



East Bay Municipal Utility District Mokelumne Aqueducts Resiliency Project Initial Study Checklist

March 2022

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ACRONYMS AND ABBREVIATIONS

Acronyms and Abbreviations

BAAQMD	Bay Area Air Quality Management District
BMPs	best management practices
BNSF	Burlington Northern Santa Fe Railway Company
CAL FIRE	California Department of Forestry and Fire Protection
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CGS	California Geologic Survey
CML	cement mortar lining
CO	carbon monoxide
CO ₂	carbon dioxide
Delta	Sacramento-San Joaquin Delta
EBMUD	East Bay Municipal Utility District
EIR	Environmental Impact Report
Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FEMA	Federal Emergency Management Agency
GIS	geographic information system
I-5	Interstate 5
N ₂ O	nitrous oxide
NHPA	National Historic Preservation Act
No.	Number
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
PM ₁₀	particulate matter
PM _{2.5}	fine particulate matter
Project	Mokelumne Aqueducts Resiliency Project
ROG	reactive organic gases
ROW	right-of-way

ACRONYMS AND ABBREVIATIONS

SF ₆	sulfur hexafluoride
SJMSCP	San Joaquin County Multiple-Species Habitat Conservation and Open Space Plan
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO _x	sulfur oxides
State	State of California
TBM	tunnel boring machine
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
VMT	Vehicle miles travelled
Water Board	Central Valley Regional Water Board
WDR	Waste Discharge Requirements

1 Environmental Checklist

1. **Project Title:** Mokelumne Aqueducts Resiliency Project
2. **Lead agency name and address:** East Bay Municipal Utility District
Water Distribution Planning Division – MS 701
375 11th Street
Oakland, CA 94607
3. **Contact person and phone number:** David J. Rehnstrom, Manager
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East Bay Municipal Utility District
375 Eleventh Street, MS 701
Oakland, CA 94607-4240
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www.ebmud.com/marp
4. **Project locations:** Approximately 16.5-miles of the existing Mokelumne Aqueducts System, including an underground section of the pipelines between Stockton and Holt and an aboveground section of the pipelines between Holt and Bixler. The alignment crosses through the San Joaquin Delta, traversing the cities and census-designated places of Stockton, Holt, and Bixler, within San Joaquin and Contra Costa Counties.
5. **Project sponsor's name and address:** East Bay Municipal Utility District
375 11th Street, MS #504
Oakland, CA 94607
6. **General plan designation:** Contra Costa County: Public/Semi Public, Agricultural Lands, Water, Parks and Recreation, Delta Recreation, Open Space

San Joaquin County: General Agriculture, Agriculture-Urban Reserve.

City of Stockton: Low-Density Residential, Commercial.

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7. **Zoning:**
- Contra Costa County: General Agriculture (AG-80)
- San Joaquin County: General Agriculture (A-2), Heavy Agriculture (A-3), Agricultural Preserve (A-4)
- City of Stockton: Public Facilities (PF)

8. **Description of Project:**

The Mokelumne Aqueduct System, which includes the Pardee Tunnel, Mokelumne Aqueducts and Lafayette Aqueducts, transports untreated water from Pardee Reservoir and the Sacramento River to EBMUD's service area and is the primary supply for 1.4 million people in Alameda and Contra Costa Counties. The Mokelumne Aqueduct System originates at EBMUD's Pardee Reservoir in the Sierra Foothills and extends from the Pardee Center in Campo Seco for approximately 90 miles through the Central Valley, along the Calaveras River and the Sacramento-San Joaquin Delta (Delta), to water treatment plants and terminal reservoirs in the EBMUD service area in the East Bay as shown in Figure 1 (Water Supply Overview). The Mokelumne Aqueducts consist of three steel pipelines, with the first of the pipelines (Mokelumne Aqueduct No. 1) completed in 1929, and Mokelumne Aqueducts Nos. 2 and 3 completed in subsequent years. The existing Mokelumne Aqueducts have a combined total capacity of 325 million gallons a day (mgd). The Mokelumne Aqueducts Resiliency Project (Project) is proposed to replace a portion of the existing Mokelumne Aqueducts with a buried Aqueduct Tunnel (Tunnel) of approximately 16.5 miles in length, beginning west of Interstate 5 (I-5) in the City of Stockton, CA and ending at the EBMUD's Bixler Maintenance Yard in unincorporated Contra Costa County, CA (see Figure 3 through Figure 8). The Tunnel alignment would follow the EBMUD's existing 100-foot wide right-of-way (ROW) for the existing Mokelumne Aqueducts.

Approximately 16 miles of the Mokelumne Aqueducts cross the Delta including an underground section from the I-5 freeway in Stockton to Holt and an above-ground section that is supported on buried piles from Holt to Bixler as shown in Figure 1 (Project Location). This 16-mile portion of the Mokelumne Aqueducts is recognized to be vulnerable to earthquake hazards and levee failure hazards including flood scour and submergence. Failure of one or more of the Aqueducts would severely reduce the level of water service to EBMUD's customers. To address this potential public health impact, the purpose of the Project is to improve the resiliency of the existing Mokelumne Aqueducts by burying them in a tunnel to be constructed in the existing Mokelumne Aqueducts 100-foot wide right of way (ROW) where they cross the Delta.

The Project would involve decommissioning two of the three existing Mokelumne Aqueducts (Mokelumne Aqueduct No. 1 and Mokelumne Aqueduct No. 2), retrofitting Mokelumne Aqueduct No. 3, and constructing a new, approximately 16.5 mile long, 15-foot diameter buried tunnel containing a 120-inch steel carrier pipeline between Stockton and Bixler (Tunnel) to replace the vulnerable section of the Mokelumne Aqueducts. The Tunnel would begin in

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Stockton near the existing Mokelumne Aqueducts interconnection facility, just west of I-5 and continue west for approximately 16.5 miles to the EBMUD Bixler Maintenance Yard.

Up to four concrete shafts are planned along the Tunnel alignment, one at the east end in Stockton, one at the west end, in Bixler, and up to two intermediate shafts. The intermediate shafts would be located at Holt and Jones Tract West near Bacon Island Road. The access shafts would be used to construct the Tunnel and, later, to provide long-term maintenance access to the carrier pipeline installed in the Tunnel. The permanent access shafts would have reinforced concrete riser pipes that extend to the ground surface or higher. For the shafts located at Holt and Jones Tract West near Bacon Island Road, elevated access shafts would be constructed and reach a height of approximately 30-feet above the ground surface. The elevated access shafts would include a concrete tower with external ladder to provide access protected against potential flood levels.

The Tunnel would be located in stable soil deposits at a depth of approximately 90 to 130 feet below mean sea level, below weak, compressible soils comprised of surficial floodplain soil deposits. The Tunnel would be excavated using electric-powered tunnel boring machines (TBMs) and supported using approximately 5-foot-long watertight precast concrete segmental rings that will be installed as the TBM advances. The concrete access shaft from which the TBM starts is called the launch shaft and the concrete access shaft from which the TBM is removed from the Tunnel is called the reception shaft. Each foot of Tunnel would produce approximately 10 loose cubic yards of soils that would be stockpiled temporarily at the launch shaft sites and dried out prior to transporting the soils to a permanent disposal site using large trucks and/or using the railroad.

The entire 16.5 mile Tunnel would be 15-feet in diameter, with a single 120-inch steel carrier pipeline, constructed in two to three tunnel drives. One drive would extend approximately 5.5 miles from a launch shaft at Holt to a reception shaft at Stockton. A second drive would extend approximately 5.0 miles from the launch shaft at Holt to a combination launch/reception shaft at Jones Tract West. The third drive would start at a combination launch/reception shaft at Jones Tract West and continue west for approximately 6.0 miles to a reception shaft at Bixler.

Launch shafts for the Tunnel would be approximately 60 feet in diameter and reception shafts would be approximately 35 feet in diameter. The shafts would be constructed using slurry wall techniques, overlapping secant piles, cutter soil mixing, or ground freezing. After the tunneling has been completed, the 120-inch steel carrier pipeline would be installed and welded together inside the Tunnel, and the annular space outside the pipeline would be filled with low-density cellular concrete. The inside of the pipeline would be coated with a cement mortar lining (CML) to protect the pipeline from corrosion.

Construction equipment for the tunneling operations at the launch shafts include the TBM and trailing gear, approximately three cranes, soil loading and hauling equipment, grout plants, cement silo, trucks for deliveries, and equipment for soil drying and processing. A crane-

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mounted slurry wall clamshell, an additional crane, front-end loaders, slurry plant, concrete delivery trucks, and a concrete pump truck would be required for shaft construction.

Construction staging areas at the launch shaft sites would be approximately 10 acres per shaft to provide adequate space for construction operations, equipment and materials storage, soil handling and disposal, grout plants, an electrical substation, offices, a worker change house, shops, parking, and other support facilities. During tunneling, sufficient space would be needed to store precast concrete tunnel segments and tunnel supports, and after the tunneling has been completed, the space would be utilized for storing steel pipeline sections. The storage space is included in the staging area size. Construction staging at the reception shaft sites would be approximately one acre per shaft and are used for retrieving the TBM at the end of the tunnel drive. Some of the staging will occur on EBMUD's existing ROW for the Mokelumne Aqueduct pipelines, but additional property adjacent to EBMUD's existing ROW for the Mokelumne Aqueduct pipelines would be obtained for the purpose of constructing the Tunnel access shafts consisting of approximately 1.7 acres of permanent ROW and 9.6 acres of temporary ROW at the launch shaft at Holt and approximately 1.2 acres of permanent ROW and 10.2 acres of temporary ROW at the launch/reception shaft at Jones Tract West. No additional permanent or temporary ROW are needed at the reception shafts at Stockton and Bixler. Access routes, including bridges, to launch shafts may need to be improved to accommodate large vehicles transporting heavy equipment and materials. Highway 4 between Stockton and Holt may also need improvements. If major access is needed at Jones Tract West, then Bacon Island Road would require improvements. Local roads near Bixler and extending north to Pittsburg/Antioch may also require improvements. Such improvements may include embankment armoring, road widening to increase turn radii, addition of turning lanes and acceleration/deacceleration lanes, and/or strengthening of bridges used for access and roads at aqueduct crossings. The Burlington Northern Santa Fe Railway Company (BNSF) railroad line between Stockton and Holt or Jones Tract West may also be utilized for transporting materials for construction. An existing siding (a railroad spur) that parallels the active track along Jones Tract may be used if rail access to the shaft sites at Holt and Jones Tract West is to be provided. Construction of an additional siding may be required to access locations not currently served by the existing siding if the BNSF railroad line is used.

After the new Tunnel is constructed and placed in service, existing Mokelumne Aqueducts Nos. 1 and 2 would be decommissioned for approximately 16.5 miles, with above-ground sections and their support structures removed and under-ground sections accessed with temporary excavations and filled with cellular concrete to prevent a potential collapse hazard. The above-ground sections would be removed by cranes and off hauled in trucks after cutting the pipeline sections into pieces, breaking up concrete pile caps with jack hammers and/or hoe-rams, and cutting piles about three feet below the ground surface. Other structures associated with the aboveground pipelines, including concrete temperature anchor structures and elevated pipeline supports, would be similarly demolished, loaded, and hauled away. The elevated supports for the above-ground section of Mokelumne Aqueduct No. 3 would be retrofitted by adding

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additional bracing and replacing seismic dampeners to improve seismic performance and by strapping the pipeline to the supports with steel straps to prevent flotation after flooding.

The operation phase would involve transmission of water through the 15-foot-diameter Tunnel in addition to the existing Mokelumne Aqueduct No. 3 pipeline, which will provide operational flexibility and support future planned and unplanned outages of the Tunnel. The Project will not increase or decrease the operating capacity of the Mokelumne Aqueducts System. Tunnel maintenance and inspection activities for the proposed Project would include replacing the carrier pipeline interior CML every 75 years. Post-construction maintenance on Mokelumne Aqueduct No. 3 would be similar to existing maintenance activities.

9. Surrounding land uses and setting:

The Project is located in unincorporated Contra Costa County west of the Old River, in unincorporated San Joaquin County between the Old River and the San Joaquin River, and in the City of Stockton east of the San Joaquin River. West of the San Joaquin River, the Project vicinity is rural and sparsely populated; the only population centers are the small rural communities of Holt and Bixler. East of the San Joaquin River, the Project vicinity is a highly developed environment with numerous residential communities in the City of Stockton. Land uses within and adjacent to Project development areas are predominantly agricultural and open space. Work would also occur within developed areas owned by EBMUD and currently used as the existing ROW for the Mokelumne Aqueduct pipelines.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement): Potential permits and agencies approvals would include:

- Clean Water Act Section 404 – Individual Permit from United States Army Corps of Engineers (USACE) for temporary and permanent impacts to waters of the United States and adjacent wetlands.
- Clean Water Act Section 401 – Water Quality Certification from the Water Board for temporary and permanent impacts to waters of the United States and adjacent wetlands.
- Porter-Cologne Water Quality Control Act – Waste Discharge Requirements (WDR) from the Water Board for temporary and permanent impacts to waters of the State and State wetlands.
- National Pollutant Discharge Elimination System from the Water Board for temporary and permanent impacts to waters of the United States and adjacent wetlands.
- Fish and Game Code Section 1602 – Lake or Streambed Alteration Agreement from California Department of Fish and Wildlife (CDFW) for temporary and permanent impacts to waters of the State.

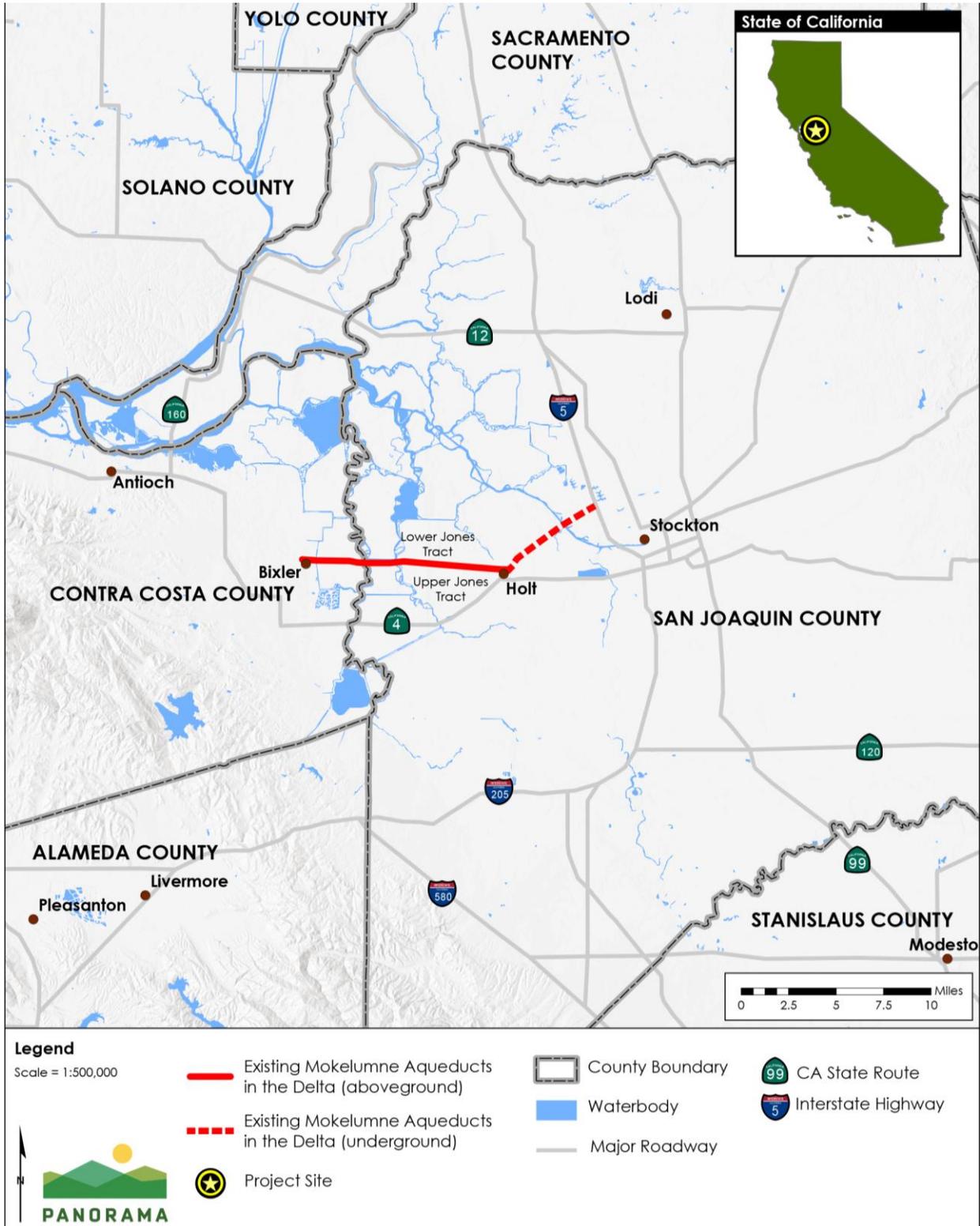
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- Section 7 Consultation – Biological Opinion from United States Fish and Wildlife Service (USFWS) for impacts to species listed under the federal Endangered Species Act.
 - Fish and Game Code Section 2081 – Incidental Take Permit from CDFW would be required if impacts to species listed under the California Endangered Species Act could not be avoided.
 - Section 106 Consultation – The National Historic Preservation Act (NHPA) requires consultation with the State Historic Preservation Office to ensure project consistency with the NHPA.
 - Certification of Consistency with the Delta Plan approved by the Delta Stewardship Council.
11. **Have California Native American tribes traditionally and culturally affiliated with the Project area requested consultation pursuant to Public Resources Code section 2180.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?**

To date no Native American tribes have requested consultation with EBMUD.

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Figure 2 Project Location

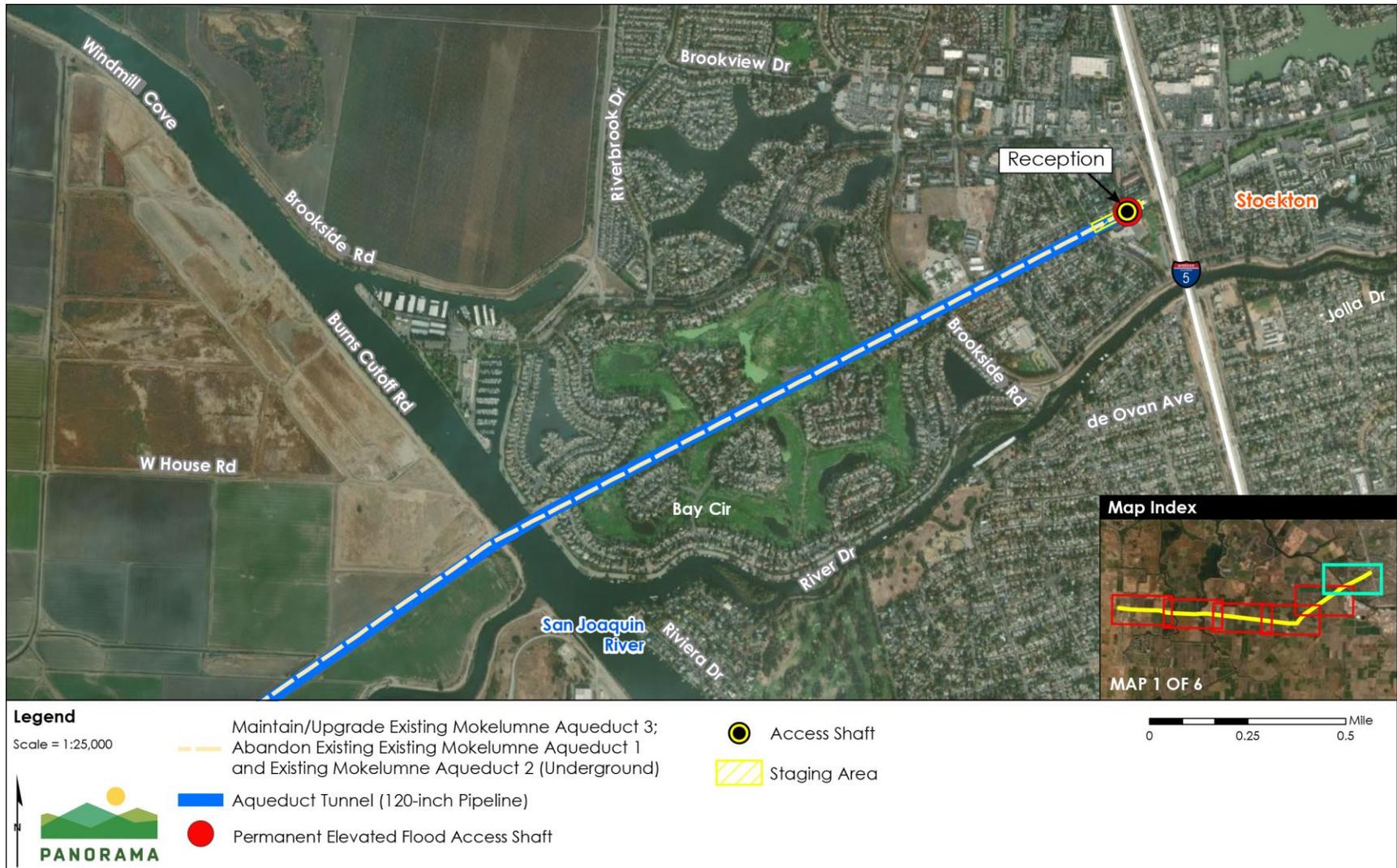


Sources: (US Census Bureau 2016, Tele Atlas North America, Inc. 2018, U.S Geological Survey 2016, Esri 2020)

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Figure 3 Project Elements (Map 1 of 6)



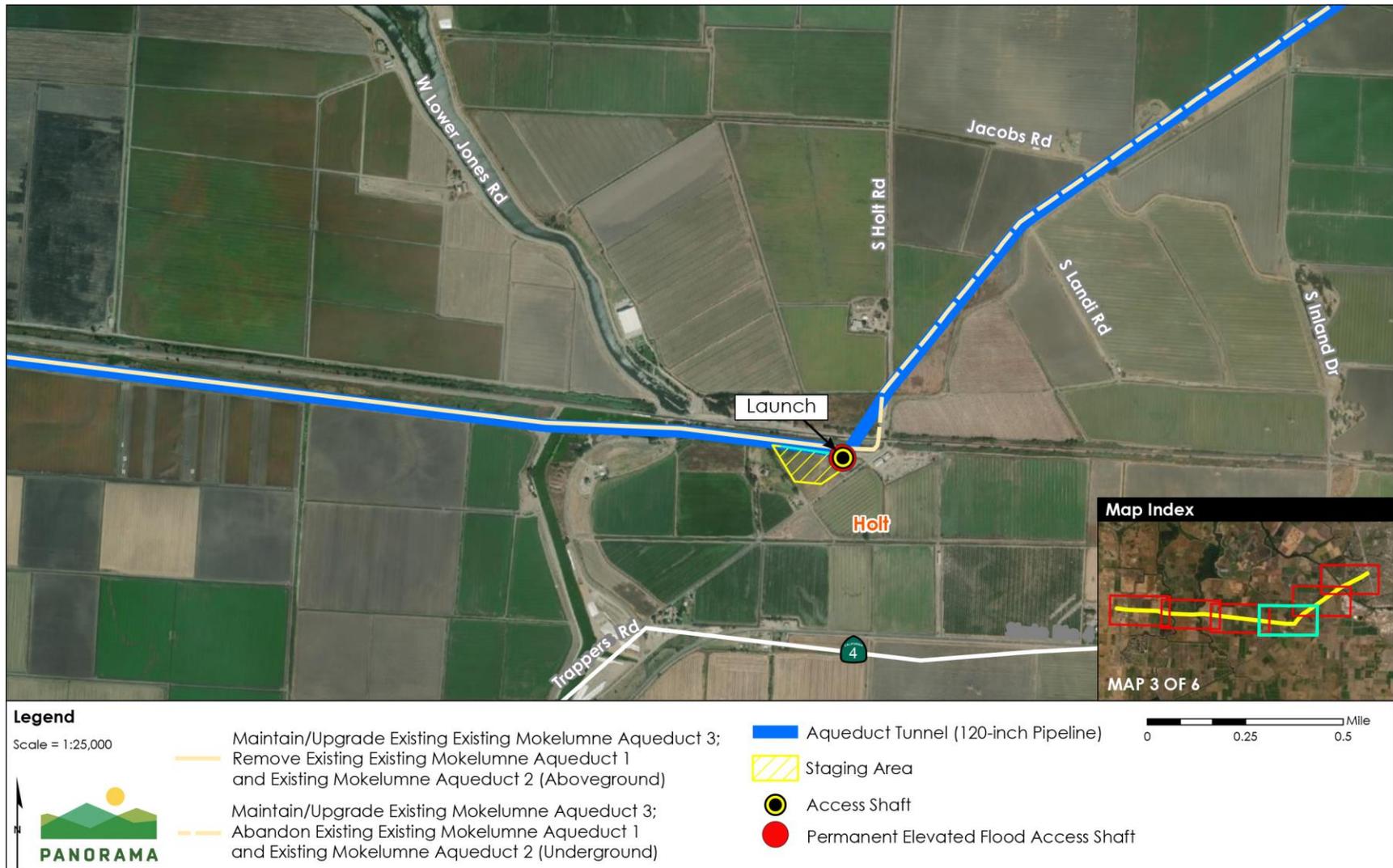
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Figure 4 Project Elements (Map 2 of 6)



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Figure 5 Project Elements (Map 3 of 6)



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Figure 6 Project Elements (Map 4 of 6)



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Figure 7 Project Elements (Map 5 of 6)

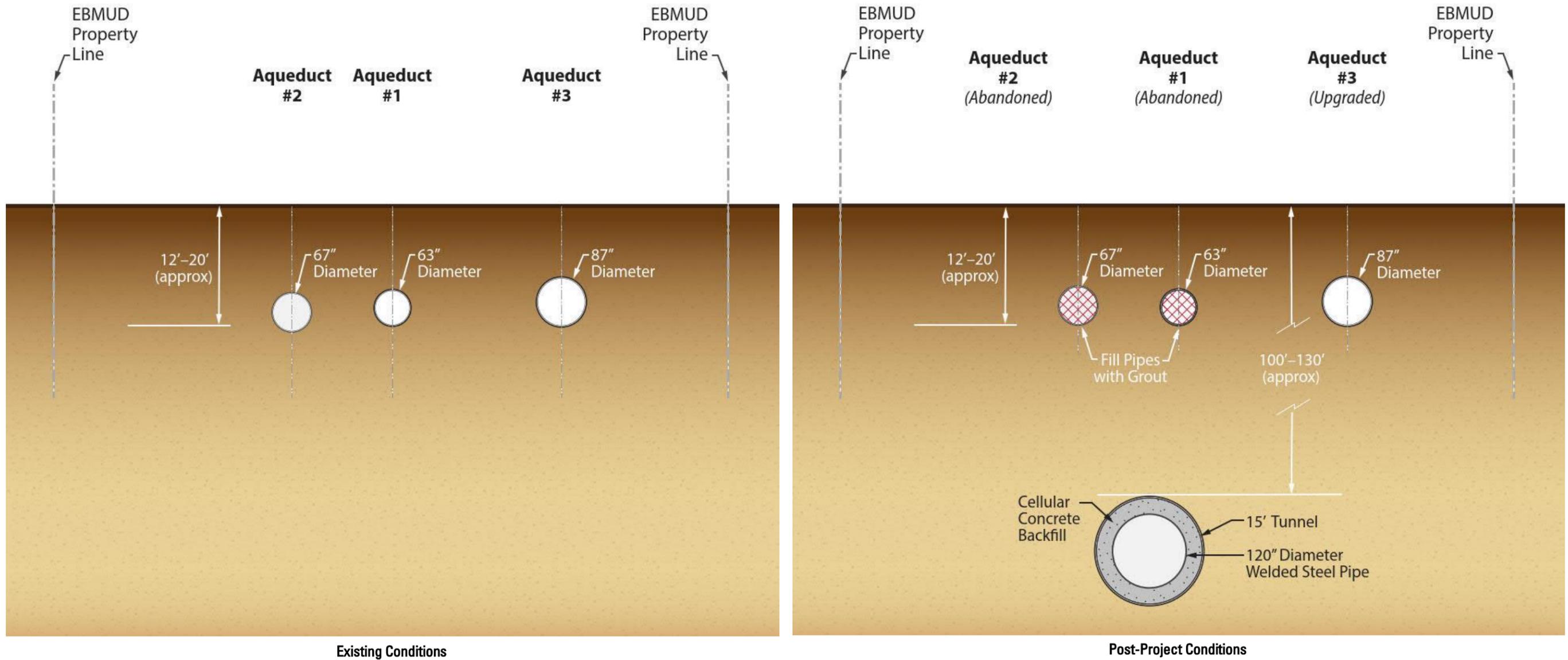


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Figure 8 Project Elements (Map 6 of 6)

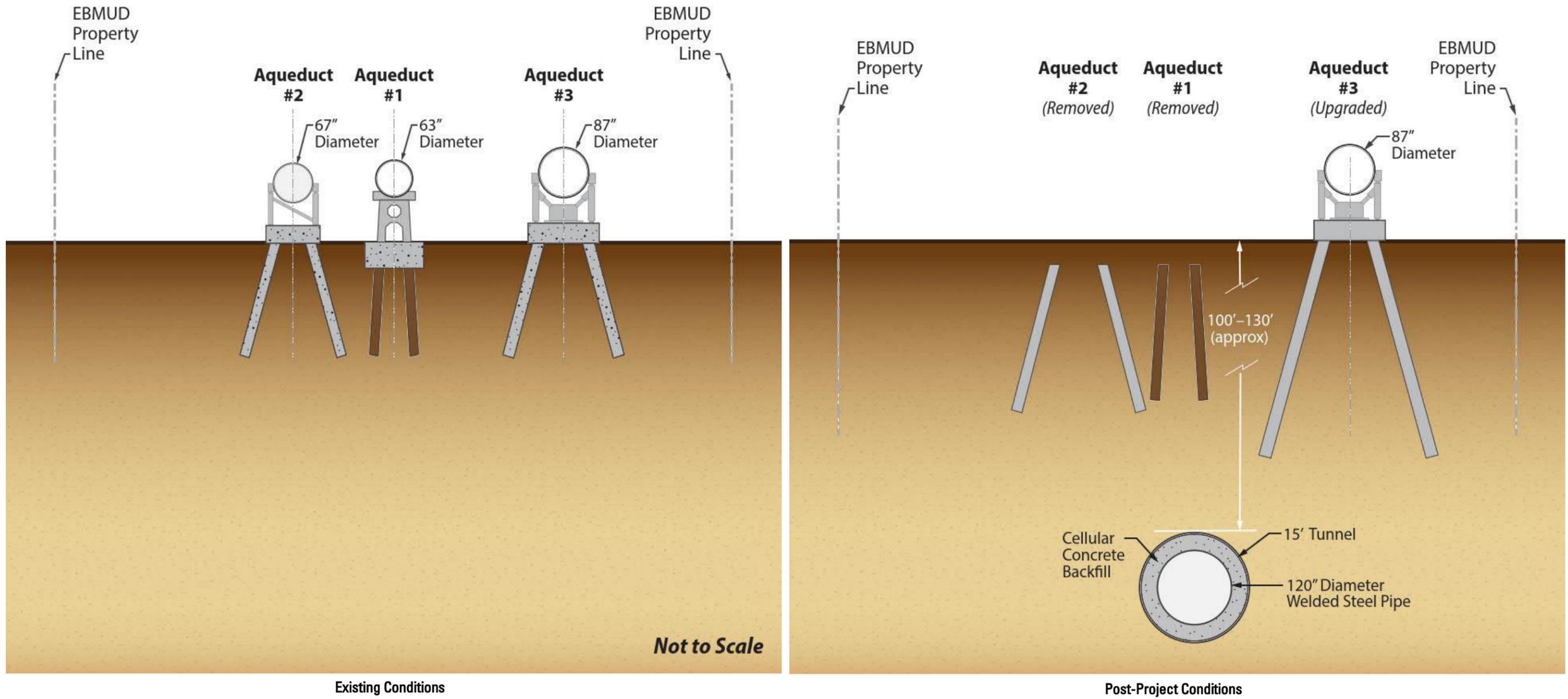


Figure 9 Comparison of Below-Ground Conditions Pre- and Post-Project (Stockton to Holt)



Source: (WSP 2022)

Figure 10 Comparison of Above-Ground Conditions Pre- and Post-Project (Holt to Bixler)



Source: (WSP 2022)

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Environmental Factors Potentially Affected

The following checked environmental factors potentially would be affected by the Project, involving at least one potentially significant impact, as shown in the California Environmental Quality Act (CEQA) checklist on the following pages.

<input checked="" type="checkbox"/>	Aesthetics	<input checked="" type="checkbox"/>	Agriculture/Forestry	<input checked="" type="checkbox"/>	Air Quality
<input checked="" type="checkbox"/>	Biological Resources	<input checked="" type="checkbox"/>	Cultural Resources	<input type="checkbox"/>	Energy
<input checked="" type="checkbox"/>	Geology / Soils	<input checked="" type="checkbox"/>	Greenhouse Gas Emissions	<input checked="" type="checkbox"/>	Hazards & Hazardous Materials
<input checked="" type="checkbox"/>	Hydrology / Water Quality	<input checked="" type="checkbox"/>	Land Use / Planning	<input type="checkbox"/>	Mineral Resources
<input checked="" type="checkbox"/>	Noise	<input type="checkbox"/>	Population / Housing	<input type="checkbox"/>	Public Services
<input checked="" type="checkbox"/>	Recreation	<input checked="" type="checkbox"/>	Transportation	<input checked="" type="checkbox"/>	Tribal Cultural Resources
<input checked="" type="checkbox"/>	Utilities / Service Systems	<input type="checkbox"/>	Wildfire	<input checked="" type="checkbox"/>	Mandatory Findings of Significance

DETERMINATION: (To be completed by Lead Agency)

On the basis of this initial evaluation:

- The proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- Although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- The proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT (EIR) is required.
- The proposed Project MAY have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- Although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.

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1.1 Aesthetics

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. AESTHETICS. Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway or designated scenic roadway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

a & c) **Potentially Significant Impact.** The visual character in the Project vicinity varies along the alignment as the Mokelumne Aqueducts pass through rural agricultural areas in the Delta and through urban areas in the City of Stockton. The agricultural areas west of the City of Stockton are characterized primarily by flat, parceled agricultural fields, linear two-lane paved roads and unpaved agricultural roads, and meandering rivers and sloughs containing vegetated islands. Contra Costa County and San Joaquin County have designated local scenic routes that would be within 1 mile of the Project. The newly constructed Woodward Island Bridge provides views across miles of the Delta and would afford views of the Project, although it is not a designated scenic vista.

Visual quality is defined as the overall visual impression or attractiveness of an area as determined by the particular landscape characteristics, including landforms, rock forms, water features, and vegetation patterns. The attributes of variety, vividness, coherence, uniqueness, harmony, and pattern contribute to the overall visual quality of an area. The visual quality in the Project vicinity is generally low because the visual character is not unique for the region, is heavily influenced by man-made structures or manipulated landscapes, and does not offer unique or exemplary natural or cultural scenic amenities.

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Elevated 30-foot-tall access shafts would be visible following construction, which may draw visual attention when viewed together with the flat Delta surroundings; however, the access shafts would not necessarily be out of character from the existing agricultural region, which includes other vertical infrastructure such as transmission towers and poles, cellular towers, and draw bridges. The amount of aboveground infrastructure visible from nearby roadways would be reduced with the removal of the existing aboveground segments of Mokelumne Aqueducts No. 1 and No. 2. The existing Mokelumne Aqueduct No. 3 would remain in place and would continue to be visible between Holt and Bixler. Although visual quality within the Project vicinity is considered to be low, the addition of 30-foot-tall access shafts within the flat Delta setting may be considered significant to viewers who pass the access shafts from locally designated scenic roads and scenic vistas (such as the newly constructed Woodward Island Bridge) and recreational waterways. The EIR will provide a detailed evaluation of potential impacts to visual character and quality, and to scenic vistas.

b) **No impact.** No designated scenic vistas or State-designated scenic highways are present within 1 mile of the Project (Caltrans 2019). No designated scenic resources, including trees, rock outcroppings, or historic buildings occur within the Project area.

The Tunnel would be constructed underground and construction activities would be centered around four access shaft locations near Stockton, Holt, Middle River, and Bixler. Following construction, the Tunnel would not be visible. Two Tunnel access shafts in Holt and Middle River would be constructed to a height of approximately 30 feet above the ground surface and would be visible from public roads in the Project vicinity. None of the features, however, would be visible from a designated scenic vista or State-designated scenic highway. No impacts would occur.

d) **Less than Significant Impact.** Tunnel construction using the TBM typically begins as a continuous (24-hour) operation and would require temporary nighttime lighting. Other phases of Project construction may also be conducted during evening and nighttime hours and require lighting. Nighttime activities are anticipated to be centered around the Tunnel launch shafts, which are located in rural areas away from residences. Tunnel operation would not require permanent lighting (aboveground).

Tunnel access shafts would be made of reinforced concrete and would not generate glare within the Delta when exposed to sunlight. Because the Project would not create a source of substantial glare impacts would be less than significant.

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1.2 Agriculture and Forestry

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
<p>2. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:</p>				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

a) **Less Than Significant Impact.** The Farmland Mapping and Monitoring Program of the California Resources Agency Department of Conservation rates land according to soil quality, irrigation status, and current land use. The Tunnel alignment passes through agricultural areas between Stockton and Bixler that include areas designated as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland.

Project construction would require temporary construction easements near the access shafts of approximately 19.8 acres, which has the potential to be partially or wholly designated as farmland. Construction activities would temporarily preclude agricultural use of the land but

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would not permanently modify the soil quality or irrigation status and the land could be returned to agricultural use following Tunnel construction. The temporary impact on designated farmland would be less than significant.

The Project would require permanent acquisition of additional ROW to accommodate flood access shaft locations. The area required for Tunnel access during operation would be less than 0.01 acre at each shaft location. The Project would result in a net conversion of a minor amount of farmland to nonagricultural use to allow Tunnel access during operation. Because the loss of farmland would be minor and likely considered *de minimis*, the implementation of the Project is anticipated to result in a less-than-significant impacts to designated farmland.

b) **Potentially Significant Impact.** The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open-space use. The Williamson Act is implemented when a city or county creates an agricultural preserve. Once a preserve is established, the landowner may ask to enter into a contract with a city or county. Much of the agricultural land within the Project area between Stockton and Bixler is a designated preserve and is also under contract.

Tunnel access shafts would require permanent conversion of farmland and land covered by Williamson Act contracts. The EIR will provide a discussion of the potential conflicts and level of significance of any impacts associated with the conversion of farmland to non-farmland uses.

c & d) **No Impact.** No areas within or in the vicinity of the Project are currently zoned for forest land, timberland, or timberland zoned for Timberland Production (Contra Costa County 2020, San Joaquin County 2016). Because there would be no loss of forest land or conflicts with zoning of forest land there would be no impact.

e) **Less than Significant Impact.** Implementation of the Project is anticipated to result in a negligible (less than 0.04-acre) loss of available agricultural lands following construction. Implementation of the Project would result in a net conversion of a minor amount of farmland to nonagricultural use to allow Tunnel access during operation. Impacts would be less than significant.

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1.3 Air Quality

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

a-c) **Potentially Significant Impact.** The Project passes through two air basins: the San Francisco Bay Area Air Quality Management District (BAAQMD) Air Basin west of the Old River and the San Joaquin Valley Air Pollution Control District (SJVAPCD) Air Basin east of the Old River.

The San Francisco Bay Area Basin is designated as a nonattainment area for particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), and ozone under State standards and for ozone under federal standards (BAAQMD 2018). BAAQMD has emissions thresholds for construction for Reactive Organic Gases (ROG) (54 lbs/day), nitrogen oxides (NO_x) (54 lbs/day), particulate matter 10 micrometers in diameter (PM₁₀) (82 lbs/day), and particulate matter 2.5 micrometers in diameter (PM_{2.5}) (54 lbs/day). No emissions limits have been set for carbon monoxide (CO) and fugitive dust; however, fugitive dust should be addressed through best management practices (BMPs).

San Joaquin County is designated as a nonattainment area for PM₁₀, PM_{2.5}, and ozone under State standards and for PM_{2.5} and ozone under federal standards (SJVAPCD 2012). Mobile sources, such as trucks, vehicles, and farm equipment were identified as the primary sources of the region's criteria pollutant emissions precursors. SJVAPCD has emissions thresholds for construction for CO (100 tons per year), NO_x (10 tons per year), ROG (10 tons per year), sulfur oxides (SO_x) (27 tons per year), PM₁₀ (15 tons per year), and PM_{2.5} (15 tons per year).

The Project has the potential to create emissions during construction and operation, including dust, fumes, equipment exhaust and other air contaminants that could conflict with emissions

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thresholds of BAAQMD and SJVAPCD as emissions have not been modeled. Sensitive receptors are near the existing and proposed ROWs, and construction activities could expose these sensitive receptors to substantial pollutant concentrations. The California Air Resources Board defines sensitive receptor locations as locations where children, elderly, asthmatics, and others who are at a heightened risk of negative health outcomes due to exposure to air pollution congregate. The EIR will include a detailed analysis, including air quality modeling of construction emissions, to assess the impacts.

Operation of the Project would require maintenance that is similar or less than existing maintenance of the Mokelumne Aqueducts. Therefore, air quality impacts from maintenance vehicles are expected to be minimal and less than significant.

d) **Potentially Significant Impact.** Project construction would require use of diesel equipment that would generate odors from diesel exhaust emissions. The EIR will address odor impacts during construction. Operation of the Project would have no significant odor impacts.

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1.4 Biological Resources

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. BIOLOGICAL RESOURCES. Would the project:				
a) 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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) 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 US Fish and Wildlife Service?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) 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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

a) **Potentially Significant Impact.** Biological impacts from construction of the Project could occur primarily around shaft locations, where construction activities have the potential to harm special-status plant and wildlife species, including species listed under the federal and/or California Endangered Species Act. Construction activities could directly impact plants and wildlife that occur within the Project area through the operation of equipment for vegetation clearing and/or ground disturbing activities. Indirect effects to species could occur through disturbance or destruction of habitats. The impact from the Project on special-status species is

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considered potentially significant and will be further addressed in the EIR. Operational impacts to special status species would likely be minimal but will also be addressed in the EIR.

b & c) **Potentially Significant Impact.** The Project involves construction near existing surface waters where riparian habitats or other sensitive natural communities may be present. A preliminary biological reconnaissance survey conducted in 2020 along the Tunnel alignment indicated the presence of three sensitive natural vegetation communities: alkali meadow, native grassland, and coastal and valley freshwater marsh (Panorama Environmental, Inc. 2021). Small stands of degraded riparian vegetation are also present in the Project area. Riparian and sensitive natural communities may be affected by construction of the Tunnel access shafts or during staging activities.

Surface waters, wetlands and riparian habitats that are potentially subject to USACE, RWQCB, and CDFW jurisdiction are present in the Project area. Construction activities may temporarily and permanently convert jurisdictional waters and wetlands to non-jurisdictional land types through import of fill material (e.g., soils) and construction of permanent Project infrastructure (e.g., tunnel access shafts).

An analysis and quantification of impacts to riparian habitats and sensitive natural communities, and jurisdictional waters will be presented in the EIR. Operation of the facilities would not have impacts on riparian habitats or sensitive natural communities.

d) **Potentially Significant Impact.** A biological reconnaissance survey was performed within the Project area in June 2020 (Panorama Environmental, Inc. 2021). Agricultural fields such as row crops, orchards, irrigated hayfields, and dryland crop fields make up the majority of habitats adjacent to the Project area. These fields are primarily inhabited by a variety of rodent species that in turn attract small mammalian predators and birds such as hawks and owls. Other major wildlife habitats in the Project area include those associated with the Indian Slough, Old River, Middle River, Whiskey Slough, Trapper Slough, Stockton Deep Water Channel, and San Joaquin River. Large patches of eucalyptus, cottonwood, and willow provide habitat for birds, and thickets of blackberry and elderberry bushes provide habitat for small mammals and insects. Fish species such as delta smelt (*Hypomesus transpacificus*) and longfin smelt (*Spirinchus thaleichthys*) are known to inhabit the waters that run through the Project area. The agricultural areas also include complex series of Irrigation canals and open-water ditches that provide habitat for crustaceans, reptiles, amphibians, and semiaquatic mammals. The EIR will address the potential for the Project to interfere with the movement of native wildlife. No new impacts are anticipated during operations.

e) **Potentially Significant.** Vegetation removal during construction could result in removal of trees that are protected under local ordinances. These impacts are considered potentially significant and will be described further in the EIR.

f) **No Impact.** The portion of the Project within San Joaquin County occurs within the coverage area of the San Joaquin County Multiple-Species Habitat Conservation and Open Space Plan (SJMSCP). The SJMSCP provides its permittees incidental take coverage for 97

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special-status plant and wildlife species protected under the Federal Endangered Species Act and the California Endangered Species Act. As a permittee, EBMUD receives take coverage under the SJMSCP for EBMUD maintenance activities; however, construction impacts are not covered under the SJMSCP. No Habitat Conservation Plan, Natural Community Conservation Plan, or other local regulation pertaining to biological resources applicable to proposed construction activities has been adopted. EBMUD is subject to the federal and State laws and regulations governing endangered species impacts and obtains its own species “take” authorizations when necessary. Since EBMUD would obtain individual “take” authorization for construction activities and maintenance activities for the proposed Project would be similar to existing maintenance activities, which are covered by the SJMSCP, no conflict with the SJMSCP is anticipated. As such, the Project would not conflict with an approved or adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other local regulation pertaining to biological resources. There would be no impact

1.5 Cultural Resources

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
5. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of formal cemeteries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

a) **Potentially Significant Impact.** Records searches for known historic and archaeological resources within 0.25 mile of from the Project were conducted on May 13, 2020, and July 3, 2020, at the Central California Information Center and on June 1, 2020, at the Northwest Information Center. Both information centers are part of the California Historical Resources Information System. The Built Environment Resource Directory, which provides historic built environment site information in the California Office of Historic Preservation’s inventory, was also examined (California Office of Historic Preservation 2022).

The existing Mokelumne Aqueduct No. 1 and existing Mokelumne Aqueduct No. 2 are designated historical resources (Duke CRM 2020). The Project includes removal of the aboveground portion of the aqueducts (between Holt and Bixler), which could be considered a significant impact. The EIR will address the Project’s potential to have a substantial adverse change in the significance of the aqueducts.

b) **Potentially Significant Impact.** The records searches revealed that a wide variety of prehistoric- and historic-era sites, features, and artifacts that have been documented within 0.25 mile of the Project area. The sensitivity for cultural resources in the Project area ranges from low to very high, with the majority designated as high or very high (Duke CRM 2020). Three known Native American burial mounds occur within the Project area (Duke CRM 2020). A Cultural Resources Sensitivity Assessment Report has been prepared that provides further details on the cultural-resources records search and sensitivity determination (Duke CRM 2020). The EIR will address the Project’s potential to have significant impacts on archaeological resources.

c) **Potentially Significant Impact.** The Project construction has the potential to disturb human remains. Impacts to human remains would be considered a potentially significant impact. The potential for impacts to human remains will be identified in the EIR.

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1.6 Energy

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
6. ENERGY. Would the project:				
a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

a & b) **Less Than Significant Impact.** The general plans of Contra Costa County, San Joaquin County, and the City of Stockton each contains goals, policies, and strategies related to increasing energy efficiency, energy sustainability, and use of alternative modes of transportation to conserve energy resources. Contra Costa County, City of Stockton, BAAQMD, and SJVAPCD have each adopted a climate action plan or program that includes policies that similarly manage energy use.

Much of the electric energy in the Project region originates from hydroelectric facilities associated with the State Water Project and the Central Valley Project hydroelectric plants. Other sources of electric energy include consumer-sited solar photovoltaics as well as wind, geothermal, biomass, coal, natural gas, and nuclear energy from both in and out of state. California is among the largest producers and consumers of petroleum products in the country and is the largest consumer of motor gasoline and jet fuel (U.S. Energy Information Administration 2020).

The Project would use electrical energy to construct the underground Tunnel and power the tunneling machine. Fossil fuels would be used to transport crew and equipment to and from the site and to haul soils off site for disposal. In addition, fossil fuels would be used to power equipment necessary for the decommissioning of the existing Mokelumne Aqueduct No. 1 and Mokelumne Aqueduct No. 2 pipelines. The Project would also require energy during operation to perform various periodic maintenance and upgrades to the existing Mokelumne Aqueduct No. 3 pipeline, which would remain in service aboveground. While the amount of energy required for construction and operation of the Project would be notable, it would not be wasteful or inefficient and is not anticipated to conflict with a State or local plan for renewable energy or energy efficiency because it is critical for water conveyance. Impacts would be less than significant.

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1.7 Geology and Soils

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
7. GEOLOGY AND SOILS. Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) 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 Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) 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, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

a i–iv) **Less Than Significant Impact.** The most current California Geological Survey (CGS) maps indicate that no portion of the Project occurs within an Alquist–Priolo Earthquake Fault Zone (CGS 2019). No active faults underly the Tunnel alignment. Earthquakes are possible in

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the area and the Project could be subject to strong ground shaking effects. Near-surface soils east of Old River are susceptible to liquefaction. Liquefaction hazards decrease east of the San Joaquin River. The active Midland and West Tracy faults are blind thrust faults underlying the west part of the Delta and are two of the closest seismic sources to the Project. The Bay Area has numerous significant active faults such as the San Andreas, Calaveras, and Hayward faults. Strong ground shaking from seismic activity on any of these nearby faults could lead to liquefaction of the weak Delta surficial soil deposits, and other potentially damaging seismically induced ground deformations (WSP 2021). West of Old River, the Project occurs within a CGS-mapped liquefaction-hazard zone. Strong seismic shaking and earthquake-induced liquefaction is not anticipated to result in loss, injury, or death in relation to the Project because no habitable structures would be constructed as part of the Project and the Tunnel would be constructed underground at a depth to withstand seismic events. No other CGS-mapped seismic hazards zones, including landslide zones, occur within the Project area. The impact would be less than significant.

b) **Potentially Significant Impact.** The Project would require ground disturbing activities and vegetation removal during establishment of staging areas and construction of Tunnel access shafts. During Tunnel construction, soil would be removed from the Tunnel alignment and trucked off site. The soils would be stored in the staging area to dry prior to loading into trucks for off-hauling. Disturbed soils in staging areas and Tunnel access shaft locations would be susceptible to wind and water erosion if not properly stabilized, leading to a potentially significant impact. The EIR will provide a detailed evaluation of potential soil erosion impacts.

c & d) **Less Than Significant Impact.** The Project is located in a CGS-mapped liquefaction-hazard zone (CGS 2019). Soils susceptible to expansion and subsidence occur within the Delta and may occur within the Project area (San Joaquin County 2021). The Project would not result in construction of habitable structures within the Project area and is not anticipated to result in direct or indirect risks to life or property. The impact would be less than significant.

e) **No Impact.** The Project does not involve installation of septic tanks or an alternative wastewater disposal system. Construction wastewater needs are anticipated to be served through use of portable restrooms and sanitation facilities that would be serviced by a commercial provider. Wastewater would be removed from the site for off-site disposal in a licensed facility. Therefore, no impacts would occur.

f) **Potentially Significant Impact.** The Project area contains geologic units from the Holocene and Pleistocene geological epochs. The geologic units in the area have a potential to contain significant fossils and the potential for finding fossils ranges from low to high across the Project area. From the western end of the Project to approximately Old River, Pleistocene Era eolian deposits from the Modesto formation are present, which have a high potential to contain significant fossils (Atwater 1982). Between approximately the Old River and Brookside Road in Stockton, the Project is located within Holocene Era floodplain and delta mud deposits, which have a low potential to contain significant fossils (Shlemon and Begg 1975). East of approximately Brookside Road, the Project is located within alluvium of the Calaveras River

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drainage from the late Pleistocene and early Holocene, which has a high potential to contain significant fossils (Atwater 1982).

There is low potential for paleontological resources to be encountered at Tunnel depths or at the surface at most shaft locations given the age of soils found in the majority of the Delta. The Tunnel shaft within the City of Stockton occurs in soils designated as high probability for encountering paleontological resources. Given how the TBM operates, impacts to paleontological resources may be unavoidable. Because of the high paleontological sensitivity in portions of the Project area and the potential to inadvertently damage paleontological resources at Tunnel depths, the impact on paleontological resources from implementation of the Project will be addressed in the EIR.

1.8 Greenhouse Gas Emissions

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
8. GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

a) **Potentially Significant Impact.** Greenhouse gas emissions in the region are predominantly from fuel combustion including carbon dioxide (CO₂) and nitrous oxide (N₂O), agricultural operations including N₂O from crop fertilization, and industrial processes including sulfur hexafluoride (SF₆).

The Project would generate greenhouse gas emissions during construction of access shafts for the Tunnel launch and receiving pits, material hauling, removal of the existing aboveground sections of Mokelumne Aqueducts Nos. 1 and 2 and associated aboveground structures, and operation of worker vehicles. The TBM is anticipated to be electric powered and would not generate greenhouse gas emissions; however, trucks used to haul trench soils off site could generate substantial greenhouse gas emissions, potentially resulting in a significant impact. Project operations are not anticipated to result in significant greenhouse gas emissions; however, emissions have not been modeled. The EIR will provide a detailed analysis of greenhouse gas emissions from construction. The air quality modeling prepared for the EIR will include an analysis of the potential increases in greenhouse gas emissions. The impact on greenhouse gas emissions from implementation of the Project will be addressed in the EIR.

b) **Potentially Significant Impact.** As previously mentioned in Section 1.3 the Project is within the BAAQMD and SJVAPCD jurisdiction for air quality regulations. Greenhouse gas emissions would be generated during construction of access shafts for the Tunnel launch and receiving pits, material hauling, removal of the existing aboveground sections of Mokelumne Aqueducts Nos.1 and 2, and operation of worker vehicles. Greenhouse gas emissions from Project operation are not anticipated to exceed BAAQMD operational thresholds; however, construction would require substantial soil hauling, which could result in a potentially significant impact. The EIR will provide a detailed analysis of greenhouse gas emissions from construction. The air quality modeling prepared for the EIR will include an analysis of the potential increases in greenhouse gas emissions.

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1.9 Hazards and Hazardous Materials

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
9. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) 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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located 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, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

a & b) **Potentially Significant Impact.** The Project would require use and transport of hazardous materials for construction and maintenance activities. The accidental release of hazardous materials during Project construction activities could pose a significant threat to human health or the environment. Fuels, lubricants, paints, and solvents would be used during construction of the Project and pipeline abandonments. The EIR will provide a detailed evaluation of the potential hazards based on previous data available for hazardous material sites and contamination in soils.

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- c) **Potentially Significant Impact.** The Project would be within 0.25 mile of Old River Elementary School, Don Riggio School, Brookside School, and Claudia Landeen School (Google 2020). Because the impact of hazardous emissions or of handling hazardous materials would occur within 0.25 mile of these schools the impact would be potentially significant and will be addressed in the EIR.
- d) **Potentially Significant Impact.** The California Water Resource Control Board and Department of Toxic Substances Control lists known hazardous materials sites under their respective GeoTracker and EnviroStor databases (State Water Resources Control Board 2021, California Department of Toxic Substances Control 2021). Six hazardous materials release sites are documented within or adjacent to the Project area. Two of hazardous materials release sites have not been fully remediated and include documented releases of heavy metals and petroleum, which have contaminated groundwater and soils near the potential staging area and shaft location south of the existing aqueducts at Holt. Potentially contaminated groundwater could be encountered during construction of the Tunnel -access shaft, and excavated soils may be contaminated. The EIR will address the potential for impacts from construction near hazardous materials sites. Impacts during operation are expected to be minimal.
- e) **Potentially Significant Impact.** Construction would not occur within 2 miles of any private airstrips, but agricultural crop dusters are commonplace around agricultural fields in the Delta. Most construction activities would be near the ground surface and thus are not anticipated to result in any increased risks to agricultural plane pilots. Project construction would require use of tall equipment, such as cranes to construct the Tunnel access shaft pits and the two 30-foot-tall Tunnel access shafts within the Delta setting, which may present a hazard to agricultural aircraft. The EIR will address the potential for impacts to crop dusters. Impacts during operation are expected to be minimal.
- f) **Potentially Significant Impact.** The Project is located within the Contra Costa County Emergency Operations Plan, San Joaquin County Emergency Operations Plan, and Bay Area Regional Catastrophic Earthquake Mass Transportation/Evacuation Plan. Highway 4 is identified as an emergency evacuation route in the San Joaquin County Emergency Operations Plan and as a priority transportation route in the Bay Area Mass Transportation and Evacuation Plan. The Project construction would require construction trucks, equipment and workers traveling to and from the Project site which could affect an adopted emergency response plan or emergency evacuation plan. The EIR will provide a detailed evaluation of the Project's potential for impacting emergency response and evacuation plans. Impacts during operation are expected to be minimal.
- g) **Less Than Significant Impact.** Construction equipment can generate fires from hot exhaust gases or from contact with the hot surfaces of exhaust systems. However, the Project is located in areas of generally low risk of wildland fire. The majority of the Project is not mapped as a fire hazard zone by California Department of Forestry and Fire Protection (CAL FIRE) (CAL FIRE 2007). Because the Project area is at a low risk of wildfire, the impact is considered less than significant.

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1.10 Hydrology and Water Quality

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
10. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on- or off-site;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii) 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; or	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv) impede or redirect flood flows?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

a) **Potentially Significant.** Water quality in the Delta is highly variable both by season and location and is dependent on the circulation patterns controlled by tidal flows, freshwater inflows, agricultural uses, exports, and the operation of flow-control structures. The Project is in the Tracy and Eastern San Joaquin Subbasins of the San Joaquin Valley groundwater basin, which is divided by the San Joaquin River (California Department of Water Resources 2016).

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Surface water quality could be affected by ground-disturbing activities or storage of loose soils that results in increased sedimentation to nearby waterbodies. Slurry waste spills could violate water quality standards for surface waters if not properly contained. Storage, maintenance, and operation of equipment in proximity to waters may also impact water quality in the event of an inadvertent release or through stormwater runoff. Groundwater will be encountered during construction of Tunnel access shafts. The EIR will provide a detailed evaluation of contaminated runoff and sedimentation impacts, and impacts associated with the disposal of groundwater encountered during construction.

b & e) **Less than Significant.** The Project is within the Tracy and Eastern San Joaquin Subbasins of the San Joaquin Valley groundwater basin, which is divided by the San Joaquin River (California Department of Water Resources 2016). Historic measurements indicate the depth to groundwater within the Project ranges from approximately 5 to 20 feet below the land surface (Central Valley Regional Water Quality Control Board 2006).

The Sustainable Groundwater Management Act was enacted in 2014, which requires governments and water agencies of high and medium priority basins to halt groundwater overdraft and bring groundwater basins into balanced levels of pumping and recharge. The Sustainable Groundwater Management Act also requires that groundwater sustainability plans be adopted, and an annual report to be published to evaluate the progress of the plan until the subbasin achieves a level of sustainability. The Eastern San Joaquin Groundwater subbasin published their first groundwater sustainability plan in 2019, and the Tracy subbasin published theirs in 2021 (Eastern San Joaquin Groundwater Authority 2019, Tracy Subbasin 2021).

Project construction or operation would not require groundwater supplies, or new groundwater wells. Groundwater may be encountered during construction of Tunnel access shafts, which would be discharged in accordance with the National Pollutant Discharge Elimination System (NPDES) permit. Because the Project is not anticipated to interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin, the impact is considered less than significant.

c i-iv) **Potentially Significant.** The majority of the Project west of the San Joaquin River would be within areas mapped as 1 percent annual chance of flooding. East of the San Joaquin River, the Project occurs within areas of minimal flood hazard above the 500-year flood level (FEMA 2020). Construction of the underground Tunnel would include two elevated access shafts within the floodplain. The access shafts would have a minor effect on flood flows. The aboveground construction would involve the removal of the existing aboveground segments of Mokelumne Aqueduct No. 1 and Mokelumne Aqueduct No. 2 (between Holt and Bixler) and therefore would reduce the amount of aboveground infrastructure within the floodplain. Construction activities, however, could result in the alteration of waterways that could result in erosion, siltation, or on or off-site flooding. The EIR will address the potential impacts.

d) **Less Than Significant Impact.** The Project area does not occur within any mapped tsunami inundation zones (California Department of Conservation 2019). A seiche is a phenomenon that occurs when seismic ground shaking induces standing waves within an

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enclosed or partially enclosed water body (e.g., reservoir, lake). Such waves can cause retention structures to fail and flood downstream areas. The Project crosses a number of rivers associated with the Delta but does not occur near any major standing water bodies at risk of seiche.

The majority of the Project west of the San Joaquin River occurs within areas mapped as 1 percent annual chance of flooding. East of the San Joaquin River, the Project occurs within areas of minimal flood hazard above the 500-year flood level (FEMA 2020). Levees provide protection against flooding; however, the levees are susceptible to failure. Levee breaches could subject the Project area to flooding and potential damage from scour effects associated with flooding.

The Tunnel would be constructed underground and would not be inundated with floodwaters. Elevated Tunnel access shafts would be designed to withstand flooding and provide protected access into the Tunnel. No pollutants would be stored within the Tunnel or elevated access shafts. The Tunnel would be designed to transport water to the EBMUD service area and would not release pollutants in the event of a flood or other form of inundation. Because the Tunnel does not transport pollutants and is protected against floodwaters due to the depth of the Tunnel, the impact would be less than significant.

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1.11 Land Use and Planning

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
11. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

a) **No Impact.** The Project area, plus a 0.25-mile buffer, is located in unincorporated Contra Costa County west of the Old River, in unincorporated San Joaquin County between the Old River and the San Joaquin River, and in the City of Stockton east of the San Joaquin River. West of the San Joaquin River, the Project is rural and sparsely populated; the only population centers are the small rural communities of Holt and Bixler. East of the San Joaquin River, the Project is in a highly developed environment with numerous residential communities in the City of Stockton. The Project would be constructed and operated within the existing EBMUD ROW. The Project includes construction of an underground Tunnel to replace Mokelumne Aqueduct No. 1 and Mokelumne Aqueduct No. 2 pipeline. Minimal ROW (approximately 2.9 acres) would be required to construct Tunnel-shaft locations; however, temporary easements of approximately 19.8 acres would be required during construction to provide space for material/equipment storage and support/administrative purposes. The existing ROW would be maintained following construction because Mokelumne Aqueduct No. 3 would remain in service. The Project would not physically divide an established community; therefore, no impact would occur.

b) **Potentially Significant Impact.** The Contra Costa County, San Joaquin County, and Stockton general plans provide land-use designations within the Project area as listed below:

- **Contra Costa County:** Public/Semi Public, Agricultural Lands, Water, Parks and Recreation, Delta Recreation, Open Space
- **San Joaquin County:** General Agriculture, Agriculture-Urban Reserve.
- **City of Stockton:** Low-Density Residential, Commercial.

The Project would be compatible with land-use designations within all of the applicable general plans. Project construction activities and permanent infrastructure east of Holt would occur within the existing EBMUD ROW and would not conflict with the San Joaquin County or City of Stockton land-use designations. Construction activities to remove the above-ground segments of Mokelumne Aqueduct No. 1 and Mokelumne Aqueduct No. 2 would be conducted within the existing EBMUD ROW and would not conflict with San Joaquin County and Contra

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Costa County land-use designations. Activities at launch shaft sites in Holt and near Middle River (San Joaquin County) would require temporary construction easements on approximately 19.8 acres and permanent ROW acquisition of approximately 2.9 acres. Temporary construction easements and permanent ROW would occur on land designated by San Joaquin County as General Agriculture. While some loss of designated agricultural land would occur as a result of constructing the Tunnel access shafts within areas designated for agricultural land uses, the Project would be allowed as a utility use per the San Joaquin General Plan (San Joaquin County 2017).

The Project traverses land in the Delta that is regulated by the Delta Protection Commission through the Land Use and Resource Management Plan for the Primary Zone of the Delta, as well as the Delta Stewardship Council through the Delta Plan (Delta Protection Commission 2010, Delta Stewardship Council 2013). The Project is likely a covered action under the Delta Plan and, as such, must meet compatibility criteria identified in the Delta Plan. The EIR will address whether or not the Project would conflict with the Delta Plan.

1.12 Mineral Resources

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
12. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

a & b) **Less than Significant Impact.** The Contra Costa County, San Joaquin County, and City of Stockton general plans describe existing mineral resources and corresponding goals and policies within their jurisdictions. The City of Stockton General Plan describes miscellaneous clay deposits located in the greater Stockton area, as well as historic mining of gold, silver, coal, and manganese ore within the county. Extraction of these minerals is focused on the southwestern portion of the San Joaquin County. Mineral resources are not mapped within the Project area under these general plans, nor are they mapped by CGS (Silva 1989).

Natural gas has been extracted from San Joaquin County since 1854, with the highest levels of extraction occurring in the Delta vicinity. The Lathrop, McDonald Island, and Union Island gas fields account for most of the extracted natural gas, including 21 natural gas fields within San Joaquin County that either are or have been active (Department of Water Resources 2016).

The Mineral Resources in the Project area include Roberts Island Gas and Bixler Gas fields, including several plugged wells. No active wells occur within the Project area (CalGEM 2020).

Because the Project would occur within an area with known natural gas wells but would not result in loss of a known mineral resource or loss of availability of a locally important mineral recovery site in Contra Costa County, San Joaquin County and City of Stockton general plans, the impact would be less than significant.

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1.13 Noise

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
13. NOISE. Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) For a project located within the vicinity of a private airstrip or 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, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

a) **Potentially Significant Impact.** The Project crosses Contra Costa County, San Joaquin County, and the City of Stockton. Most of the construction noise from the Project would occur at the launch-shaft sites near Holt and Middle River, which are anticipated to involve 24-hours of work for at least some of the construction period. Construction noise would also occur along the aboveground segment of the existing alignment during removal of existing Mokelumne Aqueduct No. 1 and Mokelumne Aqueduct No. 2 pipelines. One reception-shaft location would be within Stockton and would result in noise at nearby schools and residences for the duration of Tunnel activities completed from that shaft location. The noise from the construction of the Project is anticipated to result in temporary increases in ambient noise levels, likely in excess of application standards in their respective jurisdictions. A technical noise study will be performed to identify existing noise levels and sensitive receptors and provide an assessment of future noise levels with construction, including the duration of impacts.

The Project operations would involve periodic noise from maintenance of Mokelumne Aqueduct No. 3 and minimal noise associated with maintenance of the Tunnel. The operational noise from the Project would not change from existing operations and is therefore less than significant.

b) **Potentially Significant Impact.** Vibration caused by construction activities can be interpreted as energy transmitted in waves through the ground. Vibration attenuates as a function of the distance between the source and receptor. The amount of vibration generated by

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construction and the rate of attenuation depend on the equipment being used and the soil conditions. These vibration impacts are considered potentially significant and will be further described in the EIR.

c) **No Impact.** No airports or air strips occur within two miles of the Project. Because the Project site is not within 2 miles of a private or public airport or airport land use planning area, no impact from airport noise would occur.

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1.14 Population and Housing

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
14. POPULATION AND HOUSING. Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

a) and b) **No Impact.** The area west of the San Joaquin River is rural and sparsely populated and is entirely within unincorporated areas of Contra Costa and San Joaquin Counties. The area east of the San Joaquin River is within the City of Stockton, which is an urban population center with an estimated population of 312,697 in 2019 (U.S. Census Bureau 2019).

The existing Mokelumne Aqueducts system is approximately 90 miles long and has a combined total capacity of 325 mgd. The Project would increase the reliability of EBMUD’s existing water-transmission infrastructure. The Tunnel carrier pipeline would be sized to deliver 325 mgd in the event of a failure of Mokelumne Aqueduct No. 3 due to seismic and flooding hazards in the Delta. With both the Mokelumne Aqueduct No. 3 and Tunnel carrier pipeline in service, there would be a minimal effect on the total capacity of the Mokelumne Aqueducts System because the Project affects only 16.5 miles of the entire 90 miles long Mokelumne Aqueduct System. Therefore, the Project would not induce unplanned population growth in EBMUD’s service area.

During construction, workers would primarily be sourced from local communities. No people or housing would be introduced or displaced. Implementation of the Project is not anticipated to result in impacts to population and housing.

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1.15 Public Services

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
15. PUBLIC SERVICES.				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

a) **Less than Significant.** The western part of the Project is primarily served by fire and police departments based in Brentwood while the eastern part of the Project is primarily served by fire and police departments based in Stockton. Four schools are within 4 miles of the Project: Old River Elementary School in Bixler and Don Riggio School, Brookside School, and Claudia Landeen School in Stockton. Buckley Cove Park is a public park located approximately 0.5 miles from the Mokelumne Aqueduct ROW in Stockton.

The Project would not result in any notable population growth or displacement. Construction activities would not impact public parks. No new or physically altered governmental facilities would be required to maintain a public service. Implementation of the Project is anticipated to result in a less-than-significant impact on public services.

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1.16 Recreation

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
16. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

a) **Potentially Significant Impact.** Indian Slough, Old River, Middle River, Whiskey Slough, San Joaquin River, and Calaveras River provide boating recreation opportunities within and adjacent to the Project area. Various resorts and marinas are associated with these water bodies, including Orwood Resort, Cruiser Haven Marina, Bullfrog Marina, Whiskey Slough Marina, and River Point Landing Marina. In Stockton, the Project intersects a multiuse path and the Brookside Country Club, which houses an 18-hole golf course. Buckley Cove Park, a municipal park with grass lawns, picnic benches, and a playground structure, is approximately 0.5 miles north of the Project along the San Joaquin River.

Tunnel construction would occur deep underground and would involve tunneling under the river. Construction would not impact river recreation or the marinas located along the San Joaquin River. A Tunnel reception shaft would be constructed within the EBMUD ROW, in an area of publicly accessible open space that includes a multiuse path. After the new Tunnel is constructed and placed in service, existing Mokelumne Aqueducts Nos. 1 and 2 would be decommissioned for approximately 16.5 miles, with above-ground sections and their support structures removed and under-ground sections accessed with temporary excavations and filled with cellular concrete to prevent a potential collapse hazard. Construction would result in localized noise and restricted access in the vicinity of the shaft location. Additional construction impacts related to the decommissioning of the existing Mokelumne Aqueduct No. 1 and No. 2 include temporary and localized restricted access to locations along the multiuse path and within the Brookside Country Club golf course. The EIR will address impacts to recreation facilities, including direct impacts to the multiuse path and Brookside Country Club golf course in Stockton, and indirect impacts to regional recreation facilities from public use of alternative parks as a result of localized restricted access to the multiuse path and golf course.

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b) **No Impact.** The Project does not include construction of recreational facilities nor would the construction or expansion of recreational facilities that may have an adverse physical effect on the environment be required. Therefore, no impact would occur.

1.17 Transportation

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
17. TRANSPORTATION. Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Result in inadequate emergency access?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

a) **Potentially Significant Impact.** The Project would increase traffic on local roads due to trucks hauling Tunnel materials and equipment to the site and Tunnel soils off site. Based on preliminary engineering, soils disposal could require an estimated 100,000 truck trips. Equipment and traffic associated with Tunnel construction would travel to and from shaft locations using predominantly existing roads. The existing BNSF Railway may also be used to transport materials and equipment to and from the Tunnel shaft locations. Transport for off haul and disposal of demolition material, including tunnel soil, and importing cellular concrete to decommission the Mokelumne Aqueducts No. 1 and No. 2, and transport for equipment and materials to retrofit the Mokelumne No. 3 Aqueduct would also increase traffic on local roads and potentially on the railroad. Construction may conflict with vehicle transportation on local roads. The level of effect of the Project on program plans, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities will be determined through traffic modeling to be presented in a Traffic Study. Impacts during operation would be minimal.

b) **Potentially Significant Impact.** Project construction would generate an increase in vehicle miles travelled (VMT) due to the construction truck hauling of materials and construction worker trucks traveling to and from the construction site. A Traffic Study will be prepared to assess whether Project construction will have a significant impact on VMT. The EIR will present the findings and effects on traffic. Impacts during operation would be minimal.

c) **Potentially Significant Impact.** Transport of heavy equipment or hauling import and export soils and materials on local roads for the Project construction has the potential to cause damage or create unsafe driving conditions for motorists. Existing roads may be inadequate to support construction vehicles and transport of certain heavy machinery. Improvements to

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existing roads may be necessary. Improvements may include upgrades to bridges, road segments, or railroad crossings to ensure access roads are adequately designed to support construction by meeting weight, size, and turning radii requirements for equipment delivery and material hauling vehicles. Alternate delivery methods, such as the BNSF railroad, will also be considered. The EIR will address whether the Project construction could pose an increased hazard on roadways due to heavy equipment and truck hauling or to railroad operations. Impacts during operation would be minimal.

d) **Potentially Significant Impact.** In the rural areas west of the San Joaquin River, the traffic impact (approximately one mile from the Project area) consists primarily of paved two-lane roads. Some of these roads may present constraints such as low or narrow under-crossings, such as along South Holt Road where it under crosses the BNSF railroad. River crossings from island to island are limited. An existing access road also parallels the aqueduct alignment on both the north and south sides but does not cross over Middle River or Old River. The EIR will address the Project's potential for significant impacts to emergency access. Impacts during operation would be minimal.

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1.18 Tribal Cultural Resources

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
18. TRIBAL CULTURAL RESOURCES.				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

a i-ii) **Potentially Significant Impact.** Two known Native American burial mounds occur within the Project area, adjacent to the existing Mokelumne Aqueducts (Duke CRM 2020).

The Project involves underground tunneling deep below the ground surface. Tunnel depths would occur below cultural or tribal cultural resources; however, the ground disturbance at shaft locations would occur in areas where cultural resource sensitivity is high or very high and may result in discovery of and impact to previously undiscovered tribal cultural resources. The EIR will provide a detailed evaluation of potential tribal cultural resource impacts.

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1.19 Utilities and Service Systems

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
19. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

a) **Potentially Significant Impact.** The proposed Project objective is to improve the reliability of water-supply conveyance from the existing Mokelumne Aqueduct system and the EIR will focus on evaluating the potential impacts of those improvements. The TBM would use electricity and would be powered by connecting to a nearby electrical transmission or distribution line. Tunneling would occur underground, at a depth below any existing utilities. Utilities may be encountered near shaft locations and near staging areas. Utilities could require modification, resulting in impacts to water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunication facilities. The EIR will address public service utilities that may be affected during Project construction.

b) **No Impact.** The Project is proposed to provide a safe, resilient transport of water to the EBMUD service area, protected against flooding and seismic hazards. The Project's pipeline would transport the same quantity of water as is currently transported through the existing Mokelumne Aqueducts through the Delta resulting in no expansion of water rights. Because the

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Project would improve the conveyance of existing available water supplies and would not have any adverse impacts associated with availability of supplies; therefore, no impact would occur.

c) **No Impact.** The Project would not generate any wastewater and would not affect local wastewater treatment providers. No impact would occur.

d) **Potentially Significant Impact.** Project construction would generate solid waste that would require disposal at a landfill. Solid waste is anticipated to consist of primarily Tunnel spoils and waste generated from the removal and demolition of the aboveground segments of Mokelumne Aqueduct No. 1 and Mokelumne Aqueduct No. 2 pipeline once the Tunnel and carrier pipeline have been constructed. A percentage of the Tunnel spoils may be dried at launch shaft sites but off-haul and disposal at a permitted facility is anticipated to be necessary for the majority of the Tunnel spoils. The Mokelumne Aqueduct No. 1 and Mokelumne Aqueduct No. 2 concrete pile caps would be broken up and piles would be removed or cut off approximately 3 feet below the ground surface and the aboveground portions loaded onto trucks and hauled away. Other aboveground structures, including temperature anchor structures, would be similarly demolished, loaded, and hauled away. Some of the disposal materials can likely be recycled, and these materials would be hauled to appropriate recycling locations. The amount of waste and recyclables, and the facilities to accept Project waste and recyclables has not been determined. The EIR will identify the approximate amount of debris that will be generated by the proposed Project, will identify how the waste will be characterized and will identify the landfills that will serve the proposed Project.

e) **No Impact.** Because the Project would comply with all applicable regulations regarding solid waste, no impact would occur.

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1.20 Wildfire

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
20. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

a-d) **No Impact.** The Project is located in areas of generally low risk of wildfire. The majority of the Project area is relatively flat and not mapped as a fire hazard zone by CAL FIRE, with only a small area by the San Joaquin River designated as a moderate fire hazard (CAL FIRE 2007). No state responsibility areas or lands classified as very high fire-hazard severity zones are present in the vicinity of the Project. Implementation of the Project is not anticipated to have an impact due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. No impacts would occur.

1.21 Mandatory Findings of Significance

Environmental Impacts	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
21. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

a) **Potentially Significant Impact.** As previously stated in Section 1.4 the Project could have a potentially significant impact on riparian habitat and other natural communities, including state and federally protected wetlands, and potential conflicts with local policies and ordinances protecting biological resources. The Project also potentially could cause a substantial adverse change on historical and archaeological resources or disturb human remains. The EIR will provide a detailed evaluation of potential biological and cultural resource impacts.

b) **Potentially Significant Impact.** Contra Costa County, San Joaquin County, the City of Stockton and other relevant agencies such as Caltrans would be contacted during preparation of the EIR, to identify other planned projects in the Project vicinity. Other EBMUD projects in the vicinity also would be considered. The EIR will include a description of projects that may overlap with the proposed Project and will include an assessment of cumulative impacts.

c) **Potentially Significant Impact.** The Project could adversely affect human beings directly and/or indirectly, from air quality impacts, hazardous material use, noise generation, emergency access impacts, and potential wildfire impacts. The EIR will provide a detailed evaluation of potential impacts on human.

1 ENVIRONMENTAL CHECKLIST

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