

# CHAPTER 11

## Mitigation Monitoring and Reporting Program

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This chapter summarizes the mitigation measures that would be integrated into the proposed project (i.e., North Bay Water Recycling Program or NBWRP) to reduce the potentially significant impacts to a less-than-significant level. Also provided is a Mitigation Monitoring and Reporting Program (MMRP) organized in a tabular format, keyed to each mitigation measure incorporated into the project. The tables following each measure provide a breakdown of how the mitigation measure would be implemented, who would be responsible, and when it would occur. The tables consist of four column headings which are defined as follows:

- *Implementation Procedure*: If needed, this column provides additional information on how the mitigation measures would be implemented.
- *Monitoring and Reporting Actions*: This column contains an outline of the appropriate steps to verify compliance with the mitigation measure.
- *Monitoring Responsibility*: This column contains an assignment of responsibility for the monitoring and reporting tasks.
- *Monitoring Schedule*: This column provides a general schedule for conducting each monitoring and reporting task, identifying where appropriate both the timing and the frequency of the action.
- *Responsible Agency*: This column states the agency, which would be responsible for implementing the mitigation measure.

## Geology and Soils

### Impact 3.1.1: Seismicity

In the event of a major earthquake in the Bay Area Region, the proposed facilities could be subject to fault rupture, severe ground shaking, liquefaction, or earthquake induced landslides capable of causing injury, structural damage, pipeline rupture and service interruption.

### Mitigation Measure 3.1.1

The Member Agencies will implement the following measures:

- All proposed improvements will be designed and constructed in accordance with current geotechnical industry standard criteria, including the California Building Code (CBC) and American Waterworks Association (AWWA) criteria.
- The project construction materials and backfill materials will be designed according to a geotechnical investigation by a California-licensed geotechnical engineer or engineering geologist to address landslide, subsidence, liquefaction, and expansive soils and seismic hazards such as ground shaking and liquefaction.
- Implementation of industry standard geotechnical measures such as replacing excavated soils with engineered fill materials are effective means to overcome the potential for subsidence. If excavated soils are to be reused for backfill, they would still be appropriately compacted to mitigate the potential for subsidence or settlement and evaluated for expansion and amended, if necessary, to reduce the potential for expansion in accordance with accepted geotechnical practices.
- Proposed facilities will be designed to include flexible connections, where deemed necessary, along with backfill requirements that minimize the potential for significant damage. All other associated improvements will employ standard design and construction using the most recent geotechnical practices and California Building Code (CBC) seismic criteria, which would provide conservative design criteria.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Design improvements with current geotechnical industry standard criteria. 2. Conduct geotechnical investigation and design construction and backfill material accordingly. 3. Replace excavated soils with engineered fill or properly compacted excavated soils if reused. After placing backfill, evaluate soil's potential for expansion. 4. Design facilities to include flexible connections.	1. Incorporate design improvements into construction specifications; Comply with CBC and AWWA. 2. Incorporate design recommendations into construction specifications. 3. Incorporate procedure into construction specifications. 4. Incorporate flexible connections into construction specifications.	1. Member Agency 2. Contractor/ Member Agency 3. Contractor/ Member Agency 4. Member Agency	1. Prior to Construction 2. Prior to Construction 3. During Construction 4. Prior to Construction	Member Agency

### Impact 3.1.2: Erosion

Project construction activities could result in short-term erosion and loss of topsoils.

#### Mitigation Measure 3.1.2

The Member Agencies will implement the following measures:

- Consistent with SWPPP requirements, the construction contractor shall be required to implement BMPs for erosion control onsite. The use of construction BMPs will minimize the potential for erosion and loss of topsoil, and shall include, without limitation, the following:
- Avoid scheduling construction activities during a rain event, but be prepared for sudden changes in conditions;
- Construct berms, silt fences, straw bales, fiber rolls, and/or sand bags around stockpiled soils;
- Cover stockpiled soils during a rain event and monitor perimeter barriers, repair as necessary;
- Stabilize entrances to work area to prevent tracking of dirt or mud onto roadways; and
- Implement dust control practices as appropriate on all stockpiled material.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
<ol style="list-style-type: none"> <li>1. Prepare a SWPPP.</li> <li>2. Schedule construction to avoid rainy season.</li> <li>3. Construct berms and install silt fences, straw bales, fiber rolls, and/or sand bags around stockpiled soils.</li> <li>4. Cover stockpiled soils during a rain event and monitor perimeter barriers; repair as necessary.</li> <li>5. Stabilize entrances to work area to prevent tracking of dirt or mud onto roadways.</li> <li>6. Implement dust control practices as appropriate on all stockpiled material.</li> </ol>	<ol style="list-style-type: none"> <li>1. Incorporate erosion control BMPs into construction specifications.</li> <li>2. Incorporate schedule into construction specifications.</li> <li>3. Incorporate use of these measures into construction specifications.</li> <li>4. Incorporate use of these measures into construction specifications.</li> <li>5. Incorporate use of these measures into construction specifications.</li> <li>6. Incorporate use of these measures into construction specifications.</li> </ol>	<ol style="list-style-type: none"> <li>1. Member Agency</li> <li>2. Member Agency</li> <li>3. Contractor/ Member Agency</li> <li>4. Contractor/ Member Agency</li> <li>5. Contractor/ Member Agency</li> <li>6. Contractor/ Member Agency</li> </ol>	<ol style="list-style-type: none"> <li>1. Prior to Construction</li> <li>2. Prior to and During Construction</li> <li>3. During Construction</li> <li>4. During Construction</li> <li>5. During Construction</li> <li>6. During Construction</li> </ol>	Member Agency

### Impact 3.1.3: Unstable Soils

Project improvements could be located on expansive soils that over time could cause damage to foundations and pipelines resulting in service disruptions.

## Mitigation Measure

The Member Agencies will implement the Mitigation Measure 3.1.1.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Implement Mitigation Measure 3.1.1	1. Incorporate use of these measures into construction specifications.	1. Contractor/ Member Agency	1. Prior to and During Construction	Member Agency

## Impact 3.1.4: Expansive Soils

Project improvements could be located on expansive soils that over time could cause damage to foundations and pipelines resulting in service disruptions.

## Mitigation Measure

The Member Agencies will implement the Mitigation Measure 3.1.1.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Implement Mitigation Measure 3.1.1	1. Incorporate use of these measures into construction specifications.	1. Contractor/ Member Agency	1. Prior to and During Construction	Member Agency

## Surface Hydrology

### Impact 3.2.1: Changes in Drainage Patterns

Project construction could modify existing drainage patterns.

### Mitigation Measure 3.2.1

The Member Agencies would implement the following measure during pipeline installation at stream crossings:

- Schedule construction so as to avoid storm events to the extent feasible;
- Use trenchless techniques such as jack and bore tunneling to avoid direct impacts to the streams;
- Employ short-term drainage diversion and control measures such as sandbags, dikes, pumps, or other means; and
- Following construction, restore the construction area to pre-existing conditions

- Implement **Mitigation Measure 3.5.1** (see Section 3.5).

<b>Implementation Procedure</b>	<b>Monitoring and Reporting Actions</b>	<b>Monitoring Responsibility</b>	<b>Monitoring Schedule</b>	<b>Responsible Agency</b>
<ol style="list-style-type: none"> <li>1. Schedule construction to avoid rainy season.</li> <li>2. Integrate trenchless techniques such as jack and bore to avoid streams.</li> <li>3. Employ short-term drainage diversion and control measures such as sandbags, dikes, pumps, or other means.</li> <li>4. Restore site to pre-existing conditions.</li> </ol>	<ol style="list-style-type: none"> <li>1. Incorporate schedule into construction specifications.</li> <li>2. Incorporate use of trenchless techniques into construction specifications.</li> <li>3. Incorporate use of these measures into construction specifications.</li> <li>4. Inspect final site conditions after construction and verify its condition is it equivalent to that prior to construction. Incorporated into construction specifications.</li> </ol>	<ol style="list-style-type: none"> <li>1. Member Agency</li> <li>2. Contractor/ Member Agency</li> <li>3. Contractor/ Member Agency</li> <li>4. Contractor/ Member Agency</li> </ol>	<ol style="list-style-type: none"> <li>1. Prior to and During Construction</li> <li>2. Prior to Construction</li> <li>3. During Construction</li> <li>4. After Construction</li> </ol>	Member Agency

### Impact 3.2.3: Increased Storm Runoff

New impervious surfaces for NBWRP would result in an increase in storm runoff.

#### Mitigation Measure 3.2.3

The Member Agencies will implement the following measures:

- Comply with the local storm drainage requirements;
- Incorporate site design features to control any site runoff onsite; and
- Install storm runoff, collection, and treatment system, as applicable, to control the runoff flow offsite.

<b>Implementation Procedure</b>	<b>Monitoring and Reporting Actions</b>	<b>Monitoring Responsibility</b>	<b>Monitoring Schedule</b>	<b>Responsible Agency</b>
<ol style="list-style-type: none"> <li>1. Comply with the local storm drainage requirements.</li> <li>2. Incorporate site design features to control any site runoff onsite.</li> </ol>	<ol style="list-style-type: none"> <li>1. Incorporate requirements into construction specifications.</li> <li>2. Incorporate features into construction specifications.</li> </ol>	<ol style="list-style-type: none"> <li>1. Member Agency</li> <li>2. Member Agency</li> <li>3. Contractor/ Member Agency</li> </ol>	<ol style="list-style-type: none"> <li>1. Prior to Construction</li> <li>2. Prior to Construction</li> <li>3. During and After Construction</li> </ol>	Member Agency

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
3. Install storm runoff, collection, and treatment system, as applicable, to control the runoff flow offsite.	3. Monitor efficacy of system and regularly maintain it.			

### Impact 3.2.4: Flooding – Sea Level Rise

Sea-level rise could affect operation of project facilities.

#### Mitigation Measure 3.2.4

Design of proposed facilities shall consider sea level rise potential, and shall include appropriate measures in facility siting and design to address potential impacts related to sea level rise, similar to those applied to facility installation within 100-year flood plains. Design measures may include, but are not limited to: facility siting, access placement, access vault extension above projected water elevation, water tight vaults, and site protection.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Design facility to address potential impacts related to sea level rise. Design measures may include but are not limited to: facility siting, access placement, access vault extension above projected water elevation, water tight vaults, and site protection.	1. Incorporate design requirements into construction specifications.	1. Member Agency	1. Prior to construction	LGVSD/NMWD, Novato SD/ NMWD, SVCSD

## Groundwater Resources

### Impact 3.3.2: Hydrostatic Pressure

Proposed facilities may be affected by shallow groundwater levels and natural groundwater fluctuations.

#### Mitigation Measure 3.3.1

The Member Agencies will implement the following measures:

- All proposed improvements will be designed and constructed in accordance with current geotechnical industry standard criteria.
- Implement industry standard geotechnical measures to address high groundwater conditions as appropriate to reduce the potential for impacts related to groundwater fluctuation, in accordance with accepted geotechnical practices. Possible design features include drainage blankets, perimeter pumps to temporarily decrease hydrostatic pressure, perimeter drainage trenches, and specific groundwater monitoring scenarios.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Design improvements with current geotechnical industry standard criteria. 2. Design improvements to address high groundwater conditions in accordance with accepted geotechnical practices. Possible design features include but are not limited to: drainage blankets, perimeter pumps to temporarily decrease hydrostatic pressure, perimeter drainage trenches, and specific groundwater monitoring scenarios.	1. Incorporate design requirements into construction specifications. 2. Incorporate design requirements into construction specifications.	1. Member Agency 2. Member Agency	1. Prior to construction 2. Prior to construction	Member Agency

## Water Quality

### Impact 3.4.1: Short Term Construction-Related Effects

Disturbance of soils during construction of new project-related infrastructure could generate short term erosion-related water quality impacts. Construction activities could result in the accidental release of fuels or hazardous materials. Project construction activities could require dewatering that could result in the discharge of turbid waters into the local storm drain systems or nearby creeks.

#### Mitigation Measure 3.4.1a

NPDES Construction Activity Stormwater Permit. Member Agencies or their contractor shall comply with the provisions of the NPDES Construction Activity Stormwater permit, including preparation of Notice of Intent to comply with the provisions of this General Permit and preparation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP will identify implementation measures necessary to mitigate potential water quality degradation as a result of

construction-related runoff. These measures will include BMPs and other standard pollution prevention actions, such as erosion and sediment control measures, proper control of non-stormwater discharges, and hazardous spill prevention and response. The SWPPP will also include requirements for BMP inspections, monitoring, and maintenance.

The following items are examples of BMPs that would be implemented during construction to avoid causing water quality degradation:

- Erosion control BMPs, such as use of mulches or hydroseeding to prevent detachment of soil, following guidance presented in the California BMP Handbooks – Construction (CASQA 2003). A detailed site map will be included in the SWPPP outlining specific areas where soil disturbance may occur, and drainage patterns associated with excavation and grading activities. In addition, the SWPPP will provide plans and details for the BMPs to be implemented prior, during, and after construction to prevent erosion of exposed soils and to treat sediments before they are transported offsite.
- Sediment control BMPs such as silt fencing or detention basins that trap soil particles.
- Construction staging areas designed so that stormwater runoff during construction will be collected and treated in a detention basin or other appropriate structure.
- Management of hazardous materials and wastes to prevent spills.
- Groundwater treatment BMPs such that localized trench dewatering does not impact surface water quality.
- Vehicle and equipment fueling BMPs such that these activities occur only in designated staging areas with appropriate spill controls.
- Maintenance checks of equipment and vehicles to prevent spills or leaks of liquids of any kind.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Submit Notice of Intent and SWPPP for the NPDES General Construction Permit  2. Incorporate BMPs in standard construction procedures	1. Comply with the SWPPP and NPDES permit requirements  2. Implement BMPs	1. Contractor  2. Contractor/ Member Agency	1. Prior to construction  2. During and following construction	Member Agency

### Impact 3.4.6: Surface Water Storage

The proposed project would include storage of recycled water at existing WWTP facilities, as well as at individual user properties. Storage of recycled water quality would have the potential to affect localized surface water quality or groundwater quality.



### Mitigation Measure 3.4.6a

Under the Master Recycling Permit for each Member Agency and Cooperating Agency, user agreements shall include provisions for compliance with Title 22 and the State Recycled Water Policy regarding storage and use of recycled water onsite at individual properties.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
<ol style="list-style-type: none"> <li>Incorporate provisions for compliance with Title 22 and State Recycled Water Policy in user agreements.</li> <li>Comply with provisions in the user agreement</li> </ol>	<ol style="list-style-type: none"> <li>Execute agreement</li> <li>Execute agreement</li> </ol>	<ol style="list-style-type: none"> <li>Member Agency/Users</li> <li>Member Agency/Users</li> </ol>	<ol style="list-style-type: none"> <li>During project operation (recycled water use)</li> <li>During project operation (recycled water use)</li> </ol>	Member Agency/Users

### Mitigation Measure 3.4.6b

Prior to storage of recycled water in any “on-stream” storage facility that directly receives and releases stream flow, each Member Agency or Cooperating Agency shall enter into discussions with RWQCB regarding operational requirements to ensure operation of proposed facilities in compliance with Title 22 and the State Recycled Water Policy. It is anticipated that specific operational standards, such as pumping on-stream ponds dry prior to the onset of winter rains or other measures, would be required in order to ensure storage in compliance with Title 22.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
<ol style="list-style-type: none"> <li>Enter into discussions with San Francisco Bay RWQCB regarding operational requirements for the proposed facilities.</li> <li>Comply with requirements</li> </ol>	<ol style="list-style-type: none"> <li>Incorporate requirements into standard operational procedures.</li> <li>Incorporate requirements into standard operational procedures.</li> </ol>	<ol style="list-style-type: none"> <li>Member Agency</li> <li>Member Agency</li> </ol>	<ol style="list-style-type: none"> <li>Project operation/ prior to storage of recycled water</li> <li>Project operation</li> </ol>	Member Agency

### Impact 3.4.9: Reuse for Habitat Restoration

Disinfected tertiary-treated wastewater from the SVCSD WWTP would be delivered to the Napa Salt Marsh ponds as a dilution source for bittern ponds, thereby improving water quality.

### Mitigation Measure 3.4.9a

SVCSD and Napa SD (as appropriate) shall implement the following measures:

- Prepare a Management Plan required by the San Francisco Bay RWQCB to obtain a discharge prohibition. The management plan will comply with the RWQCB Resolution 94-086. The management plan will include the following features for Ponds 7 and 7A:
  - a) Facility Plan, includes project purpose and objectives, site selection factors, site sampling and analyses, planning and design elements.
  - b) Operations and Maintenance plan, includes vegetation planning and harvesting, channel and bank maintenance, pump and gate maintenance, vector controls, and contingency/emergency plans.
  - c) Monitoring Program, includes monitoring of pollutants, habitat diversity, wildlife use, and vector populations; and

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Prepare Management Plan in compliance with RWQCB's requirements. 2. Implement the Management Plan	1a. Incorporate requirements in the Management Plan 1b. Incorporate Facility Plan, Operations and Maintenance plan, and monitoring program in the Management Plan. 2. Report results as required	1a. SVCSD/ Napa SD 1b. SVCSD/Napa SD 2. SVCSD/ Napa SD	1a. Prior to operation 1b. Prior to operation 2. During operation	SVCSD and Napa SD

## Biological Resources

### Impact 3.5.1: Impacts on Wetlands, Streams and Riparian Habitats

Construction of the Proposed Project could result in impacts to jurisdictional wetlands and other waters of the United States, as well as impacts to riparian habitat.

#### Mitigation Measure 3.5.1

Implement the following measures to avoid, minimize and compensate for impacts to jurisdictional wetlands and other waters of the U.S. and impacts to riparian habitat.

Construction activities resulting in the introduction of fill or other disturbance to jurisdictional wetlands and other waters of the U.S. will require permit approval from the U.S. Army Corps of Engineers and water quality certification from the Regional Water Quality Control Board, pursuant to Section 401 of the Clean Water Act. The Proposed Project will most likely be authorized under Nationwide Permit #12 (Utility Lines) pursuant to Section 404 of the Clean Water Act. The CDFG has jurisdiction in the project area over riparian habitat, including stream

bed and banks, pursuant to Sections 1600-1616 of the Fish and Game Code. Pipeline construction resulting in alteration to channel bed or banks, extending to the outer dripline of trees forming the riparian corridor, is subject to CDFG jurisdiction. The project proponent will be required to obtain a Streambed Alteration Agreement (SAA) from the CDFG. Terms of these permits and SAA will likely include, but will not necessarily be limited to, the mitigation measures listed below.

- 1) Specific locations of pipeline segments, storage reservoirs, and pump stations shall be configured, wherever feasible, to avoid and minimize direct and indirect impacts to wetlands and stream drainage channels. Consideration taken in finalizing configuration placement shall include:
  - Reducing number and area of stream channel and wetland crossings where feasible. Crossings shall be oriented as close to perpendicular (90 degree angle) to the drainage or wetland as feasible.
  - Placement of project components as distant as feasible from channels and wetlands.
  - For pipeline construction activities in the vicinity of wetland and stream drainage areas, the construction work area boundaries shall have a minimum 20-foot setback from jurisdictional features<sup>1</sup>. Pipeline construction activities in proximity to jurisdictional features include: 1) entrance and exit pits for directional drilling and bore and jack operations; and 2) portions of pipeline segments listed as “parallel” to wetland/water features.
- 2) Sites identified as potential staging areas will be examined by a qualified biologist prior to construction. If potentially jurisdictional features are found that could be impacted by staging activities, the site will not be used.
- 3) Construction methods for channel crossing shall be designed to avoid and minimize direct and indirect impacts to channels to the greatest extent feasible. Use of trenchless methods including suspension of pipeline from existing bridges, directional drilling, and bore and jack tunneling will be used when feasible. Trenchless methods are required for all perennial drainage crossings (i.e., Sonoma Creek). Construction occurring in the vicinity of riparian areas shall be delimited with a minimum 20-foot setback to avoid intrusion of construction activities into sensitive habitat.

The following additional measures shall apply to channel crossings in which the trenching construction method is used:

- Limiting of construction activities in drainage channel crossings to low-flow periods: approximately April 15 to October 15.
- At in-road drainage crossings where drainages pass beneath the road in existing culverts, and where there is sufficient cover between the culvert and road surface, the new pipeline will be installed above the existing culvert without removing or disturbing it. If the pipeline must be installed below the existing culvert, then the culvert will be cut and temporarily removed to allow pipeline installation.

<sup>1</sup> Setbacks of channels with associated riparian vegetation will be from the outer dripline edge of the riparian corridor canopies and/or the upper bank edge, or per City or County code, whichever is greater.

- At off-road drainage crossings, the construction corridor width will be minimized to the greatest extent feasible at the crossing and at least 20 additional feet to either side of the drainage at the crossing.
  - If disturbance of the existing culvert is required, sediment curtains upstream and downstream of the construction zone shall be placed to prevent sediment disturbed during trenching activities from being transported and deposited outside of the construction zone.
- 4) Implement BMPs required in **Mitigation Measure 3.4.1** to reduce risk of sediment transport into all construction areas in proximity of drainages.
  - 5) For channels or wetlands for which soil removal is necessary (off-road crossings or wetlands to be trenched or otherwise directly disturbed), the top layer of the drainage or wetland bottom shall be stockpiled and preserved during construction. After the pipeline has been installed, the stockpiled material shall be placed back into the drainage or wetland feature to return the beds to approximately their original composition.
  - 6) To offset temporary and permanent impacts to wetlands and other waters of the U.S., and impacts to riparian habitat, compensatory mitigation will be provided as required by regulatory permits and SAAs.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Acquire permits from USACE, CDFG, and RWQCB. 2. Implement Best Management Practices (BMPs). 3. Stockpile excavated soil. 4. Implement compensatory mitigation.	1. Comply with regulatory permit. 2. Sign-off on inspection report and/ or MMRP. 3. Sign-off on inspection report and/ or MMRP. 4. Comply with regulatory permits and SAAs.	1. Member Agency 2. Contractor 3. Contractor 4. Member Agency	1. Prior to Construction 2. During Construction 3. During Construction 4. Prior to and During Construction	Member Agency

### Impact 3.5.2: Construction Impacts on Special-status Fish and California Freshwater Shrimp

Construction of Proposed Project facilities could affect special-status invertebrate or fish species including central California coast steelhead, Chinook salmon, California freshwater shrimp, Pacific lamprey, and Sacramento splittail, or designated critical habitat for steelhead.

#### Mitigation Measure 3.5.2

Specific measures shall be implemented to protect aquatic habitats potentially inhabited by special-status fish and California freshwater shrimp.

Sensitive fisheries and other aquatic resources shall be protected by minimizing in-stream and near-stream habitat impacts during project design, informally consulting with resource agencies (NMFS, USFWS, CDFG, and USACOE), and implementing protective measures. For Sonoma Creek, Petaluma River, Napa River, and other perennial drainages, special-status fish are presumed present. California freshwater shrimp are presumed present in Sonoma Creek. Because of the sensitivity of seasonal and ephemeral drainages, the following measures will be required to avoid and minimize impacts to aquatic habitat:

- 1) Project designs shall be reconfigured, whenever feasible, to avoid direct impacts to sensitive wetland areas and minimize disturbances to wetland and riparian corridors. Ground disturbance and construction footprints in these areas shall be minimized to the greatest degree feasible.
- 2) If trenching or directional boring stream crossing methods are used, the construction schedule of such activities shall be implemented according to conditions of the SAAs.
- 3) In-stream construction shall be avoided at all locations that are known, or presumed, to support threatened or endangered species, if at the time of construction such locations contain flowing or standing water.
- 4) In the event that equipment shall operate in any watercourse with flowing or standing water, the project proponent will ensure that they have the appropriate permit authorizations.
- 5) Prior to construction, a qualified biologist shall install fencing to establish a minimum 20-foot setback from sensitive habitat.
- 6) For work sites located adjacent to sensitive aquatic sites, a biological resource education program shall be provided by a qualified biologist, as per conditions of the SAAs.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Consult with resource agencies . 2. Implement recommendations derived during consultation.	1. Design protective measures. 2. Comply with permit conditions; sign-off on inspection report and/or MMRP	1. Member Agency 2. Contractor	1. Prior to Construction 2. During Construction	Member Agency

### Impact 3.5.3: Long term Impacts on Special-status Fish

Operation of the proposed project has the potential to affect special-status fish species due to reduced discharges from the WWTPs.

#### Mitigation Measure 3.5.3

Implementation of **Mitigation Measure 3.5.5** for the protection of California red-legged frogs and **Mitigation 3.5.1** for protection and restoration of wetlands would protect special-

status invertebrates that could potentially be impacted by the project. No specific mitigation is required.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
<ol style="list-style-type: none"> <li>1. Implement Mitigation Measure 3.5.1.</li> <li>2. Implement Mitigation Measure 3.5.5.</li> </ol>	<ol style="list-style-type: none"> <li>1. Comply with regulatory permit; sign-off on inspection report and/ or MMRP.</li> <li>2. Comply with permit conditions; sign-off on inspection report and/or MMRP.</li> </ol>	<ol style="list-style-type: none"> <li>1. Member Agency/ Contractor</li> <li>2. Contractor/ Qualified Biologist</li> </ol>	<ol style="list-style-type: none"> <li>1. Prior to and During Construction</li> <li>2. Prior to Construction</li> </ol>	Member Agency

### Impact 3.5.4: Impacts on Special-status Invertebrates

Construction of Proposed Project facilities could impact special-status invertebrates including Myrtle’s silverspot butterfly, Opler’s longhorn moth, Monarch butterfly wintering sites, Ricksecker’s water scavenger beetle and California brackishwater snail.

### Mitigation Measure 3.5.3

Mitigation Measure 3.5.3 would reduce potential impacts on special-status invertebrates to a less-than-significant level.

Implementation of **Mitigation Measure 3.5.5** for the protection of California red-legged frogs and **Mitigation 3.5.1** for protection and restoration of wetlands would protect special-status invertebrates that could potentially be impacted by the project. No specific mitigation is required.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
<ol style="list-style-type: none"> <li>1. Implement Mitigation Measure 3.5.3.</li> <li>2. Implement Mitigation Measure 3.5.1.</li> <li>3. Implement Mitigation Measure 3.5.5.</li> </ol>	<ol style="list-style-type: none"> <li>1. Comply with regulatory permit; sign-off on inspection report and/ or MMRP.</li> <li>2. Comply with regulatory permit; sign-off on inspection report and/ or MMRP.</li> <li>3. Comply with permit conditions; sign-off on inspection report and/or MMRP</li> </ol>	<ol style="list-style-type: none"> <li>1. Member Agency</li> <li>2. Member Agency/ Contractor</li> <li>3. Contractor/ Qualified Biologist</li> </ol>	<ol style="list-style-type: none"> <li>1. Prior to and During Construction</li> <li>2. Prior to and During Construction</li> <li>3. Prior to and During Construction</li> </ol>	Member Agency

## Impact 3.5.5: Impacts on Western Pond Turtle

Construction of the proposed project has the potential to impact western pond turtles in upland and aquatic habitat.

### Mitigation Measure 3.5.5

Implement protection measures to avoid and minimize impacts to western pond turtles.

- When working within 200 feet of stream crossings, all construction personnel shall receive awareness training relating to the protection of western pond turtles, in accordance with the SAAs. Also, to minimize the likelihood of encountering turtles in upland areas near stream crossings, construction footprints shall be minimized to the greatest extent feasible. Based on reconnaissance-level surveys, if staging and construction activities occur principally within or immediately adjacent to project alignment roads the project will be outside of principal pond turtle habitat.
- Within 48 hours prior to the start of construction activities, a qualified biologist shall perform pond turtle surveys within suitable habitat within projected work areas. If a pond turtle nest is located within a work area, a biologist with the appropriate permits may move the eggs to a suitable facility for incubation, and release hatchlings into the creek system in late fall.

The measures proposed for protection of aquatic species and red-legged frogs (**Mitigation Measure 3.5.2 and Mitigation Measure 3.5.6**) will additionally protect western pond turtles during construction.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Conduct awareness training for construction personnel working within 200 feet of stream crossings. 2. Conduct pond turtle surveys; move eggs if necessary. 3. Implement Mitigation Measure 3.5.2. 4. Implement Mitigation Measure 3.5.6.	1. Comply with SAA permit; sign-off on inspection report and/ or MMRP. 2. Comply with regulatory permits; sign-off on inspection report and/ or MMRP 3. Comply with permit conditions; sign-off on inspection report and/or MMRP 4. Comply with SAA permit conditions; sign-off on inspection report and/or MMRP.	1. Contractor/ Member Agency 2. Qualified Staff Biologist 3. Contractor 4. Contractor/ Qualified Biologist	1. Prior to construction 2. 48 hours Prior to Construction 3. Prior to and During Construction 4. Prior to and During Construction	Member Agency

## Impact 3.5.6: Impacts on California Red-legged Frog

Construction of the Proposed Project has the potential to affect California red-legged frogs, if present.

### Mitigation Measure 3.5.6

Protection measures to avoid and minimize impacts on California red-legged frogs.

- 1) The implementation of measures identified for the protection of special-status fish and California freshwater shrimp would also protect California red-legged frogs within aquatic habitat. All protection measures identified in **Mitigation Measure 3.5.2** shall be applied to the protection of red-legged frogs at sites that provide potential aquatic habitat for this species. These include informal USFWS consultation, avoiding aquatic habitat, establishing a suitable buffer from the aquatic habitat (e.g., 50 feet), and implementing a worker education program.
- 2) All work activities within or adjacent to aquatic habitat that is potentially occupied by red-legged frogs will be completed between May 1 and November 1.
- 3) A qualified biological resource monitor will conduct a training session for construction personnel working in upland habitat near potentially occupied drainages, as per conditions of the SAAs.
- 4) All trash that could attract predators will be regularly contained and removed from the work site.

In the event trenchless methods cannot be employed, the project proponent would obtain appropriate permit authorizations and implement construction methods per applicable Streambed Alteration Agreements.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Implement Mitigation Measure 3.5.2. 2. Complete all work within or adjacent to aquatic habitat that is inhabited by red-legged frogs between May 1 and November 1 3. Conduct training sessions for construction personnel working in upland habitat near potential occupied drainages. 4. Implement trash removal and trenchless construction methods where necessary.	1. Comply with permit conditions; sign-off on inspection report and/or MMRP. 2. Incorporate into contract specifications. 3. Comply with SAA permit conditions; sign-off on inspection report and/or MMRP. 4. Comply with SAA permit conditions; sign-off on inspection report and/or MMRP.	1. Contractor/ Qualified Biologist 2. Contractor 3. Qualified Biologist/ Construction Personnel 4. Contractor	1. Prior to and During Construction 2. During Construction 3. During Construction 4. During Construction	Member Agency



## Impact 3.5.7: Impacts on Threatened and Endangered Marsh Birds

Construction of the proposed project has the potential to affect western snowy plover, California black rail and California clapper rail and their habitat in and near the project alignments.

### Mitigation Measure 3.5.7

To minimize the likelihood of project effects on threatened and endangered marsh birds, the following mitigation measures will be implemented:

- Protocol-level surveys will be conducted in locations with suitable habitat to determine species presence or absence.
- Agency consultation will be initiated.
- Construction activities will occur during the non-breeding season, September 15 through January 31. The combined breeding season for all three species extends from February 1 through September 14.
- Construction personnel will receive environmental awareness training specific to the identification of clapper rails, black rails, western snowy plover and their habitat.
- Any clapper rail and western snowy plover activity will be immediately reported to the USFWS; black rail activity will be reported to the CDFG.
- Construction activities will be constrained to the smallest area possible to minimize marsh disturbance.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Conduct protocol-level surveys in areas that contain suitable nesting bird habitat 2. Initiate consultation with resource agency. 3. Adhere to construction schedule with respect to bird breeding season. 4. Conduct training sessions for construction personnel specific to identification of sensitive bird habitat. 5. In the event of presence of sensitive birds, coordinate with CDFG and/ or USFWS.	1. Incorporate survey results and recommendations into project contract specifications. 2. Develop and implement avoidance measures. 3. Incorporate into contract specifications. 4. Incorporate into contract specifications; sign-off on inspection report and/or MMRP. 5. Implement avoidance measures derived from agency coordination.	1. Qualified Staff Biologist 2. Member Agency 3. Contractor/ Member Agency 4. Qualified Biologist/ Construction Personnel 5. Contractor/ Member Agency	1. Prior to Construction 2. Prior to Construction 3. During Construction 4. Prior to Construction 5. During Construction	Member Agency

### Impact 3.5.8: Impacts on Burrowing Owl

Construction of the proposed project could result in direct and indirect impacts to burrowing owls, if present in portions of the project alignment.

#### Mitigation Measure 3.5.8

The following measures to avoid, minimize, or mitigate impacts on burrowing owls would be incorporated into the project.

- In areas identified to provide potential burrowing owl habitat, preconstruction surveys for burrowing owls would be conducted by a qualified biologist 14-30 days prior to the start of construction. Surveys would cover grassland areas within 500-foot buffer and check for adult and juvenile burrowing owls and their habitat.
- Construction exclusion areas would be established around the occupied burrows in which no disturbance would be allowed to occur. During the non-breeding season (September 1 through January 31), the exclusion zone would extend 160 feet around occupied burrows. During the breeding season (February 1 through August 31), exclusion areas would extend 250 feet around occupied burrows. Passive relocation of owls is not proposed.
- A qualified biologist (the on-site monitor or otherwise) will monitor owl activity on the site to ensure the species is not adversely affected by the project.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Conduct surveys for adult and juvenile burrowing owls within a 500-foot buffer. 2. Establish construction exclusion areas of appropriate size, as defined by breeding seasons). 3. Monitor owl activity on construction sites.	1. Incorporate survey results and recommendations into project contract specifications. 2. Incorporate in contract specifications. 3. Summarize results and recommendations in daily log; sign-off on inspection report and/or MMRP.	1. Qualified Biologist 2. Contractor 3. Qualified Biologist	1. 14-30 days Prior to Construction 2. Prior and During Construction 3. During Construction	Member Agency

### Impact 3.5.9: Impacts on Nesting Birds

Construction of the proposed project has the potential to affect nesting birds including Swainson’s hawk, willow flycatcher, sharp-shinned hawk, Cooper’s hawk, tri-colored blackbird, Bell’s sage sparrow, golden eagle, northern harrier, California yellow-warbler, white-tailed kite, California horned lark, salt marsh common yellowthroat, loggerhead shrike, San Pablo song sparrow, California thrasher, rookeries, and additional bird species protected by California Fish and Game Code Section 3503 and the federal Migratory Bird Treaty Act (16 USC, Sec. 703, Supp. I, 1989).

### Mitigation Measure 3.5.9

The appropriate Member Agency shall implement the following protection elements to avoid disturbing common and special-status nesting birds:

- Whenever feasible, vegetation shall be removed during the non-breeding season (generally defined as September 1 to January 31).
- For ground disturbing activities occurring during the breeding season (generally defined as February 1 to August 31), a qualified wildlife biologist will conduct preconstruction surveys of all potential nesting habitat for birds within 500 feet of earthmoving activities.
- If active bird nests are found during preconstruction surveys, a 500-foot no-disturbance buffer will be created around active raptor nests during the breeding season or until it is determined that all young have fledged. A 250-foot buffer zone will be created around the nests of other special-status birds. These buffer zones are consistent with CDFG avoidance guidelines; however, they may be modified in coordination with CDFG based on existing conditions at work locations.
- If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further mitigation is required. Trees and shrubs that have been determined to be unoccupied by special-status birds or that are located at least 500 feet from active nests may be removed.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Limit vegetation removal to non-breeding season (September 1 to January 31) 2. In the event that construction occurs during the breeding season (February 1 to August 31), conduct surveys of all potential nesting habitat within 500 feet of earthmoving activities. 3. In the event that active bird nests are found during preconstruction surveys, establish a 500 foot buffer around active nest sites. Establish a 250-foot buffer around other active special-status bird nests. 4. Remove trees, if necessary, that are not occupied by special-status birds.	1. Incorporate into contract specifications. 2. Incorporate survey results and recommendations into contract specifications. 3. Comply with CDFG guidelines. 4. Sign-off on inspection report and/ or MMRP.	1. Contractor 2. Qualified Biologist 3. Contractor 4. Contractor	1. During Construction 2. Prior to Construction 3. During Construction 4. During Construction	Member Agency

## Impact 3.5.10: Impacts on Salt Marsh Harvest Mouse and Suisun Ornate Shrew

Construction of the proposed project has the potential to affect salt marsh harvest mouse and suisun ornate shrew and their habitat in and near the project alignments.

### Mitigation Measure 3.5.10

The appropriate Member Agency shall implement protection measures to avoid and minimize impacts on salt marsh mammals during construction.

Where avoidance of sensitive habitat is not feasible (e.g., by bridging or bore and jack), consultation with CDFG and/or USFWS would be initiated. If species are present or presumed to be present after informal consultation with USFWS and/or CDFG, then a formal consultation and Biological Assessment in support of a Biological Opinion would be required. Such a consultation would proceed as part of the Corps 404 permitting program.

To avoid potential impacts on salt marsh harvest mouse and Suisun ornate shrew, a qualified biologist shall conduct specific preconstruction surveys prior to project initiation, following USFWS survey guidelines. The project proponent shall install exclusionary fences to prevent species movement into the project area, and a biologist with the appropriate permits to relocate these species shall live-trap mice and shrews within the enclosure and move these animals outside the fence. The biological monitor shall inspect these fences to ensure their integrity, and shall conduct an education workshop for contractors employees outlining species' biology, legislative protection, and construction restrictions to reduce potential impacts.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
<ol style="list-style-type: none"> <li>1. Consult with CDFG and/ or USFWS when avoidance of sensitive habitat is not feasible.</li> <li>2. Conduct surveys for salt harvest mouse and Suisun ornate shrew.</li> <li>3. Install exclusion fencing; conduct fence inspections.</li> <li>4. Relocate species if necessary.</li> <li>5. Conduct education workshops to inform construction personnel.</li> </ol>	<ol style="list-style-type: none"> <li>1. Compliance with recommendations and/ or Biological Assessment in support of a Biological Opinion.</li> <li>2. Comply with USFWS guidelines; incorporate survey results and recommendations into contract specifications.</li> <li>3. Comply with regulatory permit conditions; sign-off on inspection report and/ or MMRP.</li> <li>4. Comply with regulatory permit conditions; sign-off on inspection report and/ or MMRP.</li> <li>5. Incorporate into contract specifications; sign-off on inspection report and/ or MMRP.</li> </ol>	<ol style="list-style-type: none"> <li>1. Member Agency/ Contractor</li> <li>2. Qualified Biologist</li> <li>3. Contractor/ Qualified Biologist</li> <li>4. Qualified Biologist</li> <li>5. Qualified Biologist/ Construction Personnel</li> </ol>	<ol style="list-style-type: none"> <li>1. Prior to Construction</li> <li>2. Prior to Construction</li> <li>3. During Construction</li> <li>4. Prior to Construction</li> <li>5. Prior to Construction</li> </ol>	Member Agency

## Impact 3.5.11: Impacts on Special-Status Bats

Construction of the proposed project has the potential to affect roosting or breeding special-status bats in and near the project alignments.

### Mitigation Measure 3.5.11

The appropriate Member Agency shall implement protection measures to avoid and minimize impacts on special-status bats in and near project facilities during construction.

Concurrent with breeding bird surveys (**Mitigation Measure 3.5.8**), a qualified biologist will conduct preconstruction surveys for special-status bats at each bridge crossing location and in rural (i.e., non-road) areas where any large trees (e.g., > 24 inch diameter at breast height) will be removed. If an active roost is observed, a suitably-sized buffer (e.g., 100 to 150 feet) will be placed around the roost if it appears that trenching or other project activities may cause abandonment. Demolition activities must cease until juvenile bats are self-sufficient and will not be directly or indirectly impacted by activities.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
<ol style="list-style-type: none"> <li>1. Implement Mitigation Measure 3.5.8.</li> <li>2. Conduct species surveys at specified locations.</li> <li>3. Establish 100-150-foot buffers around active roosts; cease demolition activities until juvenile bats are self-sufficient.</li> </ol>	<ol style="list-style-type: none"> <li>1. Summarize results and recommendations in daily log; sign-off on inspection report and/or MMRP.</li> <li>2. Incorporate results and recommendations into contract specifications; sign-off on inspection report and/ MMRP.</li> <li>3. Incorporate into contract specifications; sign-off on inspection report.</li> </ol>	<ol style="list-style-type: none"> <li>1. Qualified Biologist/ Contractor</li> <li>2. Qualified Biologist</li> <li>3. Contractor</li> </ol>	<ol style="list-style-type: none"> <li>1. Prior to and During Construction</li> <li>2. Prior to construction</li> <li>3. During Construction</li> </ol>	Member Agency

## Impact 3.5.12: Impacts on American Badger

Construction of the proposed project has the potential to affect American badger and its habitat in and near the project alignments.

### Mitigation Measure 3.5.12

Mitigation Measure 3.5.12 would be implemented prior to ground-clearing activities to reduce potential impacts on badgers to a less-than-significant level.

Avoid and minimize impacts on badgers through preconstruction surveys prior to ground clearing and grading in annual grasslands habitat or areas that are known or suspected to support badger.

- Within 30-days prior to ground-clearing, a qualified biologist shall survey areas that provide potential badger habitat that occur within 100-feet of project activities. If no evidence of badgers presence is detected, no further mitigation is required. If active badger dens are identified within the project area, badgers will be passively relocated. If identified, vacated dens shall be temporarily covered using plywood sheets or similar materials to prevent badgers from returning to the project area during construction.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Conduct species surveys to identify potential badger habitat with 100 feet of project site.  2. In the event that badger dens are identified, passively relocate badgers.	1. Incorporate survey results and recommendations into contract specifications.  2. Comply with biologist recommendations.	1. Qualified Biologist 2. Qualified Biologist	1. 30 days Prior to Construction  2. Prior to Construction.	Member Agency

### Impact 3.5.13: Impacts on Rare Plants

Project construction could result in impacts to listed and other special-status plants.

#### Mitigation Measure 3.5.13

Before the initiation of any vegetation removal or ground-disturbing activities in areas that provide suitable habitat for special-status plants, the following measures shall be implemented:

- A qualified botanist will conduct appropriately-timed surveys for special-status plant species, including those identified in Table 3.5.1, in all suitable habitat that would be potentially disturbed by the project.
- Surveys shall be conducted following CDFG- or other approved protocol.
- If no special-status plants are found during focused surveys, the botanist shall document the findings in a letter to the appropriate agencies and no further mitigation will be required.

If special-status plants are found during focused surveys, the following measures shall be implemented:

- Information regarding the special-status plant population shall be reported to the CNDDDB.
- If the populations can be avoided during project implementation, they shall be clearly marked in the field by a qualified botanist and avoided during construction activities. Before ground clearing or ground disturbance, all on-site construction personnel shall be instructed as to the species' presence and the importance of avoiding impacts to this species and its habitat.
- If special-status plant populations cannot be avoided, consultations with CDFG and/or USFWS would be required. A plan to compensate for the loss of special-status

plant species could be required, detailing appropriate replacement ratios, methods for implementation, success criteria, monitoring and reporting protocols, and contingency measures that would be implemented if the initial mitigation fails; the plan would be developed in consultation with the appropriate agencies prior to the start of local construction activities.

- If mitigation is required, the project proponent shall maintain and monitor the mitigation area for 5 years following the completion of construction and restoration activities. Monitoring reports shall be submitted to the resource agencies at the completion of restoration and for 5 years following restoration implementation. Monitoring reports shall include photo-documentation, planting specifications, a site layout map, descriptions of materials used, and justification for any deviations from the mitigation plan.

### Impact 3.5.14: Impacts on Heritage and Other Significant Trees

The proposed project could affect heritage and other significant trees.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
<ol style="list-style-type: none"> <li>1. Conduct plant surveys.</li> <li>2. Implement measures if special-status plants are present.</li> <li>3. Mark special status plants and inform construction personnel of their presence.</li> <li>4. Consult with CDFG and/or USFWS if special-status plants cannot be avoided.</li> <li>5. If compensatory mitigation is required, monitor mitigation area.</li> </ol>	<ol style="list-style-type: none"> <li>1. Comply with CDFG protocol. Incorporate results and recommendations into contract specifications. In the event that no special-status plants are present, document findings in a letter to the appropriate resources agency.</li> <li>2. Report information regarding present special-status plants to CNDDDB.</li> <li>3. Sign-off on inspection report and/or MMRP.</li> <li>4. Coordination with CDFG and or USFWS; compliance with recommendations; development of a compensation plan.</li> <li>5. Submit annual monitoring reports to resource agencies that include photo documentation, planting specifications, site layout map.</li> </ol>	<ol style="list-style-type: none"> <li>1. Qualified Botanist</li> <li>2. Qualified Botanist</li> <li>3. Qualified Botanist</li> <li>4. Member Agency</li> <li>5. Member Agency</li> </ol>	<ol style="list-style-type: none"> <li>1. Prior to Construction</li> <li>2. During Construction</li> <li>3. Prior to Construction</li> <li>4. Prior to Construction</li> <li>5. 5 Years Following Construction</li> </ol>	Member Agency

### Mitigation Measure 3.5.14

The following measures will be implemented to avoid or reduce impacts to heritage or other significant trees:

1. Prior to the commencement of construction activities, trees necessary to remove or at risk of being damaged will be identified.
2. A certified arborist will inventory these trees, with the results of the inventory providing species, size (diameter at breast height, or *dbh*), and number of protected trees. Also, in consultation with the appropriate County, the arborist will determine if any are heritage or landmark trees.
3. If any protected trees are identified that will be potentially removed or damaged by construction of the proposed project, design changes will be implemented where feasible to avoid the impact.
4. Any protected trees that are removed will be replaced per applicable City and County tree protection ordinances. Foliage protectors (cages and tree shelters) will be installed to protect the planted trees from wildlife browse. The planted trees will be monitored as required by the ordinance, or regularly during a minimum two-year establishment period and maintenance during the plant establishment period will include irrigation. After the establishment period, the native tree plantings are typically capable of survival and growth without supplemental irrigation.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Identify trees at risk or trees to be removed. 2. Inventory trees. 3. Consult with counties to determine if any identified trees are landmark trees. 4. Replace removed trees. 5. Monitor replacement trees.	1. Incorporate recommendations into contract specifications. 2. Record results in inspection report. 3. Record results in inspection report. 4. Comply with City and County Tree ordinances. 5. Comply with City and County Tree ordinances; sign-off on inspection report/ and or MMRP.	1. Certified Arborist/ Contractor 2. Certified Arborist 3. Member Agency 4. Member Agency 5. Member Agency/ Certified Arborist	1. Prior to Construction 2. Prior to Construction 3. Prior to Construction 4. After Construction is Completed 5. Minimum of two years following completion of construction	Member Agency



## Land Use and Agricultural Resources

### Impact 3.6.3: Impact to Farmland

Construction activities associated with the project could temporarily affect the agricultural use of important farmland.

#### Mitigation Measure 3.6.1

To support the continued productive use of Important Farmlands in the project area, the appropriate Member Agency shall ensure that the following measures are taken, during construction of the project:

- Replace soils over pipelines in a manner that will minimize any negative impacts on crop productivity. The surface and subsurface soil layers will be stockpiled separately and returned to their appropriate locations in the soil profile.
- To avoid over-compaction of the top layers of soil, monitor pre-construction soil densities and return the surface soil (approximately the top 3 feet) to within 5 percent of original density.
- Where necessary, the top soil layers will be ripped to achieve the appropriate soil density. Ripping may also be used in areas where vehicle and equipment traffic have compacted the top soil layers, such as the construction staging areas.
- Avoid working or traveling on wet soil to minimize compaction and loss of soil structure. Before construction begins, geotechnical testing will be done to determine the moisture content limit above which work should not occur. Where working or driving on wet soil cannot be avoided, roadways will be capped with spoils that will be removed at the end of construction and/or ripped and amended with organic material as needed.
- Remove all construction-related debris from the soil surface. This will prevent rock, gravel, and construction debris from interfering with agricultural activities.
- Perform soil density monitoring during backfill and ripping to minimize excessive compaction and minimize effects on future agricultural land use.
- Remove topsoil before excavating in fields. Return it to top of fields to avoid detrimental inversion of soil profiles.
- Control compaction to minimize changes to lateral groundwater flow which could affect both irrigation and internal drainage.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
<p>1. Replace soils over pipelines in a manner that will minimize any negative impacts on crop productivity. Stockpile surface and subsurface soil layers separately and return them to their appropriate locations in the soil profile.</p> <p>2. Monitor pre-construction soil densities and return the surface soil (approximately the top 3 feet) to within 5 percent of original density.</p> <p>3. Where necessary, rip the top soil layers to achieve the appropriate soil density.</p> <p>4. Conduct geotechnical testing to determine the moisture content limit above which work should not occur. Where working or driving on wet soil cannot be avoided, roadways will be capped with spoils that will be removed at the end of construction and/or ripped and amended with organic material as needed.</p> <p>5. Remove all construction-related debris from the soil surface.</p> <p>6. Perform soil density monitoring during backfill and ripping.</p> <p>7. Remove topsoil before excavating in fields. Return it to top of fields to avoid detrimental inversion of soil profiles.</p> <p>8. Control compaction to minimize changes to lateral groundwater flow.</p>	<p>1. Incorporate procedure into construction specifications.</p> <p>2. Incorporate procedure into construction specifications.</p> <p>3. Incorporate procedure into construction specifications.</p> <p>4. Incorporate procedure into construction specifications.</p> <p>5. Incorporate procedure into construction specifications.</p> <p>6. Incorporate procedure into construction specifications.</p> <p>7. Incorporate procedure into construction specifications.</p> <p>8. Incorporate procedure into construction specifications.</p>	<p>1. Contractor/ Member Agency</p> <p>2. Member Agency</p> <p>3. Member Agency</p> <p>4. Member Agency</p> <p>5. Member Agency</p> <p>6. Member Agency</p> <p>7. Member Agency</p> <p>8. Member Agency</p>	<p>1. Prior to Construction/ During Construction</p> <p>2. Prior to Construction/ During Construction</p> <p>3. Prior to Construction/ During Construction</p> <p>4. Prior to Construction/ During Construction</p> <p>5. Prior to Construction/ During Construction</p> <p>6. Prior to Construction/ During Construction</p> <p>7. Prior to Construction/ During Construction</p> <p>8. Prior to Construction/ During Construction</p>	<p>Member Agency</p>

## Transportation and Traffic

### Impact 3.7.1: Temporary Congestion and Delays

Project construction activities could adversely affect traffic and transportation conditions in the project area.

#### Mitigation Measure 3.7.1a

The appropriate Member Agency for each project component shall obtain and comply with local road encroachment permits for roads that are affected by construction activities.

The *Work Area Protection and Traffic Control Manual* includes requirements to ensure safe maintenance of traffic flow through or around the construction work zone, and safe access of police, fire, and other rescue vehicles (CJUTCC, 1996). In addition, the Traffic Management Plan (subject to local jurisdiction review and approval) required by **Mitigation Measure 3.7.1b**, below, would direct how traffic flow is safely maintained during project construction.

#### Mitigation Measure 3.7.1b

The construction contractor for each project component shall prepare and implement a Traffic Control/Traffic Management Plan subject to approval by the appropriate local jurisdiction prior to construction. The plan shall:

- Identify hours of construction (between 8:00 AM and 7:00 PM; no construction shall be permitted between 10:00 PM and 7:00 AM);
- Identify hours for deliveries (Monday – Friday, 9:00 AM to 3:30 PM, or other hours if approved by the appropriate local jurisdiction);
- Include a discussion of haul routes, limits on the length of open trench, work area delineation, traffic control and flagging;
- Identify all access and parking restriction, pavement markings and signage requirements (e.g., speed limit, temporary loading zones);
- Layout a plan for notifications and a process for communication with affected residents and businesses prior to the start of construction. Advance public notification shall include posting of notices and appropriate signage of construction activities. The written notification shall include the construction schedule, the exact location and duration of activities within each street (i.e., which lanes and access point/driveways would be blocked on which days and for how long), and a toll-free telephone number for receiving questions or complaints;
- Include a plan to coordinate all construction activities with emergency service providers in the area at least one month in advance. Emergency service providers shall be notified of the timing, location, and duration of construction activities. All roads shall remain passable to emergency service vehicles at all times;

- Include a plan to coordinate all construction activities with the appropriate local school district at least two months in advance. The school district shall be notified of the timing, location, and duration of construction activities. Coordinate with the appropriate local school district to identify peak circulation periods at schools along the alignment(s) (i.e., the arrival and departure of students), and require their contractor to avoid construction and lane closures during those periods. The construction contractor for each project component shall be required to maintain vehicle, pedestrian, and school bus service during construction through inclusion of such provisions in the construction contract. The assignment of temporary crossing guards at designated intersections may be needed to enhance pedestrian safety during project construction;
- Include the requirement that all open trenches be covered with metal plates at the end of each workday to accommodate traffic and access; and
- Specify the street restoration requirements pursuant to agreements with the local jurisdictions.

**Mitigation Measure 3.7.1c**

The appropriate Member Agency for each project component shall identify all roadway locations where special construction techniques (e.g., horizontal boring, directional drilling or night construction) will be used to minimize impacts to traffic flow.

**Mitigation Measure 3.7.1d**

The appropriate Member Agency for each project component shall develop circulation and detour plans to minimize impact to local street circulation. This may include the use of signing and flagging to guide vehicles through and/or around the construction zone.

**Mitigation Measure 3.7.1e**

The appropriate Member Agency for each project component shall encourage construction crews to park at staging areas to limit lane closures in the public right-of-way.

**Mitigation Measure 3.7.1f**

The appropriate Member Agency for each project component shall consult with the appropriate public transit service providers at least one month prior to construction to coordinate bus stop relocations (as necessary) and to reduce potential interruption of transit service.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Obtain local road encroachment permits for roads that are affected by construction activities.	1. Incorporate permit regulations into contract specifications.	1. Member Agency 2. Member Agency 3. Member Agency 4. Contractor/ Member Agency	1. Prior to Construction 2. Prior to and During Construction	Member Agency

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
<p>2. Implement a traffic control plan which includes the following measures such as identifying hours of construction and deliveries; identifying access and parking restriction, pavement markings and signage requirements; and planning for notifications; coordinating all construction activities with emergency service providers;</p> <p>3. Identify all roadway locations where special construction techniques (e.g., horizontal boring, directional drilling or night construction) will be used to minimize impacts to traffic flow.</p> <p>4. Develop circulation and detour plans to minimize impact to local street circulation. This may include the use of signing and flagging to guide vehicles through and/or around the construction zone.</p> <p>5. Encourage construction crews to park at staging areas to limit lane closures in the public right-of-way.</p> <p>6. Consult with the appropriate public transit service providers at least one month prior to construction to coordinate bus stop relocations (as necessary) and to reduce potential interruption of transit service.</p>	<p>2. Incorporate traffic control plan measures into contract specifications.</p> <p>3. Incorporate techniques into contract specifications.</p> <p>4. Incorporate plans into contract specifications.</p> <p>5. Incorporate parking restrictions into contract specifications.</p> <p>6. Incorporate transit service notification into contract specifications.</p>	<p>5. Member Agency</p> <p>6. Contractor</p>	<p>3. Prior to and During Construction</p> <p>4. Prior to and During Construction</p> <p>5. During Construction</p> <p>6. Prior to Construction</p>	

## Impact 3.7.2: Temporary Disruption to Access

Project construction activity would temporarily disrupt circulation patterns near sensitive land uses (schools, hospitals, fire stations, police stations, and other emergency providers).

### Mitigation Measure 3.7.2a

Pipeline construction near schools shall occur when school is not in session (i.e., summer or holiday breaks). If this is not feasible, a minimum of two months prior to project construction, the appropriate Member Agency for each project component shall coordinate with the appropriate local school district to identify peak circulation periods at schools along the alignment(s) (i.e., the arrival and departure of students), and require their contractor to avoid construction and lane closures during those periods.

### Mitigation Measure 3.7.2b

A minimum of two months prior to project construction, the appropriate Member Agency for each project component shall coordinate with the appropriate local school district to identify alternatives to their Safe Routes to School program, alternatives for the school busing routes and stop locations, and other circulation provisions, as part of the Traffic Control/Traffic Management Plan (see **Mitigation Measure 3.7.1a**).

### Mitigation Measure 3.7.2c

Implement **Mitigation Measure 3.7.1b**.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Restrict pipeline construction near schools to times when school is not in session (i.e., summer or holiday breaks). If this is not feasible, coordinate with the appropriate local school district a minimum of two months prior to project construction to identify peak circulation periods at schools along the alignment(s) (i.e., the arrival and departure of students), and require the contractor to avoid construction and lane closures during those periods.	1. Incorporate restrictions for schools into construction schedule and construction specifications.	1. Member Agency	1. Prior to and During Construction	Member Agency

### Impact 3.7.3: Temporary Disruption to Access

Project construction activity would have temporary effects on alternative transportation or alternative transportation facilities.

#### Mitigation Measure 3.7.3

Implement **Mitigation Measure 3.7.1f**.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Implement Mitigation Measure 3.7.1f.	1. Incorporate transit service notification into contract specifications.	1. Member Agency	1. Prior to Construction	Member Agency

### Impact 3.7.4: Temporary Displacement of Parking

Project construction activity would temporarily create parking demand for construction workers and construction vehicles, and displace parking spaces.

#### Mitigation Measure 3.7.4

Implement **Mitigation Measure 3.7.1e**.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Implement Mitigation Measure 3.7.1e.	1. Incorporate parking restrictions into contract specifications.	1. Contractor	1. During Construction	Member Agency

### Impact 3.7.5: Temporary Potential Traffic Hazards

Project construction activity would temporarily increase the potential for accidents on project roadways.

#### Mitigation Measure 3.7.5

Implement **Mitigation Measure 3.7.1b** through **3.7.1f**.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Implement Mitigation Measure 3.7.1b. 2. Implement Mitigation Measure 3.7.1c. 3. Implement Mitigation Measure 3.7.1d. 4. Implement Mitigation Measure 3.7.1e. 5. Implement Mitigation Measure 3.7.1f.	1. Incorporate traffic control plan measures into contract specifications. 2. Incorporate techniques into contract specifications 3. Incorporate plans into contract specifications. 4. Incorporate parking restrictions into contract specifications. 5. Incorporate transit service notification into contract specifications.	1. Member Agency 2. Contractor/ Member Agency 3. Member Agency 4. Contractor 5. Member Agency	1. Prior to and During Construction 2. Prior to and During Construction 3. Prior to and During Construction 4. During Construction 5. Prior to Construction	Member Agency

### Impact 3.7.6: Road Wear

Project construction activity would increase wear and tear on the designated haul routes used by construction vehicles to access the project work sites.

#### Mitigation Measure 3.7.6

Roads damaged by construction shall be repaired to a structural condition equal to that which existed prior to construction activity as per conditions of the encroachment permit (see **Mitigation Measure 3.7.1a**).

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Obtain local road encroachment permits for roads that are affected by construction activities.	1. Incorporate permit regulations into contract specifications.	1. Member Agency	1. Prior to Construction	Member Agency



## Air Quality

### Impact 3.8.1: Temporary Construction Emissions of Criteria Pollutants

Project construction activities could result in substantial short-term criteria pollutant emissions.

#### Mitigation Measure 3.8.1a: Construction Fugitive Dust Control Plan

The appropriate Member Agency shall require its contractor(s) to implement a dust control plan that shall include the following dust control procedures during construction as required by the BAAQMD:

- Water all active construction areas at least twice daily, taking into consideration temperature and wind conditions.
- Cover all trucks hauling soil, sand, and other loose materials *or* require trucks to maintain at least two feet of freeboard.
- Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on unpaved access roads, parking areas and staging areas at construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
- Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).
- Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.)
- Limit traffic speeds on unpaved roads to 15 mph.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways, consistent with **Mitigation Measure 3.1.2**, Erosion Control.
- Replant vegetation in disturbed areas as quickly as possible.

#### Mitigation Measure 3.8.1b: Construction Exhaust Emissions Control Plan

The appropriate Member Agency shall require its contractor(s) to implement an exhaust emissions control plan that shall include the following controls and practices:

- On road vehicles with a gross vehicular weight rating of 10,000 pounds or greater shall not idle for longer than five minutes at any location as required by Section 2485 of Title 13,

Division 3, Chapter 10, Article 1 of the California Code of Regulations. This restriction does not apply when vehicles remain motionless during traffic or when vehicles are queuing.

- Off road equipment engines shall not idle for longer than five minutes per Section 2449(d)(3) of Title 13, Division 3, Chapter 9, Article 4.8 of the California Code of Regulations. All vehicle operators shall receive a written idling policy to inform them of idling restrictions. The policy shall list exceptions to this rule that include the following: idling when queuing; idling to verify that the vehicle is in safe operating condition; idling for testing, servicing, repairing or diagnostic purposes; idling necessary to accomplish work for which the vehicle was designed (such as operating a crane); idling required to bring the machine to operating temperature as specified by the manufacturer; and idling necessary to ensure safe operation of the vehicle.
- Off road engines greater than 50 horsepower shall, at a minimum, meet Tier 2 emissions standards. When available, higher Tier engines shall be utilized.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Implement BAAQMD Basic Dust Control Measures. 2. Include exhaust controls in contractor specifications. 3. Implement exhaust control measures.	1. Incorporate in contract specifications and Sign-off on inspection report and/ or MMRP that measures are being implemented. 2. Review contract specifications. 3. Sign-off on inspection report and/ or MMRP.	1. Contractor 2. Contractor 3. Contractor	1. During Construction 2. Design and prior to construction 3. During Construction	Member Agency

### Impact 3.8.4: Long term Increase in GHG Emissions

Project construction and operation would increase GHG emissions potentially interfering with the State’s GHG reduction goals.

#### Mitigation Measure 3.8.1b: Construction Exhaust Emissions Control Plan

(see p. 3.8-22 above).

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Implement Mitigation Measure 3.8.1b.	1. Review contract specifications.	1. Contractor	1. Design and During Construction	Member Agency

## Noise

### Impact 3.9.1: Temporary construction noise

Construction activity would violate standards established in the local general plans or noise ordinances, and/or would adversely affect nearby sensitive receptors.

#### Mitigation Measure 3.9.1

The appropriate Member Agency shall develop and implement a Construction Noise Reduction Plan that requires, at a minimum, the following:

- The contractor shall locate all stationary noise-generating equipment, including hammer bore and drill rigs, as far as possible from nearby noise-sensitive receptors. Stationary noise sources located within 500 feet of noise-sensitive receptors shall be equipped with noise reducing engine housings, and the line of sight between such sources and nearby sensitive receptors shall be blocked by portable acoustic barriers.
- The contractor shall assure that construction equipment with internal combustion engines have sound control devices at least as effective as those provided by the original equipment manufacturer. No equipment shall be permitted to have an un-muffled exhaust.
- All construction activities within unincorporated Sonoma County shall be limited to between the hours of 7 a.m. and 6 p.m. on weekdays and between 9 a.m. and 5 p.m. on Saturdays.
- Residences and other sensitive receptors within 200 feet of a construction area shall be notified of the construction schedule in writing, at least two weeks prior to the commencement of construction activities. This notice shall indicate the allowable hours of construction activities as specified by the applicable local jurisdiction or as defined by this mitigation measure. The construction contractor shall designate a noise disturbance coordinator who would be responsible for responding to complaints regarding construction noise. The coordinator shall determine the cause of the complaint and ensure that reasonable measures are implemented to correct the problem. A contact number for the noise disturbance coordinator shall be conspicuously placed on construction site fences and entrances and included in the construction schedule notification sent to nearby residences and sensitive receptors.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Develop and Implement Construction Noise Reduction Plan. 2. Appropriately locate all stationary noise-generating equipment. 3. Use appropriate equipment.	1. Incorporate into contract specifications; sign-of on inspection report and/or MMRP. 2. Incorporate into contract specifications; sign-of on inspection report and/or MMRP.	1. Contractor 2. Contractor 3. Contractor 4. Contractor 5. Contractor 6. Contractor	1. Prior to and During Construction 2. During Construction 3. During Construction 4. During Construction	Member Agency

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
4. Limit construction activities to specified work hours. 5. Notify sensitive receptors of construction schedule. 6. Designate a noise disturbance coordinator.	3. Incorporate into contract specifications; sign-of on inspection report and/or MMRP. 4. Sign-of on inspection report and/or MMRP. 5. Sign-of on inspection report and/or MMRP. 6. Incorporate into contract specifications; sign-of on inspection report and/or MMRP.		5. At least two weeks Prior to Construction 6. Prior to Construction	

### Impact 3.9.2: Temporary vibration impacts

Construction activities could expose sensitive receptors to excessive ground-borne vibration levels.

#### Mitigation Measure 3.9.2

The appropriate Member Agency will implement the following measure:

The construction contractor shall use a trenchless technology (e.g., horizontal directional drill, lateral drilling, etc.) other than jack and bore when there are structures within 100 feet of the proposed activities. If the construction contractor provides the Member Agency with acceptable documentation indicating that alternative trenchless technology is not feasible for the crossing, the contractor shall develop and implement a Construction Vibration Mitigation Plan to minimize construction vibration damage using all reasonable and feasible means available, including siting the jack and bore as far as possible from all nearby structures. The plan shall provide a procedure for establishing thresholds and limiting vibration values for potentially affected structures based on an assessment of each structure’s ability to withstand the loads and displacements due to construction vibrations. The plan should also include the development of a vibration monitoring plan to be implemented during construction of particular crossing.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Implement trenchless technology, when appropriate. 2. Develop a Construction Vibration Mitigation Plan in the event that trenchless technology is not feasible.	1. Incorporate into contract specifications. 2. Incorporate into contract specifications.	1. Contractor 2. Contractor	1. During Construction 2. Prior to and During Construction	Member Agency

### Impact 3.9.3: Permanent Increases to Ambient Noise Levels

Operational activities could permanently generate noise levels above existing ambient levels in the vicinity of sensitive receptor locations.

#### Mitigation Measure 3.9.3

The appropriate Member Agency shall implement the following measure:

All new pump stations shall be located within enclosed structures with adequate setback and screening to achieve acceptable regulatory noise standards for industrial uses as well as to achieve acceptable levels at the property lines of nearby residences, as determine by the applicable local jurisdiction. Noise enclosures shall be designed to reduce equipment noise levels by at least 20 dBA.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Enclose pump stations with screens.	1. Incorporate into construction specifications; Sign-off inspection report and/or MMRP.	1. Contractor/ Member Agency	1. Design and Prior to Construction	Member Agency

## Hazards and Hazardous Materials

### Impact 3.10.1: Exposure to Hazardous Materials

Project construction could expose workers and the public to hazardous materials that could be present in the soil or shallow groundwater encountered during excavation.

#### Mitigation Measure 3.10.1a

Project contract specifications shall require that, in the event that evidence of potential soil contamination such as soil discoloration, noxious odors, debris, or buried storage containers, is encountered during construction, the contractor will have a contingency plan for sampling and analysis of potentially hazardous substances, including use of a photoionization detector. The required handling, storage, and disposal methods shall depend on the types and concentrations of chemicals identified in the soil. Any site investigations or remediation shall comply with applicable laws and will coordinate with the appropriate regulatory agencies,

#### Mitigation Measure 3.10.1b

If unknown USTs are discovered during construction, the UST, associated piping, and impacted soil shall be removed by a licensed and experienced UST removal contractor. The UST and contaminated soil shall be removed in compliance with applicable county and state requirements governing UST removal.

### Mitigation Measure 3.10.1c

Prepare a project-specific Health and Safety Plan that would apply to excavation activities. The plan shall establish policies and procedures to protect workers and the public from potential hazards posed by hazardous materials. The plan shall be prepared according to federal and California OSHA regulations and submitted to the appropriate agency with jurisdiction prior to beginning site activities.

### Mitigation Measure 3.10.1d

Project contract specifications shall include a Dust Abatement Program to minimize potential public health impacts associated with exposure to contaminants in soil dust.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
<ol style="list-style-type: none"> <li>1. Require that in the event that evidence of potential soil contamination such as soil discoloration, noxious odors, debris, or buried storage containers, is encountered during construction, the contractor will have a contingency plan for sampling and analysis of potentially hazardous substances, including use of a photoionization detector. Any site investigations or remediation shall comply with applicable laws and will coordinate with the appropriate regulatory agencies.</li> <li>2. Remove USTs, associated piping, and any impacted soil discovered during construction.</li> <li>3. Prepare a project-specific Health and Safety Plan that would apply to excavation activities. The plan shall be prepared according to federal and California OSHA regulations and submitted to the appropriate agency with jurisdiction prior to beginning site activities.</li> <li>4. Implement a Dust Abatement Program.</li> </ol>	<ol style="list-style-type: none"> <li>1. Incorporate requirement into construction specifications.</li> <li>2. Incorporate requirement into construction specifications; Comply with applicable county and state requirements governing UST removal.</li> <li>3. Incorporate plan requirements into construction specifications.</li> <li>4. Incorporate program requirements into construction specifications.</li> </ol>	<ol style="list-style-type: none"> <li>1. Contractor/ Member Agency</li> <li>2. Licensed UST Removal Contractor/ Member Agency</li> <li>3. Member Agency</li> <li>4. Member Agency</li> </ol>	<ol style="list-style-type: none"> <li>1. During Construction</li> <li>2. During Construction</li> <li>3. Prior to and During Construction</li> <li>4. Prior to and During Construction</li> </ol>	<p>Member Agency</p>

## Impact 3.10.2: Release of Hazardous Materials During Construction

Project construction could increase the potential for accidental release of hazardous materials.

### Mitigation Measure 3.10.2a

Consistent with the SWPPP requirements, the construction contractor shall be required to implement BMPs for handling hazardous materials onsite. The use of construction BMPs will minimize any adverse effects on groundwater and soils, and will include, but not limited to, the following:

- Follow manufacturers' recommendations and regulatory requirements for use, storage, and disposal of chemical products and hazardous materials used in construction;
- Spill control and countermeasures, including employee spill prevention/response training;
- Avoid overtopping construction equipment fuel gas tanks;
- During routine maintenance of construction equipment, properly contain and remove grease and oils; and
- Properly dispose of discarded containers of fuels and other chemicals.

### Mitigation Measure 3.10.2b

The contractor shall follow the provisions of California Code of Regulations, Title 8, Sections 5163 through 5167 for General Industry Safety Orders to protect the project area from being contaminated by the accidental release of any hazardous materials and/or wastes. The local CUPA agency will be contacted for any site-specific requirements regarding hazardous materials or hazardous waste containment or handling.

### Mitigation Measure 3.10.2c

Oil and other solvents used during maintenance of construction equipment shall be recycled or disposed of in accordance with applicable regulatory requirements. All hazardous materials shall be transported handled, and disposed of in accordance with applicable regulatory requirements.

### Mitigation Measure 3.10.2d

In the event of an accidental release of hazardous materials during construction, containment and clean up shall occur in accordance with applicable regulatory requirements.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
<ol style="list-style-type: none"> <li>1. Implement BMPs for handling hazardous materials onsite.</li> <li>2. Protect the project area from being contaminated by the accidental release of any hazardous materials and/or wastes. Contact the local CUPA agency for any site-specific requirements regarding hazardous materials or hazardous waste containment or handling.</li> <li>3. Recycle or dispose of oil and other solvents used during maintenance of construction equipment in accordance with applicable regulatory requirements.</li> <li>4. Contain and clean up accidental releases of hazardous materials.</li> </ol>	<ol style="list-style-type: none"> <li>1. Incorporate BMPs into construction specifications; sign-off on inspection report and/or MMRP.</li> <li>2. Incorporate provisions into the construction specifications. Comply with the provisions of California Code of Regulations, Title 8, Sections 5163 through 5167 for General Industry Safety Orders. Coordinate with CUPA agency and comply with their recommendations.</li> <li>3. Incorporate requirement into construction specifications; Comply with regulatory requirements.</li> <li>4. Incorporate requirement into construction specifications; Comply with regulatory requirements.</li> </ol>	<ol style="list-style-type: none"> <li>1. Contractor/ Member Agency</li> <li>2. Member Agency</li> <li>3. Member Agency</li> <li>4. Member Agency</li> </ol>	<ol style="list-style-type: none"> <li>1. During Construction</li> <li>2. Prior to construction</li> <li>3. During construction</li> <li>4. During Construction</li> </ol>	Member Agency

### Impact 3.10.4: Wildland Fire Hazard

Construction activities in grassland areas could have the potential to expose people or equipment to risk of loss, injury, or death involving wildland fires.

#### Mitigation Measure 3.10.4a

For applicable Member Agencies, in consultation with local fire agencies, a Fire Safety Plan will be developed for each of the service areas associated with the project. The Fire Safety Plan(s) will describe various potential scenarios and action plans in the event of a fire.

#### Mitigation Measure 3.10.4b

For applicable Member Agencies, during project construction, all staging areas, welding areas, or areas slated for development using spark-producing equipment will be cleared of dried vegetation or other material that could ignite. Any construction equipment that includes a spark arrestor shall



be equipped with a spark arrestor in good working order. All vehicles and crews working at the project site(s) will have access to functional fire extinguishers at all times. In addition, construction crews will be required to have a spotter during welding activities to look out for potentially dangerous situations, including accidental sparks.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Develop Fire Safety Plan. 2. Clear all staging areas, welding areas, or areas slated for development using spark-producing equipment of dried vegetation or other material that could ignite. Equip construction equipment a spark arrestor in good working order. All vehicles and crews working at the project site(s) will have access to functional fire extinguishers at all times. Require construction crews to have a spotter during welding activities to look out for potentially dangerous situations, including accidental sparks.	1. Incorporate Fire Safety Plan into construction specifications. 2. Incorporate measures into construction specifications; sign-off on inspection report and/or MMRP.	1. Member Agency 2. Contractor/ Member Agency	1. Prior to Construction 2. During Construction	Member Agency

## Public Services and Utilities

### Impact 3.11.1: Temporary Effect on Response Times for Emergency Service Providers

Project construction activities could temporarily affect response times for emergency service providers.

#### Mitigation Measure 3.11.1

The Member Agencies will coordinate with local emergency service providers in its service area to inform them of the proposed construction activities and schedule, and provide temporary alternate access routes around construction areas as necessary.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
<ol style="list-style-type: none"> <li>Coordinate with local emergency providers to inform them of the proposed construction activities and schedule.</li> <li>Provide alternate routes for emergency service providers around construction areas as necessary.</li> </ol>	<ol style="list-style-type: none"> <li>Incorporate into contract specifications</li> <li>Sign-off on inspection report and/or MMRP</li> </ol>	<ol style="list-style-type: none"> <li>Member Agency/ Contractor</li> <li>Contractor</li> </ol>	<ol style="list-style-type: none"> <li>Prior to construction</li> <li>During Construction</li> </ol>	Member Agency

### Impact 3.11.2: Short-term Police and Fire Assistance

Project construction activities could require short-term police and fire protection services to assist in traffic management or in the event of an accident.

#### Mitigation Measure 3.11.2

Public service providers shall provide, upon request, a copy of the Traffic Control Plan to the related police and fire agencies for their review prior to construction. The appropriate Member Agency shall provide 72-hour notice to the local service providers prior to construction of individual pipeline segments. Discussion on the Traffic Control Plan is provided in Section 3.7, Traffic and Circulation.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
<ol style="list-style-type: none"> <li>Provide Traffic Control Plan to local emergency service providers for review.</li> <li>Provide notice to local fire and police agencies to notify them of construction of individual segments of pipeline.</li> </ol>	<ol style="list-style-type: none"> <li>Sign-off on inspection report and/or MMRP.</li> <li>Sign-off on inspection report and/or MMRP.</li> </ol>	<ol style="list-style-type: none"> <li>Contractor</li> <li>Member Agency/ Contractor</li> </ol>	<ol style="list-style-type: none"> <li>Prior to Construction</li> <li>72 hours Prior to Construction at each site.</li> </ol>	Member Agency

### Impact 3.11.3: Temporary Accidental Disruption to Utility Services

Project construction could result in temporary planned or accidental disruption to utility services.

#### Mitigation Measure 3.11.3

The Member Agencies will identify utilities along the proposed pipeline routes and project sites prior to construction and implement the following measures:

- a. Utility excavation or encroachment permits shall be obtained as required from the appropriate agencies. These permits include measures to minimize utility disruption. The service provider and its contractors shall comply with permit conditions regarding utility disruption.
- b. Utility locations shall be verified through the use of the Underground Service Alert services and/or field survey (potholing).
- c. As necessary, detailed specifications shall be prepared as part of the design plans to include procedures for the excavation, support, and fill of areas around utility cables and pipes. All affected utility services shall be notified of construction plans and schedule. Arrangements shall be made with these entities regarding protection, relocation, or temporary disconnection of services.
- d. In areas where the pipeline would traverse parallel to underground utility lines within five feet, the project applicant shall employ special construction techniques, such as trench wall-support measures to guard against trench wall failure and possible resulting loss of structural support for the excavated areas.
- e. Residents and businesses in the project corridor shall be notified of any planned utility service disruption two to four days in advance, in conformance with county and state standards.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Acquire utility excavation or encroachment permits. 2. Verify utility locations using Underground Service Alert services and/or field survey. 3. Include procedures for excavation, support, and fill of areas around utility cables and pipes. 4. Coordinate with affected local utility services to notify them of the proposed construction activities and schedule. 5. Implement special construction techniques, as needed. 6. Notify residents and businesses in advance to inform them of proposed construction activities and schedule.	1. Comply with regulatory permit, Copies of approved permits will be available onsite. 2. Incorporate into contract specifications. 3. Incorporate in design and contract specifications 4. Incorporate into contract specifications; sign-off on inspection report and/or MMRP 5. Sign-off on inspection report and/or MMRP 6. Sign-off on inspection report and/or MMRP	1. Contractor/ Member Agency 2. Contactor 3. Contractor 4. Contractor/ Member Agency 5. Contractor 6. Contractor/ Member Agency	1. Prior to Construction 2. Prior to Construction 3. Prior to Construction 4. Prior to Construction 5. During Construction 6. Prior to Construction	Member Agency

## Cultural Resources

### Impact 3.12.1: Impact to Cultural Resources/Archaeological Sites

Project construction could affect existing cultural resources or uncover unknown and/or buried archaeological materials in areas of high prehistoric archaeological sensitivity.

#### Mitigation Measure 3.12.1

The appropriate Member Agency will incorporate the following measures:

**Mitigation Measure 3.12.1a: Prepare a Cultural Resources Monitoring Plan.** Prior to authorization to proceed, or issuance of permits, the applicant shall prepare and submit a cultural resources monitoring plan to the appropriate jurisdiction for review and approval. Monitoring shall be required for all surface alteration and subsurface excavation work including trenching, boring, grading, use of staging areas and access roads, and driving vehicles and equipment within all areas delineated as sensitive for cultural resources. A qualified professional archaeologist (cultural resources monitor) that is approved by each Member Agency in consultation with all affected jurisdictions shall prepare the plan. The plan shall address (but not be limited to) the following issues:

- Training program for all construction and field workers involved in site disturbance;
- Person(s) responsible for conducting monitoring activities, including Native American monitors;
- How the monitoring shall be conducted and the required format and content of monitoring reports, including any necessary archaeological re-survey of the final pipeline alignment (including the need to conduct shovel-test units or auger samples to identify deposits in advance of construction), assessment, designation and mapping of the sensitive cultural resource areas on final project maps, assessment and survey of any previously unsurveyed areas;
- Person(s) responsible for overseeing and directing the monitors;
- Schedule for submittal of monitoring reports and person(s) responsible for review and approval of monitoring reports;
- Procedures and construction methods to avoid sensitive cultural resource areas (i.e. boring conduit underneath recorded or discovered cultural resource site);
- Clear delineation and fencing of sensitive cultural resource areas requiring monitoring;
- Physical monitoring boundaries (e.g., 200-foot radius of a known site);
- Protocol for notifications in case of encountering of cultural resources, as well as methods of dealing with the encountered resources (e.g., collection, identification, curation);

- Methods to ensure security of cultural resources sites;
- Protocol for notifying local authorities (i.e. Sheriff, Police) should site looting and other illegal activities occur during construction.

**Mitigation Measure 3.12.1b: Archaeological and Native American Monitoring.** If an intact archaeological deposit is encountered, all soil disturbing activities in the vicinity of the deposit shall cease until the deposit is evaluated. The appropriate Member Agency, as necessary, shall retain the services of a Native American monitor and a qualified archaeological consultant that has expertise in California prehistory to monitor ground-disturbing within areas designated as being sensitive for buried cultural resources. The archaeological monitor shall immediately notify the appropriate Member Agency of the encountered archaeological deposit. The monitors shall, after making a reasonable effort to assess the identity, integrity, and significance of the encountered archaeological deposit, present the findings of this assessment to NBWRA and the appropriate Member Agency. During the course of the monitoring, the archaeologist may adjust the frequency—from continuous to intermittent—of the monitoring based on the conditions and professional judgment regarding the potential to impact resources.

If a Member Agency, in consultation with the monitors, determines that a significant archaeological resource is present within their jurisdiction and that the resource could be adversely affected by the NBWRP, the Member Agency shall:

- Re-design the NBWRP to avoid any adverse effect on the significant archaeological resource; *or*,
- Implement an archaeological data recovery program (ADRP) (unless the archaeologist determines that the archaeological resource is of greater interpretive than research significance and that interpretive use of the resource is feasible). If the circumstances warrant an archaeological data recovery program, an ADRP shall be conducted. The project archaeologist and the Member Agency shall meet and consult to determine the scope of the ADRP. The archaeologist shall prepare a draft ADRP that shall be submitted to the appropriate Member Agency for review and approval. The ADRP shall identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The ADRP shall identify the scientific/historic research questions applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, shall be limited to the portions of the historic property that could be adversely affected by NBWRP. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical.

### **Mitigation Measure 3.12.1c: Cultural Resources Assessment for Staging Areas**

When locations for staging are defined the areas of potential effect should be subject to a cultural resources investigation that includes, at a minimum:

- An updated records search at the Northwest Information Center;

- An intensive survey of all areas within the lots;
- A report disseminating the results of this research; and,
- Recommendations for additional cultural resources work necessary to mitigate any adverse impacts to recorded and/or undiscovered cultural resources.

### **Mitigation Measure 3.12.1d: Inadvertent Discoveries**

If discovery is made of items of historical or archaeological interest, the contractor shall immediately cease all work activities in the area (within approximately 100 feet) of discovery. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. After cessation of excavation the contractor shall immediately contact the NBWRA and appropriate Member Agency. The contractor shall not resume work until authorization is received from the appropriate Member Agency.

- In the event of unanticipated discovery of archaeological indicators during construction, the Member Agency shall retain the services of a qualified professional archaeologist to evaluate the significance of the items prior to resuming any activities that could impact the site.
- In the case of an unanticipated archaeological discovery, if it is determined that the find is unique under NHPA and/or potentially eligible for listing in the National Register, and the site cannot be avoided, appropriate Member Agency shall provide a research design and excavation plan, prepared by an archaeologist, outlining recovery of the resource, analysis, and reporting of the find. The research design and excavation plan shall be submitted to NBWRA and appropriate Member Agency and approved by the appropriate Member Agency prior to construction being resumed.

### **Mitigation Measure 3.12.1e: Project-level Cultural Resources Assessment**

When project-level plans are completed for the Basic System; the Partially Connected System; and the Fully Connected System, NBWRA the appropriate Member Agency will conduct a cultural resources investigation for the APE that includes, at a minimum:

- An updated records search at the NWIC;
- An intensive cultural resources survey of the APE;
- A report disseminating the results of this research; and,
- Recommendations for additional cultural resources work necessary to mitigate any adverse impacts to recorded and/or undiscovered cultural resources.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
<ol style="list-style-type: none"> <li>1. Prepare Cultural Resources Monitoring Plan.</li> <li>2. Monitor predetermined culturally sensitive areas; cease work if cultural artifacts or humans remains are discovered.</li> <li>3. Conduct cultural resources investigation for staging areas.</li> <li>4. Cease work within 100 feet of a find and inform the appropriate Member Agency in the event of an inadvertent discovery of cultural resources.</li> <li>5. Conduct a project-level Cultural Resources Assessment for program-level areas.</li> </ol>	<ol style="list-style-type: none"> <li>1. Incorporate into contract specifications.</li> <li>2. Incorporate into contract specifications, and make recommendations for design modification if necessary.</li> <li>3. Incorporate into contract specifications.</li> <li>4. Copies of DPR 422 or 523 shall be retained in Member Agency files; incorporate recommendations for design modification if necessary.</li> <li>5. Incorporate into contract specifications, and make recommendations for design modification if necessary.</li> </ol>	<ol style="list-style-type: none"> <li>1. Qualified Archaeologist</li> <li>2. Qualified Archaeologist and Native American Monitor</li> <li>3. Qualified Archaeologist</li> <li>4. Contractor/ Member Agency</li> <li>5. Qualified Archaeologist</li> </ol>	<ol style="list-style-type: none"> <li>1. Prior to Construction</li> <li>2. During Construction</li> <li>3. Prior to Construction</li> <li>4. During Construction</li> <li>5. Following Project Design; Prior to Construction</li> </ol>	<p>Member Agency</p>

### Impact 3.12.2: Discovery of Human Remains

Project construction could result in damage to previously unidentified human remains.

#### Mitigation Measure 3.12.2: Discovery of Human Remains

If potential human remains are encountered, the appropriate Member Agency shall halt work in the vicinity of the find and contact the county coroner in accordance with Public Resources Code Section 5097.98 and Health and Safety Code Section 7050.5. If the coroner determines the remains are Native American, the coroner shall contact the NAHC. As provided in Public Resources Code Section 5097.98, the NAHC shall identify the person or persons believed to be most likely descended from the deceased Native American. The most likely descendent makes recommendations for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. In the event of discovery of human remains, cease work and contact county coroner and NAHC if necessary.	1. Sign-off on inspection report and/ or MMRP; coordinate with NAHC.	1. Contractor/ Member Agency	1. During Construction	Member Agency

## Recreation

### Impact 3.13.1: Temporary Disturbance

Project construction could result in short-term disturbance adjacent to recreational facilities.

#### Mitigation Measure 3.13.1a

The appropriate Member Agency shall coordinate with the appropriate local and regional agencies to identify detour routes for the bikeways and trails during construction where feasible, as part of the Traffic Control/Traffic Management Plan (see **Measure 3.11.1a**).

#### Mitigation Measure 3.13.1b

Implement Mitigation Measures 3.8-1a through 3.8.1b, and Mitigation Measures 3.9-1 through 3.9-3.

#### Mitigation Measure 3.13.2

Before beginning construction, the contractor will develop, in consultation with the appropriate representative(s) of the affected park's managing agency, a plan indicating how public access to the park will be maintained during construction. If needed, flaggers will be stationed near the construction activity area to direct and assist members of the public around the activity areas while maintaining access to the parks.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Identify and establish detours for disrupted bikeways and trails.	1. Coordination with local and regional agencies.	1. Contractor/ Member Agency	1. Prior to and During Construction	Member Agency
2. Maintain public access; station flaggers to assist in directing public.	2. Coordination with local and regional agencies.	2. Contractor/ Member Agency	2. Prior to and During Construction	
3. Implement Mitigation Measure 3.8.1a.	3. Incorporate in contract specifications and Sign-off on inspection report and/ or MMRP that measures are being implemented.	3. Contractor	3. Design and Prior to Construction	
4. Implement Mitigation Measure 3.8.1b.		4. Contractor	4. Design and prior to Construction	
5. Implement Mitigation Measure 3.9.1.		5. Contractor	5. Prior to and During Construction	
		6. Contractor	6. Prior to and During Construction	
		7. Contractor/ Member Agency		



Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
6. Implement Mitigation Measure 3.9.2. 7. Implement Mitigation Measure 3.9.3.	4. Review contract specifications. 5. Incorporate into contract specifications; sign-off on inspection report and/or MMRP. 6. Incorporate into contract specifications. 7. Incorporate into contract specifications; sign-off on inspection report and/or MMRP.		7. Design and Prior to Construction	

## Aesthetics

### Impact 3.14.1: Temporary Impact to Scenic Vistas

NBWRP construction activities could temporarily affect scenic vistas or corridors in the NBWRP area.

#### Mitigation Measure 3.14.1a

Following construction activities, disturbed areas shall be restored to baseline conditions, including repaving roadways, replanting trees, and/or reseeding with a native seed mix typical of the immediately surrounding area.

#### Mitigation Measure 3.14.1b

Berms around constructed reservoirs shall be vegetated with native seed mixes to soften the visual effect of the reservoirs from adjacent roadways.

#### Mitigation Measure 3.14-1c

Design elements shall be incorporated to enhance visual integration of the booster pump station and distribution pump station with their surroundings. Proposed facilities shall be painted low-glare earth-tone colors that blend with the surrounding terrain. Highly reflective building materials and/or finishes shall not be used in the designs for proposed facilities.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
<ol style="list-style-type: none"> <li>Restore disturbed areas to baseline conditions by repaving, replanting, and reseeding land.</li> <li>Incorporate buffers, integrate natural design elements, and use appropriate building materials.</li> </ol>	<ol style="list-style-type: none"> <li>Inspect final site conditions after construction and verify its condition is it equivalent to that prior to construction. Incorporated into construction specifications.</li> <li>Review construction specifications.</li> </ol>	<ol style="list-style-type: none"> <li>Contractor/ Member Agency</li> <li>Contractor</li> </ol>	<ol style="list-style-type: none"> <li>After Construction</li> <li>Design and During Construction</li> </ol>	Member Agency

### Impact 3.14.2: Impact to Views Along Scenic Roadways

Implementation of NBWRP could affect views along eligible or designated Caltrans Scenic Highways, or locally-defined scenic routes.

#### Mitigation Measures

The appropriate Member Agency will implement the following measures:

- Mitigation Measure 3.14.1a**
- Mitigation Measure 3.14.1b**

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
<ol style="list-style-type: none"> <li>Implement Mitigation Measure 3.14.1a.</li> <li>Implement Mitigation Measure 3.14.1b.</li> </ol>	<ol style="list-style-type: none"> <li>Review construction specifications.</li> <li>Review construction specifications and landscape design.</li> </ol>	<ol style="list-style-type: none"> <li>Contractor/ Member Agency</li> <li>Contractor</li> </ol>	<ol style="list-style-type: none"> <li>After Construction</li> <li>Design and During Construction</li> </ol>	Member Agency

### Impact 3.14.3: Source of Light or Glare

NBWRP components could introduce new sources of light and glare on the project sites.

#### Mitigation Measures

The appropriate Member Agency will implement the following measures:

**Mitigation Measure 3.14.3a:** The exterior lighting installed around the operational and capacity storage reservoirs, distribution pump station, storage tanks, and booster pump station shall be of a minimum standard required to ensure safe visibility. Lighting also shall be shielded and directed downward to minimize impacts of light and glare.

**Measure 3.14.3b:** All exterior lighting is directed downward and oriented to insure that limited light source is directly visible from neighboring residential areas. If necessary, landscaping would be provided around proposed facilities. The vegetation would be selected, placed, and maintained to minimize off-site light and glare onto surrounding areas.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
<ol style="list-style-type: none"> <li>Incorporate shielded, downward-oriented, low intensity light sources in design.</li> <li>Plant vegetation to act as a natural buffer around areas that require lighting.</li> </ol>	<ol style="list-style-type: none"> <li>Review construction specifications.</li> <li>Review construction specifications.</li> </ol>	<ol style="list-style-type: none"> <li>Member Agency</li> <li>Member Agency</li> </ol>	<ol style="list-style-type: none"> <li>During Design</li> <li>During Design and After Construction</li> </ol>	Member Agency

### Impact 3.14.4: Long-term Impact to Aesthetic Character

Development of the proposed facilities, particularly pump stations and storage reservoirs, would permanently alter the aesthetic character of the project area.

### Mitigation Measures

The appropriate Member Agency will implement the following measures:

**Mitigation Measure 3.14.4a:** After construction of any facility that is above grade and visible to sensitive receptors, visual screening and vegetation measures will be implemented to reduce impacts to scenic views. Trees or other suitable vegetation along the fenceline of the facility should be incorporated to reduce the industrial appearance of the structures. Similarly, berms for new storage ponds or pond reconfiguration will be re-vegetated to reduce the barren appearance of the berms.

**Mitigation Measure 3.14.4b:** Dark colored, non-reflective building materials should be used for project components that cause potentially significant impact from glare to visual resources.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
<ol style="list-style-type: none"> <li>Install screens and vegetation, and trees along fenceline; seed reconfigured berms with native grasses.</li> <li>Integrate natural design elements, and use appropriate building materials.</li> </ol>	<ol style="list-style-type: none"> <li>Review construction specifications and landscape design.</li> <li>Review construction specifications.</li> </ol>	<ol style="list-style-type: none"> <li>Contractor/ Member Agency</li> <li>Contractor/ Member Agency</li> </ol>	<ol style="list-style-type: none"> <li>Design and After Construction</li> <li>Design and During Construction</li> </ol>	Member Agency

## Cumulative Impacts

### Impact 4.1. Construction-related Cumulative Impacts.

Concurrent construction of several projects within the Sonoma, Napa, and Marin County areas could result in cumulative short-term impacts associated with construction activities. If implemented at the same time as other construction projects, construction of facilities under all three of the alternatives could contribute to potential short-term cumulative effects associated with erosion, cultural resource disturbance, disturbance of adjacent land uses, traffic disruption, dust generation, construction noise, aesthetics, air quality, biological resources, hazardous materials, water quality, public services and utilities. However, construction-related impacts would not result in long term alteration of the environment, and could be mitigated to less than significant levels through the use of mitigation measures identified throughout Chapter 3.

### Mitigation Measure

The appropriate Member Agency will implement the following measure:

**Mitigation Measure 4.1a:** Member Agencies shall coordinate construction activities along selected alignments to identify overlapping pipeline routes, project areas, and construction schedules. To the extent feasible, construction activities shall be coordinated to consolidate the occurrence of short-term construction-related impacts.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Coordinate construction activities to identify overlapping routes and construction schedules.	1. Incorporate into contract specifications.	1. Member Agency	1. Prior to Construction	Member Agency

### Impact 4.5

Concurrent construction of NBWRP with other projects proposed in the Sonoma, Napa, and Marin County area, and other water and wastewater infrastructure projects, could result in cumulative long-term impacts to biological resources.

### Mitigation Measures

Mitigation Measures in Section 3.5.

Implementation Procedure	Monitoring and Reporting Actions	Monitoring Responsibility	Monitoring Schedule	Responsible Agency
1. Implement Mitigation Measure 3.5.1.	1. Comply with regulatory permit; Sign-off on inspection report and/ or MMRP.	1. Member Agency/ Contractor	1. Prior to and During Construction	Member Agency
2. Implement Mitigation Measure 3.5.2.		2. Member Agency/ Contractor	2. Prior to and During Construction	
3. Implement Mitigation Measure 3.5.3.	2. Comply with regulatory permit; Sign-off on inspection report and/ or MMRP.	3. Member Agency/ Contractor	3. Prior to and During Construction	
4. Implement Mitigation Measure 3.5.5.		4. Member Agency/ Contractor	4. Prior to and During Construction	
5. Implement Mitigation Measure 3.5.6.	3. Comply with regulatory permit; Sign-off on inspection report and/ or MMRP.	5. Member Agency/ Contractor	5. Prior to and During Construction	
6. Implement Mitigation Measure 3.5.9.	4. Comply with regulatory permit; Sign-off on inspection report and/ or MMRP.	6. Contractor/ Qualified Biologist	6. Prior to and During Construction	
	5. Comply with regulatory permit; Sign-off on inspection report and/ or MMRP.			
	6. Incorporate into contract specifications.			

## Growth Inducement and Secondary Effects of Growth

### Impact 5.1. Direct and Indirect Impacts on Growth.

NBWRP would provide recycled water for urban, agricultural, and environmental uses, and as such, would contribute to the provision of adequate water supply to support a level of growth that is consistent with the amount planned and approved within the General Plans of Marin, Sonoma and Napa Counties. No appreciable growth in population or employment would occur as a direct result of construction or operation of the proposed facilities. However, development under the General Plans accommodated by the proposed project would result in secondary environmental effects, which include effects that would be significant and unavoidable. No additional impacts are anticipated beyond those identified in General Plan EIRs for each County.

#### Mitigation Measure 5.1a

In order to maintain consistency with the Napa County General Plan, Napa County and Napa SD will approve the MST Local Options 1 and/or 2. This will provide approximately 530 AFY of recycled water that would be available for the existing users in the MST area. Trunk facilities may be sized to accommodate service of up to 1,400 AFY of service to existing agricultural irrigators only. Any expansion of service beyond the 1,400 AFY or provision of service to new

land uses would be subject to approval by the County Planning Department and the Napa County Board of Supervisors.

<b>Implementation Procedure</b>	<b>Monitoring and Reporting Actions</b>	<b>Monitoring Responsibility</b>	<b>Monitoring Schedule</b>	<b>Responsible Agency</b>
1. Conduct additional land use and CEQA analysis prior to service to un-irrigated parcels or beyond above 1400 AFY.	1. CEQA approval process.	1. Napa County and Napa SD	1. Prior to Project Approval	Napa County/ Napa SD