climate-changes-1995/ipcc-2nd-assessment/2nd-assessment-en.pdf>.
- IPCC. 2007. "Summary for Policymakers." In *Climate Change 2007: The Physical Science Basis*, edited by S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor, and H.L. Miller, 1–18. A report of Working Group I of the IPCC. New York, New York: Cambridge University Press. Accessed October 2016. <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>.
- IPCC. 2014. *Climate Change 2014: Synthesis Report*. Accessed October 2016. http://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full.pdf.

- OPR (Governor's Office on Planning and Research). 2008. *Technical Advisory – CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review*.
- OPR. 2016. *Global Climate Leadership Memorandum of Understanding (MOU)*. Accessed October 2016. <http://under2mou.org/wp-content/uploads/2015/04/Under-2-MOU-English.pdf>.
- Qiancheng, M. 1998. National Aeronautics and Space Administration Science Briefs – Greenhouse Gases: Refining the Role of Carbon Dioxide. March 1998. Accessed July 2017. http://www.giss.nasa.gov/research/briefs/ma_01/.
- SANDAG (San Diego Association of Governments). 2015. *San Diego Forward: The Regional Plan*. October 2015. Accessed October 2016. <http://www.sandag.org/index.asp?projectid=349&fuseaction=projects.detail>.

5.9 HEALTH AND SAFETY/HAZARDS

- 8 CCR 337–340. Hazardous Substances Information and Training; Workers' Compensation Loss Control Consultation Services, Annual Health and Safety Loss Control Plan—Requirements and Procedures.
- 14 CFR Part 77. Objects Affecting Navigable Airspace.
- 15 U.S.C. 2601–2629. Toxic Substances Control Act of 1976.
- 22 CCR 66261.10. "Hazardous Waste" [definition].
- 22 CCR 66263.20–66263.50. Standards Applicable to Transporters of Hazardous Waste.
- 22 CCR 66279.1–67100. Standards for the Management of Used Oil.
- 42 U.S.C. 6901–6992k. Resource Conservation and Recovery Act of 1976.
- Allied Geotechnical Engineers Inc. 2015a. *Draft Phase I Environmental Site Assessment, Pure Water Program Task 7, Morena Pump Station, Wastewater Force Main and Brine Conveyance Pre-Design (NC05)*. Prepared for the City of San Diego.

- Allied Geotechnical Engineers Inc. 2015b. *Final Phase I Environmental Site Assessment, Pure Water Program Task 8, Miramar Pipeline/Pump Station Pre-Design (NC04B)*. Prepared for the City of San Diego.
- Allied Geotechnical Engineers Inc. 2016. *Phase I Environmental Site Assessment, North City to San Vicente Reservoir Pipeline Project*. Prepared for the City of San Diego.
- ALUC (Airport Land Use Commission). 2010a. *Montgomery Field Airport Land Use Compatibility Plan*. Adopted January 25, 2010; amended December 20, 2010. http://www.san.org/DesktopModules/Bring2mind/DMX/Download.aspx?Command=Core_Download&EntryId=2985&language=en-US&PortalId=0&TabId=225.
- ALUC. 2010b. *Gillespie Field Airport Land Use Compatibility Plan*. Adopted January 25, 2010; amended December 20, 2010. Accessed December 11, 2016. http://www.san.org/DesktopModules/Bring2mind/DMX/Download.aspx?Command=Core_Download&EntryId=2989&language=en-US&PortalId=0&TabId=225.
- ALUC. 2011. *MCAS Miramar Airport Land Use Compatibility Plan*. Adopted October 2008; amended December 2010 and November 2011.
- ALUC. 2014. *San Diego International Airport Airport Land Use Compatibility Plan*. Adopted April 3, 2014; amended May 1, 2014.
- California Health and Safety Code, Section 25501(p). "Release" [definition].
- CalOES (California Office of Emergency Services). 2011. "California Accidental Release Prevention Program." California Office of Emergency Services, For Governments & Tribal. <http://www.caloes.ca.gov/for-governments-tribal/response/california-accidental-release-prevention>.
- City of San Diego. 2007. "Section 3.5 Health and Safety." In *Final Program Environmental Impact Report for the Draft General Plan*. September 2007.
- City of San Diego. 2008. *City of San Diego General Plan*. March 2008. Accessed May 4, 2015. <http://www.sandiego.gov/planning/genplan/pdf/generalplan/publicfacilities2010.pdf>.
- City of San Diego. 2014. *Sewer System Management Plan*. June 2014.

- City of San Diego. 2015. *The “Whitebook”: Standard Specifications for Public Works Construction*. 2015 Edition. City of San Diego Supplement to the 2015 Greenbook by the Public Works Department, Project Implementation Division, Standards & Contract Documents Section. https://www.sandiego.gov/sites/default/files/2015_whitebook.pdf.
- City of San Diego. 2016. *Pure Water San Diego Program Final Environmental Impact Report*. SCH No. 2014111068. City Project No. 438188. Prepared by Dudek. Encinitas, California: Dudek. August 2016.
- EPA (U.S. Environmental Protection Agency). 2011. “Superfund CERCLA Overview.” U.S. Environmental Protection Agency, Superfund, Laws, Policy and Guidance. Last updated December 12, 2012. Accessed September 24, 2014. <http://www.epa.gov/superfund/policy/cercla.htm>.
- EPA. 2013. Summary of Resource Conservation and Recovery Act. Accessed August 2017. <https://www.epa.gov/laws-regulations/summary-resource-conservation-and-recovery-act>.
- EPA. 2015. “Emergency Planning and Community Right-to-Know Act (EPCRA).” U.S. Environmental Protection Agency. Accessed May 19, 2015. <http://www2.epa.gov/epcra>.
- Governor’s Office of Emergency Services. 2006. *California Emergency Services Act, California Disaster Assistance Act, Emergency Compacts, and California Disaster and Civil Defense Master Mutual Aid Agreement*. Includes statutory changes as of January 2006. Accessed July 27, 2015. <http://hazardmitigation.calema.ca.gov/docs/ESA-all8-06-final.pdf>.
- NFPA (National Fire Protection Association). 2016. “NFPA 820: Standard for Fire Protection in Wastewater Treatment and Collection Facilities.” Accessed December 11, 2016. <http://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards?mode=code&code=820>.
- Public Works Standards Inc. 2015. *The “Greenbook”: Standard Specifications for Public Works Construction*. Vista, California: BNI Publications Inc. <https://www.bnibooks.com/product/2015-greenbook-standard-specifications-for-public-works-construction>.

5.10 HISTORICAL RESOURCES

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act (CEQA), as amended.

16 U.S.C. 470f. National Historic Preservation Act.

36 CFR 60.4. Criteria for Determining Eligibility for Listing in the NRHP.

36 CFR 800. Methodological and Conceptual Guidance for Identifying Historic Properties.

Basgall, M.E., and M. Hall. 1993. *Adaptive Variation in the North-Central Mojave Desert*. Paper Presented at the 55th Annual Meeting of the Society for American Archaeology, Las Vegas.

Basgall, M.E. and M. Hall. 2000. "Morphological and Temporal Variation in Bifurcate-Stemmed Dart Points of the Western Great Basin." *Journal of California and Great Basin Anthropology* 22(2): 237-276.

Basgall, M.E., L. Johnson, and M.J. Hale. 2002. "An Evaluation of Four Archaeological Sites in the Lead Mountain Training Area, Marine Corps Air Ground Combat Center, Twentynine Palms, California." Submitted to U.S. Army Corps of Engineers, Fort Worth, Texas.

Bean, L.J., and F.C. Shipek. 1978. "Luiseño." In *Handbook of North American Indians*, Vol. 8, *California*, edited by R.F. Heizer, 550–563. Washington, D.C.: Smithsonian Institution.

BOR (Bureau of Reclamation). 2016. *2016 Reclamation Manual*. Last updated December 2, 2016. <https://www.usbr.gov/recman/index.html>.

Boscana, G. 1846. "Chinigchinich: A Historical Account of the Origin, Customs, and Traditions of the Indians at the Missionary Establishment of St. Juan Capistrano, Alta California." In *Life in California*, edited by A. Robinson, 227–341. New York, New York: Wiley & Putnam.

Byrd, B.F., and S.N. Reddy. 2002. "Late Holocene Adaptations along the Northern San Diego Coastline: New Perspectives on Old Paradigms." In *Cultural Complexity on the California Coast: Late Holocene Archaeological and Environmental Records*, edited by J.M. Erlandson and T.L. Jones, 41–62. Los Angeles, California: University of California–Los Angeles Press.

- California Public Resources Code, Section 5020.1(j). CRHR listing.
- California Public Resources Code, Sections 21000–21177. California Environmental Quality Act (CEQA), as amended.
- City of San Diego. 2001. "Historical Resources Guidelines." City of San Diego Land Development Manual. Adopted September 28, 1999; amended April 30, 2001. <https://www.sandiego.gov/development-services/industry/landdevcode/landdevmanual>.
- City of San Diego. 2008a. *City of San Diego Draft General Plan Final Program Environmental Impact Report*. SCH No. 2006091032. City of San Diego Development Services. December 2008. <https://www.sandiego.gov/planning/genplan/documents/peir>.
- City of San Diego. 2008b. "Historic Preservation Element." In *City of San Diego General Plan*. March 2008. <http://www.sandiego.gov/planning/genplan/>.
- City of San Diego. 2014. City of San Diego's Scoping Letter for the Pure Water Program.
- City of San Diego. 2016. *California Environmental Quality Act Significance Determination Thresholds*. Revised July 2016. San Diego, California: City of San Diego, Development Services Department. Accessed December 8, 2016. https://www.sandiego.gov/sites/default/files/july_2016_ceqa_thresholds_final_0.pdf.
- County of San Diego. 2007. Ordinance No. 9890 (N/S). County of San Diego Board of Supervisors. San Diego, California.
- CSP (California State Parks). 2009. "Preservation Matters." *The Newsletter of the California Office of Historic Preservation* 2(3):3–21.
- Davis, E.L. 1978. *The Ancient Californians: Rancholabrean Hunters of the Mojave Lakes Country*. Los Angeles, California: Natural History Museum of Los Angeles County.
- Fages, P. 1937. *A Historical, Political, and Natural Description of California (1775)*. Translated by Herbert Ingram Priestly. Berkeley, California: University of California Press.

- Gallegos, D.R. 1987. "San Dieguito-La Jolla: Chronology and Controversy." San Diego County Archaeological Society, Research Paper No. 1.
- Gallegos, D., and C. Kyle. 1988. *Five Thousand Years of Maritime Subsistence at Ballast Point Prehistoric Site SDI-48 (W-164), San Diego, California*. San Diego, California: WESTEC Services.
- Geiger, M., and C.W. Meighan. 1976. *As The Padres Saw Them: California Indian Life and Customs as Reported by the Franciscan Missionaries, 1813–1815*. Santa Barbara, California: Santa Barbara Mission Archive Library.
- Golla, V. 2007. "Linguistic Prehistory." In *California Prehistory: Colonization, Culture, and Complexity*, edited by T.L. Jones and K.A. Klar, 71–82. New York, New York: Altamira Press.
- Griset, S. 1996. "Southern California Brown Ware." Unpublished PhD dissertation; University of California, Riverside.
- Hale, M.J. 2001. "Technological Organization of the Millingstone Pattern in Southern California." Master's thesis; California State University, Sacramento.
- Hale, M.J. 2009. "San Diego and Santa Barbara: Socioeconomic Divergence in Southern California." PhD dissertation; University of California, Davis.
- Hale, M.J. 2010. "Limited Archaeological Excavations at SDI-4669 (SDM-W-12A) in Advance of Geotechnical Coring, University House Rehabilitation Project, University of California at San Diego, La Jolla, California." Prepared for Lone Stiegler Architecture. Prepared by ASM Affiliates Inc. September 2010.
- Harrington, J.P. 1934. "A New Original Version of Boscana's Historical Account of the San Juan Capistrano Indians of Southern California." *Smithsonian Miscellaneous Collections* 92(4).
- Hector, S.M. 1984. "Late Prehistoric Hunter-Gatherer Activities in Southern San Diego County." PhD dissertation; University of California, Los Angeles.
- ~~Hector, S.M. 2007. Archaeological Investigations at University House Meeting Center and Chancellor Residence, CA-SDI-4669 (SDM-W-12), University of California at San Diego, La Jolla, California. ASM Affiliates.~~

- Johnson, J.R., and J.G. Lorenz. 2006. "Genetics, Linguistics, and Prehistoric Migrations: An Analysis of California Indian Mitochondrial DNA Lineages." *Journal of California and Great Basin Anthropology* 26:33–64.
- Kroeber, A. 1925. *Handbook of the Indians of California*. Washington D.C.: Smithsonian Institution.
- Laylander, D. 1985. "Some Linguistic Approaches to Southern California's Prehistory." *San Diego State University Cultural Resource Management Center Casual Papers* 2(1): 14-58.
- Laylander, D. 2000. *Early Ethnography of the Californias, 1533–1825*. Salinas, California: Coyote Press Archives of California Prehistory.
- Laylander, D. 2010. "Linguistic Prehistory." Research Issues in San Diego Prehistory. Accessed August 31, 2012. <http://www.sandiegoarchaeology.org/Laylander/Issues/index.htm>.
- Lightfoot, K.J. 2005. *Indians, Missionaries, and Merchants*. Berkeley, California: University of California Press.
- Luomala, K. 1978. "Tipai and Ipai." In *California*, edited by Robert F. Heizer, 592–609. *Handbook of the North American Indians*, Vol. 8, William C. Sturtevant, general editor. Washington, D.C.: Smithsonian Institution.
- Meighan, C.W. 1959. "California Cultures and the Concept of an Archaic Stage." *American Antiquity* 24:289–305.
- NETR Online. 1953, 1964, 1966, 1968, 1971, 1972, 1981, 1989, 1990, 1994, 1996, 1997, 2002, 2003, 2005, 2009, 2010, 2012. Accessed October 2016. Historicaerials.com.
- Owen, R.C. 1965. "The Patrilineal Band: A Linguistically and Culturally Hybrid Social Unit." *American Anthropologist* 67:675–690.
- Pigniolo, A.R. 2004. "Points, Patterns, and People: Distribution of the Desert Side-Notched Point in San Diego." *Proceedings of the Society for California Archaeology* 14:27–39.
- Pigniolo, A.R. 2005. "Subsistence, Settlement, and Environmental Change at San Diego Bay." *Proceedings of the Society for California Archaeology* 18:255–259.

- Rogers, M.J. 1929. "The Stone Art of the San Dieguito Plateau." *American Anthropologist* 31:454–467.
- Rogers, M.J. 1945. "An Outline of Yuman Prehistory." *Southwestern Journal of Anthropology* 1:167–198.
- Ryon, R. 1985. "Estate of Scripps' Daughter Purchased." *Los Angeles Times*. June 30, 1985.
- Shipek, F.C. 1982. "Kumeyaay Socio-Political Structure." *Journal of California and Great Basin Anthropology* 4:296–303.
- Shipek, F.C. 1985. "Kuuchamaa: The Kumeyaay Sacred Mountain." *Journal of California and Great Basin Anthropology* 7(1): 67–74.
- Spier, L. 1923. "Southern Diegueño Customs." *University of California Publications in American Archaeology and Ethnology* 20:295–358.
- True, D.L. 1966. "Archaeological Differentiation of Shoshonean and Yuman Speaking Groups in Southern California." PhD dissertation; University of California, Los Angeles.
- True, D.L. 1980. "The Pauma Complex in Northern San Diego County: 1978." *Journal of New World Archaeology* 3(4):1–39.
- Wallace, W.J. 1955. "A Suggested Chronology for Southern California Coastal Archaeology." *Southwestern Journal of Anthropology* 11:214–230.
- Warren, C.N. 1964. "Cultural Change and Continuity on the San Diego Coast." PhD dissertation; University of California, Los Angeles.
- Warren, C.N. 1968. "Cultural Tradition and Ecological Adaptation on the Southern California Coast." In *Archaic Prehistory in the Western United States*, edited by C. Irwin-Williams, 1–14. Portales, New Mexico: Eastern New Mexico University Contributions in Anthropology.
- Warren, C.N., G. Siegler, and F. Dittmer. 2004. "Paleoindian and Early Archaic Periods." In *Prehistoric and Historic Archaeology of Metropolitan San Diego: A Historic Properties Background Study*. Prepared for the Metropolitan Wastewater Department, City of San Diego. Encinitas, California: ASM Affiliates.
- Wilken, M.A. 2012. "An Ethnobotany of Baja California's Kumeyaay Indians." Master's thesis; San Diego State University.

5.11 HYDROLOGY AND WATER QUALITY

40 CFR 131.38. California Toxics Rule.

City of San Diego. 2016. *2015 Urban Water Management Plan*. Final. June 2016.

Metropolitan (Metropolitan District of Southern California). *Water Quality Excellence 2017. Annual Drinking Water Quality Report, Covering the reporting period of January – December 2016*. June 2017.

Project Clean Water. 2016. "Watershed Index Map and Descriptions." San Diego, California: Project Clean Water. Accessed November 30, 2016.
http://www.projectcleanwater.org/index.php?option=com_content&view=article&id=2&Itemid=19.

~~WQS (Water Quality Solutions). 2017. *Limnology and Detention Study for Miramar Reservoir*. Prepared for the City of San Diego.~~

San Diego RWQCB (Regional Water Quality Control Board). 2016a. *Water Quality Control Plan for the San Diego Basin*. With amendments through November 30, 2016.
http://www.swrcb.ca.gov/sandiego/water_issues/programs/basin_plan.

San Diego RWQCB. 2016b. *Clean Water Act Sections 305(B) and 303(D) Integrated Report for the San Diego Region*. Draft Staff Report. October 12, 2016.

San Diego RWQCB. 2016c. Executive Officer Summary Report, Agenda Item 11. For meeting to be held on December 14, 2016.

San Diego RWQCB. 2017. "Resolution No. R9-2017-0030: Resolution Supporting Use of The Key Beneficial Uses/Key Areas Concept to Help the San Diego Water Board Focus on What is Most Important." March 15, 2017.

SanGIS (San Diego Geographic Information Source). 2016. Website [GIS database]. Maintained by the City of San Diego and the County of San Diego.
<http://www.sangis.org/>.

SDCWA (San Diego County Water Authority). 2016. *2015 Urban Water Management Plan*. June 2016.

- SWRCB (State Water Resources Control Board). 1975. "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California." Accessed November 30, 2016. http://www.waterboards.ca.gov/water_issues/programs/ocean/docs/wqplans/thermpln.pdf.
- SWRCB. 2005. *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*. (State Implementation Policy.) SWRCB, California. February 2005. https://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/final.pdf.
- SWRCB. 2015. *2015 California Ocean Plan: Water Quality Control Plan – Ocean Waters of California*. Sacramento, California: SWRCB, California Environmental Protection Agency.
- SWRCB. 2016. *Final 2012 California Integrated Report (Clean Water Act Section 303(d) List /305(b) Report)*. Web-based interactive tool. Accessed November 30, 2016. http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2012.shtml.
- USGS (U.S. Geological Survey). 2016. The National Map Hydrography. Web-Based Interactive Tool. Watershed Boundary Dataset (HUC10). Accessed November 30, 2016. <https://viewer.nationalmap.gov/viewer/nhd.html?p=nhd>.

5.12 NOISE

- 29 CFR 1910.95. Occupational Noise Exposure.
- California Government Code Section 65300 – 65303.4. Authority for and Scope of General Plans.
- City of San Diego. 2010. City of San Diego Municipal Code 59.5.0401 Noise Ordinance.
- City of Santee. n.d. City of Santee Municipal Code Section 8.12.290.
- City of Santee 1984. City of Santee Municipal Code.
- City of Santee 1985. City of Santee Municipal Code Section 17.30.030. Performance Standards.

County of San Diego. 2009. County of San Diego Municipal Code Section 36.410. Sound Level Limitations on Impulsive Noise. Effective January 9, 2009.

County of San Diego. 2014. County of San Diego Municipal Code Section 36.404. General Sound Level Limits.

EPA (U.S. Environmental Protection Agency). 1981. *Noise Effects Handbook: A Desk Reference to Health and Welfare Effects of Noise*. Office of Noise Abatement and Control, U.S. Environmental Protection Agency. July 1981.

5.13 PALEONTOLOGICAL RESOURCES

BLM (Bureau of Land Management). 1998. "General Procedural Guidance for Paleontological Resource Management." Handbook Section H-8270-1 for *BLM Manual Section 8270 – Paleontological Resource Management*. Release No. 8-69. U.S. Department of the Interior, BLM. July 13, 1998.

BLM. 2009. "Guidelines for Assessment and Mitigation of Potential Impacts to Paleontological Resources."

County of San Diego. 2009. *Guidelines for Determining Significance: Paleontological Resources*.

Deméré, T.A., and S.L. Walsh. 1993. *Paleontological Resources, County of San Diego*: Prepared for the Department of Public Works, County of San Diego.

Kennedy, M.P. and S.S. Tan, 2008. *Geologic map of the San Diego 30' X 60' Quadrangle, California*. California Geologic Survey, Regional Geologic Map Series, Map No. 3.

SDNHM (San Diego Natural History Museum). 2016. Paleontological Records Search for the North City Pure Water Project.

Todd, V.R., R.M. Alvarez, and Techni Graphic Systems, Inc., 2004. *Preliminary geologic map of the El Cajon 30' X 60' quadrangle, southern California*: U.S. Geological Survey, Open-File Report OF-2004-1361, scale 1:100,000.

5.14 PUBLIC SERVICES

City of San Diego. 2008. *City of San Diego General Plan*. March 2008. Accessed May 4, 2015. <https://www.sandiego.gov/sites/default/files/legacy/planning/genplan/pdf/2012/ce120100.pdf>.

- City of San Diego. 2016a. "Fire-Rescue Department: About SDFD."
<https://www.sandiego.gov/fire/about>.
- City of San Diego. 2016b. "Fire-Rescue Department: Fire Stations."
<https://www.sandiego.gov/fire/about/firestations>.
- City of San Diego. 2016c. "Parks and Recreation: General Information."
<https://www.sandiego.gov/park-and-recreation/general-info>.
- City of San Diego. 2016d. "Public Library: About the Library."
<https://www.sandiego.gov/public-library/about-the-library>.
- City of Santee. 2015. "Fire and Emergency Service: About Our Department."
<http://www.ci.santee.ca.us/Index.aspx?page=233>.
- Miramar Fire Department. 2016. "Miramar Fire Department Operations."
http://www.miramar.marines.mil/Portals/164/Docs/MCASMiramar/fire_department/FireDepartmentOPSV2.pdf.
- San Diego Unified School District. 2016. "About San Diego Unified."
<https://www.sandiegounified.org/about-san-diego-unified>.
- SDPD (San Diego Police Department). 2013. "City of San Diego Police: Neighborhoods." November 16, 2013. <https://www.sandiego.gov/sites/default/files/legacy/police/pdf/2013policecitywidemap.pdf>.

5.15 PUBLIC UTILITIES

- 40 CFR 257. Criteria for Classification of Solid Waste Disposal Facilities and Practices.
- 40 CFR 403. General Pretreatment Regulations for Existing and New Sources of Pollution.
- 40 CFR 503. Standards for the Use or Disposal of Sewage Sludge.
- California Public Resources Code Section 41700–41704. Article 1. Element Preparation.
- CalRecycle (California Department of Resources Recycling and Recovery). 2012. "Solid Waste Facility Permit No. 37-AA-0010: Otay Landfill." August 24, 2012.

- CalRecycle. 2014. Solid Waste Facility Permit—West Miramar Sanitary Landfill. Issued December 12, 2014.
- CalRecycle. 2015a. Alternative Daily Cover (ADC): Local Government Basics. April 29, 2015.
- CalRecycle. 2015b. Mandatory Commercial Organics Recycling. December 14, 2015.
- City of San Diego. 2008. “Public Utilities.” Section 3.14 in *City of San Diego Draft General Plan, Final PEIR*. Adopted March 10, 2008.
- City of San Diego. 2015a. “Miramar Landfill.” City of San Diego, Environmental Services Department. Accessed May 7, 2015. www.sandiego.gov/environmental-services/miramar/index.shtml.
- City of San Diego. 2015b. City of San Diego Zero Waste Plan: Road to Zero Waste, Next Stop 75%. Environmental Services Department. June 2015.
- City of San Diego. 2015c. *The “Whitebook”: Standard Specifications for Public Works Construction*. 2015 Edition. City of San Diego Supplement to the 2015 Greenbook by the Public Works Department, Project Implementation Division, Standards & Contract Documents Section. https://www.sandiego.gov/sites/default/files/2015_whitebook.pdf.
- MWH Americas Inc., Brown and Caldwell, and Dudek. 2017. *Task Order 24: Metropolitan Biosolids Center, Biosolids Technology Evaluation*. Final Draft. Prepared for City of San Diego Public Utilities Department. February 24, 2017.
- Public Works Standards Inc. 2015. *The “Greenbook”: Standard Specifications for Public Works Construction*. Vista, California: BNI Publications Inc. <https://www.bnibooks.com/product/2015-greenbook-standard-specifications-for-public-works-construction>.

5.16 TRANSPORTATION, CIRCULATION, AND TRAFFIC

- Caltrans (California Department of Transportation). 2002. *Guide for the Preparation of Traffic Impact Studies*. December 2002.
- City of San Diego. 2011a. *Clairemont Mesa Community Plan*. As amended April 26, 2011. Prepared by the City of San Diego Planning Department. Accessed February 27, 2017. <https://www.sandiego.gov/sites/default/files/legacy/planning/community/profiles/clairemontmesa/pdf/clairemontmesa042611c.pdf>.

City of San Diego. 2011b. *Kearny Mesa Community Plan Update*.

City of San Diego. 2014. *Morena Boulevard Station Area Planning Study*.

City of Santee. 2014. *Circulation Element Update*.

SANDAG (San Diego Association of Governments). 2013. *Series 13 Regional Growth Forecast: San Diego Region*. October 2013.

5.17 WATER SUPPLY

City of San Diego. 2013. *2012 Long-Range Water Resources Plan*. City of San Diego, Public Utilities Department. December 2013. Accessed December 8, 2016. <https://www.sandiego.gov/sites/default/files/legacy/water/pdf/2012lrpwrfinalreport.pdf>.

City of San Diego. 2016. *2015 City of San Diego Urban Water Management Plan*. Final. City of San Diego Public Utilities Department. June 2016. https://www.sandiego.gov/sites/default/files/2015_uwmp_report.pdf.

Metropolitan (Metropolitan Water District of Southern California). 2015. *Annual Report 2015*. Los Angeles, California: Metropolitan.

Metropolitan. 2016. *Water Tomorrow: Integrated Water Resources Plan 2015 Update*. Report No. 1518. Los Angeles, California: Metropolitan. January 2016. [http://www.mwdh2o.com/PDF_About_Your_Water/2015%20IRP%20Update%20Report%20\(web\).pdf](http://www.mwdh2o.com/PDF_About_Your_Water/2015%20IRP%20Update%20Report%20(web).pdf).

SDCWA (San Diego County Water Authority). 2012. *Water Shortage and Drought Response Plan*. Prepared by SDCWA, Water Resources Department. May 2006; updated April 2012.

SDCWA. 2014. *Final 2013 Regional Water Facilities Optimization and Master Plan Update*. Prepared for SDCWA by CH2M HILL and Black & Veatch. March 2014. <http://www.sdcwa.org/master-plan-documents>.

SDCWA. 2016a. *Final 2015 Urban Water Management Plan*. Adopted June 2016. Accessed December 8, 2016. http://www.sdcwa.org/sites/default/files/files/water-management/water_resources/2015%20UWMP%20Final%2006222016.pdf.

SDCWA. 2016b. "Water Supplies." Accessed December 8, 2016.
<http://www.sdcwa.org/water-supplies>.

SDCWA. 2016c. "Water Use." Accessed December 9, 2016. <http://sdcwa.org/water-use>.

5.18 RECREATION

CDFW (California Department of Fish and Wildlife). 2014. Lake Miramar Creel Report: 2013 – 2014 Creel Survey. August 2014.

CDFW. 2016. Mojave River Fish Hatchery Fish Release List – Lake Miramar 2016.

City of San Diego. 1994. *Carroll Canyon Master Plan: An Amendment to the Mira Mesa Community Plan*. December 6, 1994.

City of San Diego. 2011a. *Mira Mesa Community Plan*. As amended April 26, 2011. Prepared by Latitude 33 Planning and Engineering. Prepared for the City of San Diego Planning and Development Review Department. Accessed February 15, 2017. <https://www.sandiego.gov/sites/default/files/miramesa042611c.pdf>.

City of San Diego. 2011b. *Linda Vista Community Plan and Local Coastal Program Land Use Plan*. As amended April 26, 2011. City of San Diego Planning Department. Accessed February 15, 2017. <https://www.sandiego.gov/sites/default/files/legacy/planning/community/profiles/lindavista/pdf/lindavista042611c.pdf>.

City of San Diego. 2011c. *Kearney Mesa Community Plan*. As amended April 26, 2011. City of San Diego Planning Department. Accessed February 15, 2017. <https://www.sandiego.gov/sites/default/files/legacy/planning/community/profiles/kearnymesa/pdf/kearnymesa042611c.pdf>.

City of San Diego. 2011d. *Scripps Miramar Ranch Community Plan*. As amended April 26, 2011. Prepared by the City of San Diego Planning Department. Accessed February 27, 2017. https://www.sandiego.gov/sites/default/files/scripps_miramar_ranch_cp_4-26-11.pdf.

City of San Diego. 2011e. *Tierrasanta Community Plan*. As amended April 26, 2011. Prepared by the City of San Diego Planning Department. Accessed February 15, 2017. https://www.sandiego.gov/sites/default/files/tierrasanta_cp_4-26-11.pdf.

City of San Diego. 2013. *Mission Valley Community Plan*. As amended May 2013. Prepared by the City of San Diego Planning Department. Accessed February 18, 2018. https://www.sandiego.gov/sites/default/files/mission_valley_cp_060613_0.pdf.

City of San Diego. 2015a. "Recreation Element." In *City of San Diego General Plan*. June 19, 2015.

City of San Diego. 2015b. *Clairemont Mesa Community Plan*. Prepared by the City of San Diego Planning Department. Accessed February 27, 2017. <https://www.sandiego.gov/sites/default/files/legacy//planning/community/profiles/clairemontmesa/pdf/clairemontmesa042611c.pdf>.

City of San Diego. 2015c. *Navajo Community Plan*. As amended June 9, 2015. Prepared by the Navajo Community Planners and the City of San Diego Planning Department. Accessed February 15, 2017. https://www.sandiego.gov/sites/default/files/2015_navajo_community_plan.pdf.

City of San Diego. 2016a. "Mission Valley Preserve Open Space Trail Map." December 2016. Accessed April 12, 2017. <https://www.sandiego.gov/park-and-recreation/parks/oscp/maps>.

City of San Diego. 2016b. *University Community Plan*. As amended December 5, 2016. Prepared by the University Community Planning Group and the City of San Diego Planning Department. Accessed February 15, 2017. https://www.sandiego.gov/sites/default/files/university_cp_02-03-17_0.pdf.

City of San Diego. 2017a. "Parks and Recreation Department FAST FACTS." City of San Diego Official Website. Accessed May 26, 2017. <https://www.sandiego.gov/park-and-recreation/general-info>.

City of San Diego. 2017b. "Mission Bay Park." City of San Diego Official Website. Accessed April 12, 2017. <https://www.sandiego.gov/park-and-recreation/parks/regional/missionbay>.

City of San Diego. 2017c. "Mission Bay Park Facilities and Permit Sites Map." City of San Diego Official Website. Accessed April 12, 2017. <https://www.sandiego.gov/park-and-recreation/parks/regional/missionbay/facilities>.

- City of San Diego. 2017d. "Presidio Park Facilities and Permit Sites Map." City of San Diego Official Website. Accessed April 12, 2017. <https://www.sandiego.gov/park-and-recreation/parks/regional/presidio>.
- City of San Diego. 2017e. "Tecolote Canyon Natural Park and Nature Center." City of San Diego Official Website. Accessed April 12, 2017. <https://www.sandiego.gov/park-and-recreation/parks/osp/tecolote>.
- City of San Diego. 2017f. "Tecolote Canyon Natural Park Trail Map." Accessed April 12, 2017. <https://www.sandiego.gov/park-and-recreation/parks/osp/tecolote>.
- City of San Diego. 2017g. "North Clairemont Recreation Center." Accessed April 12, 2017. <https://www.sandiego.gov/park-and-recreation/centers/recctr/nclairemont>.
- City of San Diego. 2017h. "Canyon Open Space Trail Maps (Marian Bear Memorial Park)." Accessed April 12, 2017. <https://www.sandiego.gov/park-and-recreation/parks/oscp/maps>.
- City of San Diego. 2017i. "Canyon Open Space Trail Maps (Rose Canyon Open Space Park)." Accessed April 12, 2017. <https://www.sandiego.gov/park-and-recreation/parks/oscp/maps>.
- City of San Diego. 2017j. "Nobel Athletic Fields and Recreation Center." Accessed April 13, 2017. <https://www.sandiego.gov/park-and-recreation/centers/recctr/nobel>.
- City of San Diego. 2017k. "Miramar Reservoir." Accessed April 13, 2017. <https://www.sandiego.gov/water/recreation/reservoirs/miramar>.
- City of San Diego. 2017l. "What's New at City Lakes." Accessed April 13, 2017. <https://www.sandiego.gov/water/recreation/fishbulletin#Miramar>.
- City of San Diego. 2017m. Miramar Reservoir Fish Report.
- City of Santee. 2017. "Community Services – City Parks." Accessed April 11, 2017. <http://www.ci.santee.ca.us/Index.aspx?page=63>.
- City of San Diego. 2017n. City of San Diego Official Website: Fish Catch Report. Accessed April 13, 2017. <https://www.sandiego.gov/water/recreation/fish#MiramarReservoir>.

- City of San Diego 2017o. "Rancho Mission Canyon Open Space Trail Map." Accessed April 14, 2017. <https://www.sandiego.gov/park-and-recreation/parks/oscp/maps#TrailMaps>.
- City of San Diego 2017p. "Mission Trails Regional Park Trail Map." Accessed April 14, 2017. <https://www.sandiego.gov/park-and-recreation/parks/oscp/maps#TrailMaps>.
- City of San Diego. 2017q. "San Vicente Reservoir." City of San Diego Official Website: Water. Accessed April 13, 2017. <https://www.sandiego.gov/water/recreation/reservoirs/sanvicente>.
- City of Santee. 2017. "The City of Santee – Mast Park." Accessed April 14, 2017. <http://www.ci.santee.ca.us/index.aspx?page=66>.
- County of San Diego. 2005. Community Trails Master Plan. Adopted January 12, 2005. Accessed April 17, 2017. <http://www.sandiegocounty.gov/content/sdc/pds/community-trails-master-plan.html>.
- County of San Diego. 2011a. *San Diego County General Plan: A Plan for Growth, Conservation, and Sustainability*. August 2011. <http://www.sandiegocounty.gov/content/sdc/pds/generalplan.html>.
- County of San Diego. 2011b. *Lakeside Community Plan: San Diego County General Plan*. Adopted August 3, 2011. <http://www.sandiegocounty.gov/pds/generalplan.html>.
- County of San Diego Parks and Recreation. 2017a. "County of San Diego Parks and Recreation – Louis A. Stelzer County Park." Accessed April 14, 2017. <http://www.sdparcs.org/content/sdparcs/en/park-pages/LouisStelzer.html>.
- County of San Diego Parks and Recreation. 2017b. "County of San Diego Parks and Recreation – Oakoasis Preserve." Accessed April 14, 2017. <http://www.sdparcs.org/content/sdparcs/en/park-pages/Oakoasis.html>.
- El Capitan Equestrian Center. 2017a. "Home." Accessed April 14, 2017. <http://lakesideequestriancenter.com/>.
- El Capitan Equestrian Center. 2017b. "Boarding." Accessed April 14, 2017. <http://elcapitaneqcenter.com/boarding.htm>.

- Lakeside National Little League. 2017. "Our Fields." Accessed April 14, 2017. <http://www.eteamz.com/Inllbaseball/news/index.cfm?cat=602058>.
- Mission Trails Regional Park Foundation. 2017a. "Mission Trails Regional Park - The Park." Accessed April 14, 2017. <http://www.mtrp.org/park>.
- Mission Trails Regional Park Foundation. 2017b. "Mission Trails Regional Park - Your Mission Trails Adventure Begins Here!" Accessed April 14, 2017. http://www.mtrp.org/visitor_center.
- Padre Dam Municipal Water District. 2016. *Santee Lakes Recreation Preserve Dynamic Vision Plan*. July 2016. <http://www.santeelakes.com/dynamic-vision-plan>.
- Padre Dam Municipal Water District. 2017a. "Santee Lakes Recreation Preserve – Fishing." Accessed April 14, 2017. <http://www.santeelakes.com/fishing/>.
- San Diego Union Tribune. 2016. "San Vicente reopens to great bass fishing." October 10, 2016.
- SanGIS (San Diego Geographic Information Source). 2013. San Diego Geographic Information Source [database].

6.1 LAND USE

- ~~Brown and Caldwell. 2016. *Task 3: North City Pure Water Facility (MR) (NC03B), 30% Engineering Design Report – Supplemental – Rev 1*. Draft. Prepared for City of San Diego Public Utilities Department. October 17, 2016.~~
- City of San Diego. 1997. *City of San Diego Final MSCP Subarea Plan*. Prepared by the City of San Diego Community and Economic Development Department. March 1997. <https://www.sandiego.gov/sites/default/files/legacy//planning/programs/mscp/pdf/subareafullversion.pdf>.
- City of San Diego. 2015. "Land Use and Community Planning Element." In *City of San Diego General Plan*. June 2015. Accessed June 6, 2017. https://www.sandiego.gov/sites/default/files/lu_2015.pdf
- ~~HDR. 2016. *Basis of Design Report for the North City Conveyance System*. August 16, 2016.~~

HDR. 2018. 100% Design Report. Prepared for the City of San Diego Public Utilities. Prepared by HDR.

MCAS (Marine Corps Air Station) Miramar INRMP (Integrated Natural Resources Management Plan) 2011. Integrated Natural Resources Management Plan for Marine Corps Air Station Miramar, California.

MWH Americas Inc., Brown and Caldwell, and Trussell Technologies Inc. 2016. Task 3: North City Pure Water Facility (MR) (NC03B), 30% Engineering Design Report – Supplemental – Rev 1. Draft. Prepared for City of San Diego Public Utilities Department. October 17, 2016.

USMC (U.S. Marine Corps). 2016. “Pure Water San Diego Program North City Project.” Letter from S.M. VanWinkle (Deputy Director of Environmental, MCAS Miramar) to M.J. Steele (Area Manager, U.S. Bureau of Reclamation). November 15, 2016.

6.2 AESTHETICS/VISUAL EFFECTS AND NEIGHBORHOOD CHARACTER

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act (CEQA), as amended.

AECOM. 2017. *30% Design Development Basis of Design Report: Morena Pump Station, WW Force Main, Brine Conveyance and Water Distribution/Transmission Pipelines*. Prepared for the City of San Diego Public Utilities Water & Wastewater. April 2017.

City of San Diego. 2016a. *California Environmental Quality Act Significance Determination Thresholds*. Revised July 2016. San Diego, California: City of San Diego, Development Services Department. Accessed December 8, 2016. https://www.sandiego.gov/sites/default/files/july_2016_ceqa_thresholds_final_0.pdf.

City of San Diego. 2016b. *University Community Plan*. Prepared by the University Community Planning Group and City of San Diego Planning Department. October 2014.

~~HDR. 2016. *Basis of Design Report for the North City Conveyance System*. August 16, 2016.~~

HDR. 2018. 100% Design Report. Prepared for the City of San Diego Public Utilities. Prepared by HDR.

MWH Americas Inc., Brown and Caldwell, and Trussell Technologies Inc. 2016. *Task 3: North City Pure Water Facility (MR) (NC03B), 30% Engineering Design Report – Supplemental – Rev 1*. Draft. Prepared for City of San Diego Public Utilities Department. October 17, 2016.

6.3 AIR QUALITY AND ODOR

40 CFR Part 93.153(b)(2). Criteria for Determining Conformity of General Federal Actions.

Brown and Caldwell. 2018. “Mission Trails Booster Pump Station Construction Assumptions.” January 26, 2018.

CARB (California Air Resources Board). 2011. Final Regulation Order – Amendments to the Airborne Toxic Control Measure for Stationary Compression Ignition Engines. Accessed April 2015. <http://www.arb.ca.gov/diesel/documents/FinalReg2011.pdf>.

CARB. 2015. Hotspots Analysis and Reporting Program Version 2 (HARP2). <https://www.arb.ca.gov/toxics/harp/eim.htm>.

City of San Diego. 2000. San Diego Municipal Code, Chapter 14, Article 2, Division 7, — Off-Site Development Impact Regulations. Effective January 1, 2000.

City of San Diego. 2016a. City of San Diego Rules and Regulation for Recycled Water. June. Accessed August 2017. https://www.sandiego.gov/sites/default/files/recycled_water_rules_and_regulations_june_2016_final.pdf.

City of San Diego. 2016b. *California Environmental Quality Act Significance Determination Thresholds*. Revised July 2016. San Diego, California: City of San Diego, Development Services Department. Accessed December 8, 2016. https://www.sandiego.gov/sites/default/files/july_2016_ceqa_thresholds_final_0.pdf.

City of San Diego. 2016c. Public Notice of Preparation for the Pure Water San Diego Program, North City Project. August 4, 2016. http://docs.sandiego.gov/citybulletin_publicnotices/CEQA/PN1300%20%23499621%20NOP2%20Date%208-4-16.pdf.

- OEHHA (Office of Environmental Health Hazard Assessment). 2015. Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments. February. Accessed January 2017. <https://oehha.ca.gov/media/downloads/crnrr/2015guidancemanual.pdf>.
- PBS&J. 2011. *Vallecitos Water District 2008 Water, Wastewater and Recycled Water Master Plan PEIR*. March 2011. <http://www.vwd.org/departments/engineering/capital-facilities/master-plan>.
- SANDAG (San Diego Association of Governments). 2004. *Regional Comprehensive Plan*. July. Accessed November 2016. http://www.sandag.org/programs/land_use_and_regional_growth/comprehensive_land_use_and_regional_growth_projects/RCP/rcp_final_complete.pdf.
- SANDAG. 2015. San Diego Forward The Regional Plan. October 2015. Accessed February 2017. http://www.sdforward.com/pdfs/RP_final/The%20Plan%20-%20combined.pdf.
- SCAQMD (South Coast Air Quality Management District). 2008. "Localized Significance Thresholds Methodology." July 2008. Accessed January 2018. <http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-1st-methodology-document.pdf?sfvrsn=2>.
- SDAPCD (San Diego Air Pollution Control District). Regulation IV: Prohibitions; 1976. Rule 51: Public Nuisance. Accessed February 2017. http://www.sdapcd.org/content/dam/sdc/apcd/PDF/Rules_and_Regulations/Prohibitions/APCD_R50-1-51.pdf.
- SDAPCD. 2009. Regulation IV: Prohibitions; Rule 55: Fugitive Dust. Adopted June 24, 2009; effective December 24, 2009. Accessed December 12, 2016. http://www.sdapcd.org/content/dam/sdc/apcd/PDF/Rules_and_Regulations/Prohibitions/APCD_R55.pdf.
- SDAPCD. 2012. *Redesignation Request and Maintenance Plan for the 1997 National Ozone Standard for San Diego County*. Adopted December 5, 2012. Accessed December 12, 2016. http://www.sandiegocounty.gov/content/dam/sdc/apcd/PDF/Air%20Quality%20Planning/8_Hour_O3_Maint-Plan.pdf.
- SDAPCD. 2015a. Supplemental Guidelines for Submission of Air Toxics "Hot Spots" Program Health Risk Assessments. June. Accessed January 2017.

http://www.sdapcd.org/content/dam/sdc/apcd/PDF/Misc/APCD_HRA_Guidelines.pdf.

SDAPCD. 2015b. Regulation IV: Prohibitions; Rule 67.0.1: Architectural Coatings. Adopted June 24, 2015. Effective January 1, 2016. Accessed December 12, 2016.

SDAPCD. 2016. "Attainment Status." Accessed October 2016.
<http://www.sdapcd.org/content/sdc/apcd/en/air-quality-planning/attainment-status.html>.

6.4 BIOLOGICAL RESOURCES

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

Bossard, C.C., J.M. Randall, and C.M. Hoshovsky, eds. 2000. "Impacts of Plants on Wildlands." In *Invasive Plants for California's Wildlands*, 12–14. Berkeley, California: University of California Press.

California Fish and Game Code, Section 2050–21115. California Endangered Species Act.

CDFG (California Department of Fish and Game). 2012. *Staff Report on Burrowing Owl Mitigation*. March 7, 2012. Accessed March 8, 2012. <http://www.dfg.ca.gov/wildlife/nongame/docs/BUOWStaffReport.pdf>.

City of San Diego. 1993. *North City Water Reclamation Plan Environmental Impact Report*. SCH no. 91111018. DEP No. 91-0516. September 27, 1993.

City of San Diego. 1996. *Miramar Landfill General Development Plan/Fiesta Island Replacement Project/Northern Sludge Processing Facility/West Miramar Landfill: Overburden Disposal Environmental Impact Report*. SCH no. 91121022. DEP no. 91-0653. March 18, 1996.

City of San Diego. 1997. *City of San Diego Final MSCP Subarea Plan*. Prepared by the City of San Diego Community and Economic Development Department. March 1997. <https://www.sandiego.gov/sites/default/files/legacy//planning/programs/mscp/pdf/subareafullversion.pdf>.

City of San Diego. 2001. *Miramar WTP Upgrade/Expansion Project Final Environmental Impact Report*.

City of San Diego. 2002. *Miramar Water Treatment Plant Upgrade and Expansion Environmental Impact Report*. SCH no. 99091067. LDR No. 99-0704. October 21, 2002.

City of San Diego. 2006. *City of San Diego Land Development Code—Environmentally Sensitive Lands Regulations*. Section 143.0101.

City of San Diego. 2012. *San Diego Municipal Code, Land Development Code—Biology Guidelines*. Amended April 23, 2012 by Resolution No. R-307376.
https://www.sandiego.gov/sites/default/files/ldc_biology_guidelines_vphcp_wildlife-city_draft_july_2016.pdf.

City of San Diego. 2016a. *California Environmental Quality Act, Significance Determination Thresholds*. Revised July 2016. San Diego, California: City of San Diego, Development Services Department. Accessed December 8, 2016.
https://www.sandiego.gov/sites/default/files/july_2016_ceqa_thresholds_final_0.pdf.

~~City of San Diego. 2016b. *Draft City of San Diego Vernal Pool Habitat Conservation Plan*. September 2016. https://www.sandiego.gov/sites/default/files/vphcp_public_draft.pdf.~~

City of San Diego. 2016e. Public Notice of Preparation for the Pure Water San Diego Program, North City Project.

City of San Diego. 2016d. City of San Diego, Land Development Code—Landscape Standards. April 5, 2016. Accessed August 24, 2017. <https://www.sandiego.gov/development-services/industry/landdevcode/landdevmanual>.

City of San Diego. 2017. *Final City of San Diego Vernal Pool Habitat Conservation Plan*. October 2017. <https://www.sandiego.gov/sites/default/files/vph-cp.pdf>.

~~Harmsworth Associates and B. Goodman. 2002. *Shady Canyon Turtle Pond Mitigation Monitoring Annual Report*. Final Report prepared for the Irvine Company, Newport Beach, California.~~

~~Harmsworth Associates and B. Goodman. 2003. *Shady Canyon Turtle Pond Mitigation Monitoring Annual Report for 2003*. Final Report Prepared for the Irvine Company, Newport Beach, California.~~

- Holland, D.C. 1994. "The Western Pond Turtle: Habitat and History." Final Report. Prepared for U.S. Department of Energy, Portland, Oregon. Project Number 92-068. Contract Number DE-B179-92BP62-137. August 1994. <http://relicensing.pcwa.net/documents/Library/PCWA-L%20450.pdf>.
- Lovich, J.E., J.R. Ennen, S.V. Madrak, C.L. Loughran, K.P. Meyer, T.R. Arundel, and C.D. Bjurlin. 2011. "Long-Term Post-Fire Effects on Spatial Ecology and Reproductive Output of Female Agassiz's Desert Tortoises (*Gopherus agassizii*) at a Wind Energy Facility near Palm Springs, California, USA." *Fire Ecology* 7(3):75–87. Accessed December 22, 2011. doi: 10.4996/fireecology.0703075.
- MCAS (Marine Corps Air Station) Miramar INRMP (Integrated Natural Resources Management Plan) 2011. Integrated Natural Resources Management Plan for Marine Corps Air Station Miramar, California.
- Naval Air Station Miramar and City of San Diego. 1994. Programmatic Environmental Impact Statement/Environmental Impact Report – Miramar Landfill General Development Plan/Fiesta Island Replacement Project/Northern Sludge Processing Facility/West Miramar Landfill Phase II: Overburden Disposal, Naval Air Station Miramar. SCH no. 91121022. DEP no. 91-0653. April 1994.
- USGS (U.S. Geological Survey). 2005. "Distribution and Status of the Arroyo Toad (*Bufo californicus*) and Western Pond Turtle (*Emys marmorata*) in the San Diego MSCP and Surrounding Areas." Final Report October 11, 2005. http://www.sandiegocounty.gov/pds/mscp/docs/Toad_Turtle_Distribution_and_Status.pdf.

6.5 ENVIRONMENTAL JUSTICE

- SANDAG (San Diego Association of Governments). 2016. SANDAG Data Surfer: Census 2010. Accessed November 18, 2016.

6.6 ENERGY

- 14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

CARB (California Air Resources Board). 2013. "Clean Car Standards – Pavley, Assembly Bill 1493." Last reviewed May 6, 2013. Accessed October 2016. <http://arb.ca.gov/cc/ccms/ccms.htm>.

CEC (California Energy Commission). 2016a. "Electricity Consumption by Entity." Energy Consumption Data Management System. Accessed November 2016. <http://ecdms.energy.ca.gov/elecbycounty.aspx>.

CEC. 2016b. "California Fuel Data, Facts, and Statistics." Accessed October 2016. http://www.energy.ca.gov/almanac/transportation_data/diesel.html.

SANDAG (San Diego Association of Governments). 2015. *San Diego Forward: The Regional Plan*. October 2015. Accessed November 2016. http://www.sdforward.com/pdfs/RP_final/The%20Plan%20-%20combined.pdf.

The Climate Registry 2016. 2016 Default Emission Factors. April 19. Accessed January 2017. <https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf>.

6.7 GEOLOGY AND SOILS

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

City of San Diego. 2014. *Sewer System Management Plan*. June 2014. City of San Diego. 2016a. *California Environmental Quality Act, Significance Determination Thresholds*. Revised July 2016. San Diego, California: City of San Diego, Development Services Department. Accessed December 8, 2016. https://www.sandiego.gov/sites/default/files/july_2016_ceqa_thresholds_final_0.pdf.

City of San Diego. 2016a. *California Environmental Quality Act, Significance Determination Thresholds*. Revised July 2016. San Diego, California: City of San Diego, Development Services Department. Accessed December 8, 2016. https://www.sandiego.gov/sites/default/files/july_2016_ceqa_thresholds_final_0.pdf.

City of San Diego. 2016b. *City of San Diego Storm Water Standards -- Part 1: BMP Design Manual, Part 2: Construction BMP Standards, and Part 3: Offsite Storm Water Alternative Compliance Program*. City of San Diego, Transportation and Storm Water. January 2016. <https://www.sandiego.gov/stormwater/regulations>.

City of San Diego. 2017. *City of San Diego Storm Water Standards – Part 1: BMP Design Manual*. City of San Diego, Transportation and Storm Water. November 2017. https://www.sandiego.gov/sites/default/files/sws_part_1_nov_2017_edition.pdf

6.8 GREENHOUSE GAS EMISSION

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

CARB (California Air Resources Board), California Climate Action Registry, ICLEI - Local Governments for Sustainability, and The Climate Registry. 2010. *Local Government Operations Protocol – For the Quantification and Reporting of Greenhouse Gas Emissions Inventories*. Version 1.1. May 2010. https://www.arb.ca.gov/cc/protocols/localgov/pubs/lgo_protocol_v1_1_2010-05-03.pdf.

City of San Diego. 2015a. *Sewer Design Guide*. City of San Diego, Public Utilities Department. May 2015. <https://www.sandiego.gov/sites/default/files/legacy/mwwd/pdf/sewerdesign.pdf>.

City of San Diego. 2015b. City of San Diego Climate Action Plan. December. Accessed January 2017. https://www.sandiego.gov/sites/default/files/final_july_2016_cap.pdf.

City of San Diego. 2016a. Public Notice of Preparation for the Pure Water San Diego Program, North City Project.

City of San Diego. 2016b. Climate Action Plan Consistency Checklist. July 12, 2016. https://www.sandiego.gov/sites/default/files/city_of_san_diego_cap_checklist_clean_7.pdf.

MWH Americas Inc., Brown and Caldwell, and Trussell Technologies Inc. 2016. *Task 3: North City Pure Water Facility (MR) (NC03B) 30% Engineering Design Report, Appendix B-1: General Plant Flow and Mass Balance*. October 10, 2016.

OPR (Governor's Office of Planning and Research). 2008. *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review*.

The Climate Registry. 2016. Default Emission Factors. April 19, 2016. Accessed January 2017. <https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf>.

6.9 HEALTH AND SAFETY/HAZARDS

22 CCR, Division 4.5. Environmental Health Standards for the Management of Hazardous Waste.

BLP Engineers Inc. 2016. Task No. 018 Final Draft Technical Memorandum: Evaluate Impacts of North City Water Reclamation Plant (NCWRP) Expansion on Metropolitan Biosolids Center (MBC). Prepared for the City of San Diego Public Utilities Department. June 10, 2016.

Borchardt, J., M. Adelman, M. Smith, and S. Theis. 2016. Technical Memorandum: Water Operations Cost Evaluation for MR Option. April 19, 2016.

California Health and Safety Code Division 20, Chapter 6.5. Hazardous Waste Control.

California Public Utilities Code, Sections 21655 – 21660. Regulation of Obstructions.

City of San Diego. 2016a. *Public Notice of Preparation for the Pure Water San Diego Program, North City Project*.

City of San Diego. 2016b. *California Environmental Quality Act, Significance Determination Thresholds*. Revised July 2016. San Diego, California: City of San Diego, Development Services Department. Accessed December 8, 2016. https://www.sandiego.gov/sites/default/files/july_2016_ceqa_thresholds_final_0.pdf.

Federal Aviation Regulations (FAR) Part 77, Subpart B. Safe, Efficient Use, and Preservation of the Navigable Airspace—Notice Requirements.

~~HDR. 2016. *Basis of Design Report for the North City Conveyance System*. August 16, 2016.~~

HDR. 2018. 100% Design Report. Prepared for the City of San Diego Public Utilities. Prepared by HDR.

MWH Americas Inc., Brown and Caldwell, and Trussell Technologies Inc. 2016. *Task 3: North City Pure Water Facility (MR) (NC03B), 30% Engineering Design Report – Supplemental – Rev 1*. Draft. Prepared for City of San Diego Public Utilities Department. October 17, 2016.

6.10 HISTORICAL RESOURCES

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

City of San Diego. 2016. *California Environmental Quality Act Significance Determination Thresholds*. Revised July 2016. San Diego, California: City of San Diego, Development Services Department. Accessed December 8, 2016. https://www.sandiego.gov/sites/default/files/july_2016_ceqa_thresholds_final_0.pdf.

NETR Online. 1953, 1964, 1966, 1968, 1971, 1972, 1981, 1989, 1990, 1994, 1996, 1997, 2002, 2003, 2005, 2009, 2010, 2012. Accessed October 2016. Historicaerials.com.

NPS (National Park Service). 2017. *Secretary of the Interior's Standards for the Treatment of Historic Properties, with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*. Accessed August 2017. <https://www.nps.gov/tps/standards/treatment-guidelines-2017.pdf>.

6.11 HYDROLOGY AND WATER QUALITY

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

CH2M. 2017. *Evaluation of Geotechnical Impacts due to BMP Partial Infiltration for the NCWRP Expansion and the NCPW Influent Conveyance Project*. Prepared by Ping Tian. July 17, 2017.

City of San Diego, 2013. Indirect Potable Reuse/Reservoir Augmentation Demonstration Project: Advanced Water Purification Facility. Appendix B of the Final Quarterly Testing Report Number 4 (5/15/12 to 7/31/12). Available online at: <https://www.sandiego.gov/sites/default/files/legacy/water/purewater/pdf/projectreports/awpfappendixb.pdf>

- City of San Diego. 2016a. *California Environmental Quality Act, Significance Determination Thresholds*. July 2016. San Diego, California: City of San Diego, Development Services Department. Accessed November 30, 2016. https://www.sandiego.gov/sites/default/files/july_2016_ceqa_thresholds_final_0.pdf.
- City of San Diego. 2016b. *Storm Water Standards*. January 2016. Prepared by Geosyntec Consultants and Michael Backer International. Accessed November 30, 2016. <https://www.sandiego.gov/stormwater/regulations>.
- City of San Diego 2016c. *Proposed Approach: Compliance with Basin Plan Nutrient Objectives – Pure Water San Diego Discharge to Miramar Reservoir*. Department of Utilities. Final Draft. December 2016.
- City of San Diego 2016d. *Off Spec Water Disposal Facilities*. Draft Technical Memorandum. Dated August 30, 2016.
- ~~Dudek. 2017. *Draft Technical Memorandum on Identifying Potential Additional Sources of Nutrients to the Miramar Reservoir*. Prepared for the City of San Diego. June 2017.~~
- ~~Fishing Network. 2017. "Top 25 Largemouth Bass." Accessed July 12, 2017. <http://fishingnetwork.net/index.php?pageid=top-25-largemouth-bass-records>.~~
- International Code Council. 2015. 2015 International Fire Code. http://codes.iccsafe.org/app/book/toc/2015/I-Codes/2015_IFC_HTML/index.html.
- KEH & Associates. 2017. *Priority Development Project Stormwater Quality Management Plan for Morena Pump Station*. Prepared for the City of San Diego. June 16, 2017.
- MWH Americas Inc., Brown and Caldwell, and Trussell Technologies Inc. 2016. *Task 3: North City Pure Water Facility (MR) (NC03B), 30% Engineering Design Report – Supplemental – Rev 1*. Draft. Prepared for City of San Diego Public Utilities Department. October 17, 2016.
- San Diego RWQCB. 2016a. *Water Quality Control Plan for the San Diego Basin*. With amendments through November 30, 2016. http://www.swrcb.ca.gov/sandiego/water_issues/programs/basin_plan.
- San Diego RWQCB. 2016b. Executive Officer Summary Report, Agenda Item 11. For meeting to be held on December 14, 2016.

San Diego RWQCB. 2017. "Resolution No. R9-2017-0030: Resolution Supporting Use of The Key Beneficial Uses/Key Areas Concept to Help the San Diego Water Board Focus on What is Most Important." March 15, 2017.

Trussell Technologies Inc. 2016. "Concentration of Key Water Quality Parameters in NCPWF (Miramar Reservoir) Process Streams." Technical Memorandum. October 5, 2016.

West Coast Civil. 2017. Eastgate Mall Roadway Improvements Hydrology Calculations. July 17, 2017.

~~WQS (Water Quality Solutions). 2017. *Limnology and Detention Study for Miramar Reservoir*. Prepared for the City of San Diego.~~

6.12 NOISE

Caltrans (California Department of Transportation). 2015. Noise Study Report Template and Guidelines. April 1, 2015. http://www.caltrans.ca.gov/ser/downloads/noise/noise_study_report_annotated_outline_final04-01-2015.pdf.

City of San Diego. 2016. *California Environmental Quality Act Significance Determination Thresholds*. Revised July 2016. San Diego, California: City of San Diego, Development Services Department. Accessed December 8, 2016. https://www.sandiego.gov/sites/default/files/july_2016_ceqa_thresholds_final_0.pdf.

Dudek. 2008. *Final Program Environmental Impact Report for the City of Vista 2008 Sewer Master Plan Update*. Prepared for City of Vista. Encinitas, California: Dudek. May 2008.

Dudek. 2012a. Final Mitigated Negative Declaration for the Recycled Water Distribution System Expansion. Prepared for El Toro Water District. Encinitas, California: Dudek. June 2012.

Dudek. 2012b. Final Mitigated Negative Declaration for the Recycled Water Tertiary Treatment Plant. El Toro Water District. Encinitas, California: Dudek. June 2012.

Dudek. 2012c. *Mitigated Negative Declaration for the Temescal Canyon and Dawson Canyon Pipelines and Non-Potable Water Tank Project*. Prepared for the Lee Lake Water District. Riverside, California: Dudek. December 2012.

- Dudek. 2013a. *Plano Lift Station Force Main Relocation Project*. Prepared for the Rancho Santa Margarita Water District. Encinitas, California: Dudek. December 2013.
- Dudek. 2013b. *Final Initial Study/Mitigated Negative Declaration for the South Pasadena Sewer Rehabilitation and Replacement Project*. Prepared for City of South Pasadena Public Works Department. Encinitas, California: Dudek. June 2013.
- Dudek. 2013c. *Final Mitigated Negative Declaration for the West Padaro Lane Main Sewer Extension Project*. Prepared for the Carpinteria Sanitary District. Encinitas, California: Dudek. August 2013.
- Dudek. 2013d. *Final Environmental Impact Report for the Coastal Treatment Plant Export Sludge Force Main Replacement Project*. Prepared for the South Orange County Wastewater Authority. Encinitas, California: Dudek. March 2013.
- Dudek. 2014. *Addendum to the Final Recycled Water Distribution System Expansion. Final Mitigated Negative Declaration*. Prepared for El Toro Water District. Encinitas, California: Dudek. August 2014.
- FHWA (Federal Highway Administration). 2008. *Roadway Construction Noise Model*.
- FTA. 2006. *Transit Noise and Vibration Impact Assessment*. May 2006.
- ~~HDR. 2016. *Basis of Design Report for the North City Pipeline, North City Pump Station, and Dechlorination Facility*.~~
- HDR. 2017. *90% Design Report*. Prepared for the City of San Diego Public Utilities. Prepared by HDR.
- PBS&J. 2011. *Vallecitos Water District 2008 Water, Wastewater and Recycled Water Master Plan PEIR*. March 2011.

6.14 PUBLIC SERVICES

- City of San Diego. 2016. *California Environmental Quality Act Significance Determination Thresholds*. Revised July 2016. San Diego, California: City of San Diego, Development Services Department. Accessed December 8, 2016. https://www.sandiego.gov/sites/default/files/july_2016_ceqa_thresholds_final_0.pdf.

6.15 PUBLIC UTILITIES

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

City of San Diego. 2016. *California Environmental Quality Act Significance Determination Thresholds*. Revised July 2016. San Diego, California: City of San Diego, Development Services Department. Accessed December 8, 2016. https://www.sandiego.gov/sites/default/files/july_2016_ceqa_thresholds_final_0.pdf.

MWH Americas Inc., Brown and Caldwell, and Trussell Technologies Inc. 2016. Table 11-5. In *Task 3: North City Pure Water Facility (MR) (NC03B), 30% Engineering Design Report – Supplemental – Rev 1*. Draft. Prepared for City of San Diego Public Utilities Department. October 17, 2016.

6.16 TRANSPORTATION, CIRCULATION, AND TRAFFIC

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

City of San Diego. 1998. *Traffic Impact Study Manual*. Final. July 1998.

City of San Diego. 2003. *Land Development Code—Trip Generation Manual*. Revised May 2003.

City of San Diego. 2014a. *Morena Boulevard Station Area Planning Study Final Report*. February 2014.

City of San Diego. 2014b. “Official Zoning Map: Grid Tile 31” [map]. Grid Scale: 800. San Diego, California: City of San Diego Development Services Department. June 19, 2014.

City of San Diego. 2015. *University Community Plan Amendment Existing Conditions Summary*. December 2015.

City of San Diego. 2016a. *California Environmental Quality Act Significance Determination Thresholds*. Revised July 2016. San Diego, California: City of San Diego, Development Services Department. Accessed December 8, 2016. https://www.sandiego.gov/sites/default/files/july_2016_ceqa_thresholds_final_0.pdf.

City of San Diego. 2016b. "Transportation Element." In *University Community Plan*. As amended December 5, 2016. Prepared by The University Community Planning Group and City of San Diego Planning Department.

City of San Diego. 2016c. *San Diego Municipal Code, Article 2: General Development Regulations, Division 5: Parking Regulations*. August 2016.

6.17 WATER SUPPLY

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

City of San Diego. 2016a. *California Environmental Quality Act, Significance Determination Thresholds*. Revised July 2016. San Diego, California: City of San Diego, Development Services Department. Accessed December 8, 2016. https://www.sandiego.gov/sites/default/files/july_2016_ceqa_thresholds_final_0.pdf.

City of San Diego. 2016b. *City of San Diego 2015 Urban Water Management Plan*. Final. City of San Diego Public Utilities Department. June 2016.

6.18 RECREATION

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

CDFW (California Department of Fish and Wildlife). 2014. *Lake Miramar Creel Report: 2013 – 2014 Creel Survey*. August 2014.

Fishing Network. 2017. "Top 25 Largemouth Bass." Accessed July 12, 2017. <http://fishingnetwork.net/index.php?pageid=top-25-largemouth-bass-records>.

7 CUMULATIVE IMPACTS

40 CFR 1508.1–1508.28. Terminology and Index. Regulations for Implementing the National Environmental Protection Act, in Chapter 5: Council on Environmental Quality.

City of San Diego. 1997. *City of San Diego Final MSCP Subarea Plan*. Prepared by the City of San Diego Community and Economic Development Department. March 1997. <https://www.sandiego.gov/sites/default/files/legacy/planning/programs/mscp/pdf/subareafullversion.pdf>.

- City of San Diego. 2008. *University Towne Center Revitalization Project Final Environmental Impact Report*. SCH no. 2002071071. July 2008. Accessed January 16, 2018. <http://www.rosecanyon.org/pdf/utc/conclusions.pdf>.
- City of San Diego. 2016. *City of San Diego 2015 Urban Water Management Plan*. Final. City of San Diego Public Utilities Department. June 2016.
- City of San Diego. 2017. *Addendum to Mitigated Negative Declaration No. 255100*. SCH No. 2011091045. Project No. 583432/WBS No. B-10627.02.02.
- Padre Dam Municipal Water District. 2015. Mitigated Negative Declaration for the Ray Stoyer Water Reclamation Facility. Adopted in July 2015.
- SANDAG (San Diego Association of Governments). 2007. *2030 San Diego Regional Transportation Plan: Pathways for the Future*. <http://www.sandag.org/index.asp?classid=13&projectid=292&fuseaction=projects.detail>.
- SANDAG. 2014. *Final Supplemental Environmental Impact Statement/Environmental Impact Report (SEIS/SEIR) for the Mid-Coast Corridor Transit Project*.
- SDG&E (San Diego Gas and Electric). 2017. "Pipeline Safety & Reliability Project." Fall 2017. Accessed February 6, 2018. <https://www.sdge.com/key-initiatives/pipeline-project/quick-hit-project-facts>.
- UCSD (University of California San Diego). 2017a. *North Torrey Pines Living and Learning Neighborhood Project Draft Tiered Environmental Impact Report*. SCH no. 2017041056. UCS-20.25. Prepared by HELIX Environmental Planning Inc. La Mesa, California: HELIX Environmental Planning. October 2017. Accessed January 20, 2018. <http://www.trbas.com/media/media/acrobat/2017-11/69955697124360-20120217.pdf>.
- UCSD. 2017b. *Mesa Housing Nuevo West and East Project Final Environmental Impact Report*. November 2017.
- USMC (United States Marine Corps). 2017. *Pre-Final Supplemental Environmental Assessment for the F-35 West Coast Basing at MCAS Miramar*. August 2017.
- Westfield (Westfield Corporation). 2018. "Westfield Revitalization Project Frequently Asked Questions." Accessed January 16, 2018. <https://www.westfield.com/utc/development/faq>.

8 EFFECTS NOT FOUND TO BE SIGNIFICANT

Bureau of Reclamation. 2012. *Managing Water in the West – Reclamation’s NEPA Handbook*. U.S. Department of the Interior, Bureau of Reclamation. February 2012.

City of San Diego. 2015a. Application for Renewal of NPDES CA0107409 and 301(h) Modified Secondary Treatment Requirements – Point Loma Ocean Outfall. City of San Diego, Public Utilities Water & Wastewater. January 2015. <https://www.sandiego.gov/sites/default/files/legacy/mwwd/pdf/facilities/2015/301vol1.pdf>.

City of San Diego. 2015b. “Pure Water San Diego.” FAQ. February 3, 2015. https://www.sandiego.gov/sites/default/files/legacy/water/pdf/purewater/2015/faq_purewater.pdf.

Department of Conservation. 1996. “Generalized Mineral and Classification Map of Western San Diego County, California; Aggregate Resources Only” [map]. 1:100,000. Department of Conservation, Division of Mines and Geology. Accessed November 30, 2016. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/OFR_96-04/OFR_96-04_Plate1.pdf.

Department of Conservation. 2016. “San Diego County Important Farmland 2014” [map]. 1:120,000. November 2016. Accessed November 30, 2016. ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2014/sdg14_w.pdf.

Hall, D. 2016. Telephone call between D. Hall (Bureau of Indian Affairs) and M. DeCarlo (Dudek). December 8, 2016.

9 MANDATORY DISCUSSION AREAS

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

40 CFR 1502.1–1502.25. Environmental Impact Statement.

California Government Code Sections 65300 – 65303.4. Article 5. Authority for and Scope of General Plans.

California Water Code, Chapter 3, Urban Water Management Plans, Sections 10631, 10633, 10634, and 10635.

City of Antioch v. City Council of the City of Pittsburg (1986).

City of San Diego. 2016a. *California Environmental Quality Act, Significance Determination Thresholds*. Revised July 2016. San Diego, California: City of San Diego, Development Services Department. Accessed December 8, 2016. https://www.sandiego.gov/sites/default/files/july_2016_ceqa_thresholds_final_0.pdf.

City of San Diego. 2016b. *2015 City of San Diego Urban Water Management Plan*. Adopted June 2016. https://www.sandiego.gov/sites/default/files/2015_uwmp_report.pdf.

Merz v. Monterey County Board of Supervisors; California Court of Appeal (1983).

Metropolitan (Metropolitan Water District). 2015. "The Metropolitan Water District of Southern California: Overview." Accessed December 8, 2016. <http://www.mwdh2o.com/WhoWeAre/Mission/Pages/default.aspx>.

Metropolitan. 2016. *Integrated Water Resources Plan 2015 Update*. Report No. 1518. January 2016. Accessed February 10, 2017. [http://www.mwdh2o.com/PDF_About_Your_Water/2015%20IRP%20Update%20Report%20\(web\).pdf](http://www.mwdh2o.com/PDF_About_Your_Water/2015%20IRP%20Update%20Report%20(web).pdf).

SANDAG (San Diego Association of Governments). 2013. *Series 13 Regional Growth Forecast: San Diego Region*. October 2013.

SDCWA (San Diego County Water Authority). 2016a. "Imported Supplies." Accessed December 8, 2016. <http://www.sdcwa.org/imported-supplies>.

SDCWA. 2016b. "Water Supplies." Accessed December 8, 2016. <http://www.sdcwa.org/water-supplies>.

SDCWA. 2016c. "Reservoirs." Accessed December 8, 2016. <http://www.sdcwa.org/reservoirs>.

SDCWA. 2016d. "Recycled Water." Accessed December 8, 2016. <http://www.sdcwa.org/recycled-water>.

SDCWA. 2016e. "Seawater Desalination." Accessed December 8, 2016. <http://www.sdcwa.org/seawater-desalination>.

SDCWA. 2016f. *Final 2015 Urban Water Management Plan*. Adopted June 2016. Accessed December 8, 2106. http://www.sdcwa.org/sites/default/files/files/water-management/water_resources/2015%20UWMP%20Final%2006222016.pdf.

10 MITIGATION MONITORING AND REPORTING PROGRAM

CDFG (California Department of Fish and Game). 2012. *Staff Report on Burrowing Owl Mitigation*. March 7, 2012. Accessed March 8, 2012. <http://www.dfg.ca.gov/wildlife/nongame/docs/BUOWStaffReport.pdf>.

City of San Diego. 2012. City of San Diego Municipal Code, Land Development Code—Biology Guidelines. Amended April 23, 2012 by Resolution No. R-307376. https://www.sandiego.gov/sites/default/files/ldc_biology_guidelines_vphcp_wildlife-city_draft_july_2016.pdf.

City of San Diego 2016a. City of San Diego Rules and Regulation for Recycled Water. June. Accessed August 2017. https://www.sandiego.gov/sites/default/files/recycled_water_rules_and_regulations_june_2016_final.pdf.

City of San Diego 2016d. City of San Diego, Land Development Code—Landscape Standards. April 5, 2016. Accessed August 24, 2017. <https://www.sandiego.gov/development-services/industry/landdevcode/landdevmanual>.

Harmsworth Associates and B. Goodman. 2002. *Shady Canyon Turtle Pond Mitigation Monitoring Annual Report*. Final Report prepared for the Irvine Company, Newport Beach, California.

Harmsworth Associates and B. Goodman. 2003. *Shady Canyon Turtle Pond Mitigation Monitoring Annual Report for 2003*. Final Report Prepared for the Irvine Company, Newport Beach, California.

USGS (U.S. Geological Survey). 2005. "Distribution and Status of the Arroyo Toad (*Bufo californicus*) and Western Pond Turtle (*Emys marmorata*) in the San Diego MSCP and Surrounding Areas." Final Report October 11, 2005. http://www.sandiegocounty.gov/pds/mscp/docs/Toad_Turtle_Distribution_and_Status.pdf.