

## CHAPTER 5

# Mitigation Monitoring and Reporting Program

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This chapter summarizes the mitigation measures that would be integrated into the North Bay Water Reuse Program (NBWRP) Phase 2 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. If the measure applies to all the Member Agencies, the responsible agency noted is “Member Agency”. If the measure applies to specific agencies, the name of the agency or agencies is/are noted in the column.

## Surface Hydrology

### Impact 3.3.1: Changes in Drainage Patterns

Project construction and operation could alter the existing drainage patterns in a manner that would result in substantial erosion, siltation, or flooding on- or off-site.

#### Mitigation Measure 3.5.1: NPPDES Construction Activity Stormwater Permit

Refer to Impact 3.5.1 in Section 3.5, Water Quality.

| Implementation Procedure  | Monitoring and Reporting Actions  | Monitoring Responsibility   | Monitoring Schedule  | Responsible Agency |
|---|---|---|--|--------------------|
| <ol style="list-style-type: none"> <li>1. Submit Notice of Intent and SWPPP for the NPDES General Construction Permit</li> <li>2. Incorporate BMPs in standard construction procedures</li> </ol> | <ol style="list-style-type: none"> <li>1. Comply with the SWPPP and NPDES permit requirements</li> <li>2. Implement BMPs</li> </ol> | <ol style="list-style-type: none"> <li>1. Contractor</li> <li>2. Contractor/ Member Agency</li> </ol> | <ol style="list-style-type: none"> <li>1. Prior to construction</li> <li>2. During and following construction</li> </ol> | Member Agency      |

### Mitigation Measure 3.3.1a: Stream and Drainage Crossings

The Member Agencies shall implement the following measure during pipeline installation at stream or drainage crossings:

1. Schedule construction during the dry season and so as to avoid storm events to the extent feasible, or as required by regulatory permits (approximately June 15 to October 15);
2. Pipelines suspended from bridges shall be designed such that they do not interfere with conveyance of flows beneath the bridge, as determined by a certified professional engineer;
3. 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.
4. 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.
5. Employ short-term drainage diversion and control measures such as sandbags, dikes, pumps, or other means; and
6. Following construction, restore the construction area to pre-existing conditions.

| Implementation Procedure   | Monitoring and Reporting Actions   | Monitoring Responsibility  | Monitoring Schedule   | Responsible Agency |
|--|--|--|---|--------------------|
| <ol style="list-style-type: none"> <li>1. Schedule construction to avoid storm events.</li> <li>2. Integrate pipeline designs that do not interfere with conveyance of flows beneath bridges.</li> <li>3. Install new pipeline above existing culverts without removing or disturbing them.</li> <li>4. If disturbance of the</li> </ol> | <ol style="list-style-type: none"> <li>1. Incorporate schedule into construction specifications.</li> <li>2. Incorporate pipeline designs into construction specifications.</li> <li>3. Incorporate construction method 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> <li>5. Contractor/ Member Agency</li> <li>6. 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. During Construction</li> <li>5. During Construction</li> </ol> | Member Agency      |

| Implementation Procedure  | Monitoring and Reporting Actions   | Monitoring Responsibility | Monitoring Schedule   | Responsible Agency |
|---|--|---------------------------|-----------------------|--------------------|
| <p>existing culvert is required, place sediment curtains upstream and downstream of the construction zone.</p> <p>5. Employ short-term drainage diversion and control measures such as sandbags, dikes, pumps, or other means.</p> <p>6. Restore site to pre-existing conditions.</p> | <p>4. Incorporate construction method into construction specifications.</p> <p>5. Incorporate use of these measures into construction specifications.</p> <p>6. Inspect final site conditions after construction and verify its condition is it equivalent to that prior to construction. Incorporated into construction specifications.</p> |                           | 6. After Construction |                    |

### Mitigation Measure 3.3.1b: Impervious Surface Area – WRF Improvements

Design of proposed facilities, including tertiary facilities and storage at Soscol WRF, shall be integrated into existing drainage infrastructure such that drainage patterns do not result in new erosion, siltation, or flooding. Design shall include appropriate collection and conveyance of stormwater to WWTP infrastructure, per each facility's NPDES Permit requirements for stormwater.

| Implementation Procedure  | Monitoring and Reporting Actions                        | Monitoring Responsibility    | Monitoring Schedule                 | Responsible Agency |
|---|---|------------------------------|-------------------------------------|--------------------|
| 1. Incorporate design of proposed facilities into existing drainage infrastructure. | 1. Incorporate design into construction specifications. | 1. Contractor/ Member Agency | 1. Prior to and During Construction | Napa SD            |

### Mitigation Measure 3.3.1c: Siting Requirements for Storage at Jameson Ranch – Storage Alternative

To avoid alterations to existing drainage patterns in the vicinity of the storage facilities at Jameson Ranch, Napa SD shall locate the storage levees such that existing waterways remain continuously connected and any changes in existing drainage patterns caused by the levees do not result in new erosion, siltation, or flooding. Compliance with this measure can be demonstrated by:

1. Locating the levees such that no existing waterways are blocked, rerouted, or otherwise altered, as shown in the project design drawings; or
2. Hydrologic and hydraulic analyses performed in accordance with standard engineering practice document that waterways affected by the project would not result in new erosion, siltation, or flooding.

3. Should Napa SD elect to locate the levees such that no existing waterways are blocked, rerouted, or otherwise altered, as part of future environmental review of this programmatic project the project design shall depict the levees as part of the project.

| Implementation Procedure   | Monitoring and Reporting Actions  | Monitoring Responsibility  | Monitoring Schedule  | Responsible Agency |
|--|---|--|--|--------------------|
| <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> | Napa SD            |

### Impact 3.3.2: Reduction in flows within Stream Channels

Project operation would reduce the amount of annual discharge due to the recovery and use of recycled water that is currently discharged.

#### Mitigation Measure 3.3.2: SWRCB Change of Use Petition

Member Agencies shall complete SWRCB Change of Use Petition for use of recycled water, pursuant to Section 1700 of the California Water Code. Direct diversions of less than 3.0 cubic feet per second (cfs) or storage of less than 200 AFY may qualify for a minor petition, as appropriate. Member Agencies shall complete SWRCB Change of Use Petition process prior to recycled water distribution.

| Implementation Procedure  | Monitoring and Reporting Actions  | Monitoring Responsibility  | Monitoring Schedule  | Responsible Agency |
|---|---|--|--|--------------------|
| <ol style="list-style-type: none"> <li>1. Comply with Section 1700 of the California Water Code.</li> </ol> | <ol style="list-style-type: none"> <li>1. Complete SWRCB Change of Use Petition for use of recycled water.</li> </ol> | <ol style="list-style-type: none"> <li>1. Member Agency</li> </ol> | <ol style="list-style-type: none"> <li>1. Prior to recycled water distribution.</li> </ol> | Member Agency      |

### Impact 3.3.3: Flooding and Effects to Surface Waters

The proposed action could expose the public or structures to the risk of flooding due to placement of facilities within the one percent annual chance of exceedance flood level. The proposed action would also change the amount of discharge to local surface waters.

#### Mitigation Measure 3.3.1a: Stream and Drainage Crossings

Refer to Impact 3.3.1.

| Implementation Procedure  | Monitoring and Reporting Actions  | Monitoring Responsibility  | Monitoring Schedule  | Responsible Agency |
|---|---|--|--|--------------------|
| <ol style="list-style-type: none"> <li>Schedule construction to avoid storm events.</li> <li>Integrate pipeline designs that do not interfere with conveyance of flows beneath bridges.</li> <li>Install new pipeline above existing culverts without removing or disturbing them.</li> <li>If disturbance of the existing culvert is required, place sediment curtains upstream and downstream of the construction zone.</li> <li>Employ short-term drainage diversion and control measures such as sandbags, dikes, pumps, or other means.</li> <li>Restore site to pre-existing conditions.</li> </ol> | <ol style="list-style-type: none"> <li>Incorporate schedule into construction specifications.</li> <li>Incorporate pipeline designs into construction specifications.</li> <li>Incorporate construction method into construction specifications.</li> <li>Incorporate construction method into construction specifications.</li> <li>Incorporate use of these measures into construction specifications.</li> <li>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>Member Agency</li> <li>Contractor/ Member Agency</li> <li>Contractor/ Member Agency</li> <li>Contractor/ Member Agency</li> <li>Contractor/ Member Agency</li> <li>Contractor/ Member Agency</li> </ol> | <ol style="list-style-type: none"> <li>Prior to and During Construction</li> <li>Prior to Construction</li> <li>During Construction</li> <li>During Construction</li> <li>During Construction</li> <li>After Construction</li> </ol> | Member Agency      |

#### Mitigation Measure 3.3.3: Floodplain Hydraulic Analysis for Seasonal Storage

As part of the design process for seasonal storage, Member Agencies shall demonstrate through hydrologic and hydraulic analyses that the proposed modification and/or encroachment would not result in an increase in flood levels during the occurrence of the one percent annual chance of exceedance flood event. Analysis shall be performed by a California licensed engineer in accordance with standard engineering practices.

| Implementation Procedure | Monitoring and Reporting Actions | Monitoring Responsibility | Monitoring Schedule | Responsible Agency |
|--------------------------|----------------------------------|---------------------------|---------------------|--------------------|
| 1. Demonstrate through   | 1. California licensed           | 1. Member Agency          | 1. Prior to         | Member Agency      |

|  |                                  |  |              |  |
|--|----------------------------------|--|--------------|--|
| hydrologic and hydraulic analyses that the proposed modification and/or encroachment would not result in an increase in flood levels during the occurrence of the one percent annual chance of exceedance flood event. | engineer shall perform analysis. |  | construction |  |
|--|----------------------------------|--|--------------|--|

### Impact 3.3.4: Flooding – Sea Level Rise

Sea-level rise could affect operation of project facilities.

#### Mitigation Measure 3.3.4: Design Measures Addressing Sea Level Rise

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 | Member Agency      |

### Impact 3.3.5: Flooding – Other Hazards

The NBWRP Phase 2 would not cause or exacerbate any existing risk of inundation by seiche, tsunami, or mudflow.

#### Mitigation Measure 3.3.1a: Stream and Drainage Crossings

Refer to Impact 3.3.1.

| Implementation Procedure | Monitoring and Reporting Actions | Monitoring Responsibility | Monitoring Schedule | Responsible Agency |
|--------------------------|----------------------------------|---------------------------|---------------------|--------------------|
|--------------------------|----------------------------------|---------------------------|---------------------|--------------------|

| Implementation Procedure  | Monitoring and Reporting Actions  | Monitoring Responsibility  | Monitoring Schedule  | Responsible Agency |
|---|---|--|--|--------------------|
| <ol style="list-style-type: none"> <li>1. Schedule construction to avoid storm events.</li> <li>2. Integrate pipeline designs that do not interfere with conveyance of flows beneath bridges.</li> <li>3. Install new pipeline above existing culverts without removing or disturbing them.</li> <li>4. If disturbance of the existing culvert is required, place sediment curtains upstream and downstream of the construction zone.</li> <li>5. Employ short-term drainage diversion and control measures such as sandbags, dikes, pumps, or other means.</li> <li>6. 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 pipeline designs into construction specifications.</li> <li>3. Incorporate construction method into construction specifications.</li> <li>4. Incorporate construction method into construction specifications.</li> <li>5. Incorporate use of these measures into construction specifications.</li> <li>6. 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> <li>5. Contractor/ Member Agency</li> <li>6. 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. During Construction</li> <li>5. During Construction</li> <li>6. After Construction</li> </ol> | Member Agency      |

### Mitigation Measure 3.5.1: NPDES Construction Activity Stormwater Permit

Refer to Impact 3.5.1 in Section 3.5, Water Quality.

| Implementation Procedure  | Monitoring and Reporting Actions  | Monitoring Responsibility   | Monitoring Schedule  | Responsible Agency |
|---|---|---|--|--------------------|
| <ol style="list-style-type: none"> <li>1. Submit Notice of Intent and SWPPP for the NPDES General Construction Permit</li> <li>2. Incorporate BMPs in standard construction procedures</li> </ol> | <ol style="list-style-type: none"> <li>1. Comply with the SWPPP and NPDES permit requirements</li> <li>2. Implement BMPs</li> </ol> | <ol style="list-style-type: none"> <li>1. Contractor</li> <li>2. Contractor/ Member Agency</li> </ol> | <ol style="list-style-type: none"> <li>1. Prior to construction</li> <li>2. During and following construction</li> </ol> | Member Agency      |

## Groundwater Resources

### Impact 3.4.3: Hydrostatic Pressure

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

### Mitigation Measure 3.4.3

The Member Agencies will implement the following measures:

1. All proposed improvements will be designed and constructed in accordance with current geotechnical industry standard criteria as overseen and approved by a state licensed geotechnical engineer.
2. 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 and current building code requirements. 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 |
|---|--|--|--|--------------------|
| <ol style="list-style-type: none"> <li>1. Design improvements with current geotechnical industry standard criteria.</li> <li>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.</li> </ol> | <ol style="list-style-type: none"> <li>1. Incorporate design requirements into construction specifications.</li> <li>2. Incorporate design requirements into construction specifications.</li> </ol> | <ol style="list-style-type: none"> <li>1. Member Agency</li> <li>2. Member Agency</li> </ol> | <ol style="list-style-type: none"> <li>1. Prior to construction</li> <li>2. Prior to construction</li> </ol> | Member Agency      |

## Water Quality

### Impact 3.5.1: 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 3.5.1: 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 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:

1. 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.
2. Sediment control BMPs such as silt fencing or detention basins that trap soil particles.
3. Construction staging areas designed so that stormwater runoff during construction will be collected and treated in a detention basin or other appropriate structure.
4. Management of hazardous materials and wastes to prevent spills and provide the means to contain any spills that might occur.
5. Groundwater treatment BMPs such that localized trench dewatering does not impact surface water quality.
6. Vehicle and equipment fueling BMPs such that these activities occur only in designated staging areas with appropriate spill controls.
7. 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<br>2. Incorporate BMPs in standard construction | 1. Comply with the SWPPP and NPDES permit requirements<br>2. Implement BMPs | 1. Contractor<br>2. Contractor/<br>Member Agency | 1. Prior to construction<br>2. During and following construction | Member Agency      |

| Implementation Procedure | Monitoring and Reporting Actions | Monitoring Responsibility | Monitoring Schedule | Responsible Agency |
|--------------------------|----------------------------------|---------------------------|---------------------|--------------------|
| procedures               |                                  |                           |                     |                    |

## Biological Resources

### Impact 3.6.1: 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 waters of the State and riparian habitat.

#### Mitigation Measure 3.6.1

Implement the following measures to avoid, minimize and compensate for impacts to jurisdictional wetlands and other waters of the U.S. and State, 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. Proposed facilities would most likely be authorized under Nationwide Permit #12 (Utility Lines) pursuant to Section 404 of the Clean Water Act. The CDFW 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 CDFW jurisdiction. If work is proposed in these areas, project proponent will be required to obtain a Streambed Alteration Agreement (SAA) from the CDFW. 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:
  - a) 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.
  - b) Placement of project components as distant as feasible from channels and wetlands.
  - c) 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

<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.

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., Lynch 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:

- a. Limiting of construction activities in drainage channel crossings to low-flow periods: approximately April 15 to October 15.
  - b. 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.
  - c. 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.
  - d. 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. Construction BMPs shall be implemented as discussed in **Mitigation Measure 3.5.1** in Section 3.5, Water Quality, to reduce risk of erosion and 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. Project sites will be revegetated with an appropriate assemblage of native upland vegetation and, if necessary, riparian and wetland vegetation suitable for the area. A plan describing pre-project conditions, restoration and monitoring success criteria will be prepared prior to construction.

7. To offset temporary and permanent impacts to wetlands and other waters of the U.S. and State, and impacts to riparian habitat, compensatory mitigation will be provided through on-site restoration to emulate pre-project conditions, or as required by regulatory permits and SAAs.

| Implementation Procedure   | Monitoring and Reporting Actions   | Monitoring Responsibility  | Monitoring Schedule   | Responsible Agency   |
|--|--|--|---|--|
| <ol style="list-style-type: none"> <li>1. Acquire permits from USACE, CDFW, and RWQCB.</li> <li>2. Implement Best Management Practices (BMPs).</li> <li>3. Stockpile excavated soil.</li> <li>4. Implement compensatory mitigation.</li> </ol> | <ol style="list-style-type: none"> <li>1. Comply with regulatory permit.</li> <li>2. Sign-off on inspection report and/ or MMRP.</li> <li>3. Sign-off on inspection report and/ or MMRP.</li> <li>4. Comply with regulatory permits and SAAs.</li> </ol> | <ol style="list-style-type: none"> <li>1. Member Agency</li> <li>2. Contractor</li> <li>3. Contractor</li> <li>4. Member Agency</li> </ol> | <ol style="list-style-type: none"> <li>1. Prior to Construction</li> <li>2. During Construction</li> <li>3. During Construction</li> <li>4. Prior to and During Construction</li> </ol> | Novato SD<br>Petaluma<br>SVCSD<br>American Canyon<br>Napa SD |

## Impact 3.6.2: Impacts to Special-status Fish and California Freshwater Shrimp

Construction of NBWRP Phase 2 facilities could affect special-status aquatic species including central California coast steelhead, Chinook salmon, and California freshwater shrimp, or designated critical habitat for steelhead.

### Mitigation Measure 3.6.2

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, CDFW, and USACOE), and implementing protective measures. For Lynch Creek, North Slough, and Arroyo Seco, special-status fish are presumed present. California freshwater shrimp are presumed present in Lynch 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 configured, 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. Trenchless constructions methods will be employed wherever possible. 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.

2. All activities across waterways will be restricted to low-flow periods of June 15 through November 1. If the channel is dry, construction can occur as early as April 15 (in accordance with CDFW and RWQCB permit requirements). Restricting construction activities to this work window will minimize effects to California freshwater shrimp and steelhead;
3. Reclamation or appropriate agency shall ensure the appropriate permit authorizations are secured for stream crossings, and a qualified biological resource monitor shall be present at all times to alert construction crews to the possible presence of California freshwater shrimp during construction operations;
4. At least 15 days prior to onset of activities, Reclamation or appropriate agency shall submit the name(s) and credentials of biologists who would conduct activities authorized by the BO. No project activities shall begin until Reclamation has received written approval from the USFWS and CDFW that the biologist(s) is approved to conduct the work;
5. A Service-approved biologist shall conduct a training session for construction personnel all working near appropriate habitat prior to the onset of construction activities. At a minimum, the training shall describe the California red-legged frog and their habitat, their importance, and the measures that are being implemented to conserve these species as they relate to the proposed action;
6. If trenchless methods cannot be implemented due to geotechnical conditions, and the channel is not dry, water from around the section of trench that is within the actively flowing channels will be diverted. This will reduce the potential for sediment or other pollutants to enter the waterways and to affect downstream resources. Sediment curtains will be placed downstream of the construction zone to prevent disturbed sediment from being transported and deposited outside of the construction zone;
7. If ground water is encountered, or if water remains in the channel after flows are diverted, it will be pumped out of the construction area and into a retention basin constructed of hay bales lined with filter fabric. The pump(s) will be screened according to NMFS fish screening criteria for anadromous salmonids (NMFS, 1997);
8. Silt fencing will be installed in all areas where construction occurs within 100 feet of known or potential California freshwater shrimp or steelhead habitat;
9. A qualified biological monitor will be on site during all activities crossing waterways. The biological monitor will be authorized to halt construction if effects to California freshwater shrimp or salmonids are evident.

| Implementation Procedure  | Monitoring and Reporting Actions   | Monitoring Responsibility         | Monitoring Schedule                   | Responsible Agency                                |
|---|--|-----------------------------------|---------------------------------------|---|
| 1. Consult with resource agencies .<br>2. Implement recommendations | 1. Design protective measures.<br>2. Comply with permit conditions; sign-off | 1. Member Agency<br>2. Contractor | 1. Prior to Construction<br>2. During | Novato SD<br>Petaluma<br>SVCSD<br>American Canyon |

| Implementation Procedure     | Monitoring and Reporting Actions | Monitoring Responsibility | Monitoring Schedule | Responsible Agency |
|------------------------------|----------------------------------|---------------------------|---------------------|--------------------|
| derived during consultation. | on inspection report and/or MMRP |                           | Construction        | Napa SD            |

### Impact 3.6.3: Impacts on Reptiles and Amphibians

Construction of the NBWRP Phase 2 has the potential to impact California red-legged frog and western pond turtles in upland and aquatic habitat.

#### Mitigation Measure 3.6.3

Implement protection measures to avoid and minimize impacts to western pond turtles and 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 and western pond turtles within aquatic habitat. When working within 200 feet of stream crossings, workers shall receive specific training in the identification, life history, local project area occurrence, and protection of western pond turtles and California red-legged frogs. Also, to minimize the likelihood of encountering turtles or frogs 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 frog and pond turtle habitat.
2. Trenchless methods will be employed at crossings presumed or known to support California red-legged frog. 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;
3. To the extent practicable, work activities within or adjacent to aquatic habitat that is potentially occupied by red-legged frogs will be completed between April 1 and October 31, which avoids the time period when California red-legged frogs are most likely to move through upland areas.
4. Prior to construction activities at stream crossings where aquatic impacts are expected, a qualified biologist shall perform California red-legged frog and western pond turtle surveys within suitable habitat within projected work areas. If California red-legged frogs or western pond turtles are encountered during construction activities, work in the immediate area shall cease until the area is determined to be free of sensitive species. 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. If California red-legged frog tadpoles or eggs are found, the biologist shall contact the USFWS to determine if moving any of these life-stages is appropriate.

5. At least 15 days prior to onset of activities, Reclamation or appropriate agency shall submit the name(s) and credentials of biologists who would conduct activities authorized by the BO. No project activities shall begin until Reclamation has received written approval from the USFWS that the biologist(s) is approved to conduct the work;
6. Reclamation or appropriate agency shall ensure the appropriate permit authorizations are secured for stream crossings, and a qualified biological resource monitor shall be present at all times to alert construction crews to the possible presence of California red-legged frog or western pond turtle during construction operations;
7. All trash that could attract predators will be regularly contained and removed from the work site.

| Implementation Procedure  | Monitoring and Reporting Actions  | Monitoring Responsibility   | Monitoring Schedule  | Responsible Agency  |
|---|---|---|--|---|
| <ol style="list-style-type: none"> <li>1. Conduct awareness training for construction personnel working within 200 feet of stream crossings.</li> <li>2. Employ trenchless methods at crossings presumed or known to support California red-legged frogs.</li> <li>3. Complete all work within or adjacent to aquatic habitat that is inhabited by red-legged frogs between April 1 and October 31</li> <li>4. Perform California red-legged frog and western pond turtle surveys within suitable habitat within project work area. Cease work until the area is determined to be free of sensitive species if they are encountered. 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. If California red-legged frog tadpoles or eggs are found, the biologist shall contact the USFWS to determine if moving any of these</li> </ol> | <ol style="list-style-type: none"> <li>1. Comply with SAA permit; sign-off on inspection report and/ or MMRP.</li> <li>2. Incorporate construction methods/ requirements into construction specifications.</li> <li>3. Incorporate into contract specifications.</li> <li>4. Comply with permit conditions; sign-off on inspection report and/or MMRP.</li> <li>5. Incorporate into contract specifications</li> <li>6. Incorporate into construction specifications</li> <li>7. Comply with SAA permit conditions; sign-off on inspection report and/or MMRP.</li> </ol> | <ol style="list-style-type: none"> <li>1. Contractor/ Qualified Biologist</li> <li>2. Contractor</li> <li>3. Contractor</li> <li>4. Contractor/ Qualified Biologist</li> <li>5. Reclamation or appropriate agency.</li> <li>6. Reclamation or appropriate agency/Qualified Biologist.</li> <li>7. Contractor</li> </ol> | <ol style="list-style-type: none"> <li>1. Prior to and During Construction</li> <li>2. During Construction</li> <li>3. During Construction</li> <li>4. During Construction</li> <li>5. Prior to Construction</li> <li>6. Prior to and During Construction</li> <li>7. During Construction</li> </ol> | <p>Novato SD<br/>Petaluma<br/>SVCSD<br/>American Canyon<br/>Napa SD</p> |

| Implementation Procedure   | Monitoring and Reporting Actions | Monitoring Responsibility | Monitoring Schedule | Responsible Agency |
|--|----------------------------------|---------------------------|---------------------|--------------------|
| <p>life-stages is appropriate.</p> <p>5. Submit the name(s) and credentials of biologists who would conduct activities authorized by the BO.</p> <p>6. Ensure the appropriate permit authorizations are secured for stream crossings, and a qualified biological resource monitor shall be present at all times to alert construction crews to the possible presence of California red-legged frog or western pond turtle during construction operations.</p> <p>7. Implement trash removal and trenchless construction methods where necessary.</p> |                                  |                           |                     |                    |

## Impact 3.6.4: Impacts on Birds

Construction of the NBWRP Phase 2 has the potential to affect special-status marsh birds, burrowing owl, and other nesting birds in and near the project sites.

### Mitigation Measure 3.6.4: Impacts to Nesting Birds

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

1. Whenever feasible, vegetation shall be removed during the non-breeding season (generally defined as September 1 to January 31).
2. 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. Construction activities will be constrained to the smallest area possible to minimize disturbance to potential nesting habitat.
3. For work in Ridgway's rail, California black rail, western snowy plover or western burrowing owl habitat, a Service-approved biologist shall conduct a training session for construction personnel all working near appropriate habitat prior to the onset of construction activities. At a minimum, the training shall describe the bird species and their habitat, their importance, and



the measures that are being implemented to conserve these species as they relate to the proposed action.

4. All work areas, including staging areas will be surveyed prior to construction for bird nests during nesting season. 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. For non-special status migratory birds, buffer size will be determined in consultation with CDFW. Buffer zones may be modified in coordination with CDFW 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.

5. For work in locations that provide habitat for listed marsh birds including Ridgway's rail, and special-status birds such as burrowing owl and black rail, protocol-level surveys will be conducted to determine species presence or absence.
6. If occupied burrowing owl burrows are discovered, 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 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 |
|---|--|--|--|--------------------|
| <ol style="list-style-type: none"> <li>1. Limit vegetation removal to non-breeding season (September 1 to January 31)</li> <li>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.</li> <li>3. Conduct training sessions for construction personnel specific to identification of</li> </ol> | <ol style="list-style-type: none"> <li>1. Incorporate into contract specifications.</li> <li>2. Incorporate survey results and recommendations into contract specifications.</li> <li>3. Incorporate into contract specifications; sign-off on inspection report and/or MMRP.</li> <li>4. Comply with CDFW guidelines. Sign-off on inspection report and/or MMRP.</li> <li>5. Incorporate survey results and recommendations into contract specifications</li> </ol> | <ol style="list-style-type: none"> <li>1. Contractor</li> <li>2. Qualified Biologist</li> <li>3. Qualified Biologist/ Construction Personnel</li> <li>4. Contractor</li> <li>5. Qualified Biologist</li> <li>6. Qualified Biologist</li> </ol> | <ol style="list-style-type: none"> <li>1. During Construction</li> <li>2. Prior to Construction</li> <li>3. Prior to Construction</li> <li>4. During Construction</li> <li>5. Prior to Construction</li> <li>6. During Construction</li> </ol> | Member Agency      |

| Implementation Procedure   | Monitoring and Reporting Actions   | Monitoring Responsibility | Monitoring Schedule | Responsible Agency |
|--|--|---------------------------|---------------------|--------------------|
| <p>sensitive bird habitat.</p> <p>4. 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. Remove trees, if necessary, that are not occupied by special-status birds.</p> <p>5. Conduct protocol-level surveys in areas that contain suitable habitat for listed marsh birds.</p> <p>6. Monitor owl activity on construction sites.</p> | <p>6. Summarize results and recommendations in daily log; sign-off on inspection report and/or MMRP.</p> |                           |                     |                    |

### Impact 3.6.5: Impacts to Mammals

Construction of the NBWRP Phase 2 has the potential to affect special-status mammals, including salt marsh harvest mouse, and roosting or breeding bats in and near the project alignments.

### Mitigation Measure 3.6.5: Impacts to Mammals

1. The appropriate Member Agency shall implement protection measures to avoid and minimize impacts on salt marsh harvest mouse during construction. Where avoidance of sensitive habitat (i.e., areas in or near pickleweed) is not feasible (e.g., by bridging or bore and jack), consultation with the USFWS would be initiated. If salt marsh harvest mouse is present or presumed to be present in the project area following informal coordination with USFWS, then formal consultation and a Biological Assessment in support of a Biological Opinion may be needed. Such a consultation would proceed as part of the Corps 404 permitting process. Similar coordination and permitting shall be performed with CDFW to address potential impacts to salt marsh harvest mouse. Staging areas shall be located outside potential salt marsh harvest mouse habitat.
2. To avoid potential impacts on salt marsh harvest mouse and Suisun ornate shrew, a qualified biologist shall conduct specific preconstruction surveys to delineate potential habitat in the project area. For areas within 100 feet of potential habitat, the project proponent shall install exclusionary fences to prevent species movement into the project area, and to prevent spoils from entering the salt marsh. Fencing will consist of a material that does not allow small mammals to pass through or over, and the bottom will be buried to a depth of at least six inches.

3. A qualified biologist shall conduct a training session for construction personnel all working near appropriate habitat prior to the onset of construction activities. At a minimum, the training shall describe the species and their habitat, their importance, and the measures that are being implemented to conserve these species as they relate to the proposed action.
4. Once a Biological Opinion is issued for the work, a qualified biologist will direct crews in the hand removal of pickleweed and remain on-site to provide biological monitoring during construction. The biological monitor shall inspect the exclusion fence to ensure their integrity, and shall conduct an education workshop for contractors outlining species' biology, legislative protection, and construction restrictions to reduce potential impacts. Protective measures for the salt marsh harvest mouse will equally protect the Suisun ornate shrew.
5. At the close of each workday, escape ramps/boards will be provided in all open trenches. Every morning prior to the start of construction, a qualified biologist will inspect all open trenches within 250 feet of emergent pickleweed (*Salicornia pacifica*) habitat for trapped mice. In the event a salt marsh harvest mouse or Suisun ornate shrew is found on-site, with approval from the Service, the biologist will remove animals from trenches before the start of construction.
6. A Service-approved biologist will be onsite during all ground-disturbing activities, including vegetation removal and during morning trench inspections, and otherwise available during the course of the construction work. The biologist will be responsible for informing the crews of the need to halt work if sensitive species are observed, and documenting compliance with the conservation measures and contacting the USFWS if any sensitive species are observed.
7. The appropriate Member Agency shall implement protection measures to avoid and minimize impacts on special-status bats in and near project facilities during construction.
8. In conjunction with breeding bird surveys (**Mitigation Measure 3.6.4**), 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   |
|---|---|--|---|--|
| 1. Consult with CDFW and/ or USFWS when avoidance of sensitive habitat is not feasible.<br>2. Conduct surveys for salt harvest mouse and Suisun ornate shrew. | 1. Compliance with recommendations and/ or Biological Assessment in support of a Biological Opinion.<br>2. Comply with USFWS guidelines; incorporate survey results and | 1. Member Agency/ Contractor<br>2. Qualified Biologist<br>3. Contractor/ Qualified Biologist | 1. Prior to Construction<br>2. Prior to Construction<br>3. During Construction<br>4. Prior to | Novato SD<br>Petaluma<br>SVCSD<br>SCWA<br>American Canyon<br>Napa SD |

| Implementation Procedure  | Monitoring and Reporting Actions   | Monitoring Responsibility   | Monitoring Schedule  | Responsible Agency |
|---|--|---|--|--------------------|
| <p>3. Install exclusion fencing; conduct fence inspections.</p> <p>4. Conduct training sessions for construction personnel.</p> <p>5. Direct crews in the hand removal of pickleweed and remain on-site to provide biological monitoring during construction. Inspect the exclusion fence to ensure their integrity, and conduct an education workshop for contractors outlining species' biology, legislative protection, and construction restrictions to reduce potential impacts.</p> <p>6. Provide escape ramps/boards in all trenches. Inspect all trenches for trapped mice or shrews.</p> <p>7. Biologist will remain onsite during all ground-disturbing activities.</p> <p>8. Implement protection measures to avoid and minimize impacts on special-status bats in and near project facilities during construction</p> <p>9. Implement Mitigation Measure 3.5.8.</p> <p>10. Conduct species surveys at specified locations.</p> <p>11. Establish 100-150-foot buffers around active roosts; cease demolition activities until juvenile bats are self-sufficient.</p> | <p>recommendations into contract specifications.</p> <p>3. Comply with regulatory permit conditions; sign-off on inspection report and/ or MMRP.</p> <p>4. Incorporate into contract specifications; sign-off on inspection report and/or MMRP.</p> <p>5. Incorporate into contract specifications; sign-off on inspection report and/or MMRP.</p> <p>6. Incorporate into contract specifications; sign-off on inspection report and/or MMRP.</p> <p>7. Comply with regulatory permit conditions; sign-off on inspection report and/ or MMRP.</p> <p>8. Incorporate into contract specifications.</p> <p>9. Summarize results and recommendations in daily log; sign-off on inspection report and/or MMRP.</p> <p>10. Incorporate results and recommendations into contract specifications; sign-off on inspection report and/ MMRP.</p> <p>11. Incorporate into contract specifications; sign-off on inspection report.</p> | <p>4. Qualified Biologist/ Construction Personnel</p> <p>5. Qualified Biologist/ Construction Personnel</p> <p>6. Qualified Biologist</p> <p>7. Qualified Biologist.</p> <p>8. Appropriate Member Agency</p> <p>9. Qualified Biologist/ Contractor</p> <p>10. Qualified Biologist</p> <p>11. Contractor</p> | <p>Construction</p> <p>5. Prior to and During Construction</p> <p>6. During Construction</p> <p>7. During Construction</p> <p>8. Prior to and During Construction</p> <p>9. Prior to and During Construction</p> <p>10. Prior to construction</p> <p>11. During Construction</p> |                    |

## Impact 3.6.6: Impacts to Rare Plants

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

### Mitigation Measure 3.6.6: Impacts to Rare Plants

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:

1. A qualified botanist will conduct appropriately-timed surveys for special-status plant species, including those identified in Appendix 3.6C, in all suitable habitat that would be potentially disturbed by the project, including staging areas.
2. Surveys shall be conducted following the most recent CDFW- or other approved protocol.
3. 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.
4. If special-status plants are found during focused surveys, the following measures shall be implemented:
  - a. Information regarding the special-status plant population shall be reported to the CNDDDB.
  - b. 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.
  - c. If special-status plant populations cannot be avoided, consultations with CDFW 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.
  - d. 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.

| Implementation Procedure  | Monitoring and Reporting Actions  | Monitoring Responsibility   | Monitoring Schedule                   | Responsible Agency                     |
|---|---|---|---------------------------------------|--|
| 1. Conduct plant surveys.<br>2. Implement measures if special-status plants | 1. Comply with CDFW protocol.<br>Incorporate results and recommendations into | 1. Qualified Botanist<br>2. Qualified Botanist<br>3. Qualified Botanist | 1. Prior to Construction<br>2. During | Novato SD<br>Petaluma<br>SVCSD<br>SCWA |

| Implementation Procedure  | Monitoring and Reporting Actions  | Monitoring Responsibility                       | Monitoring Schedule  | Responsible Agency             |
|---|---|---|--|--------------------------------|
| <p>are present.</p> <p>3. Mark special status plants and inform construction personnel of their presence.</p> <p>4. Consult with CDFG and/or USFWS if special-status plants cannot be avoided.</p> <p>5. If compensatory mitigation is required, monitor mitigation area.</p> | <p>contract specifications.</p> <p>In the event that no special-status plants are present, document findings in a letter to the appropriate resources agency.</p> <p>2. Report information regarding present special-status plants to CNDDB.</p> <p>3. Sign-off on inspection report and/or MMRP.</p> <p>4. Coordination with CDFW and or USFWS; compliance with recommendations; development of a compensation plan.</p> <p>5. Submit annual monitoring reports to resource agencies that include photo documentation, planting specifications, site layout map.</p> | <p>4. Member Agency</p> <p>5. Member Agency</p> | <p>Construction</p> <p>3. Prior to Construction</p> <p>4. Prior to Construction</p> <p>5. 5 Years Following Construction</p> | <p>American Canyon Napa SD</p> |

### Impact 3.6.7: Impacts on Heritage and Other Significant Trees

The proposed project could affect heritage and other significant trees.

#### Mitigation Measure 3.6.7

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

1. If trees are identified for removal or trimming, a certified arborist will inventory these trees, with the results of the inventory providing species, size (diameter at breast height), and number of protected trees. Also, in consultation with the appropriate jurisdiction, the arborist will determine if any are heritage or landmark trees.
2. 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.
3. Any protected trees that are removed will be replaced per applicable City and County tree protection ordinances (see Appendix 3.6A). 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. Inventory trees.<br>2. Consult with counties to determine if any identified trees are landmark trees.<br>3. Replace removed trees.<br>4. Monitor replacement trees. | 1. Record results in inspection report.<br>2. Record results in inspection report.<br>3. Comply with City and County Tree ordinances.<br>4. Comply with City and County Tree ordinances; sign-off on inspection report/ and or MMRP. | 1. Certified Arborist<br>2. Member Agency<br>3. Member Agency<br>4. Member Agency/ Certified Arborist | 1. Prior to Construction<br>2. Prior to Construction<br>3. After Construction is Completed<br>4. Minimum of two years following completion of construction | Member Agency      |

## Transportation and Traffic

### Impact 3.8.1: Temporary Congestion and Delays

Construction of NBWRP Phase 2 would have temporary and intermittent effects on traffic and transportation conditions in the project area.

#### Mitigation Measure 3.8.1a

The appropriate Member Agency for each NBWRP Phase 2 element shall obtain and comply with local and Caltrans 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, 2014). In addition, the Traffic Management Plan (subject to local jurisdiction review and approval, or Caltrans for State roadways) required by **Mitigation Measure 3.8.1b**, below, would direct how traffic flow is safely maintained during project construction.

#### Mitigation Measure 3.8.1b

The construction contractor for each NBWRP Phase 2 element shall prepare and implement a Traffic Control/Traffic Management Plan subject to approval by the appropriate local jurisdiction prior to construction. The plan – prepared in accordance with the California *Manual on Uniform Traffic Control Devices* – shall be subject to approval by Caltrans for work occurring in Caltrans facilities. The plan shall:

1. Identify hours of construction (between 7:00 AM and 7:00 PM; no construction shall be permitted between 10:00 PM and 7:00 AM unless stipulated in coordination with responsible jurisdiction on a case-by-case basis);
2. Identify hours for deliveries;
3. Include a discussion of haul routes, limits on the length of open trench, work area delineation, traffic control and flagging;
4. Identify all access and parking restriction, pavement markings and signage requirements (e.g., speed limit, temporary loading zones);
5. 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;
6. 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;
7. 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;
8. Include the requirement that all open trenches be covered with metal plates at the end of each workday to accommodate traffic and access; and
9. Specify the street restoration requirements pursuant to agreements with the local jurisdictions.

### **Mitigation Measure 3.8.1c**

The appropriate Member Agency for each NBWRA Phase 2 element 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 3.8.1d

The appropriate Member Agency for each NBWRA Phase 2 element 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 3.8.1e

The appropriate Member Agency for each NBWRA Phase 2 element shall encourage construction crews to park at staging areas to limit lane closures in the public right-of-way.

### Mitigation Measure 3.8.1f

The appropriate Member Agency for each NBWRA Phase 2 element 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 |
|---|--|---|---|--------------------|
| <ol style="list-style-type: none"> <li>1. Obtain local road encroachment permits for roads that are affected by construction activities.</li> <li>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;</li> <li>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.</li> <li>4. Develop circulation and detour plans to minimize impact to local street circulation. This may include the use of signing and</li> </ol> | <ol style="list-style-type: none"> <li>1. Incorporate permit regulations into contract specifications.</li> <li>2. Incorporate traffic control plan measures into contract specifications.</li> <li>3. Incorporate techniques into contract specifications.</li> <li>4. Incorporate plans into contract specifications.</li> <li>5. Incorporate parking restrictions into contract specifications.</li> <li>6. Incorporate transit service notification into contract specifications.</li> </ol> | <ol style="list-style-type: none"> <li>1. Member Agency</li> <li>2. Member Agency</li> <li>3. Member Agency</li> <li>4. Contractor/ Member Agency</li> <li>5. Member Agency</li> <li>6. Contractor</li> </ol> | <ol style="list-style-type: none"> <li>1. Prior to Construction</li> <li>2. Prior to and During Construction</li> <li>3. Prior to and During Construction</li> <li>4. Prior to and During Construction</li> <li>5. During Construction</li> <li>6. Prior to Construction</li> </ol> | Member Agency      |

| Implementation Procedure  | Monitoring and Reporting Actions | Monitoring Responsibility | Monitoring Schedule | Responsible Agency |
|---|----------------------------------|---------------------------|---------------------|--------------------|
| <p>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> |                                  |                           |                     |                    |

## Impact 3.8.2: Temporary Disruption to Access

Construction of NBWRP Phase 2 would temporarily disrupt circulation patterns near sensitive land uses (schools, hospitals, fire stations, police stations, and other emergency providers).

### Mitigation Measure 3.8.2a

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 NBWRA Phase 2 element 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 3.8.2b

A minimum of two months prior to project construction, the appropriate Member Agency for each NBWRP Phase 2 element 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 3.8.1a**).

### Mitigation Measure 3.8.2c

Implement **Mitigation Measure 3.8.1b**.

| 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 3.8.3: Temporary Disruption to Access

Construction of NBWRP Phase 2 would have temporary effects on alternative transportation or alternative transportation facilities.

### Mitigation Measure 3.8.3

Implement **Mitigation Measure 3.8.1f**.

| Implementation Procedure                | Monitoring and Reporting Actions  | Monitoring Responsibility | Monitoring Schedule      | Responsible Agency |
|---|---|---------------------------|--------------------------|--------------------|
| 1. Implement Mitigation Measure 3.8.1f. | 1. Incorporate transit service notification into contract specifications. | 1. Member Agency          | 1. Prior to Construction | Member Agency      |

## Impact 3.8.4: Temporary Potential Traffic Hazards

Construction of NBWRP Phase 2 would temporarily increase the potential for accidents on project roadways.

### Mitigation Measure 3.8.4

Implement **Mitigation Measure 3.8.1b** through **3.8.1f**.

| Implementation Procedure  | Monitoring and Reporting Actions   | Monitoring Responsibility   | Monitoring Schedule   | Responsible Agency |
|---|--|---|---|--------------------|
| 1. Implement Mitigation Measure 3.8.1b.<br>2. Implement Mitigation Measure 3.8.1c.<br>3. Implement Mitigation Measure 3.8.1d.<br>4. Implement Mitigation Measure 3.8.1e.<br>5. Implement Mitigation Measure 3.8.1f. | 1. Incorporate traffic control plan measures into contract specifications.<br>2. Incorporate techniques into contract specifications<br>3. Incorporate plans into contract specifications.<br>4. Incorporate parking restrictions into contract specifications.<br>5. Incorporate transit service notification into contract specifications. | 1. Member Agency<br>2. Contractor/ Member Agency<br>3. Member Agency<br>4. Contractor<br>5. Member Agency | 1. Prior to and During Construction<br>2. Prior to and During Construction<br>3. Prior to and During Construction<br>4. During Construction<br>5. Prior to Construction | Member Agency      |

## Impact 3.8.5: Road Wear

Construction of the NBWRP Phase 2 would increase wear and tear on the designated haul routes used by construction vehicles to access the project work sites.

### Mitigation Measure 3.8.5

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 3.8.1a**).

| 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 3.9.1: Construction Emissions of Criteria Pollutants

Construction of the NBWRP Phase 2 projects would result in criteria pollutant emissions that could exceed air quality standards or contribute substantially to an existing or projected air quality violation.

#### Mitigation Measure 3.9.1-1a: BAAQMD Basic Construction Measures

To limit dust, criteria pollutants, and precursor emissions associated with construction, the following BAAQMD-recommended Basic Construction Measures shall be implemented and included in all contract specifications for projects constructed under the Phase 2 Program:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8. Post a publicly visible sign with the telephone number and persons to contact at the North Bay Water Reuse Authority and/or the applicable member agency regarding dust complaints. These persons shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

### **Mitigation Measure 3.9.1-1b: Additional Construction**

The North Bay Water Reuse Authority and/or applicable member agency shall implement all feasible measures from the BAAQMD's Additional Construction Mitigation Measures listed below:

1. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.
2. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
3. Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
4. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
5. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
6. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
7. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12-inch compacted layer of wood chips, mulch, or gravel.
8. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
9. Minimize the idling time of diesel powered construction equipment to 2 minutes.

10. The off-road diesel-powered equipment (more than 50 horsepower) to be used in the construction of any project (i.e., owned, leased, and subcontractor vehicles) under the Phase 2 Program shall be equipped with engines that achieve USEPA Tier 4 emissions standards.
11. Use low volatile organic compound (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).
12. Require that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NOx and PM10.

| Implementation Procedure  | Monitoring and Reporting Actions  | Monitoring Responsibility  | Monitoring Schedule  | Responsible Agency |
|---|---|--|--|--------------------|
| <ol style="list-style-type: none"> <li>1. Implement BAAQMD Basic Dust Control Measures.</li> <li>2. Implement BAAQMD's Additional Construction Mitigation Measures</li> </ol> | <ol style="list-style-type: none"> <li>1. Incorporate in contract specifications and Sign-off on inspection report and/ or MMRP that measures are being implemented.</li> <li>2. Incorporate in contract specifications and Sign-off on inspection report and/ or MMRP that measures are being implemented</li> </ol> | <ol style="list-style-type: none"> <li>1. Contractor</li> <li>2. Contractor</li> </ol> | <ol style="list-style-type: none"> <li>1. During Construction</li> <li>2. During Construction</li> </ol> | Member Agency      |

### Impact 3.9.3: Conflict with Clean Air Plan

Construction of the NBWRP Phase 2 projects would result in emissions that could conflict with the 2017 Clean Air Plan.

#### Mitigation Measure 3.9.3

Implement **Mitigation Measures 3.9.1-1a** and **3.9.1-1b**.

| Implementation Procedure   | Monitoring and Reporting Actions   | Monitoring Responsibility                                       | Monitoring Schedule   | Responsible Agency |
|--|--|---|---|--------------------|
| <ol style="list-style-type: none"> <li>1. Implement Mitigation Measure 3.9.1-1a.</li> <li>2. Implement Mitigation Measure 3.9.1-1b.</li> </ol> | <ol style="list-style-type: none"> <li>1. Review contract specifications.</li> </ol> | <ol style="list-style-type: none"> <li>1. Contractor</li> </ol> | <ol style="list-style-type: none"> <li>1. Design and During Construction</li> </ol> | Member Agency      |

### Impact 3.9.4: Exposure of Sensitive Receptors

Construction of the NBWRP Phase 2 could expose sensitive receptors to toxic air contaminants, including diesel particulate matter emissions.

## Mitigation Measure 3.9.4

Implement **Mitigation Measure 3.9.1-1b.**

| Implementation Procedure                  | Monitoring and Reporting Actions   | Monitoring Responsibility | Monitoring Schedule               | Responsible Agency |
|---|------------------------------------|---------------------------|-----------------------------------|--------------------|
| 1. Implement Mitigation Measure 3.9.1-1b. | 1. Review contract specifications. | 1. Contractor             | 1. Design and During Construction | Member Agency      |

## Noise

### Impact 3.11.1: Temporary Construction Noise

Construction activity would result in a substantial temporary increase in ambient noise levels in the vicinity of Program projects during construction.

#### **Mitigation Measure 3.11.1: Construction Noise Reduction Measures** (applies to Marin County Lower Novato Creek Project 1- Distribution Project)

The applicable Member Agency shall develop and implement a Construction Noise Reduction Plan. The Construction Noise Reduction Plan shall be submitted to the County of Marin for review and approval prior to construction. A disturbance coordinator shall be designated for the project to implement the provisions of the plan. At a minimum, the Construction Noise Reduction Plan shall implement the following measures:

1. Distribute to the potentially affected residences and other sensitive receptors within 100 feet of project construction boundary a “hotline” telephone number, which shall be attended during active construction working hours, for use by the public to register complaints. The distribution shall identify a noise disturbance coordinator who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaints and institute feasible actions warranted to correct the problem. All complaints shall be logged noting date, time, complainant’s name, nature of complaint, and any corrective action taken. The distribution shall also notify residents adjacent to the project site of the construction schedule.
2. All construction equipment shall have intake and exhaust mufflers recommended by the manufacturers thereof, to meet relevant noise limitations.
3. Maintain maximum physical separation, as far as practicable, between noise sources (construction equipment) and sensitive noise receptors. Separation may be achieved by locating stationary equipment to minimize noise impacts on the community.



4. Impact tools (e.g., jack hammers, pavement breakers) used during construction activities will be hydraulically or electrically powered where feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used.
5. Use construction noise barriers such as paneled noise shields, blankets, or enclosures adjacent to noisy stationary equipment. Noise control shields, blankets or enclosures shall be made featuring a solid panel and a weather-protected, sound-absorptive material on the construction-activity side of the noise shield.
6. Truck hauling access routes to project sites along local roadways shall use roadways with the fewest residences feasible to minimize vehicle noise exposure to nearby residences.

| Implementation Procedure   | Monitoring and Reporting Actions   | Monitoring Responsibility   | Monitoring Schedule  | Responsible Agency |
|--|--|---|--|--------------------|
| <ol style="list-style-type: none"> <li>1. Develop and Implement Construction Noise Reduction Plan.</li> <li>2. Distribute "hotline" telephone numbers to sensitive receptors.</li> <li>3. Designate a noise disturbance coordinator.</li> <li>4. Use appropriate equipment.</li> <li>5. Appropriately locate all stationary noise-generating equipment.</li> <li>6. Designate roadways with fewest residences feasible.</li> </ol> | <ol style="list-style-type: none"> <li>1. Incorporate into contract specifications; sign-of on inspection report and/or MMRP.</li> <li>2. Sign-of on inspection report and/or MMRP.</li> <li>3. Incorporate into contract specifications; sign-of on inspection report and/or MMRP.</li> <li>4. Incorporate into contract specifications; sign-of on inspection report and/or MMRP.</li> <li>5. Incorporate into contract specifications; sign-of on inspection report and/or MMRP.</li> <li>6. Incorporate into contract specifications; sign-of on inspection report and/or MMRP.</li> </ol> | <ol style="list-style-type: none"> <li>1. Contractor</li> <li>2. Contractor</li> <li>3. Contractor</li> <li>4. Contractor</li> <li>5. Contractor</li> <li>6. Contractor</li> <li>7. Contractor</li> </ol> | <ol style="list-style-type: none"> <li>1. Prior to and During Construction</li> <li>2. At least two weeks Prior to Construction</li> <li>3. Prior to Construction</li> <li>4. During Construction</li> <li>5. During Construction</li> <li>6. During Construction</li> </ol> | Novato SD          |

## Impact 3.11.2: Violation of Established Standards during Construction

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

## Mitigation Measure 3.11-2a: Construction Time-of-Day Restriction

All NBWRP Phase 2 project construction activities shall be limited to the acceptable hours identified within the applicable jurisdiction policies and/or municipal codes unless granted a special exemption by the applicable jurisdiction.

| Implementation Procedure                    | Monitoring and Reporting Actions   | Monitoring Responsibility | Monitoring Schedule                 | Responsible Agency |
|---|--|---------------------------|-------------------------------------|--------------------|
| 1. Implement acceptable construction hours. | 1. Incorporate into construction specifications; Sign-off inspection report and/or MMRP. | 1. Contractor             | 1. Prior to and During Construction | Member Agency      |

## Impact 3.11.3: Temporary Vibration Impacts

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

## Mitigation Measure 3.11-3: Vibration Control

The construction contractor shall use a trenchless technology (e.g., horizontal directional drill, lateral drilling, etc.) other than jack-and-bore when there are historical building structures within 100 feet of the proposed activities and/or any building structure within 50 feet of the proposed activities. If the contractor provides the applicable Member Agency with acceptable documentation indicating that alternative trenchless technology is not feasible for the given 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 shall also include the development of a vibration monitoring plan to be implemented during construction of a particular crossing.

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

## Impact 3.11.5: Violation of Established Standards during Operations

Expose people to or generate noise levels in excess of standards established in the local general plan, noise ordinance, or applicable standards of other agencies during operations.

### Mitigation Measure 3.11-5: Stationary – Source Noise Controls

The applicant applicable Member Agency shall retain an acoustical engineer to design stationary -source noise controls and ensure the applicable noise standards are met. Prior to operations of the stationary noise source, the applicable Member Agency shall conduct a single 24-hour noise monitoring survey to ensure compliance with local noise standards.

| Implementation Procedure   | Monitoring and Reporting Actions  | Monitoring Responsibility  | Monitoring Schedule   | Responsible Agency |
|--|---|--|---|--------------------|
| <ol style="list-style-type: none"> <li>Design stationary – source noise controls and ensure applicable noise standards are met.</li> <li>Conduct noise monitoring survey.</li> </ol> | <ol style="list-style-type: none"> <li>Incorporate into construction specifications; Sign-off inspection report and/or MMRP.</li> <li>Incorporate survey results and recommendations into project contract specifications.</li> </ol> | <ol style="list-style-type: none"> <li>Contractor/ Acoustical Engineer</li> <li>Contractor/ Acoustical Engineer</li> </ol> | <ol style="list-style-type: none"> <li>Prior to Construction</li> <li>After Construction</li> </ol> | SCWA               |

## Hazards and Hazardous Materials

### Impact 3.12.2: Emit Hazardous Materials near a School

Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

### Mitigation Measure 3.8.1b

Refer to Impact 3.8.1 in Section 3.8, Transportation and Traffic.

| Implementation Procedure  | Monitoring and Reporting Actions  | Monitoring Responsibility   | Monitoring Schedule   | Responsible Agency       |
|---|---|---|---|--------------------------|
| <ol style="list-style-type: none"> <li>Obtain local road encroachment permits for roads that are affected by construction activities.</li> <li>Implement a traffic control plan which includes the following measures such as identifying hours of</li> </ol> | <ol style="list-style-type: none"> <li>Incorporate permit regulations into contract specifications.</li> <li>Incorporate traffic control plan measures into contract specifications.</li> </ol> | <ol style="list-style-type: none"> <li>Member Agency</li> <li>Member Agency</li> <li>Member Agency</li> <li>Contractor/ Member Agency</li> <li>Member Agency</li> <li>Contractor</li> </ol> | <ol style="list-style-type: none"> <li>Prior to Construction</li> <li>Prior to and During Construction</li> <li>Prior to and During Construction</li> <li>Prior to and</li> </ol> | Petaluma American Canyon |

| Implementation Procedure  | Monitoring and Reporting Actions   | Monitoring Responsibility | Monitoring Schedule  | Responsible Agency |
|---|--|---------------------------|--|--------------------|
| <p>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>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>During Construction</p> <p>5. During Construction</p> <p>6. Prior to Construction</p> |                    |

### Impact 3.12.3: Create Significant Hazards to the Public

Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.

### Mitigation Measure 3.12-3a: Health and Safety Plan

The construction contractor(s) shall prepare and implement a site-specific Health and Safety Plan as required by and in accordance with 29 CFR 1910.120 to protect construction workers and the public during all excavation and grading activities. The Health and Safety Plan shall include, but is not limited to, the following elements:

1. Designation of a trained, experienced site safety and health supervisor who has the responsibility and authority to develop and implement the site health and safety plan;
2. A summary of all potential risks to construction workers and maximum exposure limits for all known and reasonably foreseeable site chemicals;
3. Specified personal protective equipment and decontamination procedures, if needed;
4. Emergency procedures, including route to the nearest hospital; and
5. Procedures to be followed in the event that evidence of potential soil contamination (such as soil staining, noxious odors, debris or buried containers) is encountered. These procedures shall be in accordance with hazardous waste operations regulations and specifically include, but are not limited to, the following: immediately stopping work in the vicinity of the unknown hazardous materials release, notifying the appropriate regulatory agency, and retaining a qualified environmental firm to perform sampling and remediation, as needed.

### Mitigation Measure 3.12-3b: Soil and Groundwater Management Plan

In support of the Health and Safety Plan described above, the construction contractor(s) shall develop and implement a Soil Management Plan that includes materials testing and disposal procedures specifying how the construction contractor will remove, handle, transport, and dispose of all excavated material in a safe, appropriate, and lawful manner. The plan shall identify protocols for soil testing, list action levels<sup>2</sup> to determine whether the soil may be reused or must be disposed of at an offsite facility permitted to accept the materials, identify the approved disposal site, and include written documentation that the disposal site will accept the waste. Contract specifications shall mandate full compliance with all applicable local, state, and federal regulations related to the identification, transportation, and disposal of hazardous materials, including those encountered in excavated soil.

| Implementation Procedure  | Monitoring and Reporting Actions  | Monitoring Responsibility      | Monitoring Schedule   | Responsible Agency          |
|---|---|--------------------------------|---|-----------------------------|
| 1. Prepare and implement a site-specific Health and Safety Plan in accordance with 29 CFR 1910.120. | 1. Incorporate plan requirements into construction specifications.<br>2. Incorporate plan | 1. Contractor<br>2. Contractor | 1. Prior to and During Construction<br>2. Prior to and During | Petaluma<br>American Canyon |

<sup>2</sup> Action levels would include San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels to identify soil requiring cleanup, and landfill hazardous and designated waste acceptance criteria.

| Implementation Procedure                         | Monitoring and Reporting Actions               | Monitoring Responsibility | Monitoring Schedule | Responsible Agency |
|--|--|---------------------------|---------------------|--------------------|
| 2. Develop and implement a Soil Management Plan. | requirements into construction specifications. |                           | Construction        |                    |

## Impact 3.12.5: Interfere with Emergency Response Plan

Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan during construction.

### Mitigation Measure 3.8.1b through 3.8.1f

Refer to Impact 3.8.1 in Section 3.8, Transportation and Traffic.

| Implementation Procedure   | Monitoring and Reporting Actions  | Monitoring Responsibility  | Monitoring Schedule  | Responsible Agency |
|--|---|--|--|--------------------|
| <p>1. Obtain local road encroachment permits for roads that are affected by construction activities.</p> <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>1. Incorporate permit regulations into contract specifications.</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>1. Member Agency</p> <p>2. Member Agency</p> <p>3. Member Agency</p> <p>4. Contractor/ Member Agency</p> <p>5. Member Agency</p> <p>6. Contractor</p> | <p>1. Prior to Construction</p> <p>2. Prior to and During Construction</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> | Member Agency      |

| Implementation Procedure  | Monitoring and Reporting Actions | Monitoring Responsibility | Monitoring Schedule | Responsible Agency |
|---|----------------------------------|---------------------------|---------------------|--------------------|
| 5. Encourage construction crews to park at staging areas to limit lane closures in the public right-of-way.<br><br>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. |                                  |                           |                     |                    |

## Impact 3.12.6: Wildland Fire Hazard

Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

### Mitigation Measure 3.12.6: Fire Safety Plan

Prior to construction, the construction contractor for each project component that would be within or adjacent to an area designated as susceptible to wildland fires shall prepare and implement a fire safety plan to reduce the potential for starting wildland fires during construction activities. The fire safety plan shall provide, but not be limited to, the following elements:

In consultation with local fire agencies, a Fire Safety Plan will be developed for each of the service areas designated as susceptible to wildland fires. The Fire Safety Plans will describe various potential scenarios and action plans in the event of a fire. 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 sites shall 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. Prepare and implement a Fire | 1. Incorporate Fire Safety Plan into construction | 1. Contractor             | 1. Prior to Construction | MMWD<br>Petaluma   |

| Implementation Procedure | Monitoring and Reporting Actions | Monitoring Responsibility | Monitoring Schedule | Responsible Agency |
|--------------------------|----------------------------------|---------------------------|---------------------|--------------------|
| Safety Plan.             | specifications.                  |                           |                     |                    |

## Public Services and Utilities

### Impact 3.13.1: Temporary Effect on Response Times for Emergency Service Providers

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

#### Mitigation Measure 3.13.1

The Member Agencies or Participating Municipalities 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>1. Coordinate with local emergency providers to inform them of the proposed construction activities and schedule.</li> <li>2. Provide alternate routes for emergency service providers around construction areas as necessary.</li> </ol> | <ol style="list-style-type: none"> <li>1. Incorporate into contract specifications</li> <li>2. 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</li> </ol> | <ol style="list-style-type: none"> <li>1. Prior to construction</li> <li>2. During Construction</li> </ol> | MMWD<br>Petaluma<br>SVCSD<br>American Canyon |

### Impact 3.13.2: 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 3.13.2

The Member Agency (i.e., project owner) or its construction contractor shall provide 72-hour notice to the local emergency service providers prior to construction of individual pipeline segments. The Member Agency or its construction contractor shall provide, upon request, a copy of the Traffic Control/Traffic Management Plan to the emergency service agencies for review prior to construction. Discussion on the Traffic Control/Traffic Management Plan is provided in Section 3.8, Transportation and Traffic.



| Implementation Procedure   | Monitoring and Reporting Actions   | Monitoring Responsibility  | Monitoring Schedule  | Responsible Agency  |
|--|--|--|--|---|
| 1. Provide notice to local fire and police agencies to notify them of construction of individual segments of pipeline.<br><br>2. Provide Traffic Control Plan to local emergency service providers for review. | 1. Sign-off on inspection report and/or MMRP.<br><br>2. Sign-off on inspection report and/or MMRP. | 1. Member Agency/ Contractor<br><br>2. Member Agency/ Contractor | 1. 72 hours Prior to Construction at each site.<br><br>2. Prior to Construction. | MMWD<br>Novato SD<br>Petaluma<br>SVCSD<br>SCWA<br>American Canyon |

### Impact 3.13.3: Temporary Disruption to Utility Services

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

#### Mitigation Measure 3.13.3

The Member Agencies (i.e., project owner) or its construction contractor shall 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.
- 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  |
|---|--|--|--|---|
| <ol style="list-style-type: none"> <li>1. Acquire utility excavation or encroachment permits.</li> <li>2. Verify utility locations using Underground Service Alert services and/or field survey.</li> <li>3. Include procedures for excavation, support, and fill of areas around utility cables and pipes.</li> <li>4. Coordinate with affected local utility services to notify them of the proposed construction activities and schedule.</li> <li>5. Implement special construction techniques, as needed.</li> <li>6. Notify residents and businesses in advance to inform them of proposed construction activities and schedule.</li> </ol> | <ol style="list-style-type: none"> <li>1. Comply with regulatory permit, Copies of approved permits will be available onsite.</li> <li>2. Incorporate into contract specifications.</li> <li>3. Incorporate in design and contract specifications</li> <li>4. Incorporate into contract specifications; sign-off on inspection report and/or MMRP</li> <li>5. Sign-off on inspection report and/or MMRP</li> <li>6. Sign-off on inspection report and/or MMRP</li> </ol> | <ol style="list-style-type: none"> <li>1. Contractor/ Member Agency</li> <li>2. Contactor</li> <li>3. Contractor</li> <li>4. Contractor/ Member Agency</li> <li>5. Contractor</li> <li>6. 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. Prior to Construction</li> <li>4. Prior to Construction</li> <li>5. During Construction</li> <li>6. Prior to Construction</li> </ol> | MMWD<br>Novato SD<br>Petaluma<br>SVCSD<br>SCWA<br>American Canyon |

## Cultural Resources

### Impact 3.14.1: Impacts or Adverse Effects to Archaeological Resources, Human Remains, and Tribal Cultural Resources

This impact discussion focuses on archaeological resources, human remains, and tribal cultural resources that are considered historical resources or unique archaeological resources (for the purposes of CEQA), or historic properties (for the purposes of the NHPA).

#### Mitigation Measure 3.14.1a: Inadvertent Discoveries

If prehistoric or historic-era archaeological resources are encountered, the contractor shall immediately cease all work within 100 feet of the 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-era 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 the appropriate Member Agency. The contractor shall not resume work until authorization is received from the appropriate Member Agency.

1. In the event of unanticipated discovery of archaeological resources during construction, the Member Agency shall retain the services of a qualified professional archaeologist (defined as an archaeologist that meets the Secretary of the Interior's Standards) to evaluate the significance of the find prior to resuming any activities.
2. If it is determined that the Project could damage a historical resource or a unique archaeological resource (pursuant to CEQA) or a historic property (pursuant to NHPA), mitigation shall be implemented with a preference for preservation in place. This may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement. If the site cannot be avoided, a qualified professional archaeologist shall prepare and implement a detailed research design and treatment plan in consultation with the Member Agency and the affiliated Native American tribe(s), as appropriate. Treatment for most resources would consist of (but would not be not limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the significant resource to be impacted by the Project. The treatment plan shall include provisions for analysis of data in a regional context, reporting of results within a timely manner, curation of artifacts and data at an approved facility, and dissemination of reports to local and state repositories, libraries, and interested professionals.

### **Mitigation Measure 3.14.1b: 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 PRC 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 Native American Heritage Commission. As provided in PRC Section 5097.98, the Commission 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 PRC Section 5097.98.

### **Mitigation Measure 3.14.1c: Cultural Resources Assessment for Staging Areas**

When locations for staging are defined, the staging areas should be subject to a cultural resources investigation completed by a qualified professional archaeologist that includes, at a minimum:

1. An updated records search at the NWIC;
2. An intensive survey of the staging areas;
3. A report disseminating the results of this research;

4. Recommendations to avoid impacts to identified resources that qualify as historical resources, unique archaeological resources, tribal cultural resources, or historic properties; and
5. If resources cannot be avoided, provide recommendations for additional cultural resources work necessary to mitigate any adverse impacts to recorded and/or undiscovered cultural resources.

### **Mitigation Measure 3.14.1d: Cultural Resources Monitoring**

Prior to authorization to proceed, or issuance of permits, the appropriate Member Agency shall prepare a cultural resources monitoring plan. 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 shall prepare the plan. The plan shall address (but not be limited to) the following issues:

1. Training program for all construction and field workers involved in site disturbance;
2. Person(s) responsible for conducting monitoring activities, including Native American monitors, if necessary;
3. Person(s) responsible for overseeing and directing the monitors;
4. Schedule for submittal of monitoring reports and person(s) responsible for review and approval of monitoring reports;
5. Procedures and construction methods to avoid sensitive cultural resource areas (i.e. boring conduit underneath recorded or discovered cultural resource site);
6. Clear delineation and fencing of sensitive cultural resource areas requiring monitoring;
7. Physical monitoring boundaries;
8. 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);
9. Methods to ensure security of cultural resources sites;
10. Protocol for notifying local authorities (i.e. Sheriff, Police) should site looting and other illegal activities occur during construction.

If an intact archaeological deposit is encountered, all soil-disturbing activities within 100 feet of the find shall cease until the deposit is evaluated. The archaeological monitor shall immediately notify the appropriate Member Agency of the encountered archaeological resource. The protocol outlined in **Mitigation Measure 3.14.1a** and **Mitigation Measure 3.14.1b** would be implemented.

### **Mitigation Measure 3.14.1e Archaeological Research Design and Treatment Plan**

This mitigation measure applies to the Soscol WRF operational storage pond Option A. During the final development design of the proposed operational storage pond Option A, and prior to submittal of a building permit or grading application to the County of Napa, Napa SD shall undertake the following:

1. ***Preservation in Place.*** A qualified archaeologist, in consultation with Napa SD and the appropriate Native American representative(s) shall determine whether preservation in place of site CA-NAP-860/H is feasible. Consistent with CEQA Guidelines Section 15126.4(b)(3), this may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement.

If it is determined that preservation in place is not feasible for the resource and another type of mitigation would better serve the interests protected by CEQA, mitigation of the project impacts on the archaeological research values of the site shall include testing and data recovery through archaeological investigations and Napa SD shall undertake the following:

- o ***Archaeological Research Design and Treatment Plan.*** Because a significant archaeological resource (CA-NAP-860/H) has been previously identified in the project area, Napa SD shall retain a Secretary of the Interior-qualified archaeologist, in consultation with a Native American representative(s), to prepare and implement an Archaeological Research Design and Treatment Plan (ARDTP). The ARDTP will include how a data recovery program would preserve the significant information the archaeological resource is expected to contain. Treatment would consist of (but would not be not limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim of targeting the recovery of important scientific data contained in the portion(s) of the significant resource to be impacted by the project. The ARDTP shall include provisions for analysis of data in a regional context; reporting of results within a timely manner and subject to review and comments by the appropriate Native American representative, before being finalized; curation of artifacts and data at a local facility acceptable to the appropriate Native American representative; and dissemination of final confidential reports to the appropriate Native American representative, the Northwest Information Center of the California Historical Resources Information System, and Napa SD.

### **Mitigation Measure 3.14.1f: Program Elements and Storage Alternative: Cultural Resources Assessment**

If this alternative is selected, the appropriate Member Agency will conduct a cultural resources investigation prepared by a qualified professional archaeologist that includes, at a minimum:

1. An updated records search at the NWIC;

2. An intensive cultural resources survey of the Project area;
3. A report disseminating the results of this research;
4. Recommendations to avoid impacts to identified resources that qualify as historical resources, unique archaeological resources, tribal cultural resources, or historic properties; and
5. 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. 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>2. In the event of discovery of human remains, cease work and contact county coroner and NAHC if necessary.</li> <li>3. Conduct cultural resources investigation for staging areas.</li> <li>4. Prepare Cultural Resources Monitoring Plan.</li> <li>5. Conduct a project-level Cultural Resources Assessment for program-level areas.</li> </ol> | <ol style="list-style-type: none"> <li>1. Copies of DPR 422 or 523 shall be retained in Member Agency files; incorporate recommendations for design modification if necessary.</li> <li>2. Sign-off on inspection report and/ or MMRP; coordinate with NAHC.</li> <li>3. Incorporate into contract specifications.</li> <li>4. Incorporate into contract specifications.</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. Contractor/ Member Agency</li> <li>2. Contractor/ Member Agency</li> <li>3. Qualified Archaeologist</li> <li>4. Qualified Archaeologist</li> <li>5. Qualified Archaeologist</li> </ol> | <ol style="list-style-type: none"> <li>1. During Construction</li> <li>2. During Construction</li> <li>3. Prior to Construction</li> <li>4. Prior to Construction</li> <li>5. Following Project Design; Prior to Construction</li> </ol> | Member Agency Napa SD (Mitigation Measure 3.14.1e) |

## Recreation

### Impact 3.15.1: Temporary Disturbance

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

#### Mitigation Measure 3.15.1a

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 3.8.1**). In addition, the Member Agency shall conduct outreach to notify the public of closures, detours, etc.

| Implementation Procedure   | Monitoring and Reporting Actions  | Monitoring Responsibility  | Monitoring Schedule  | Responsible Agency                |
|--|---|--|--|-----------------------------------|
| <ol style="list-style-type: none"> <li>1. Identify and establish detours for disrupted bikeways and trails.</li> <li>2. Implement Mitigation Measure 3.8.1a.</li> <li>3. Conduct outreach to notify the public of closures, detours, etc.</li> </ol> | <ol style="list-style-type: none"> <li>1. Coordination with local and regional agencies.</li> <li>2. Incorporate in contract specifications and Sign-off on inspection report and/ or MMRP that measures are being implemented.</li> <li>3. Incorporate into contract specifications; sign-off on inspection report and/or MMRP.</li> </ol> | <ol style="list-style-type: none"> <li>1. Contractor/ Member Agency</li> <li>2. Contractor</li> <li>3. Contractor</li> </ol> | <ol style="list-style-type: none"> <li>1. Prior to and During Construction</li> <li>2. Design and Prior to Construction</li> <li>3. Prior to Construction</li> </ol> | Petaluma SVCSD<br>American Canyon |

## Aesthetics

### Impact 3.16.2: 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 Measure 3.16.2a

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

#### Mitigation Measure 3.16.2b

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

#### Mitigation Measure 3.16.2c

Design elements shall be incorporated to enhance visual integration of the pump stations and other above ground structures 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>1. Restore disturbed areas to baseline conditions.</li> <li>2. Vegetate berms with native seed mixes.</li> <li>3. Paint facilities low-glare earth-tone colors and refrain from using highly reflective building materials.</li> </ol> | <ol style="list-style-type: none"> <li>1. Inspect final site conditions after construction and verify its condition is it equivalent to that prior to construction. Incorporated into construction specifications.</li> <li>2. Review construction specifications and landscape design.</li> <li>3. Review construction specifications.</li> </ol> | <ol style="list-style-type: none"> <li>1. Contractor/ Member Agency</li> <li>2. Contractor</li> <li>3. Contractor</li> </ol> | <ol style="list-style-type: none"> <li>1. After Construction</li> <li>2. Design and During Construction</li> <li>3. Design and During Construction</li> </ol> | Novato SD<br>Petaluma<br>SVCSD<br>American Canyon |

### Impact 3.16.3: Source of Light or Glare

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

#### Mitigation Measure 3.16.3a

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.

#### Mitigation Measure 3.16.3b

All exterior lighting is directed downward and oriented to ensure 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.

#### Mitigation Measure 3.16.3c

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>1. Incorporate shielded, downward-oriented, low intensity light sources in design.</li> <li>2. Plant vegetation to act as a natural buffer around areas that</li> </ol> | <ol style="list-style-type: none"> <li>1. Review construction specifications.</li> <li>2. Review construction specifications.</li> <li>3. Review construction specifications.</li> </ol> | <ol style="list-style-type: none"> <li>1. Member Agency</li> <li>2. Member Agency</li> <li>3. Member Agency</li> </ol> | <ol style="list-style-type: none"> <li>1. During Design</li> <li>2. During Design and After Construction</li> <li>3. During Design and During</li> </ol> | Napa SD            |



| Implementation Procedure  | Monitoring and Reporting Actions | Monitoring Responsibility | Monitoring Schedule | Responsible Agency |
|---|----------------------------------|---------------------------|---------------------|--------------------|
| require lighting.<br>3. Incorporate dark colored, non-reflective building material in design. |                                  |                           | Construction        |                    |

### Impact 3.16.4: 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 Measure 3.16.4a

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

#### Mitigation Measure 3.16.4b

Design elements shall be incorporated to enhance visual integration of the pump stations or other project-related above ground structures 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.

#### Mitigation Measure 3.16.4c

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.

| Implementation Procedure  | Monitoring and Reporting Actions   | Monitoring Responsibility                                      | Monitoring Schedule   | Responsible Agency                                      |
|---|--|--|---|---|
| 1. Restore disturbed areas to baseline conditions.<br>2. Paint facilities low-glare earth-tone colors and refrain from using highly reflective building materials.<br>3. Incorporate trees and other vegetation along fence line of facility. Vegetate berms. | 1. Inspect final site conditions after construction and verify its condition is it equivalent to that prior to construction. Incorporated into construction specifications.<br>2. Review construction specifications.<br>3. Review construction specifications and landscape design. | 1. Contractor/ Member Agency<br>2. Contractor<br>3. Contractor | 1. After Construction<br>2. Design and During Construction<br>3. Design and During Construction | MMWD<br>Petaluma<br>AVCSD<br>American Canyon<br>Napa SD |

## Energy Conservation

### Impact 3.17.1 Wasteful Use of Fuel and Energy

Use large amounts of fuel and energy in an unnecessary, wasteful, or inefficient manner during construction and decommissioning.

#### Mitigation Measures 3.9.1-1a and 3.9.1-1b

Refer to Impact 3.9.1 in Section 3.9, Air Quality

| Implementation Procedure  | Monitoring and Reporting Actions  | Monitoring Responsibility  | Monitoring Schedule  | Responsible Agency |
|---|---|--|--|--------------------|
| <ol style="list-style-type: none"> <li>1. Implement BAAQMD Basic Dust Control Measures.</li> <li>2. Implement BAAQMD's Additional Construction Mitigation Measures</li> </ol> | <ol style="list-style-type: none"> <li>1. Incorporate in contract specifications and Sign-off on inspection report and/ or MMRP that measures are being implemented.</li> <li>2. Incorporate in contract specifications and Sign-off on inspection report and/ or MMRP that measures are being implemented</li> </ol> | <ol style="list-style-type: none"> <li>1. Contractor</li> <li>2. Contractor</li> </ol> | <ol style="list-style-type: none"> <li>1. During Construction</li> <li>2. During Construction</li> </ol> | Member Agency      |

## Environmental Justice

### Impact 3.18.1 Disproportionate Impacts to Minority or Low-Income Populations

Project construction could result in significant environmental impacts that could disproportionately affect minority or low-income populations.

#### Mitigation Measures 3.9.1-1a and 3.9.1-1b

Refer to Impact 3.9.1 in Section 3.9, Air Quality

| Implementation Procedure  | Monitoring and Reporting Actions   | Monitoring Responsibility  | Monitoring Schedule  | Responsible Agency                               |
|---|--|--|--|--|
| <ol style="list-style-type: none"> <li>1. Implement BAAQMD Basic Dust Control Measures.</li> <li>2. Implement BAAQMD's Additional Construction</li> </ol> | <ol style="list-style-type: none"> <li>1. Incorporate in contract specifications and Sign-off on inspection report and/ or MMRP that measures are being</li> </ol> | <ol style="list-style-type: none"> <li>1. Contractor</li> <li>2. Contractor</li> </ol> | <ol style="list-style-type: none"> <li>1. During Construction</li> <li>2. During Construction</li> </ol> | MMWD<br>Novato SD<br>Petaluma<br>American Canyon |

| Implementation Procedure | Monitoring and Reporting Actions   | Monitoring Responsibility | Monitoring Schedule | Responsible Agency |
|--------------------------|--|---------------------------|---------------------|--------------------|
| Mitigation Measures      | implemented.<br>2. Incorporate in contract specifications and Sign-off on inspection report and/ or MMRP that measures are being implemented |                           |                     |                    |

## 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 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 4.1

The 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. Cumulative Long-Term Impacts on Biological Resources

Concurrent construction of NBWRP Phase 2 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 in Section 3.6, Biological Resources

Refer to Section 3.6, Biological Resources.

| Implementation Procedure   | Monitoring and Reporting Actions   | Monitoring Responsibility  | Monitoring Schedule  | Responsible Agency |
|--|--|--|--|--------------------|
| 1. Implement Mitigation Measure 3.6.1.<br>2. Implement Mitigation Measure 3.6.2.<br>3. Implement Mitigation Measure 3.6.3.<br>4. Implement Mitigation Measure 3.6.4.<br>5. Implement Mitigation Measure 3.6.5.<br>6. Implement Mitigation Measure 3.6.6.<br>7. Implement Mitigation Measure 3.6.7. | 1. Comply with regulatory permit; Sign-off on inspection report and/ or MMRP.<br>2. Comply with regulatory permit; Sign-off on inspection report and/ or MMRP.<br>3. Comply with regulatory permit; Sign-off on inspection report and/ or MMRP.<br>4. Incorporate into contract specifications; Comply with CDFW guidelines; Sign-off on inspection report and/or MMRP.<br>5. Incorporate into contract specifications; Comply with regulatory permit; Sign-off on inspection report and/ or MMRP.<br>6. Comply with CDFW protocol; Sign-off on inspection report and/ or MMRP.<br>7. Comply with City and County Tree ordinances; Sign-off on inspection report and/ or MMRP. | 1. Member Agency/ Contractor<br>2. Member Agency/ Contractor<br>3. Member Agency/ Contractor<br>4. Contractor/ Qualified Biologist<br>5. Member Agency/ Contractor/ Qualified Biologist<br>6. Member Agency/ Qualified Biologist<br>7. Member Agency/ Certified Arborist | 1. Prior to and During Construction<br>2. Prior to and During Construction<br>3. Prior to and During Construction<br>4. Prior to and During Construction<br>5. Prior to and During Construction<br>6. Prior to and During Construction<br>7. Prior to and After Construction | Member Agency      |

## Impact 4.7. Cumulative Impacts from Greenhouse Gas Emissions

Concurrent operation of NBWRP Phase 2 with other projects could result in a cumulatively considerable net increase in GHG emissions or criteria pollutants for which the region is in non-attainment under applicable standards.

### Mitigation Measures in Section 3.9, Air Quality

Refer to Section 3.9, Air Quality.

| Implementation Procedure   | Monitoring and Reporting Actions   | Monitoring Responsibility  | Monitoring Schedule  | Responsible Agency |
|--|--|--|--|--------------------|
| 1. Implement Mitigation Measure 3.9.1-1a.<br>2. Implement Mitigation Measure 3.9.1-1b.<br>3. Implement Mitigation Measure 3.9.3.<br>4. Implement Mitigation Measure 3.9.4. | 1. Incorporate in contract specifications and Sign-off on inspection report and/ or MMRP that measures are being implemented<br>2. Incorporate in contract specifications and Sign-off on inspection report and/ or MMRP that measures are being implemented<br>3. Incorporate in contract specifications and Sign-off on inspection report and/ or MMRP that measures are being implemented<br>4. Incorporate in contract specifications and Sign-off on inspection report and/ or MMRP that measures are being implemented | 1. Contractor<br>2. Contractor<br>3. Contractor<br>4. Contractor | 1. During Construction<br>2. During Construction<br>3. During Construction<br>4. During Construction | Member Agency      |

## Impact 4.8. Cumulative Long-Term Impacts on Cultural and Historic Resources

Concurrent operation of NBWRP Phase 2 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 cultural resources.

## Mitigation Measures in Section 3.14, Cultural and Tribal Resources

Refer to Section 3.14, Cultural and Tribal Resources.

| Implementation Procedure   | Monitoring and Reporting Actions   | Monitoring Responsibility  | Monitoring Schedule  | Responsible Agency |
|--|--|--|--|--------------------|
| 1. Implement Mitigation Measure 3.14.1a.<br>2. Implement Mitigation Measure 3.14.1b.<br>3. Implement Mitigation Measure 3.14.1c.<br>4. Implement Mitigation Measure 3.14.1d.<br>5. Implement Mitigation Measure 3.14.1e. | 1. Copies of DPR 422 or 523 shall be retained in Member Agency files; incorporate recommendations for design modification if necessary.<br>2. Sign-off on inspection report and/ or MMRP; coordinate with NAHC.<br>3. Incorporate into contract specifications.<br>4. Incorporate into contract specifications.<br>5. Incorporate into contract specifications, and make recommendations for design modification if necessary. | 1. Contractor/ Member Agency<br>2. Contractor/ Member Agency<br>3. Qualified Archaeologist<br>4. Qualified Archaeologist<br>5. Qualified Archaeologist | 1. During Construction<br>2. During Construction<br>3. Prior to Construction<br>4. Prior to Construction<br>5. Following Project Design; Prior to Construction | Member Agency      |

## Growth Inducement and Secondary Effects of Growth

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

The NBWRP Phase 2 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 could result in secondary environmental effects, which include effects that could be significant and unavoidable.

### Mitigation Measure 5.1

Incorporate applicable policies and mitigation measures established to minimize secondary effects of growth in the county and city General Plan EIRs for each Member Agency.

| <b>Implementation Procedure</b>  | <b>Monitoring and Reporting Actions</b>   | <b>Monitoring Responsibility</b> | <b>Monitoring Schedule</b>   | <b>Responsible Agency</b> |
|--|---|----------------------------------|------------------------------|---------------------------|
| 1. Implement applicable policies and mitigation measures adopted in county and city General Plan EIRs to minimize secondary effects of growth. | 1. Incorporate applicable General Plan EIR policies and mitigation measures into contract specifications. | 1. Member Agency                 | 1. Prior to Project Approval | Member Agency             |