

4.1 WATER SUPPLY

This chapter evaluates the potential environmental impacts associated with water supply. While the 2009 DEIR Project Description considered the use of groundwater as the project's only water supply, this Supplement to the 2009 DEIR considers the effects of a second option: importing surface water supplies to meet the majority of the project's water demand and using groundwater only as a supplemental water supply.

This chapter evaluates existing conditions, applicable policies and regulations, and impacts pertaining to the following components:

- ◆ **Imported surface water option.** As described in the Supplement to the Water Supply Assessment prepared for the project (see Appendix I of this Supplement to the DEIR), a successful surface water importation for the project would include:
 - The source of the water, including water rights.
 - Diversion of transferred water from the Sacramento-San Joaquin River Delta (Delta) via State Water Project (SWP) facilities.
 - Conveyance of water through SWP facilities and local water distribution facilities.
- ◆ **Water supply pipeline.** The imported surface water option would include use of the existing water distribution system of either the City of American Canyon or the City of Napa, through one of the following scenarios:
 - **Connection to the City of American Canyon:** The project site is located approximately 0.5 miles from the northern boundary of the City of American's water service area. Should the project connect to the City of American Canyon's water services, a 16-inch pipeline would be extended north to the project site from the existing pipeline on Devlin Road.
 - **Connection to the City of Napa:** The City currently supplies water to the project site via an 18-inch water main.

A. Existing Conditions

1. Land Use and Public Policy

The 2009 DEIR provides a description of the existing land use on the project site and in the vicinity of the project site. This section provides information regarding water rights involved in the imported surface water option, as well as information regarding the land uses through which a water supply pipeline connecting the project site to the American Canyon water supply distribution system would pass. A detailed description of California water rights is provided in Subsection 10, Hydrology and Water Quality, and Subsection 13, Utilities, of Section C, Regulatory Setting, of this chapter.

As described in Chapter 3, Project Description, of this Supplement to the 2009 DEIR, the water rights considered for the imported surface water source are currently owned by the Orange Cove Irrigation District (OCID).¹ The project applicant currently holds an option to purchase water rights yielding an average of 2,160 acre-feet per year (AFY) of water from the Orange Cove Irrigation District, which possesses a pre-1914 appropriative right on Mill Creek, a tributary to the Sacramento River.

The relevant water rights are pre-1914 appropriative rights on Mill Creek, a tributary to the Sacramento River. Prior to December 19, 1914, a Californian could form an appropriative right to the use of surface water by diverting water and putting it to beneficial use. The Orange Cove Irrigation District water right originated as a diversion and appropriation from Mill Creek that can be traced back to Joseph Cone, a significant wheat farmer in Tehama County in the late 1800s. The Cone family and the Cone/Ward Company owned a substantial amount of land, extending north from Mill Creek to the southern banks of Antelope Creek, and extending south to the north side of Deer Creek and into the foothills. Cone also purchased various sections of public land adjacent to his property. Cone's property was split among five

¹ Existing conditions information for the Orange Cove Irrigation District is from the Supplement to the Water Supply Assessment for the proposed project. See Appendix I, pages 8 to 23.

family members at the time of his death in 1894, including Mary Runyon, one of his daughters. The Runyon water right was adjudicated in an August 16, 1920 court decree, under which the water right was allotted 13 percent of the water flowing past the point of diversion, in flows up to 203 cubic feet per second (cfs). The option agreement between OCID and the project applicant is for 2 percent of the original 13 percent Runyon water right. Because this allocation is a percentage of the designated net flow, which changes on a daily basis, the amount of water associated with this right varies. Based on a review of United States Geological Survey data, the average yield of the right was 6,723 AFY between 1929 and 2009.

The historical and current point of diversion from Mill Creek remains the Runyon Dam on Mill Creek in Tehama County, in the vicinity of the unincorporated community of Los Molinos. From the Runyon Dam, water is diverted through the Runyon Ditch on the south bank of the creek to a number of properties, including the Wood Orchard property on which the Orange Cove Irrigation District water right was previously used. Pursuant to the 1920 court decree, the Orange Cove Irrigation District water right is not limited to seasonal diversion, and water can be diverted year-round. The Orange Cove Irrigation District initially acquired this water right with the intent to dedicate the water to a specific environmental restoration project but that was ultimately not approved by the United States Bureau of Reclamation. OCID has since determined to sell the right because it is unnecessary to its operations.

As shown in Figure 3-2 in the Project Description of this Supplement to the 2009 DEIR, the water supply pipeline from the City of American Canyon distribution to the project site would, for the most part, follow existing rights-of-way. From the project site, the pipeline would cross Bedford Slough via the proposed Anselmo Court connection and new bridge across Bedford Slough. From there, the pipeline would follow existing rights-of-way along Napa Valley Corporate Drive, Vista Point Drive, Soscol Ferry Road, and Devlin Road. Existing land uses along this route are primarily vacant and industrial, with scattered office, vineyard, and single-family residential uses.

2. Population, Employment, and Housing

The 2009 DEIR describes existing population, employment, and housing conditions in Napa County. The water supply project components evaluated in this Supplement to the 2009 DEIR do not require that these existing conditions be updated or that any additional conditions be addressed; therefore, no updates have been made to this section.

3. Traffic and Transportation

The 2009 DEIR includes a description of the existing conditions of traffic and transportation within the project site and within the vicinity of the project. The water supply project components evaluated in this Supplement to the 2009 DEIR do not require that these existing conditions be updated or that any additional conditions be addressed; therefore, no updates have been made to this section.

4. Biological Resources

The 2009 DEIR includes a description of existing biological resource conditions on the project site. This section provides information about animal species in Barker Slough, the proposed point of diversion for the surface water transfer. Unless otherwise noted, the existing conditions information is based on the biological resources assessment conducted for the project by ICF International, included in this Supplement to the 2009 DEIR as Appendix K.²

a. Imported Surface Water Option

As described above, the origin of water transferred from the Orange Cove Irrigation District would be Mill Creek. The existing point of diversion on Mill Creek is a tributary to the Sacramento River and Sacramento-San Joaquin River Delta (Delta) and thus would directly supply water to the Barker Slough Pumping Plant in Barker Slough. Each of the ten North Bay Aqueduct pump bays is individually screened with a positive barrier fish screen consisting of a series of flat, stainless steel, wedge-wire panels with a slot width of 3/32 inch. This configuration is designed to exclude fish approxi-

² ICF International, 2011, *Environmental Impacts of Increased Pumping at North Bay Aqueduct for Napa Pipe Project Delta Water Transfer*.

mately 25 mm or larger from being entrained. The slow approach velocity of 0.2 feet per second (ft/sec) also helps to protect fish species. Special-status fish species identified as potentially occurring in the Barker Slough vicinity are the delta smelt (*Hypomesus transpacificus*), Central Valley steelhead (*Oncorhynchus mykiss*), Central Valley spring-run Chinook salmon (*O. tshawytscha*) and Central Valley winter-run Chinook salmon. Sacramento splittail (*Pogonichthys macrolepidotus*), a California species of special concern, longfin smelt (*Spirinchus thaleichthys*) a California Endangered Species Act (ESA) candidate species, and green sturgeon (*Acipenser medirostris*), a threatened species under the ESA and a California species of special concern, also have the potential to occur in Barker Slough.

i. Delta Smelt

Adult delta smelt may begin their spawning migration into the Delta channels in December or January, and migration may continue over several months. Spawning typically occurs between January and July, with peak spawning during April and May. Spawning is assumed to occur along the channel edges in the Delta, including the Sacramento River above Rio Vista, and nearby on Cache, Lindsey, and Barker Sloughs. Eggs are broadcast over the bottom, where they attach to firm substrate (rocks and gravel), tree roots, and aquatic vegetation. Recent observations of delta smelt larvae in the Sacramento Deep Water Ship Canal suggest that sandy beaches may be important for spawning. Hatching takes approximately 9 to 13 days, and larvae begin feeding 4 to 5 days thereafter. Larval smelt feed on rotifers and other zooplankton. Newly hatched larvae contain a large oil globule and as a result are semi-buoyant. As their fins and swim bladder develop, they move higher into the water column. Larvae and juveniles gradually move downstream toward rearing habitat in the estuarine mixing zone.

Estuarine rearing habitat for juvenile and adult delta smelt typically is found in the waters of the lower Delta and Suisun Bay where salinity is between 2 and 7 parts per thousand (ppt). Delta smelt tolerate salinities ranging from 0 to 19 ppt. They typically occupy open shallow (less than 10 feet deep) waters but also occur in the main channel in the region where fresh water and brack-

ish water mix. Delta smelt are found at temperatures ranging from 43 degrees Fahrenheit (°F) to 82°F, although in summer they often are found in habitats that are well oxygenated and relatively cool (less than 72°F). Spawning is assumed to occur at temperatures ranging from 45°F to 72°F.

ii. Central Valley Steelhead

Adult steelhead enter the Sacramento River in July, peak in abundance in September and October, and continue migrating through February or March. Most steelhead spawn from January through March. Spawning occurs in the cool reaches of Central Valley rivers that are downstream of the large dams that block many rivers and in smaller tributary streams. Most Sacramento River steelhead juveniles migrate as 1-year-olds at a length of 6 to 8 inches during the spring and summer.

iii. Central Valley Chinook Salmon

Chinook salmon generally spend 2 to 5 years in the ocean before migrating upstream in the Sacramento and San Joaquin Rivers. Spawning occurs in the cool reaches of Central Valley rivers that are downstream of the terminal dams and in tributary streams. Chinook salmon spawning generally occurs in swift-flowing riffles or along the edges of runs containing clean, loose gravel. Juvenile Chinook salmon remain in fresh water for 3 to 14 months (depending on race) before immigrating to the ocean.

iv. Sacramento Splittail

Adult splittail are found mostly in the Delta, Suisun Bay, Suisun Marsh, and other parts of the San Francisco estuary. Adult splittail commonly are found at salinities between 10 and 18 ppt, although they seem to prefer lower salinities within that range. Adult splittail exhibit a gradual movement upstream during winter and spring, presumably to forage and spawn in flooded areas. Splittail spawn in late April and May in Suisun Marsh and between early March and May in the upper Delta, the lower reaches and flood bypasses of the Sacramento and San Joaquin Rivers, and on the Cosumnes River Preserve.

v. Longfin Smelt

During late fall, as water temperatures drop below 64°F, maturing adults migrate from the lower estuary to the low salinity zone and congregate prior to spawning. As adults ripen, most often from December through February, they make generally short-distance, brief spawning runs into freshwater where spawning takes place over a sand substrate, then return to the low salinity zone. Spawning activity appears to decrease with distance upstream from the low salinity zone. Larvae hatch farther into the Delta in low outflow as compared to high outflow years. The longfin smelt larval densities are highest in January through March.

The California Department of Fish and Game (CDFG) recently issued a California ESA Incidental Take Permit for longfin smelt for the long-term operations of the existing SWP Delta facilities, including the Barker Slough Pumping Plant.³ The Incidental Take Permit for the preservation of longfin smelt populations imposes pumping restrictions of a maximum of 50 cfs (seven-day average flows) at the Barker Slough Pumping Plant during dry and critical dry years from January 15 to March 31.⁴ However, Barker Slough Pumping Plant pumping has generally been less than 50 cfs in January through March so that the pumping restrictions have no practical effect.

Longfin smelt use the Cache Slough region as spawning habitat more during low outflow winter/springs when the low-salinity zone encompasses parts of the Delta. Migrating adult longfin smelt get to the Cache Slough region using the strong outflow signal and tidal currents of the Sacramento River and Yolo Bypass. Diversion of water from Barker Slough is lower during the winter – which reduces longfin smelt larvae entrainment from the slough. Entrainment and impingement of adult longfin smelt staging or spawning in Barker Slough should be minimal due to the screened diversion with fairly low approach velocities.

³ California Department of Fish and Game, Bay Delta Region, 2009, *California Endangered Species Act, Longfin Smelt Incidental Take Permit No. 2081-2009-001-03*.

⁴ California Department of Fish and Game, Bay Delta Region, 2009, *California Endangered Species Act, Longfin Smelt Incidental Take Permit No. 2081-2009-001-03*.

vi. Green Sturgeon

Green sturgeon are known to migrate from the waters of Mexico to the Bering Sea. Despite this large geographic range, the only known spawning locations for green sturgeon occur in the Klamath, Sacramento, and Rogue Rivers. Green sturgeon make extensive oceanic migrations and come into freshwater rivers only to spawn. Adults migrate into rivers to spawn from April to July, with May to June being the peak spawning season.

b. Water Supply Pipeline

The water supply pipeline would follow existing roadways starting from the connection point in Devlin Road. From the existing 16-inch American Canyon pipeline, the water supply pipeline extension would be installed within the existing roadway right-of way along Devlin Road to Anselmo Court and the new bridge over Bedford Slough to the southern edge of the Napa Pipe site where it would tie into the on-site water storage tank. The entire alignment would be contained within existing or future paved roadways, and no direct disturbance to existing vegetation would be required. Vegetation along the edge of the existing roadways consists of non-native grassland, scattered native and ornamental trees, and dense riparian cover at the Suscol Creek crossing. Potential impacts to existing vegetative cover and Bedford Slough would occur regardless in constructing the new vehicle entrance onto the Napa Pipe site, as discussed in the Biological Resources section of the 2009 DEIR.

The water supply pipeline alignment is not expected to support any special-status species or wetland resources, other than those described in the Biological Resources section of the 2009 DEIR for the Bedford Slough crossing. Suscol Creek may support steelhead and other aquatic-dependent special-status species, but the pipeline would be contained within the existing roadway crossing, and no disturbance to the creek or associated aquatic habitat is anticipated. Similarly, no wetland would be affected specifically as a result of the new pipeline construction given it would be located within existing or future roadways.

Wildlife use along the water supply pipeline alignment is limited given the current function as a roadway. Bedford Slough provides important aquatic and marshland habitat, but the new vehicle bridge would be installed regardless of the water supply pipeline. Similarly, Suscol Creek provides important cover and a perennial source of water for aquatic and terrestrial species, but the water supply pipeline would be constructed within the existing roadway and creek crossing on Devlin Road.

5. Noise

The 2009 DEIR includes a description of the existing noise conditions at the project site. The water supply project components evaluated in this Supplement to the 2009 DEIR do not require that these conditions be updated or that any additional conditions be addressed; therefore, no updates have been made to this section.

6. Air Quality

The 2009 DEIR includes a description of the existing air quality conditions. The water supply project components evaluated in this Supplement to the 2009 DEIR do not require that these conditions be updated or that any additional conditions be addressed; therefore, no updates have been made to this section.

7. Greenhouse Gas Emissions

The 2009 DEIR provides general background information on greenhouse gas (GHG) emissions and the environmental impacts of climate change, including the effects that sea level rise could have on the Napa River. This section includes information pertaining to the effects of climate change on the Delta.

Climate change has had, and will continue to have, an impact on water supplies in California. Climate change can shift the timing of streamflow and alter the management of water supply reservoirs. Impacts on water resources depend on the degree of warming, as well as local and regional climates. Global warming is likely to affect the hydrologic cycle, which affects California's precipitation pattern. Evidence exists showing the Sierra snowmelt

starting earlier, with more runoff shifting from the spring to the winter, and an increase in winter flooding frequency. Other potential effects of climate change on California's water resources include the possible loss of annual storage in California's snowpack, sea level rise, increases in water temperature, and variations in evapotranspiration rates. The Delta is vulnerable to sea level rise because Delta lands are located below sea level. These lands are protected by levees, but could become inundated in the event of levee failure. If levees in the Delta fail, salt water would intrude on freshwater, which would threaten fresh water supplies.⁵

The California Department of Water Resources' (DWR's) May 2009 report *Using Future Climate Projections to Support Water Resources Decision Making in California* examines the impacts of climate change on Central Valley Project (CVP) and SWP facilities. The information in the DWR report indicates that SWP and CVP water supplies will be less reliable under future climate conditions using current system infrastructure and operating rules. The DWR also releases bi-annual reports on current and future SWP water supply conditions. Due to these conclusions regarding the effects of climate change on water supplies, governmental and non-governmental organizations recommend that water decision makers operate water systems to allow for increased flexibility.⁶

8. Hazards and Hazardous Materials

The 2009 DEIR includes a description of the existing conditions in regards to hazards and hazardous materials within the project site. This section provides information regarding hazardous waste sites in the vicinity of the water supply pipeline.

The Department of Toxic Substances Control and State Water Resources Control Board (SWRCB) have identified sites adjacent to the pipeline align-

⁵ Brownstein, Hyatt, Farber and Schreck, 2011, *Supplement to the Water Supply Assessment for the Napa Pipe Project, Napa County, California*, pages 49-50.

⁶ Brownstein, Hyatt, Farber and Schreck, 2011, *Supplement to the Water Supply Assessment for the Napa Pipe Project, Napa County, California*, pages 50-52.

ment that have been known to contain hazardous materials. One of these sites is on Soscol Ferry Road and is a Leaking Underground Fuel Tank site; the cleanup of this site is completed and the case was closed in 1993. The other site is on State Route 29 and is listed as a Tiered Permit site. There are no federal Superfund sites, State Response sites, voluntary cleanup sites, school cleanup sites, or Spills, Leaks, Investigation, and Cleanup sites identified.⁷

9. Geology, Soils and Seismicity

The 2009 DEIR includes a description of the existing geologic setting of the project site and surrounding area. Figures 4.9-1 and 4.9-2 of the 2009 DEIR show active faults and geologic information within the vicinity of the project site, respectively.

10. Hydrology and Water Quality

The 2009 DEIR includes descriptions of existing hydrology and water quality conditions on the project site. The 2009 DEIR evaluated the use of groundwater as the sole water supply source. As described in Chapter 3, Project Description, of this Supplement to the 2009 DEIR, the imported surface water option would involve increased pumping at the Barker Slough Pumping Plant and conveyance of surface water through the North Bay Aqueduct. This section provides information regarding hydrology and water quality in the Delta and Barker Slough, the water source, and point of diversion under the imported surface water option evaluated in this Supplement to the 2009 DEIR. The Barker Slough Pumping Plant is located at the upstream end of Barker Slough, which is connected to Lindsey Slough and Cache Slough. Section 13, Utilities, describes existing constraints on the use of the North Bay Aqueduct.

The Delta water pumped into the North Bay Aqueduct during the winter and spring rainfall runoff season is generally higher in turbidity and total organic carbon (TOC) and may require more treatment than water diverted during other times of the year. These water quality problems in the North Bay Aqueduct

⁷ EnviroStor, Department of Toxic Substances Control, <http://www.envirostor.dtsc.ca.gov/public/>, accessed on December 14, 2010.

ueduct generally occur in the winter when runoff from the Barker Slough watershed is pumped into the North Bay Aqueduct; studies have shown that winter runoff from the local watershed is the source of elevated levels of turbidity and TOC, and no point sources were identified. The local watershed is used mostly for grazing of livestock. Any dissolved organic carbon (DOC) is generated from natural sources such as the soil and decaying plant matter. Studies have shown that it is not possible to effectively control organic carbon in the North Bay Aqueduct watershed. Turbidity comes from soil particles that have eroded during rainfall runoff events. The soil particles from the Barker Slough watershed do not easily settle and may remain in suspension (i.e. high turbidity) for long periods.

The drinking water treatment plants (WTPs) that would be utilized under the imported surface water option — the American Canyon WTP and the City of Napa's Jamieson Canyon WTP — have been designed to take into consideration the North Bay Aqueduct seasonal water quality and are able to meet current drinking water standards.

The Barker Slough watershed is about 14.5 square miles of agricultural and grazing land (with some urban drainage from east Vacaville), with a 40-acre lake (Campbell Lake) located about 1.5 miles upstream of the Barker Slough Pumping Plant. During large rainfall events, a substantial flow with high TOC and high turbidity flows through Campbell Lake past the Barker Slough Pumping Plant. Because the Barker Slough channel is relatively small, a slug of runoff water may fill the upstream end of Barker Slough and be pumped at the Barker Slough Pumping Plant for several days before tidal exchange can reduce the influence of Barker Slough watershed runoff.

11. Cultural Resources

The 2009 DEIR describes existing cultural resource conditions on the project site. This section provides existing conditions information for the lands through which the water supply pipeline would cross. The following information was provided by Tom Origer & Associates and a complete report including references to cited material is included in Appendix J of this Supplement to the DEIR.

Archival research found that the approximately 40 percent of the water supply pipeline route had been surveyed in the past, and that most of that work took place in 1994 or earlier. Given the passage of time and the fact that there are known resources within or near the study area, it was thought prudent to re-inspect the routes.

Review of the ethnographic literature found reference to the village of *sû sk l*, described as being “on the east bank of the Napa river probably at or near the present town of Suscol.” The town of Suscol was located about ¼-mile south of the water supply pipeline route, at the western toe of a prominent hill, north of Suscol Creek. Archaeological investigations were conducted at *sû sk l* (CA-NAP-15) as part of the Napa Bypass project in 1978 and 1979.

The site was first recorded in 1946 by Adan Treganza, and revisited in 1974 and 1978 by Tom King and Sonia Tamez, respectively. As part of the Napa Bypass project, an auguring program and site testing were completed by archaeologists from Sonoma State University in 1978⁸ and 1979⁹. Excavation focused on the future route of Devlin Road, where it would pass through the archaeological site. The water supply pipeline proposes to be located on the same stretch of road.

Two other resources have been recorded along the pipeline routes. In 1981, Sally Salzman documented an 800-meter-long ditch (CA-NAP-598H) on the north side of the hill traversed by the water supply pipeline. Along the recycled water pipeline route, a short segment of the Southern Pacific Railroad (P-28-000966) was recorded by J. Nelson in 1999. Also of note is the Soscol House, an 1855 hotel and tavern that is listed on the National Register of Historic Places. The house is now located at the junction of Soscol Ferry Road

⁸ Tamez, S, 1978. *Archeological Investigations at Soscol*, CA-NAP-15. Document S-1318 on file at the Northwest Information Center, Rohnert Park.

⁹ Schwaderer, R., Stradford, R., and D. Fredrickson, 1979, *An Archaeological Study of the Suscol Village*, CA-NAP-15, Napa County, California. Document on file at the Northwest Information Center, Rohnert Park.

and Devlin Road, adjacent to the recycled water pipeline route, having been moved from its original location on the north side of Soscol Ferry Road.

Review of historical maps found buildings and a wharf associated with the Suscol Ferry were located at the western foot of the hill south of the Napa Pipe property. The Southern Pacific Railroad runs through that area at present, and the planned route of the recycled water pipeline includes this section of the grade. The original line was constructed in 1865 as the Napa Valley Railroad, and the 1902 USGS map for this area shows that at least two of the ferry buildings were extant at that time. Buildings associated with the Stanly Ranch are first depicted on the 1858 Coast Survey map. No other buildings, structures, or other historical features were noted on historical maps.

12. Public Services and Recreation

The 2009 DEIR includes descriptions of existing conditions for law enforcement, fire protection services, emergency medical response, schools, library services, and parks and recreation. The water supply project components evaluated in this Supplement to the 2009 DEIR do not require that these conditions be updated or that any additional conditions be addressed; therefore, no updates have been made to this section.

13. Utilities

The 2009 DEIR includes descriptions of existing conditions for water supply, wastewater, stormwater, solid waste, and energy resource utilities. The water supply project components evaluated in this Supplement to the 2009 DEIR do not require that wastewater, stormwater, solid waste, or energy resource information be addressed or updated. This section provides existing conditions information regarding water supply utilities that would be utilized by the surface water transfer and water supply pipeline.

As stated above, the project proposes the possibility to divert surface water and convey it to the project site via the North Bay Aqueduct. The North Bay Aqueduct starts at Barker Slough and delivers water into Napa County at Jamieson Canyon. Water enters the North Turnout Reservoir and is treated by the City of Napa and City of American Canyon WTPs and distributed to

water users through the cities' respective distribution systems. Unless otherwise noted, information in this section is from the Supplement to the Water Supply Assessment for the project, available in Appendix I.

Water is pumped from the Delta at Barker Slough Pumping Plant, which was constructed as a facility of the SWP to service water contracts for the Napa County Flood Control and Water Conservation District (NCFCWCD) and the Solano County Water Agency. The Barker Slough Pumping Plant consists of nine pumps with a current total capacity of 154 cfs and a potential future capacity of 228 cfs. There are two 14.4 cfs and seven 28.4 cfs pumping units. Water is lifted about 120 feet through a 6-foot-diameter pipe. Fish screens are about 10 feet high and located at an elevation of -3 feet to -13 feet mean sea level (msl) near the bottom of the dredged forebay channel extending about 1,000 feet from Barker Slough. The screen area is about 10 feet deep and 100 feet wide. This provides a screen approach velocity of about 0.15 feet per second at the current pumping capacity of 154 cfs.¹⁰

From the Barker Slough Pumping Plant, Reach 1 of the North Bay Aqueduct conveys water to the Travis Surge Tank located 9 miles to the west.¹¹ Water then flows by gravity through Reach 2 of the North Bay Aqueduct to Cordelia Forebay. Although Reaches 1 and 2 were intended to carry 175 cfs, the as-built capacity and growth of a biofilm on the inside of the pipeline has reduced the flow to approximately 140 cfs. Of that capacity, the NCFCWCD may utilize 41.8 cfs and the Solano County Water Agency may utilize 98.2 cfs. To the extent that one of those agencies does not use its entire capacity right, the other agency may utilize the excess.

From Cordelia Forebay, Cordelia Pumping Plant sends water through one of three pipelines to the City of Vallejo (Reach 3A, 53.0 cfs), NCFCWD (Reach 3B, 52.4 cfs), or the City of Benecia (Reach 3C, 32.6 cfs). The capacity in each

¹⁰ ICF International, 2011, *Environmental Impacts of Increased Pumping at North Bay Aqueduct for Napa Pipe Project Delta Water Transfer*, page 2.

¹¹ ICF International, 2011, *Environmental Impacts of Increased Pumping at North Bay Aqueduct for Napa Pipe Project Delta Water Transfer*, page 2.

reach is controlled by the agencies at the terminus, so that NCFPWD has exclusive use of Reach 3B. Since that reach can convey at least 52.4 cfs, compared to NCFPWD's proportional allocation of only 41.8 cfs from Reaches 1 and 2, Reach 3B does not act as a limitation on conveyance of water to Napa County. Reach 3B travels from the Cordelia Pumping Plant to the Napa Turnout Reservoir located in Jamieson Canyon.

NCFPWD utilizes Reach 3B to deliver water to its three subcontractors, each of which has its own conveyance allocation, with City of Napa having 35.6 cfs, the City of Calistoga 1.8 cfs, and the City of American Canyon 8.6 cfs. Due to the restrictions in Reaches 1 and 2, those figures have been reduced proportionately, with the City of Napa having 34.0 cfs for its own and Calistoga, and the City of American Canyon having 7.8 cfs. If the City of Napa or City of Calistoga does not utilize its full capacity on any given day, the City of American Canyon may utilize the excess capacity. There are certain days during the peak summer period, that the City of American Canyon uses the maximum capacity in the pipeline. During these periods, pipeline capacity would not be available for the surface water proposed for use at the Napa Pipe site. In other periods, however, excess capacity would allow for the import of water supplies for use by the proposed Napa Pipe project. Further detailed discussion is included in the Supplement to the Water Supply Assessment in Appendix I.

As stated above, both the City of Napa and the City of American Canyon own and operate WTPs in Jamieson Canyon, where they take water from the Napa Turnout Reservoir. The City of Calistoga receives water on a wholesale basis from the City of Napa through that agency's Jamieson Canyon WTP. Both the City of Napa and the City of American Canyon have water distribution systems that convey water relatively close to the project site, and either could provide wholesale water service or convey water to the project site.

The City of American Canyon treats water at its own American Canyon WTP before injecting it into the City of American Canyon water distribution

system. The City of American Canyon WTP uses both a conventional sedimentation and filtration treatment process and a membrane filtration treatment process. The WTP produces up to 5.5 million gallons per day (mgd) of potable water for the City of American Canyon's service population. In addition to water from its own WTP, the City of American Canyon receives treated water through an agreement with the City of Vallejo.¹² The City of American Canyon also utilizes recycled water from its Water Recycling Facility for irrigation purposes.¹³ The project site is located approximately 0.5 miles from the northern boundary of the City of American's water service area. The likely connection point to the project's water supply pipeline would be at Devlin Road, just south of the Devlin Road Bridge over Soscol Creek, where there is an existing 16-inch pipeline.¹⁴

The City of Napa's Jamieson Canyon WTP was recently updated to increase its treatment capacity to 20 mgd.¹⁵ The City of Napa does not produce or distribute recycled water; the City's service area utilized recycled water which is treated, distributed, and managed by the Napa Sanitation District.¹⁶ The City of Napa distribution system provides water supply service to over 85,000 people in the City of Napa and adjacent areas.¹⁷ The City of Napa

¹² City of American Canyon, 2005, *Urban Water Management Plan*, page 4-4.

¹³ City of American Canyon, 2005, *Urban Water Management Plan*, page 4-5.

¹⁴ Hydrosience Engineers, Inc., 2011, *Napa Pipe Project Water and Wastewater Feasibility Study*, page 20.

¹⁵ City of Napa, 2006, *Urban Water Management Plan 2005 Update*, page 3-6; and City of Napa Jamieson Canyon WTP Improvements Project website, available at http://www.cityofnapa.org/index.php?option=com_content&view=article&id=367&Itemid=465, accessed on December 8, 2010.

¹⁶ City of Napa, 2006, *Urban Water Management Plan 2005 Update*, page 8-1.

¹⁷ City of Napa Water Division website, available at http://www.cityofnapa.org/index.php?option=com_content&task=view&id=53&Itemid=281, accessed on December 8, 2010.

currently provides water to industrial uses at the project site via an 18-inch water main.¹⁸

14. Aesthetics

The 2009 DEIR provides a description of the existing character of the project site and the surrounding area, as well as a description of scenic vistas within and across the project site and views of the project site from off-site locations. The water supply project components evaluated in this Supplement to the 2009 DEIR do not require that these conditions be updated or that any additional conditions be addressed; therefore, no updates have been made to this section.

B. Regulatory Setting

1. Land Use and Public Policy

The 2009 DEIR provides a description of the regulatory setting with regard to policies that are applicable to the project site. This section provides regulatory information relevant to the imported surface water option.

In California, a water right provides a legal entitlement authorizing water to be diverted from a specified source and put to a reasonable beneficial use. Water rights are property rights that grant the rights holder with the right to use the water; the water rights holder does not possess the water itself. State law distinguishes between riparian rights and appropriative rights. Riparian rights allow water to be used on lands that are directly adjacent to the source of water; appropriative water rights allow water to be diverted for delivery to non-adjacent lands.¹⁹ The imported surface water option would be subject to laws governing appropriative water rights.

¹⁸ Hydrosience Engineers, Inc., 2011, *Napa Pipe Project Water and Wastewater Feasibility Study*, page 9.

¹⁹ California Environmental Protection Agency, Division of Water Rights, http://www.waterboards.ca.gov/waterrights/board_info/water_rights_process.shtml, accessed on December 8, 2010.

State law regulates the conditions under which water can be transferred from one owner, point of diversion, and purpose of use to another. California law distinguishes between pre-1914 and post-1914 appropriative water rights. As stated above in Section A.1.a., the water rights possessed by the Orange Cove Irrigation District are pre-1914 appropriative rights. In the transfer of water rights that were initiated prior to December 19, 1914, parties (the transferor and transferee) may implement a water transfer so long as no others are injured by the change. No approval is needed from any State regulatory agency.²⁰

2. Population, Employment, and Housing

The 2009 DEIR describes the regulatory setting of Napa County. No updates were made to this section. The water supply project components evaluated in this Supplement to the 2009 DEIR do not require this information to be updated.

3. Traffic and Transportation

The 2009 DEIR considered documents prepared by the County of Napa, the City of Napa, the City of American Canyon, the City of Vallejo, and the California Department of Transportation (Caltrans), as study intersections are located in each of those jurisdictions. Relevant policy goals, guidelines, and objectives adopted by these jurisdictions are provided in the 2009 DEIR. The water supply project components evaluated in this Supplement to the 2009 DEIR do not require this information to be updated.

4. Biological Resources

This section provides regulatory information relevant to special-status species in the Delta, and is based on the report, “Environmental Impacts of Increased Pumping at North Bay Aqueduct for Napa Pipe Project Delta Water Transfer,” prepared by ICF International²¹ (included in Appendix K of this Sup-

²⁰ Brownstein, Hyatt, Farber and Schreck, 2011, *Supplement Water Supply Assessment for the Napa Pipe Project, Napa County, California*, page 9.

²¹ ICF International, 2011, *Environmental Impacts of Increased Pumping at North Bay Aqueduct for Napa Pipe Project Delta Water Transfer*.

plement to the DEIR). As described in the 2009 DEIR, special-status species are plants and animals that are legally protected under the State and/or federal ESAs, the Migratory Bird Treaty Act, the California Fish and Game Code, or other regulations. In addition, pursuant to CEQA Guidelines Section 15380, special-status species also include other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration.

a. Imported Surface Water Option

The North Bay Aqueduct has been subject to pumping restrictions to protect delta smelt under the federal ESA. Although the North Bay Aqueduct intake has screens that were designed to United States Fish and Wildlife Service (USFWS) criteria for delta smelt, the screens will not protect larval (<1 inch) delta smelt. A larval monitoring program was required by USFWS in the 1995 Operations Criteria and Plan (OCAP) Biological Opinion for delta smelt. In several of the years since delta smelt monitoring started in 1996, a temporary pumping restriction of 65 cfs was placed on the North Bay Aqueduct during the spring months of March through May (when larvae were found) in order to protect larval delta smelt from being entrained at the North Bay Aqueduct pumping plant.

As a result of lawsuits challenging the ESA compliance of the CVP and SWP OCAP, the USFWS issued a new Biological Opinion on the effects on delta smelt on December 15, 2008,²² which concluded that the continued operation of the CVP and SWP will jeopardize the continued existence of delta smelt and adversely modify its critical habitat. The Biological Opinion prescribed a Reasonable and Prudent Alternative (RPA) intended to protect all life stages of delta smelt and avoid adverse modification to critical habitat. Components of the RPA included: reduced entrainment of pre-spawning adult delta smelt during December to March by controlling Old and Middle River flows during vulnerable periods; reduced entrainment of larval and juvenile smelt by

²² United States Fish and Wildlife Service, 2008, *Formal Endangered Species Act Consultation and Biological Opinion on the Proposed Coordinated Operations of the Central Valley Project (CVP) and State Water Project (SWP)*.

controlling Old and Middle River flow during spring periods, allowing smelt to successfully rear in the Central Delta and move downstream when appropriate; improved fall habitat for delta smelt by increasing Delta outflow during the fall months; and enhanced delta smelt habitat via creation or restoration of at least 8,000 acres of intertidal and subtidal habitat in the Delta and Suisun Marsh.

The USFWS' 2008 Biological Opinion evaluation concluded that the North Bay Aqueduct effects on delta smelt are not a significant impact in comparison with other CVP and SWP effects in the Delta. The only calculated effects of North Bay Aqueduct pumping on entrainment were estimates of the number of larvae lost in a year as the monitored fish larvae density (fish/acre-feet) times the daily pumping (acre-feet/day). The methods used to calculate these annual totals were not described. Although the larval delta smelt monitoring for the North Bay Aqueduct is no longer required, the method can be extended to demonstrate the relative effects of larval entrainment on an assumed population (i.e. larval density) in the Cache Slough complex tidal channels. The entrainment impacts of the Barker Slough Pumping Plant, with a total diversion flow of 50 cfs during the two-month spring period when the larvae are less than 25 mm, was calculated to be about 2.5 percent. This existing condition effect from North Bay Aqueduct pumping (50 cfs to 75 cfs) was considered less than significant in the 2008 USFWS Biological Opinion, and no restrictions were placed on the simulated future (2020) North Bay Aqueduct pumping. The daily entrainment loss was assumed to depend on the channel volume, the pumping volume, and the remaining larval density.²³ Based on these factors, the calculated loss of delta smelt to North Bay Aqueduct entrainment was estimated to be 25 percent as a result of North Bay Aqueduct pumping of 50 cfs in March and April. This calculation is described in further detail in Appendix K. This 25 percent loss is likely higher than would actually occur because it was based on the assumption that all of the larvae would remain within the Cache Slough complex. This is unlikely to be true

²³ ICF International, 2011, *Environmental Impacts of Increased Pumping at North Bay Aqueduct for Napa Pipe Project Delta Water Transfer*.

because the tidal flow moves larvae towards Rio Vista and the Sacramento River. If larvae are moving out of the Cache Slough complex, then the North Bay Aqueduct entrainment loss will be reduced. The assumption that the larvae remain fully mixed within the Cache Slough complex channels is also unlikely to be true. CDFG monitoring data suggests that the actual entrainment loss from North Bay Aqueduct pumping of 50 cfs is most likely less than 2.5 percent of the larvae spawned within the Cache Slough complex.

The National Marine Fisheries Service OCAP Biological Opinion, released in June 2009 concluded that the CVP and SWP OCAP would jeopardize the continued existence of federally listed endangered Sacramento River winter-run Chinook salmon, threatened Central Valley spring-run Chinook salmon, threatened Central Valley steelhead, threatened southern distinct population segment of North American green sturgeon, and endangered southern resident killer whales.²⁴ The 2009 National Marine Fisheries Service Biological Opinion contained a suite of RPA measures to avoid the likelihood of jeopardy to the species and to avoid adverse modification of designated and proposed critical habitat. In the Delta, the main actions included changes in operations to the Delta Cross Channel to reduce the number of salmonids entering the central Delta; maintenance of adequate flows in the Sacramento and San Joaquin Rivers to increase survival of migrating salmonids; reduction of the likelihood of entrainment/salvage at the south Delta fish collection facilities; and improved efficiency of the fish collection facilities. The North Bay Aqueduct pumping facility was included in the National Marine Fisheries Service Biological Opinion.

The Bay Delta Conservation Plan (BDCP) planning and evaluation efforts of several State and federal agencies have identified the Yolo Bypass and Cache Slough complex as important tidal wetlands restoration “opportunity areas.”²⁵

²⁴ National Marine Fisheries Service, 2009, *Biological Opinion and Conference Opinion of the Long-Term Operations of the Central Valley Project and State Water Project*.

²⁵ SAIC Consultant Team, November 18, 2010., *Bay Delta Conservation Plan Working Draft*, pages 3-12 and 3-13.

The BDCP effort is a major Delta ecosystem and endangered species conservation planning effort that was begun in 2007 and was scheduled to release the final conservation plan description in 2010, with an Environmental Impact Report/Environmental Impact Statement evaluation of conservation plan alternatives in 2011.

In November 2010, the BDCP released a Bay Delta Conservation Plan Working Draft that shows tidal marsh restoration targets within the Yolo Bypass/Cache Slough Area.²⁶ Implementation of these conservation strategy measures is designed to support increases in delta smelt, longfin smelt, and salmonid populations in the Delta. The increased presence of these listed species in the Cache Slough complex could result in further pumping restrictions at the Barker Slough Pumping Plant.

b. Water Supply Pipeline

The 2009 DEIR describes relevant federal, State, and local regulations pertaining to biological resources.

5. Noise

The 2009 DEIR provides a description of the regulatory setting with regard to noise. The water supply project components evaluated in this Supplement to the 2009 DEIR do not require this information to be updated.

6. Air Quality

The 2009 DEIR describes federal, State, and regional regulations relevant to the project. The water supply project components evaluated in this Supplement to the 2009 DEIR do not require this information to be updated. Chapter 4.6, Air Quality and GHG of this Supplement to the 2009 DEIR provides an updated evaluation of air quality impacts based on the Bay Area Air Quality Management District's updated CEQA Guidelines. The discussion takes into account impacts to air quality and GHG emissions resulting from this project component.

²⁶ SAIC Consultant Team, November 18, 2010. *Bay Delta Conservation Plan Working Draft*, pages 3-12 and 3-13.

7. Greenhouse Gas Emissions

The 2009 DEIR summarizes key federal, State, regional, and County statutes, regulations and policies that would apply to the project. The water supply project components evaluated in this Supplement to the 2009 DEIR do not require this information to be updated. As mentioned above, see Chapter 4.6, Air Quality and GHG, of this Supplement to the DEIR, for a discussion of updated BAAQMD thresholds pertaining to air quality and GHG emissions.

8. Hazards and Hazardous Materials

The 2009 DEIR provides a description of the regulatory setting with regard to hazards and hazardous materials. The water supply project components evaluated in this Supplement to the 2009 DEIR do not require this information to be updated.

9. Geology, Soils and Seismicity

The 2009 DEIR provides a description of the regulatory setting with regard to geology and soils that have been adopted by agencies other than Napa County that are applicable to the project site. The water supply project components evaluated in this Supplement to the 2009 DEIR do not require this information to be updated.

10. Hydrology and Water Quality

The 2009 DEIR describes existing federal, State, and local regulations pertaining to hydrology and water quality. This section includes information related to water quality planning in the Delta.

a. Bay Delta Conservation Plan (BDCP)

As stated above, the BDCP effort is a major Delta ecosystem and endangered species conservation planning effort that was begun in 2007. The BDCP allows the State Water Contractors, an association of 27 agencies who take delivery of water from the SWP and must comply with federal and State ESAs, to work together in planning for a new cross-Delta water conveyance system. The BDCP identifies strategies to improve the overall health of the Delta and ways to transport fresh water through and around the Delta. Under the BDCP, federal, and State water projects may be constructed and operated

through a conservation-based approach that provides funding for ecosystem restoration. BDCP participants have identified the Yolo Bypass and Cache Slough complex (which includes the Barker Slough) as key wetlands restoration opportunity areas. The release of the public review draft of the BDCP has been delayed to the spring of 2011.²⁷

b. Delta Flow Criteria

The Sacramento-San Joaquin Delta Reform Act of 2009 required the SWRCB to develop new flow criteria for the Delta ecosystem. On July 21, 2010 the SWRCB released the public review draft of the *Report on Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem*. On August 3, 2010 the SWRCB approved Resolution 2010-0039 approving the final report determining new flow criteria. The report concludes that restoring the Delta's fisheries and hydrologic rhythms are inconsistent with the continued conveyance of large volumes of water through the Delta for export. The diversion of water at Barker Slough could be reduced in order to meet flow criteria calling for 75 percent unimpaired Sacramento River inflow from November through June.²⁸

11. Cultural Resources

The 2009 DEIR summarizes key State and County regulations and policies that would apply to cultural resources on the project site. The water supply project components evaluated in this Supplement to the 2009 DEIR do not require this information to be updated.

12. Public Services and Recreation

The 2009 DEIR includes descriptions of the regulatory settings for law enforcement, fire protection services, emergency medical response, schools, library services, and parks and recreation. The water supply project compo-

²⁷ Brownstein, Hyatt, Farber and Schreck, 2011, *Supplement to the Water Supply Assessment for the Napa Pipe Project, Napa County, California*, pages 35 to 37.

²⁸ Brownstein, Hyatt, Farber and Schreck, 2011, *Supplement to the Water Supply Assessment for the Napa Pipe Project, Napa County, California*, pages 37 to 38.

nents evaluated in this Supplement to the 2009 DEIR do not require this information to be updated.

13. Utilities

The 2009 DEIR describes regulations and policies applicable to water supply, wastewater, stormwater, solid waste, and energy resource utilities. The water supply project components evaluated in this Supplement to the 2009 DEIR do not require that wastewater, stormwater, solid waste, or energy resource information be addressed or updated. This section provides information regarding water supply agencies relevant to the imported surface water option.

a. State Water Project

The California SWP is a water storage and delivery system that includes reservoirs, aqueducts, powerplants, and pumping plants located primarily in California's Central Valley. The SWP's main purpose is to store and distribute water to urban and agricultural water suppliers in Northern California, the San Francisco Bay Area, the San Joaquin Valley, the Central Coast, and Southern California. As described in previous sections above, the SWP system provides water to Napa County through the North Bay Aqueduct.

b. Napa County Flood Control and Water Conservation District (NCFWCD)

The NCFWCD, through an agreement with the DWR, is provided with an annual entitlement of water from the SWP. The NCFWCD subcontracts this entitlement to local agencies. The NCFWCD also has an agreement with the United States Bureau of Reclamation for an annual entitlement of water drawn from Lake Berryessa that it subcontracts to individual property owners and special districts in the Napa County area.

14. Aesthetics

The 2009 DEIR provides a summary of the existing State and Napa County policies and regulations that apply to aesthetics of the Napa Pipe vicinity. The water supply project components evaluated in this Supplement to this 2009 DEIR do not require this information to be updated.

C. Impacts Found to Be Potentially Significant

1. Land Use and Public Policy

a. Imported Surface Water Option

- i. *Conflict with any Applicable Land Use Plan, Policy, or Regulation of an Agency with Jurisdiction over the Project (Including, but Not Limited to, the General Plan, Specific Plan, Local Coastal Program, or Zoning Ordinance) Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect*

The 2009 DEIR evaluates whether the proposed project would be consistent with applicable plans, policies and regulations, and concludes that there would be no significant impact. The 2009 DEIR addresses that the proposed project would include amendment to County General Plan policies regarding the use of groundwater, and finds that the project would be consistent upon General Plan amendment. (Revised proposed amendments are included in Appendix B of this Supplement to the 2009 DEIR.) Implementation of the proposed imported surface water option would reduce the quantity of groundwater to be used by the project to levels at or below historical use. If approved, the project would be consistent with the County's General Plan policies, as amended.

As described above, State law regulates the conditions under which water can be changed from one owner, point of diversion, and purpose of use to another. In the change of water rights that were initiated prior to December 19, 1914 (as for the Orange Cove Irrigation District), parties may implement the change so long as no others are injured by the change, and no approval is needed from any State regulatory agency. The Supplement to the Water Supply Assessment for the project finds that the imported surface water option would not result in substantial injury to any legal user of water.²⁹

Because the imported surface water option would be consistent with the County General Plan upon amendment and would meet State law requirements for the transfer of water rights, impacts would be *less than significant*.

²⁹ Brownstein, Hyatt, Farber and Schreck, 2011, *Supplement to the Water Supply Assessment for the Napa Pipe Project, Napa County, California*, page 32.

ii. Cumulative Impacts

The importation of surface water would rely on existing water supply facilities, and is not expected to contribute to any cumulative land use changes or policy conflicts. Like the proposed project analyzed in the 2009 DEIR, the imported surface water option would involve amendment to the County's General Plan. The proposed amendments however are limited to reduce the impacts that could otherwise occur from future projects using same language. The proposed policy would apply only to areas that (1) have previously been urbanized, (2) have been or are designated "Study Area" in the General Plan Agricultural Preserve and Land Use Element, (3) have established groundwater usage, and (4) demonstrate the sufficiency of on-site groundwater supplies to meet on-site water demands without adversely affecting the availability of groundwater for agricultural and rural residential use. Therefore, cumulative impacts would be *less than significant*.

b. Water Supply Pipeline

The 2009 DEIR provides a discussion of consistency with the Napa County General Plan. The location of the proposed water supply pipeline would not conflict with land use plans and would result in a temporary construction impacts within existing roadway rights-of-way. A *less-than-significant* impact would occur.

2. Population, Employment, and Housing

a. Imported Surface Water Option

i. Induce Substantial Growth or Concentration of Population in an Area Either Directly or Indirectly

The imported surface water option would not involve the construction of new housing units and would therefore not directly result in growth or concentration of population. However, increased water supply could indirectly induce growth if the water was used to support additional housing or employment off-site. The applicant plans to acquire surface water rights that would yield an average of 2,160 AFY, which exceeds the amount of water needed to meet the project's expected demand of 620 AFY.

By importing surface water to the project site, the project could make groundwater resources available for agricultural uses off-site and could provide surplus or substitute surface water to the City of American Canyon or City of Napa. (The applicant has precluded the possibility that groundwater could be supplied to support urban uses.) In allowing additional water supplies to be provided to existing water uses, the need for other water to be imported to these uses would be reduced. Similarly, providing surplus surface water to the City of American Canyon could reduce the need for water to be imported through more expensive options, such as from Vallejo. Surplus water supplies could also be used by the City of Napa and/or the City of American Canyon to address existing deficiencies identified in their water planning documents (for example in dry years), thereby increasing reliability for existing users.

While it's reasonable to expect that the surplus surface water supply would first be used as substitute water (substituting for more expensive, existing supplies), and then be used to increase reliability for existing users, there is a possibility that surplus water could also be used to support growth in the cities. However, both cities have general plans that identify the location and intensity of future growth anticipated within their jurisdictions, as well as growth boundaries that can only be changed by popular vote. Both general plans contain informed regional housing and employment projections, which ensures that any growth that occurs is already expected and planned for. Therefore, impacts associated with the growth of population, housing, and employment would be considered *less than significant*. Please see Chapter 6, CEQA-Required Assessment Conclusions, for a further discussion of potential growth inducement, associated with the imported surface water option.

ii. Cumulative Impacts

The imported surface water option, as discussed above, could make additional water supplies available to the City of American Canyon or the City of Napa. This, could facilitate additional growth in both cities, however future growth would need to be consistent with the cities' general plans and voter-

approved growth boundaries. In addition, as noted in the Chapter 4.0, Water Supply of the Urban Water Management Plan, the City of American Canyon has been seeking additional water supplies from nearby cities including the Cities of Vallejo, Rio Vista, and Dixon to ensure that water is available during shortages and help make the City's delivery system more reliable in the event the SWP and/or NBA water system is curtailed or shutdown for long periods of time. The one-time connection fee and on-going services charges associated with obtaining such water through a new connection and purchase from the City of Vallejo are high and would cause recipients of the new supply to pay much higher water services charges. It is reasonable to assume that surface water would first be used to diversify potential sources of water, increase the reliability of those supplies, or reduce the cost of surface water supplies. Some combination of these benefits could serve as the consideration for one or the other city to enter into an agreement with the applicant with respect to the surface water. In addition, as described in a previous section, water resources in California are expected to become less reliable under future climate change conditions. Therefore, the importation of surface water is also expected to help to make water resources more reliable for these cities.

Because the project would not directly contribute to cumulative population, employment, or housing conditions, and because the project is not expected to indirectly induce growth in surrounding cities beyond what is planned for within the Cities' general plans and included in regional projections, cumulative impacts would be considered *less than significant*.

b. Water Supply Pipeline

i. *Induce Substantial Growth or Concentration of Population in an Area Either Directly or Indirectly*

The water supply pipeline would serve as a link between the project site and City of American Canyon water distribution system. Impacts associated with importing surface water to the project site through the pipeline are evaluated above in Section C.2.a.i, and impacts are found to be *less than significant*. Construction of the pipeline itself would not have any additional impacts unless it allowed for the movement of other water supplies.

As discussed in the Water and Wastewater Feasibility Study (included in Appendix I), the groundwater from on-site wells would be used only within the project site, and not for the benefit of any other customers, including the City of American Canyon. This would be accomplished by requiring both water supplies (potable water from the City of American Canyon and groundwater from on-site wells) to be able to be conveyed only to the on-site storage tank within the project site or designing on-site infrastructure so that water from the on-site water pump station cannot be pumped to any other off-site customers.

Should others want to use groundwater from the on-site groundwater wells, pipelines would have to be constructed and appropriate environmental analysis would have to be performed. The environmental analysis for the project focuses on the impacts of the project's use of on-site groundwater as a source of supply, and does not analyze the impacts of the use of on-site groundwater for any other purpose.

ii. Cumulative Impacts

The water supply pipeline, as discussed above, would make water available to the project site from the City of American Canyon's distribution system. Cumulative impacts as a result of importing surface water to the project site through the pipeline are evaluated above in Section C.2.a.ii, and cumulative impacts are found to be *less than significant*.

3. Traffic and Transportation

a. Imported Surface Water Option

The importation of surface water would not result in any potentially significant impacts to traffic or transportation facilities or services. Please see Section D.3.a, below, for a discussion of impacts found not to be potentially significant.

b. Water Supply Pipeline

Construction of the water supply pipeline would likely occur along Devlin Road and Anselmo Court, and would then connect to the new bridge across the Bedford Slough. Construction has the potential to impact traffic opera-

tions on a short-term basis along these right-of-ways. However, with the incorporation of a Construction Management Plan (CMP), as proposed in the 2009 DEIR (Mitigation Measure TRA-14), the impacts would be considered *less than significant*.

c. Cumulative Impacts

As discussed above, the construction of the water supply pipeline has the potential to impact traffic operations on a short-term basis. Construction of the proposed water supply pipeline would be subject to the mitigation measures proposed in the 2009 DEIR, including the implementation of a CMP that would reduce impacts to a less-than-significant level. Because the potential impacts to traffic would be mitigated to a less-than-significant level, the impacts would be on a short-term basis, and the impacts would occur on roads that are not heavily traveled, cumulative traffic impacts resulting from the construction and operation of the water pipeline would be considered *less than significant*.

4. Biological Resources

a. Imported Surface Water Option

- i. *A Substantial Adverse Effect, either Directly or Through Habitat Modifications, on any Species Identified as a Candidate, Sensitive, or Special-Status Species in Local or Regional Plans, Policies, Regulations, or by the CDFG or USFWS*

As described above, surface water transferred from the Orange Cove Irrigation District would originate from Mill Creek. There will be some environmental benefits to the special-status species in Mill Creek from the reduced diversion and increased river flow between the original point of diversion and the Delta. However, these positive effects are considered too small to identify and are not further considered.

Surface water imported to the project site would be diverted at Barker Slough. The source of water at the Barker Slough Pumping Plant in the winter months during runoff periods may come from local runoff from the Barker Slough watershed or from other streams (Calhoun Cut and Big Ditch) that drain into Lindsey Slough and can be tidally mixed upstream to the

Barker Slough Pumping Plant. Drainage from the Ulatis Creek flood control channels, as well as Putah Creek, Cache Creek, and the Yolo Bypass, flows into Cache Slough and past Lindsey Slough. Some of this Cache Slough water can be tidally mixed upstream to the North Bay Aqueduct intake. But during the spring and summer months of the proposed water transfer, the Barker Slough Pumping Plant diversions would predominantly be Sacramento River water.

Environmental impacts may result from the increased pumping of available water at the Barker Slough Pumping Plant, and are evaluated in comparison to the water quality and fish conditions without this additional pumping. The environmental impacts resulting from the increased diversion at Barker Slough are evaluated below by considering the seasonal occurrence of special-status fish in the vicinity of the Barker Slough Pumping Plant. Because there are no quantitative methods in the Biological Opinions or BDCP documents to evaluate fish entrainment losses, this section summarizes a quantitative assessment of fish larvae entrainment losses at the North Bay Aqueduct. This entrainment assessment method is more fully described in Appendix K.³⁰

The water transfer would involve additional pumping of 4 cfs. Because the incremental effects from the water transfer pumping of 4 cfs during any month would be difficult to determine, except as a fraction of the full pumping impacts, this impact evaluation considers the baseline pumping effects from the Barker Slough Pumping Plant on water quality and fish entrainment, and then evaluates the impacts from the proposed water transfer as a fraction of the baseline pumping effects. The impacts of the assumed constant water transfer of 4 cfs will be a greater fraction of the baseline pumping effects in months with lower baseline pumping. The baseline (existing) conditions include the monthly pumping pattern at Barker Slough Pumping Plant that has varied in recent years from about 25 cfs in the winter to about 125 cfs in the summer. The baseline conditions also include the historical range of

³⁰ ICF International, 2011, *Environmental Impacts of Increased Pumping at North Bay Aqueduct for Napa Pipe Project Delta Water Transfer*.

monthly Delta inflows, Delta agricultural diversions, Delta exports, and Delta outflows. The Delta tidal flows and fish habitat features are part of the baseline conditions. The recent fish life histories (i.e. life stages and seasonal movement and migration patterns) and the recent abundance patterns are also considered in evaluating the baseline conditions.

a) Delta Smelt

Juvenile delta smelt and other estuarine fish that are expected to occur in Barker Slough generally are protected by the fish screens that were designed to meet the USFWS criteria for delta smelt, with a maximum of 0.2 ft/sec approach velocity. This slow approach velocity also is expected to protect all other juvenile fish. However, larval fish less than 1 inch (25 mm) may not be protected by screens because of limited swimming ability and/or insufficient avoidance behavior.

As described above, the USFWS' 2008 Biological Opinion evaluation of North Bay Aqueduct effects on delta smelt appears to conclude that the entrainment impacts of the Barker Slough Pumping Plant, with a total diversion flow of 50 cfs during the two-month spring period when the larvae are less than 25 mm, was calculated to be about 2.5 percent. This existing condition effect from North Bay Aqueduct pumping (50 cfs to 75 cfs) was considered less than significant in the 2008 USFWS Biological Opinion, and no restrictions were placed on the simulated future (2020) North Bay Aqueduct pumping.

The North Bay Aqueduct pumping flow was assumed to be 50 cfs in March and April for the impact assessment calculation. This represents a daily entrainment rate of 0.5 percent per day (i.e., 100 acre-feet per day/20,000 acre-feet), which increases the natural mortality rate from 1.5 percent to 2 percent per day. The assumed larval density was 50 per acre-feet at the beginning of March, and natural mortality of 1.5 percent per day caused the larval density to decrease to 32 per acre-feet at the end of March and to 20 per acre-feet at the end of April. With a constant pumping flow of 50 cfs the larval density decreased to 27 per acre-feet at the end of March and to 15 per acre-feet at the

end of April. This represents a loss of 25 percent of the larvae remaining at the end of April, when the larvae would be large enough to be fully protected by the Barker Slough Pumping Plant fish screens. Because the North Bay Aqueduct larval surveys indicated that larval density in Lindsey and Barker Sloughs was only about 10 percent of the density at the other four Cache Slough stations, the actual loss from existing Barker Slough Pumping Plant pumping would be approximately 2.5 percent of the larval population. The increased entrainment impact from the proposed water transfer of 4 cfs during the spring months would be about 8 percent of the existing Barker Slough Pumping Plant entrainment loss (i.e., 0.2 percent of larval population).

The incremental entrainment impacts from pumping the 4 cfs water supply are considered *less than significant* based on the small magnitude of estimated larval entrainment (0.2 percent of larval population). This calculated estimate of larval entrainment accounted for the fewer delta smelt larvae that were captured in DFG sampling nets in Barker Slough and Lindsey Slough compared to other locations in Cache Slough, but did not account for the local runoff from the Barker Slough watershed that will transport larvae rearing in Barker Slough downstream towards Cache Slough, and it did not account for the fact that only a portion of the delta smelt adult population will spawn in the Cache Slough channels, and it did not account for the downstream movement of larvae from the Cache Slough region. Each of these biological factors will further reduce the larval entrainment impacts that were estimated as 0.2 percent of the larvae remaining in the Cache Slough channels. This conclusion is further supported by the 2008 USFWS Biological Opinion which indicated that the existing larval entrainment of delta smelt at the Barker Slough Pumping Plant was not a significant concern.

b) Central Valley Steelhead

Because juvenile steelhead and migrating adults are large enough to be fully protected by the Barker Slough Pumping Plant fish screens, there are assumed to be no environmental impacts on steelhead from the existing or future North Bay Aqueduct pumping at the Barker Slough Pumping Plant. Therefore the project would result in *no impact* to steelhead juveniles or adults

from the Barker Slough Pumping Plant diversion of the proposed water transfer of 4 cfs.

c) Central Valley Chinook Salmon

Juvenile Chinook salmon move downstream in response to many factors, including inherited behavior, habitat availability, flow, competition for space and food, and water temperature. However, because Chinook salmon juveniles and migrating adults are large enough to be protected by the Barker Slough Pumping Plant fish screens, there are expected to be no environmental impacts on Chinook salmon from the existing or future North Bay Aqueduct pumping at the Barker Slough Pumping Plant. There is therefore a *less-than-significant impact* to Chinook salmon juveniles or adults from the Barker Slough Pumping Plant diversion of the proposed water transfer of 4 cfs.

d) Sacramento Splittail

Larval splittail have been captured during CDFG sampling of North Bay Aqueduct larval fish monitoring sites from February through June. Although there is some larval splittail entrainment at the North Bay Aqueduct Barker Slough Pumping Plant, the abundance of juvenile fish is very high in wet years with upstream flooding of riparian corridors and the Yolo Bypass. Juvenile splittail (>25 mm) would be fully protected by the Barker Slough Pumping Plant fish screens. Because the loss of larval splittail would be similar to the calculated loss of larval delta smelt (<2.5 percent), the environmental impacts from existing or future North Bay Aqueduct pumping at the Barker Slough Pumping Plant on splittail larval and juveniles are considered to be *less than significant*.

e) Longfin Smelt

The CDFG Incidental Take Permit for longfin smelt³¹ concluded that the existing levels of winter pumping at Barker Slough Pumping Plant of 50 to 75 cfs was not a significant impact on larval longfin smelt. The Barker Slough

³¹ California Department of Fish and Game, 2009, California Endangered Species Act, Longfin Smelt Incidental Take Permit No. 2081-2009-001-03, Bay Delta Region.

Pumping Plant fish screens are fully protective of juvenile (>25 mm) and adult longfin smelt. The Incidental Take Permit assessment used particle tracking in the Cache Slough channels and found that less than 10 percent of the particles released in Cache Slough (representing drifting larvae) would be entrained in the Barker Slough Pumping Plant with current pumping of less than 50 cfs.

The Barker Slough Pumping Plant entrainment impacts that were calculated for delta smelt with a total diversion flow of 50 cfs during the spring can also be used to estimate the impacts to longfin smelt. Longfin smelt spawning is not expected as far upstream as delta smelt, and is earlier in the year (January to March), so the impacts on the longfin smelt larvae will be less than the effects on delta smelt larvae and the impact would likewise be *less than significant*.

f) Green Sturgeon

Juvenile sturgeon may spend between 1 and 3 years in fresh water before migrating to the ocean but may also spend time in estuaries. Juvenile green sturgeon have been collected in the Sacramento River, near Hamilton City, and in the Delta and San Francisco Bay. According to previously completed studies, juveniles may inhabit the estuary until they are approximately 4 to 6 years old, when they migrate to the ocean. Adults and juvenile sturgeon are benthic (bottom feeders) but also may eat small fish. Juveniles in the Sacramento-San Joaquin Delta (San Francisco estuary) feed primarily on opossum shrimp and amphipods.³²

Because juvenile green sturgeon and migrating adults are large enough to be protected by the Barker Slough Pumping Plant fish screens, there are no environmental impacts on green sturgeon from the existing or future North Bay Aqueduct pumping at the Barker Slough Pumping Plant. Therefore, the project impacts on green sturgeon from the Barker Slough Pumping Plant diver-

³² Moyle, P.B., 2002, *Inland Fishes of California*, 2nd edition, Davis, CA: University of California Press, page 110.

sion of the proposed water transfer of 4 cfs is considered to be *less than significant*.

ii. Substantial Adverse Effect on Any Riparian Habitat or Other Sensitive Natural Community Identified in Local or Regional Plans, Policies, or Regulations, or by the CDFG or USFWS

As previously described, under the imported surface water option, water that would have been diverted from Mill Creek would instead remain instream, which could have a beneficial impact on instream uses. Therefore, it is expected that riparian habitat or sensitive natural communities near the Mill Creek point of diversion could benefit under this scenario.

Because the transfer of water rights would not involve an increased diversion from any surface water sources other than at Barker Slough, which is an existing point of diversion, impacts to riparian habitat or sensitive natural communities would not be negatively affected by the imported surface water option and impacts would be *less than significant*.

iii. A Substantial Adverse Effect on Federally Protected Wetlands as Defined by Section 404 of the CWA through Direct Removal, Filling, Hydrological Interruption, or Other Means

As described in previous sections, the imported surface water option would involve increased pumping at Barker Slough instead of diverting water at previous diversion points. Because the change of water rights would not involve an increased diversion from any surface water sources other than at Barker Slough, which is an existing point of diversion, impacts to wetlands would be *less than significant*.

iv. Interfere Substantially with the Movement of Any Native Resident or Migratory Fish or Wildlife Species or with Established Native Resident or Migratory Wildlife Corridors, or Impede the Use of Native Wildlife Nursery Sites

The imported surface water transfer would involve increased pumping at Barker Slough, which potentially contains the following special-status species: delta smelt, Central Valley steelhead, Central Valley spring-run Chinook salmon, Central Valley winter-run Chinook salmon, Sacramento splittail,

longfin smelt, and green sturgeon. As discussed above in Section C.4.a.i, increased pumping at Barker Slough could interfere with delta smelt and Sacramento splittail and longfin smelt larvae that could become entrained in the Barker Slough Pumping Plant. However, as discussed above, impacts to larvae are expected to be *less than significant* due to the small contribution that the project would have on overall impacts at the pumping plant location that the USFWS have already concluded are less than significant.

v. Conflict with Any Applicable Land Use Plans, Policies, Regulations, or Ordinances, of an Agency with Jurisdiction over the Project, Adopted for the Purpose of Protecting Biological Resources or Avoiding and Mitigating Impacts to Biological Resources

As described above in the Regulatory Setting section, the facilities that would be used in the diversion and conveyance of surface water under the imported surface water option are subject to several plans protecting biological resources. The CVP and SWP, including the North Bay Aqueduct, are subject to a USFWS Biological Opinion on the effects on the delta smelt, issued on December 15, 2008. The CVP and SWP are also included in the National Marine Fisheries Service OCAP Biological Opinion released in June 2009, which concluded that the CVP and SWP OCAP would jeopardize the continued existence of several threatened and endangered species, including species that could potentially occur in the Barker Slough. In addition, a Draft Conservation Strategy released for the BDCP in September 2009, when implemented, could result in further pumping restrictions at the Barker Slough Pumping Plant.

In light of these plans and regulations intended to protect threatened species that could be affected by increased pumping at Barker Slough, a biological resources evaluation was conducted for the project to evaluate potential impacts. As evaluated in Section C.4.a.i, above, the project's contribution to entrainment of fish species at the Barker Slough Pumping Plant is considered to be less than significant due to the small contribution that the project would have on overall impacts at the pumping plant location that the USFWS have already concluded is less than significant. This determination is based on the

USFWS' Biological Opinion evaluation of North Bay Aqueduct, which found that effects on delta smelt are not a significant impact in comparison with other CVP and SWP effects in the Delta, even with future increased pumping conditions. Therefore, the project is not expected to result in any conflicts with plans protecting species in the Barker Slough and impacts would be *less than significant*. The final Conservation Strategy for the BDCP could result in further pumping restrictions at Barker Slough in the future but, because these restrictions are not yet known, an evaluation of potential conflicts with the BDCP cannot be determined at this time.

vi. Conflict with the Provisions of an Adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other Approved Local, Regional, or State Habitat Conservation Plan

As described in the previous section, the Barker Slough Pumping Plant is subject to several plans protecting biological resources in Barker Slough. However, as described above, the imported surface water option would have a small contribution to impacts to biological resources in comparison to the overall effects experienced at Barker Slough. Based on the evaluation conducted by the USFWS for its 2008 Biological Opinion, the increased pumping as a result of the project would be less than significant. Therefore, it is expected that the project's impacts on other applicable habitat conservation plans would also be considered to be *less than significant*.

vii. Cumulative Impacts

Biological species in the Delta and Barker Slough are protected through several plans and regulations, including the National Marine Fisheries Service's 2009 Biological Opinion (2009), the USFWS' 2008 Biological Opinion, the CDFG Incidental Take Permit for the SWP and the BDCP. These other habitat conservation and planning projects are intended to protect biological resources and may result in further restrictions on pumping at Barker Slough in the future. To determine the project's contribution to cumulative impacts at Barker Slough, the biological evaluation prepared for the project considered increased pumping with the project in comparison to increased pumping evaluated by the USFWS for the 2008 Biological Opinion. The evaluation determined that, because the USFWS did not consider impacts with increased

future pumping to be significant, impacts from the project would be less than significant as well. The cumulative effects of pumping at Barker Slough include entrainment of larvae at the Barker Slough Pumping Plant; however, the USFWS considers impacts to delta smelt at the North Bay Aqueduct to be less than significant in comparison with impacts at other SWP and CVP facilities. Therefore, cumulative impacts from the imported surface water option are considered to be *less than significant*.

b. Water Supply Pipeline

- i. *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

A habitat suitability analysis was conducted during the field reconnaissance to determine whether suitable habitat for any special-status species occurs along the proposed water supply pipeline alignment, and whether development could affect any essential habitat for species of concern. The water supply pipeline alignment is not expected to support any special-status species or wetland resources, other than those described in the Biological Resources section of the 2009 DEIR for the Bedford Slough crossing. The Bedford Slough crossing would be implemented as part of the project, regardless of whether the water supply pipeline is installed as part of the project-related improvements, and no additional potential impacts on special-status species are anticipated. Suscol Creek may support steelhead and other aquatic-dependent special-status species, but the pipeline would be contained within the existing roadway crossing, and no disturbance to the creek or associated aquatic habitat is anticipated.

Implementation of mitigation measures from the 2009 DEIR would serve to address all potential impacts associated with installation of the proposed water supply pipeline. These include: Mitigation Measures BIO-1 and BIO-2 which call for supplemental surveys for special-status plants were improvements could affect marshland habitat, and adherence to appropriate mitigation measures if new occurrences are found; Mitigation Measure BIO-3(a) which

restricts the timing of construction activities within 300 feet of marsh habitat to avoid disruption of possible bird nesting activity; Mitigation Measures BIO-3(b) and BIO-3(c) which call for preconstruction surveys for nesting birds; and Mitigation Measures BIO-4(a) through BIO-4(d) pertaining to avoidance of potential impacts on special-status fish species and securing agency authorizations for potential inadvertent take. All of these measures would be implemented as part of the proposed project, whether or not the pipeline is constructed, and they would simultaneously address any potential impacts associated with the proposed water supply pipeline. Potentially significant impacts would be mitigated to a level of *less-than-significant*, and no additional mitigation is considered necessary.

ii. *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

Sensitive natural communities are absent along the existing and future roadway alignment where the proposed pipeline would be installed. No new potential impacts are anticipated and no mitigation is required.

iii. *Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

Jurisdictional wetlands are absent along the existing roadway alignment where the proposed pipeline would be installed. The Bedford Slough crossing would be implemented as part of the project, regardless of whether the water supply pipeline is installed as part of the project-related improvements, and no additional potential impacts on wetlands are anticipated. Mitigation Measure BIO-5 from the 2009 DEIR calls for securing authorizations from the USACE and RWQCB where regulated waters would be affected, and complying with all conditions required as part of these authorizations. This measure would address any potential impacts associated with the Bedford Slough crossing, and would serve to adequately mitigate the potentially sig-

nificant impacts on wetlands. Therefore, no additional mitigation would be required.

iv. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

The proposed project would not have any significant adverse impacts on wildlife movement opportunities or adversely impact native wildlife nursery sites. Bedford Slough provides important aquatic and marshland habitat, but the new vehicle bridge would be installed regardless of whether the water supply pipeline is constructed. Preconstruction surveys for possible nesting birds and restrictions on timing of construction activities, as discussed above under Criterion a, would ensure that wildlife associated with Bedford Slough, marshlands, and other habitat on the Napa Pipe site are not inadvertently lost during construction. Similarly, Suscol Creek provides important cover and a perennial source of water for aquatic and terrestrial species, but the water supply pipeline would be constructed within the existing roadway and creek crossing on Devlin Road and no additional restrictions are required at this location because of the on-going disturbance from existing vehicle traffic. No potentially significant impacts are anticipated, and no mitigation is considered necessary.

v. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No significant conflicts with any local policies or ordinances protecting biological resources are anticipated. Table 4.4-1 in the Biological Resources section of the 2009 DEIR lists the relevant goals and policies applicable to development of the site. Preconstruction nesting surveys, avoidance measures for special-status species associated with Bedford Slough, and implementation of required mitigation for potential impacts on jurisdictional wetlands to be implemented as part of the project regardless of whether the water supply pipeline is constructed would ensure compliance with these goals and policies. With implementation of these measures, potential impacts are considered to be *less-than-significant* under this significance criterion, and no mitigation would be required.

vi. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No habitat conservation plans have been prepared addressing the vicinity of the proposed water supply pipeline alignment, and development would therefore not conflict with any adopted habitat conservation plans. As a result, *no impact* would occur, and no mitigation would be required.

5. Noise

a. Imported Surface Water Option

The importation of surface water would not result in any potentially significant noise impacts. Please see Section D.5.a, below, for a discussion of impacts found not to be potentially significant.

b. Water Supply Pipeline

i. Exposure of People to or Generation of Noise Levels in Excess of Established Standards

The 2009 DEIR provides a discussion of noise impacts generated by the proposed project both during the construction and operational phases of the project. The proposed water supply pipeline would result in temporary construction noise, however, because the construction noise would be short-term, subject to the provisions and restrictions of the Napa County ordinance, and the operation of the pipeline would not result in the increase of noise, the discussion included in the 2009 DEIR would apply to this component as well. A *less-than-significant* impact would occur.

ii. Exposure of people to or generation of excessive groundborne vibration or groundborne noise levels.

Construction impacts resulting in the generation of excessive groundborne vibration is discussed in the 2009 DEIR. Because this component of the project would be short-term, no update to this discussion would be required. Exposure of people to the generation of excessive groundborne vibration is considered a *less-than significant* impact.

c. Cumulative Impacts

The 2009 DEIR discusses the cumulative impact of noise generated by construction. During construction, the project would generate temporary noise that, when combined with other sources of construction-related noise on adjacent sites, could result in potentially significant cumulative impacts. However, as explained above in the 2009 DEIR and above, all construction activities, including those occurring under the proposed and other projects, would be subject to the provisions and restrictions of the Napa County Noise ordinance. Compliance with the ordinance would ensure that cumulative impacts from construction noise are *less than significant*.

6. Air Quality

The air quality impacts associated with water supply components are considered together with other project components evaluated in this Supplement to the 2009 DEIR. Please see Chapter 4.6 for an evaluation of air quality impacts.

7. Greenhouse Gas Emissions

The greenhouse gas emissions associated with water supply components are considered together with other project components evaluated in this Supplement to the 2009 DEIR. Please see Chapter 4.6 for an evaluation of greenhouse gas emission impacts.

8. Hazards and Hazardous Materials

a. Imported Surface Water Option

The importation of surface water would not result in any potentially significant impacts associated with hazards or hazardous materials. Please see Section D.8.a, below, for a discussion of impacts found not to be potentially significant.

b. Water Supply Pipeline

i. Create a Significant Hazard to the Public or the Environment Through the Routine Transport, Use, or Disposal of Hazardous Materials

Construction of the water supply pipeline would involve the temporary transport, use, or disposal of hazardous materials. Hazardous materials used

during construction are typically gasoline, diesel fuel, lubricating oil, grease, hydraulic fluid, solvents, caulking, and paint. The transport, use and disposal of hazardous materials involved in the construction of the pipeline would be subject to existing regulations. The Department of Toxic Substances Control is chiefly responsible for regulation, handling, use and disposal of toxic materials. The California Division of Occupational Safety and Health Administration and the California Department of Health Services administer programs intended to protect workers from exposure to hazardous materials and from accidental upset. Compliance with applicable regulations, as well as adherence to standard handling practices and involvement of trained personnel, would ensure that impacts would be *less than significant*.

ii. Create a Significant Hazard to the Public or the Environment through Reasonably Foreseeable Upset and Accident Conditions Involving the Release of Hazardous Materials into the Environment

As stated above, construction of the water supply pipeline would involve the temporary use of hazardous materials, which could be released to the public or environment during accident conditions. For example, operation of heavy equipment during construction carries the risks of fuel spills. Such equipment would be required during earthwork. As stated above, existing procedures and regulations apply to the use of hazardous materials, including the accidental release of such materials. Regulations for workplace safety designed to prevent spills and other accidents are established by the California Division of Occupational Safety and Health Administration and transport is covered by Department of Transportation regulations. Compliance with applicable regulations would ensure that impacts would be *less than significant*.

iii. Be Located on a Site Which is Included on a List of Hazardous Material Sites Compiled Pursuant to and, as a Result, Create a Significant Hazard to the Public or the Environment

As described above in the Existing Conditions section, the rights-of-way along which the water supply pipeline would be aligned are adjacent to two documented hazardous materials sites. In addition, during subsurface construction work, equipment operators could unearth areas of contamination not previously documented, or hazardous substances different from those

previously documented. However, sites currently known to contain hazardous materials are monitored by the appropriate government agencies. For example, through its Hazardous Waste Management Program, the Department of Toxic Substance Control works with the California Environmental Protection Agency (EPA) to enforce and implement regulations pertaining to hazardous wastes. In addition, the federal EPA provides oversight and supervision for site investigations and remediation projects, and has developed land disposal restrictions and treatment standards for the disposal of certain hazardous wastes. These existing regulations and procedures would be expected to avoid potentially significant impacts during construction of the pipeline. In addition, because the water supply pipeline would be aligned along existing rights-of-way, the potential for the discovery of unknown hazardous sites is considered to be low. Therefore, impacts would be *less than significant*.

iv. For a Project within an Airport Land Use Plan or, where Such a Plan Has Not Been Adopted, within Two Miles of a Public Airport or Public Use Airport, Result in a Safety Hazard for People Living or Working in the Project Area

The water supply pipeline would be located within 2 miles of the Napa County Airport. The water supply pipeline would be located within Zones C and D of the Napa County Airport Land Use Compatibility Plan (ALUCP). The ALUCP identifies land uses and population densities considered to be incompatible with the airport for safety purposes. Construction of the water supply pipeline would involve the development of new infrastructure, but no new housing or employment centers. In addition, population increases would be limited to the temporary presence of on-site construction workers. Therefore, impacts would be *less than significant*.

v. Cumulative Impacts

Construction of the water supply pipeline would not result in the routine transport, use, or disposal of significant amounts of hazardous materials, and any potential impacts associated with hazardous materials would be limited to temporary impacts during the construction period. Any transport or use of hazardous materials would be closely monitored and regulated through existing procedures and regulations. Therefore, the water supply pipeline would

not contribute to cumulative hazards impacts, and the impact would be *less than significant*.

9. Geology, Soils, and Seismicity

a. Imported Surface Water Option

The importation of surface water would not result in any potentially significant impacts associated with geology, soils, or seismicity. Please see Section D.9.a, below, for a discussion of impacts found not to be potentially significant.

b. Water Supply Pipeline

i. *Expose People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Rupture of a Known Earthquake Fault, Strong Seismic Ground Shaking, Seismic-Related Ground Failure, Including Liquefaction, and/or Landslides*

This project would result in the construction and operation of a new water supply pipeline extending from the American Canyon water distribution system to the Napa Pipe project site. Information regarding the specific location of the pipeline, as well as construction specifications have not been developed.

However, as described in the 2009 DEIR, the County of Napa requires that all construction activities meet the IBC regulations for seismic safety (i.e. reinforcing perimeter and/or load bearing walls, bracing parapets, etc.).³³ In addition,

³³ Seismic design provisions of the IBC generally prescribe minimum lateral forces, applied statistically to the structure and combined with the gravity forces of dead and live loads. The IBC-prescribed lateral forces generally are substantially smaller than the expected peak forces that would be associated with a major earthquake. Therefore, when built according to IBC standards, structures are anticipated to (1) resist minor earthquakes without damage; (2) resist moderate earthquakes without structural damage, but with some nonstructural damage; and (3) resist major earthquakes without collapse, but with some structural as well as nonstructural damage. Conformance to the current building code standards does not guarantee that significant structural damage will not occur in the event of a maximum magnitude earthquake; but it is reasonable to expect that a well-designed and well-constructed structure would not collapse or cause loss of life in a major earthquake.

tion, as required by the County of Napa, all project-related grading, trenching, backfilling, and compaction operations would be conducted in accordance with the County of Napa Standard Specifications. All grading would conform to regulations for seismic safety contained in the IBC and the CBC.

Even with the incorporation of construction standards, as required under the IBC and by Napa County, strong ground shaking could cause significant damage to structures and, in severe instances, result in injuries or loss of life. However, with incorporation of Mitigation Measure GEO-1, as included in the 2009 DEIR, the project applicant is required to submit geotechnical reports prior to the construction of infrastructure, and a geotechnical engineer would be required to participate in the planning and construction phases of project components.

ii. Result in Substantial Soil Erosion or the Loss of Topsoil

As discussed above and in the 2009 DEIR, impacts resulting from soil erosion or loss of topsoil would be considered *less than significant*. New and existing fills and native soils could be subject to erosion. Consistent with Napa County requirements, the applicant will prepare and submit a Stormwater Pollution Prevention Plan (SWPPP) to County Public Works for review and approval prior to construction. The SWPPP will include a site map that identifies all potential pollutants and incorporates Best Management Practices (BMPs) appropriate for site conditions. Erosion impacts would therefore be *less than significant*.

iii. Be Located on a Geologic Unit or Soil that is Unstable, or that Would Become Unstable as a Result of the Project, and Potentially Result in On- or Off-Site Landslide, Settlement, Lateral Spreading, Subsidence, Liquefaction, or Collapse

Impacts resulting from off-site project components being located on unstable geologic unit or soil would be considered *less-than-significant* through the implementation Mitigation Measure GEO-3, as included in the 2009 DEIR that requires corrective measures, including engineering and compaction of new fills and removal or densification of liquefiable soils.

iv. Be Located on Expansive Soil, as Defined in Table 18-1-b of the Uniform Building Code (1994), Creating Substantial Risks to Property

Impacts resulting from off-site project components being located on expansive soil would be considered *less-than-significant* through the implementation 2009 DEIR mitigation measures requiring the compliance with Napa County building codes.

10. Hydrology and Water Quality

a. Imported Water Supply Option

i. Violate Any Water Quality Standards or Waste Discharge Requirements

The water to be conveyed to the project site would be treated at the City of American Canyon WTP or City of Napa Jamieson Canyon WTP before entering the water distribution system. These WTPs are permitted by the California Department of Public Health to meet water quality standards. Therefore, a *less-than-significant* impact would occur.

ii. Substantially Deplete Groundwater Supplies or Interfere Substantially with Groundwater Recharge Such that There Would be a Net Deficit in Aquifer Volume or a Lowering of the Local Groundwater Table Level (e.g. the Production Rate of Pre-Existing Nearby Wells Would Drop to a Level Which Would Not Support Existing Land Uses or Planned Uses for Which Permits Have Been Granted)

The 2009 DEIR evaluates the use of groundwater as the sole water supply for the project and finds that impacts associated with the depletion of groundwater supplies or interference with groundwater recharge would be less than significant. Under the imported surface water option, the project would rely on surface water as its primary water supply and would utilize groundwater only as a supplemental water source. The maximum supplemental water demands of 140 acre feet per year, as identified in the Supplement to the Water Supply Assessment (included in Appendix I), would be within historical groundwater use of the project site. Though pumping to import surface water from SWP Delta facilities is not limited to seasonal diversion and water may be pumped year-round. The greatest demand for water however, resulting in the use of supplemental water use would be during the peak summer months. Further, there is anticipated to be significant periods when the City

of American Canyon would not use its maximum daily capacity. The project would have on-site water storage of at least 1.8 million gallons that would draw down water stored during these periods to meet water demands before groundwater supplies would be needed. Therefore, the effects on groundwater supplies would be less substantial when compared to the effects evaluated in the 2009 DEIR, and likewise the impact would be *less than significant*.

iii. Cumulative Impacts

As described above, groundwater pumping under the imported surface water option would be reduced in comparison to the project as evaluated in the 2009 DEIR. Therefore, the imported surface water option is not expected to substantially deplete groundwater supplies within the underlying Sonoma Volcanics aquifer and the impact would be *less than significant*.

b. Water Supply Pipeline

i. Violate Any Water Quality Standards or Waste Discharge Requirements

The water supply pipeline would convey treated, potable water from the City of American Canyon's water distribution system to the project site. As described above in Section C.10.a.i, water treated at the City of American Canyon WTP is treated to meet applicable water quality regulations. Similarly, the construction of the proposed water pipeline would be required to comply with Mitigation Measure HYDRO-7 included in the 2009 DEIR that requires the project applicant to prepare and submit an Erosion and Sediment Control Plan (ESCP) and a Stormwater Runoff Management Plan (SRMP).

Because mitigation measures proposed in the 2009 DEIR would also apply to the construction and operation of the water supply pipeline, the water supply pipeline would not violate any water quality standards or water discharge requirements, and a *less-than-significant* impact would occur.

ii. Substantially Alter the Existing Drainage Pattern of the Site or Area in a Manner Which Would Result in Substantial Erosion or Siltation On- or Off-Site

Construction of the water supply pipeline between the American Canyon water distribution system and the project site would result in physical

changes resulting from excavation and backfilling for the water supply pipeline. However, the construction would occur within existing right-of-ways and would result in minimal, temporary impacts to drainage patterns. During construction, contractors would be required to conform to NPDES regulations for controlling sedimentation in stormwater runoff, similar to Mitigation Measure HYDRO-7. As a result *less-than-significant* impacts would occur.

iii. Place within a 100-Year Flood Hazard Area Structures Which Would Impede or Redirect Flood Flows

The water supply pipeline would run from the American Canyon water distribution system and the project site. In order for the pipe to reach the project site, the pipe would likely be required to cross Soscol Creek and Bedford Slough. Pipeline suspension is a construction possibility for the water supply pipeline, and could occur at locations with bridges that cross streams. Pipeline construction at these crossings could occur by installing the pipeline in the structural supports underneath or on the sides of the bridges. Design of a bridge crossing (e.g. pipe material and placement) would be determined during the design phase, once the engineers consult with the bridge's proprietor and review the design specifications of the bridge. Attaching the new pipeline to both bridges would be designed to not impede or redirect flood flows. Therefore the impact is considered to be *less-than-significant*.

iv. Cumulative Impacts

Construction of the water supply pipeline would be required to comply with NPDES regulations, and would disturb areas in a right-of-way, or previously developed area. These construction impacts would not be expected to contribute to cumulative impacts associated with water quality, drainage patterns, or flood hazards. Therefore, cumulative impacts would be *less than significant*.

11. Cultural Resources

a. Imported Surface Water Option

The importation of surface water would not result in any potentially significant cultural resources impacts. Please see Section D.11.a, below, for a discussion of impacts found not to be potentially significant.

b. Water Supply Pipeline

i. *Cause a Substantial Adverse Change in the Significance of an Archaeological Resource as Pursuant to CEQA Guidelines §15064.5*

Construction of the water supply pipeline could affect subsurface archaeological resources. To avoid impacts to potential archaeological resources during excavation of pipeline trenches, implementation of CULT-2 from the 2009 DEIR shall be required, together with Mitigation Measure CULT-5, below. As a result, this impact would be considered *less than significant*.

ii. *Directly or Indirectly Destroy a Unique Paleontological Resource or Site or Unique Geologic Feature*

Construction of the water supply pipeline could affect subsurface paleontological resources. This would have the potential to cause a substantial adverse change in the significance of a paleontological resource pursuant to CEQA Guidelines §15064.5, which is considered a significant impact. Implementation of Mitigation Measure CULT-3, as included in the 2009 DEIR would reduce this impact to a *less-than-significant* level.

iii. *Disturb any Human Remains, Including those Interred Outside of Formal Cemeteries*

There is a remote possibility that human remains could be present within buried archaeological deposits, and that the water supply pipeline would have the potential to disturb human remains interred outside of formal cemeteries.

This impact would only occur if such buried deposits are present and ground disturbing construction activities cut through the deposits. Due to the potential for such a disturbance to occur, this is considered a significant impact. Mitigation Measure CULT-4, included in the 2009 DEIR, provides measures to reduce impacts associated with disturbing human remains. However, as

noted in the Tom Origer report (included as Appendix J), the water supply pipeline would be located in CA-NAP-15, a known archaeological site located along Devlin Road, and there is the possibility of unearthing human burials. Because of the specific nature of the site, Mitigation Measure CULT-5 has been added to this Supplement to the 2009 DEIR to reduce the impact of disturbing human remains to a *less-than-significant* level.

Impact CULT-5: Ground disturbing activities associated with constructing the water supply pipeline could damage buried archaeological deposits at CA-NAP-15 at Devlin Road.

Mitigation Measure CULT-5: Prior to any excavation on-site, an archaeologist shall review excavation plans near CA-NAP-15 and shall develop a monitoring plan based on the depth of the excavation. The plan shall include observation of ground disturbing activities (such as grading, trenching, and boring) to be focused in areas that are most likely to contain buried resources associated with CA-NAP-15. During construction activities, an archaeologist and a Native American monitor shall observe trenching from Soscol Road through the site, a distance of about 1,200 feet. If human remains are discovered accidentally during the course of construction, all work within 50 feet of the find shall stop while an assessment of the find is made by the archaeologist. If needed, a treatment plan shall be developed that takes into account the nature and scope of the find. The treatment plan shall provide for the recovery, disposition, and curation of significant cultural material in accordance with professional practices and consultation with the Native American monitor.

Significance After Mitigation: *Less than significant.* Having an archaeologist and Native American monitor on-site during excavation of CA-NAP-15 allows for timely intervention if human remains are unearthed. The archaeologist would be able to provide immediate feedback regarding the remains and actions to be taken regarding contact with the County Coroner and appropriate Native American representatives.

iv. Cumulative Impacts

With all ground disturbing activities, there is the possibility of encountering buried archaeological and paleontological deposits and human remains; however, impacts to those resources would need to be assessed on a case-by-case basis. Furthermore, provisional mitigation measures discussed above would serve to reduce potential impacts to a less-than-significant level. As a result, construction of the water distribution pipeline would not substantially contribute to a significant cumulative impact on such resources and the cumulative impact would be *less than significant*.

12. Public Services and Recreation

a. Imported Surface Water Option

The importation of surface water would not result in any potentially significant impacts associated with law enforcement, fire protection services, emergency medical response, schools, library services, or parks and recreation. Please see Section D.12.a, below, for a discussion of impacts found not to be potentially significant.

b. Water Supply Pipeline

The water supply pipeline would not result in any potentially significant impacts associated with law enforcement, fire protection services, emergency medical response, schools, library services, or parks and recreation. Please see Section D.12.b, below, for a discussion of impacts found not to be potentially significant.

13. Utilities

a. Imported Surface Water Option

i. Have Insufficient Water Supplies Available to Serve the Project

As previously described, the imported surface water option would involve imported surface water as the primary source of water for the project, with groundwater supplies used as a supplemental water source. Under this scenario, water rights would be purchased by the project applicant from the Orange Cove Irrigation District and water would be diverted at Barker Slough, conveyed to either the City of Napa or City of American Canyon WTP, and distributed to the project site. The Supplement to the Water Supply Assess-

ment for the project finds that water supplies under this scenario would be sufficient to meet the water demand of the project during all years. Therefore, impacts would be *less than significant*.

ii. Require or Result in the Construction of New Water Facilities

If groundwater were to be used as the primary water supply to the project, as evaluated in the 2009 DEIR, it would be extracted from the on-site wells, treated, using an iron and manganese treatment system, then chlorinated and stored onsite in a 1.82 MG storage tank. As evaluated in the 2009 DEIR, such a tank would meet both operational and fire flow storage requirements. A pump station would be constructed to provide for average and peak day flows, and a separate diesel powered pump station would provide for fire flows. The location of the water treatment, storage, and pumping facilities will be on the southeast corner of the property adjacent to the proposed wastewater treatment plant.

If imported surface water were to be delivered by the City of American Canyon or City of Napa, an agreement for wholesale water service or an agreement to convey surface water supplies would have to be executed. Additional information about the surface water rights, North Bay Aqueduct, and requirements to implement the water importation are documented in the Supplement to the Water Supply Assessment.³⁴ Formal agreements to convey surface water would not be approved until the County certifies the environmental impact report for the Project. In order to import surface water to the Napa Project additional facilities within the Delta, North Bay Aqueduct, City of Napa, or American Canyon water distribution system would be required.

Even with the City of American Canyon delivering imported surface water as the primary water supply to the project, the same groundwater supplies, treatment facilities, and 1.8 million gallon storage tank would still be constructed, as these sources would provide redundancy and reliability in case surface water supplies were interrupted or unavailable for any reason. Con-

³⁴ Brownstein, Hyatt, Farber and Schreck, 2011, *Supplement to the Water Supply Assessment for the Napa Pipe Project, Napa County, California*.

struction of these facilities is evaluated in the 2009 DEIR and impacts were found to be *less than significant*.

Both the City of Napa and the City of American Canyon have water distribution systems that convey water relatively close to the project site, and either could provide wholesale water service or convey water to the project. In fact, the City of Napa currently provides water to the project site for industrial purposes, and the Supplement to the Water Supply Assessment³⁵ describes the additional infrastructure that would be needed to provide water for the project. However, as described above, the project applicant has not agreed to terms and conditions under which either the City of American Canyon or the City of Napa would provide wholesale or retail water service to the Project. The Supplement to the Water Supply Assessment analyzes the possibility that either the City of American Canyon or the City of Napa, or both, would provide wholesale water service to the project, or would provide retail service under comparable terms and conditions so that such service would not impact service to existing water customers.

As described in the 2009 DEIR, the Napa Pipe site is currently served by a City of Napa water pipeline. To provide water service to the proposed project, the City of Napa would need to construct a new treated water storage facility and associated booster pumping station within the City of Napa, increase incremental pumping capacity for the Westside Pump Station, and increase the treatment capacity of the Jamison Canyon Water Treatment Plant.³⁶

Treated water produced at the City of American Canyon WTP is conveyed through a network of pipelines to the water service area. The City of American Canyon water service area includes areas within the City limits, and selected areas outside of the City limits including the area around the Napa

³⁵ Brownstein, Hyatt, Farber and Schreck, 2011, *Supplement to the Water Supply Assessment for the Napa Pipe Project, Napa County, California*.

³⁶ Water System Evaluation – Task 1: Water Demand and City Water System Hydraulic Impacts. West Yost Associates, August 21, 2008.

Airport, adjacent to Jameson Canyon Road, and areas on Devlin Road. The current northern terminus of the City of American Canyon's water service area is Soscol Creek.

The project site is located approximately 0.5 miles from the northern boundary of the City of American Canyon's water service area. Should the project connect to the City of American Canyon water distribution system, the likely connection point would be on Devlin Road, south of the Devlin Road Bridge over Soscol Creek, where an existing 16-inch pipeline is located. This 16-inch pipeline would be extended north to the project site along Devlin Road, Anselmo Court, and the new bridge across the Bedford Slough, where it would tie into the on-site water storage tank. The proposed pipeline would be connected to the sides or bottom of both the existing and proposed bridge. Figure 3-1 shows the location of the proposed extension of the City of American Canyon water pipeline to the on-site water storage tank.

Approval of the proposed alignment would require encroachment permits and building permits (including structural review of the bridge segments) by the County. CDFG or Corps permits would not be required because all pipeline construction would occur from the bridge deck. In addition to permits, the construction of the pipeline may require excavation and off-haul of unused soil. Potential impacts to traffic and transportation would be mitigated through traffic construction mitigation plans, as proposed by the 2009 DEIR (Mitigation Measure TRA-14). The construction of the pipeline would be subject to NPDES stormwater discharge requirements. Given the requirements associated with constructing a below-grade construction in areas heavily disturbed by previous construction activity, a *less-than-significant* impact would occur.

b. Water Supply Pipeline

i. *Have Insufficient Water Supplies Available to Serve the Project*

The water supply pipeline would be constructed to provide an additional option for supplying potable water to the project site. Although sufficient water supplies are available through the use of groundwater, the water supply

acquisition and construction and operation of the water supply pipeline would provide an additional source of water. As a result, a *less-than-significant* impact would occur.

ii. Cumulative Impacts

The 2009 DEIR determines that the cumulative impacts of using only groundwater at the site would result in a less-than-significant impact on water supply. Because the imported surface water option considers the use of groundwater only as a supplemental water source, cumulative impacts to groundwater would also be considered to be less than significant. In addition to the groundwater option discussed in the 2009 DEIR, this Supplement to the 2009 DEIR evaluates the option of providing potable water to the site from the acquisition of water rights in the Sacramento River system. Conveyance of water from the Sacramento River system to the project site would result in construction of new facilities that would serve to supply only the project site. Impacts associated with construction of these facilities would be consistent with impacts from similar construction projects, and would potentially inconvenience those in the area if they experience noise or temporary traffic detours. These types of inconveniences are not considered significant and no changes to utilities or facilities within the Delta or the North Bay Aqueduct would be required. A *less-than-significant* impact would occur.

c. Energy Resources

i. Waste, or inefficiently or unnecessarily consume, energy.

The 2009 DEIR provides a discussion of future energy conservation. This component of the project would require short-term energy usage for construction and on-going energy usage for pumping to deliver the surface water supply through existing and proposed distribution systems. On-going operational energy usage would be required to pump and convey water from the Barker Slough Pumping Plant, along the NBA, and to the project site from the American Canyon WTP. Additionally, two pumps would be required to pump water from the on-site storage tank to future project customers. A 20 hp pump would function at low flow periods and a 70 hp pump would function during peak flow periods. A fire pump station would also be installed

consisting of two 135 hp pumps and would be diesel powered so they could be operated if electrical service was unavailable.

Additional pumping at Barker Slough Pumping Station and American Canyon WTP would represent an incremental increase in energy and new pumps and associated equipment would be installed using Best Available Technology to maximize energy efficiency and, as a result, a *less-than-significant* impact would occur.

ii. Impede future energy conservation.

The 2009 DEIR provides a discussion of future energy conservation. This component of the project would require short-term energy usage for construction, but would not require on-going energy usage to sustain operation. As a result, a *less-than-significant* impact would occur.

d. Cumulative Impacts

The water supply pipeline would be constructed to supply the project site with potable water. No other jurisdictions or projects would receive water conveyed through the water supply pipeline. Construction of the water supply pipeline would result in site-specific impacts that would not combine with other planned for reasonably foreseeable projects. As a result, a *less-than-significant* impact would occur.

14. Aesthetics

a. Imported Surface Water Option

The importation of surface water would not result in any potentially significant aesthetic impacts. Please see Section D.14.a, below, for a discussion of impacts found not to be potentially significant.

b. Water Supply Pipeline

i. Substantially Degrade the Existing Visual Character or Quality of the Site and its Surroundings

Construction of the water supply pipeline could result in temporary effects to the visual character in the immediate vicinity of the pipeline. For example, construction equipment and activities could clutter views of the roadways

along which the pipeline would be installed. The proposed pipeline could be visible if attached to the side the Devlin Road Bridge over Suscol Creek or to the new bridge over Bedford Slough. If the new pipeline would be attached to the side of the Devlin Road Bridge, it would result in a slight change in the visual character of the bridge. However, the pipeline would not be prominently featured if attached to the bridge, and the subterranean portions of the pipeline would follow existing rights-of-way. The rights-of-way are not scenic resources and are previously disturbed areas of land. Therefore, the effects would be considered *less than significant*.

ii. Cumulative Impacts

As stated above, potential aesthetic effects associated with pipeline construction, such as visual clutter, would be temporary in nature and would be limited to areas that do not contain scenic resources. Therefore, the water supply pipeline would not contribute to cumulative aesthetic impacts and the impact would be *less than significant*.

D. Impacts Found Not to Be Potentially Significant

1. Land Use and Public Policy

a. Imported Surface Water Option

The imported surface water option would utilize existing water conveyance, treatment, and distribution systems and facilities to divert surface water at Barker Slough for use by the project and construct a new pipeline to convey water from the existing City of American Canyon or City of Napa WTP to the project site. Though new facilities would be constructed, the entire pipeline alignment would be contained within existing or future paved roadways and construction would be short term and would not have physical effects on or pose conflicts with existing land uses. Therefore, there would be *no impact* for the following standards of significance:

- ◆ Physically divide an established community.
- ◆ Create or exacerbate a conflict between land uses on the project site and in the surrounding area.

b. Water Supply Pipeline

There are no direct land use or public policy impacts associated with this project component. Related land use issues, including biology, cultural resources, noise, air quality, and transportation are addressed in the respective sections of this chapter. Therefore, there would be *no impact* for the following standards of significance:

- ◆ Physically divide an established community.
- ◆ Create or exacerbate a conflict between land uses on the project site and in the surrounding area.
- ◆ Conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

2. Population, Employment and Housing

a. Imported Surface Water Option

The imported surface water option would utilize existing facilities to divert surface water for use by the project. This project component would not result in the construction of new housing units or jobs, and would not displace any existing housing units or jobs. Therefore, there would be *no impact* for the following standards of significance:

- ◆ Displace substantial numbers of existing housing units.
- ◆ Displace substantial numbers of people.
- ◆ Substantially alter the ratio or “balance” between housing and employment in the unincorporated area.

b. Water Supply Pipeline

Construction of the water supply pipeline would not result in the construction of new housing units or jobs that would result in an imbalance between population and employment, and would not displace any existing housing units or jobs. Therefore, there would be *no impact* for the following standards of significance:

- ◆ Displace substantial numbers of existing housing units.
- ◆ Displace substantial numbers of people.
- ◆ Substantially alter the ratio or “balance” between housing and employment in the unincorporated area.

3. Traffic and Transportation

a. Imported Surface Water Option

The importation of surface water would not generate new traffic or parking demand; affect non-automotive transportation facilities; or result in any physical changes to traffic, parking or transportation facilities. Therefore, there would be *no impact* for the following standards of significance:

◆ Traffic/Intersection Impacts

- At a signalized intersection, degrade the AM or PM peak hour level of service from an acceptable LOS D or better to LOS E or F.
- At a signalized intersection, increase traffic volumes at an intersection already operating at LOS E or F by more than 50 vehicles per hour in the AM or PM peak hour (This criterion has not been identified by the County as a threshold).
- At an unsignalized intersection, degrade the AM or PM peak hour level of service from an acceptable LOS D or better to LOS E or F and the worst-case approach would experience total delay of more than 4.0 vehicle-hours (for a single lane approach) or more than 5.0 vehicle hours (for a multi-lane approach).
- At an unsignalized intersection, increase traffic volumes at an intersection already operating at LOS E or F by more than 50 vehicles per hour in the AM or PM peak hour.

◆ Bicycle Circulation

- Be inconsistent with goals to have facilities that encourage greater use of bicycles for recreation, commuting and shopping.
- Result in substantial conflicts for bicyclists or would adversely affect nearby bicycle facilities.

- Be inconsistent with goals to develop and maintain a safe, integrated bicycle route network for residents and visitors, connecting key destinations to neighborhoods, neighborhoods to each other and provide adequate bicycle access to the project site.
- Exacerbate a current substandard pedestrian or bicycle condition in the project area.

◆ Pedestrian Circulation

- Be inconsistent with goals to provide an interconnected pedestrian network providing safe access to the project site, between residential areas, public uses, shopping and employment centers, with special attention to a high quality downtown pedestrian environment with links to neighborhoods.
- Result in substantial conflicts for pedestrians or would adversely affect nearby pedestrian facilities.
- Exacerbates a current unsafe pedestrian condition in the project area.

◆ Transit Network

- Be inconsistent with goals to develop and maintain an efficient and convenient transit system providing alternatives to the use of the personal automobile to residents, workers, and visitors to alleviate congestion and enhance mobility.
- Cause a transit demand above the levels able to be adequately provided by local transit operators or agencies, or has other adverse impacts on transit operations.

◆ Site Access and Circulation

- Create an on-site circulation system that would be inadequate for the volumes and types of traffic expected.
- Vehicular access points would not be designed to appropriate design standards.

◆ Parking

- An impact to parking would be significant if the proposed parking supply not serve the expected demand. Residential guest parking can be served by on-street parking, and therefore, does not need to be included in the calculation of off-street demand.

◆ Construction

- A construction impact to the circulation system would be significant if it adversely affected transportation circulation or infrastructure conditions. Impacts specific to construction would be significant if:
 - The construction activity causes substantial adverse effects to vehicle, pedestrian, and bicycle circulation.
 - The construction activity causes substantial adverse effects to pavement conditions.

Because the imported surface water option would not affect traffic or transportation facilities or services, there would also be *no impact* to cumulative impacts.

b. Water Supply Pipeline

The water supply pipeline would not generate new traffic or parking demand (apart from construction-related trips); affect non-automotive transportation facilities; or result in any physical changes to traffic, parking, or transportation facilities. Therefore, there would be *no impact* for the traffic/intersection, bicycle circulation, pedestrian circulation, transit network, site access, and circulation or parking standards of significance listed in the previous section. Impacts associated with construction traffic are discussed in Section C.3.b, above.

4. Noise

a. Imported Surface Water Option

The transfer of surface water to the project site would not result in any direct physical impacts that would result in an increase in noise or groundborne

vibration. Therefore, the project would have *no impact* for the following standards of significance:

- ◆ Exposure of people to or generation of noise levels in excess of standards established in the current Napa County General Plan and the Napa County Noise Ordinance.
- ◆ Exposure of people to or generation of excessive groundborne vibration or groundborne noise levels.
- ◆ Substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
 - Increases in predicted traffic noise levels of 5 dBA L_{dn} , or greater, would be considered significant in areas where the ambient noise environment is less than 60 dBA L_{dn} .
 - In areas where the ambient noise environment is between 60 and 65 dBA L_{dn} , exceeds applicable noise standards, increases of 3 dBA L_{dn} , or greater, would be considered significant.
 - In areas where the ambient noise environment equals or exceeds 65 dBA L_{dn} , a predicted increase of 1.5 dBA L_{dn} , or greater, would be considered significant.
 - For areas equal to or greater than 70 dBA L_{dn} , increases of greater than 1 dBA L_{dn} would be considered significant.
 - For any of the increases listed above, a 1 dBA increase attributable to the project would be “cumulatively considerable.” Cumulative noise impacts generally occur when traffic associated with a development, in combination with reasonably foreseeable projects, causes noise levels to substantially increase at a noise sensitive receptor, such as an existing residence. For the impact to be considered significant the traffic attributable to the project must make a cumulatively considerable contribution to the increased traffic noise. A cumulatively considerable contribution is considered to be 1 dBA L_{dn} , the smallest number that can be accurately measured or modeled.

- Substantial temporary or periodic increase in ambient noise levels in the project vicinity in excess of Napa County's Noise Ordinance Standards.
- ◆ Exposure of people residing or working in the project area to excessive aircraft noise levels.

Because the imported surface water option would not affect any noise conditions, there would also be *no impact* to cumulative impacts.

b. Water Supply Pipeline

The proposed water supply pipeline would not result in noise generation after the completion of the construction phase, and construction within the vicinity of the Napa County-City Airport would be temporary. Therefore, the project would have *no impact* for the following standards of significance:

- ◆ Substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- ◆ Exposure of people residing or working in the project area to excessive aircraft noise levels.

5. Air Quality

The air quality impacts associated with water supply components are considered together with other project components evaluated in this Supplement to the 2009 DEIR. Please see Chapter 4.6 for an evaluation of air quality impacts.

6. Greenhouse Gas Emissions

The greenhouse gas emissions associated with water supply components are considered together with other project components evaluated in this Supplement to the 2009 DEIR. Please see Chapter 4.6 for an evaluation of greenhouse gas emission impacts.

7. Hazards and Hazardous Materials

a. Imported Surface Water Option

Implementation of this option would not result in physical changes that would, in turn, result in an impact from hazards or hazardous materials. Therefore, the project would have *no impact* for the following standards of significance:

- ◆ Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials.
- ◆ Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- ◆ Generate hazardous emissions or handle hazardous materials, substances or waste within ¼-mile of an existing or proposed school.
- ◆ Be located on a site which is included on a list of hazardous material sites compiled pursuant to and, as a result, create a significant hazard to the public or the environment.
- ◆ Expose people or structures to a significant risk of loss, injury or death involving wildland fires.
- ◆ Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- ◆ For a project within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard for people living or working in the project area.

Because the imported surface water option would not affect any hazards or hazardous materials conditions, there would also be *no impact* to cumulative impacts.

b. Water Supply Pipeline

The water supply pipeline project component would require construction of new infrastructure south of the project site. The pipeline would not be located within ¼-mile of an existing or proposed school, create new housing or

structures, or interfere with emergency response procedures. Therefore, the project would have *no impact* for the following standards of significance:

- ◆ Generate hazardous emissions or handle hazardous materials, substances or waste within ¼-mile of an existing or proposed school.
- ◆ Expose people or structures to a significant risk of loss, injury, or death involving wildland fires.
- ◆ Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

8. Geology, Soils, and Seismicity

a. Imported Surface Water Option

Implementation of this option would not result in physical changes that would, in turn, result in geology, soils or seismicity impacts. Therefore, the project would have *no impact* for the following standards of significance:

- ◆ Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. Refer to CDMG Special Publication 42.
 - Strong seismic ground shaking.
 - Seismic-related ground failure, including liquefaction.
 - Landslides.
- ◆ Result in substantial soil erosion or the loss of topsoil.
- ◆ Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, settlement, lateral spreading, subsidence, liquefaction or collapse.
- ◆ Be located on expansive soil, as defined in Table 18-1-b of the Uniform Building Code (1994), creating substantial risks to property.

- ◆ Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater.

Because the imported surface water option would not affect any geologic conditions, there would also be *no impact* to cumulative impacts.

b. Water Supply Pipeline

The water supply pipeline would not involve the construction of any wastewater facilities. Therefore, the project would have *no impact* for the following standard of significance:

- ◆ Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

9. Hydrology and Water Quality

a. Imported Water Supply Option

Implementation of this option would not result in physical changes that would alter drainage patterns, contribute to runoff, or affect flood hazard areas. Therefore, the project would have *no impact* for the following standards of significance:

- ◆ Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.
- ◆ Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
- ◆ Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- ◆ Otherwise substantially degrade water quality.

- ◆ Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- ◆ Place within a 100-year flood hazard area structures which would impede or redirect flood flows.
- ◆ Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

b. Water Supply Pipeline

The water supply pipeline would convey imported surface water to the site through a new pipeline that would be located along existing rights-of-way. The pipeline would not involve groundwater resources, contribute to runoff, create new housing, or expose people or structures to levee or dam failure. Therefore, the project would have *no impact* for the following standards of significance:

- ◆ Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).
- ◆ Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
- ◆ Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- ◆ Otherwise substantially degrade water quality.

- ◆ Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- ◆ Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

10. Cultural Resources

a. Imported Surface Water Option

Implementation of this option would not result in physical changes that would, in turn, result in cultural resource impacts. Therefore, the project would have *no impact* for the following standards of significance:

- ◆ Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5.
- ◆ Cause a substantial adverse change in the significance of an archaeological resource as pursuant to CEQA Guidelines §15064.5.
- ◆ Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- ◆ Disturb any human remains, including those interred outside of formal cemeteries.

Because the imported surface water option would not affect any cultural resources, there would also be *no impact* to cumulative impacts.

b. Water Supply Pipeline

The water supply pipeline would be routed within existing rights-of-ways and would therefore have *no impact* for the following standard of significance:

- ◆ Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5.

11. Public Services and Recreation

a. Imported Surface Water Option

Implementation of this option would not result in physical changes that would, in turn, affect law enforcement, fire protection services, emergency medical response, schools, library services, or parks and recreation. For example, no new facilities would be required to handle additional water to fight fires because fire flows were accounted for in the water supply assessment. Therefore, the project would have *no impact* for the following standard of significance:

- ◆ Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental or public facilities, or result in the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:
 - Law Enforcement
 - Fire
 - Emergency Medical Response
 - Schools
 - Library
 - Parks and Recreation

b. Water Supply Pipeline

The water supply pipeline project component would involve construction of a new utility in an existing right-of-way and would not affect law enforcement, fire protection services, emergency medical response, schools, library services, or parks and recreation. Therefore, the project would have *no impact* for the following standard of significance:

- ◆ Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental or public facilities, or result in the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

- Law Enforcement
- Fire
- Emergency Medical Response
- Schools
- Library
- Parks and Recreation

12. Utilities

a. Imported Surface Water Option

Implementation of this option would not result in physical changes that would, in turn, affect wastewater, stormwater, solid waste, or energy resources. Therefore, the project would have *no impact* for the following standard of significance:

◆ Wastewater:

- Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Have insufficient wastewater treatment capacity available to serve the project's projected demand in addition to existing demand.
- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

◆ Stormwater:

- Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

◆ Solid waste:

- Not be served by a landfill with sufficient permitted capacity to accommodate the buildout of the project's solid waste disposal needs.
- Not comply with federal, State, and local statutes and regulations related to solid waste and recycling.

◆ Energy resources:

- Waste, or inefficiently or unnecessarily consume, energy.
- Impede future energy conservation.

b. Water Supply Pipeline

Construction of the water supply pipeline would not involve wastewater, stormwater, or solid waste facilities. Therefore, the project would have *no impact* for the following standard of significance:

◆ Wastewater:

- Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Have insufficient wastewater treatment capacity available to serve the project's projected demand in addition to existing demand.
- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

◆ Stormwater:

- Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

◆ Solid waste:

- Not be served by a landfill with sufficient permitted capacity to accommodate the buildout of the project's solid waste disposal needs.
- Not comply with federal, State, and local statutes and regulations related to solid waste and recycling.

13. Aesthetics

a. Imported Surface Water Option

Implementation of this option would not result in physical changes that would, in turn, result in aesthetic impacts. Therefore, the project would have *no impact* for the following standards of significance:

- ◆ Substantially degrade the existing visual character or quality of the site and its surroundings.
- ◆ Have a substantial adverse effect on a scenic vista.
- ◆ Substantially degrade the view from a scenic highway, including, but not limited to, trees, rock outcroppings and historic buildings.
- ◆ Expose people on- or off-site to substantial light or glare.

b. Water Supply Pipeline

Construction of the water supply pipeline would involve installing a new utility in an existing right-of-way and would not create a new structure that could affect aesthetic resources. Therefore, the pipeline would be considered to have *no impact* for the following standards of significance:

- ◆ Have a substantial adverse effect on a scenic vista.
- ◆ Substantially degrade the view from a scenic highway, including, but not limited to, trees, rock outcroppings, and historic buildings.
- ◆ Expose people on- or off-site to substantial light or glare.