El Dorado Irrigation District
Upper Main Ditch Piping Project

DRAFT ENVIRONMENTAL IMPACT REPORT

June 2018

Prepared for:
El Dorado Irrigation District
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Upper Main Ditch Piping Project

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C.6 California Red-Legged Frog Protocol Survey Report, AECOM (October 2016)
C.7 Draft EIR Biological Species Assessment

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Appendix E Cultural Report
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<td>CEC</td>
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## Abbreviations

**June 2018**

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<td>cfs</td>
<td>Cubic Feet Per Second</td>
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<td>CO</td>
<td>Carbon Monoxide</td>
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<td>DPM</td>
<td>Diesel Particulate Matter</td>
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<td>dsh</td>
<td>Diameter at Standard Height</td>
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<td>EDCTA</td>
<td>El Dorado County Transit Authority</td>
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## Abbreviations

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<tr>
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<td>El Dorado Irrigation District</td>
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<td>Environmental Impact Report</td>
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<td>Emergency Medical Technician</td>
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<td>Evapotranspiration</td>
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<td>Farmland</td>
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<td>g</td>
<td>Percentage of Gravity</td>
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<td>gpm</td>
<td>Gallons Per Minute</td>
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<td>Highway Capacity Manual</td>
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<td>Intergovernmental Panel on Climate Change</td>
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<td>independent System Operator</td>
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<td>Sound Level</td>
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<td>LTS/M</td>
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<td>Manual of California Vegetation</td>
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<td>Most Likely Descendants</td>
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<td>Miles Per Gallon</td>
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<td>Notice of Intent</td>
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<td>Notice of Preparation</td>
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<td>NOP/IS</td>
<td>Notice of Preparation/Initial Study</td>
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<td>NO$_x$</td>
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<td>National Pollution Discharge Elimination System</td>
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<td>Native Plant Protection Act</td>
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<td>Natural Resource</td>
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<td>NRCS</td>
<td>Natural Resources Conservation Service</td>
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NRHP | National Register of Historic Places
---|---
NWI | National Wetland Inventory
O&M | Operations and Maintenance
OHWM | Ordinary High Water Mark
OSHA | Occupational Safety and Health Administration
OWMP | Oak Woodlands Management Plan
PCA | Priority Conservation Areas
PFC | Perfluorocarbons
PG&E | Pacific Gas and Electric Company
PM | Particulate Matter
Porter-Cologne | Porter Cologne Water Quality Control Act
PPV | Peak Particle Velocity
PRC | Public Resources Code
PVC | Polyvinyl Chloride
QSD | Qualified SWPPP Developer
RCNM | Roadway Construction Noise Model
RCRA | Resource Conservation and Recovery Act
ROG | Reactive organic gases
ROW | Right-of-Way
RPF | Registered Professional Forester
RTIP | Regional Transportation Improvement Program
RTP | Regional Transportation Plan
RWQCB | Regional Water Quality Control Board
SAA | Streambed Alteration Agreement
SACOG | Sacramento Area Council of Governments
SAR | Second Assessment Report
SB | Senate Bill
SCADA | Supervisory Control and Data Acquisition
Scoping Plan | Climate Change Scoping Plan
SDWA | Safe Drinking Water Act
SEMS | California Standardized Emergency Management System
SF6 | Sulfur Hexafluoride
SHPO | State Historic Preservation Officer
SMAQMD | Sacramento Metropolitan Air Quality Management District
SRA | State Responsibility Area
SSC | Species of Special Concern
State | State of California
STIP | State Transportation Improvement Program
SWPPP | Stormwater Pollution Prevention Plan
# Abbreviations

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<table>
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<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<td>SWRCB or Water Board</td>
<td>State Water Resources Control Board</td>
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<td>TAC</td>
<td>Toxic Air Contaminant</td>
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<td>THP</td>
<td>Timber Harvesting Plan</td>
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<td>Timberland Conversion</td>
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<td>Timber Production Zone</td>
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<td>Upper Main Ditch Piping Project</td>
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<td>Unified Hazardous Waste and Hazardous Materials Management Regulatory Program</td>
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<td>United States Department of Agriculture</td>
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<td>United States Environmental Protection Agency</td>
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<td>United States Forest Service</td>
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<td>United States Fish and Wildlife Service</td>
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<td>United States Geological Survey</td>
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<td>Urban Water Management Plan</td>
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<td>California State Water Resources Control Board</td>
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<td>Wildlife Conservation Board</td>
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<td>Water Treatment Plant</td>
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<td>WSG&amp;E</td>
<td>Western States Gas &amp; Electric Company</td>
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</table>
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ES.1 INTRODUCTION TO THE UPPER MAIN DITCH PROJECT

Pursuant to the California Environmental Quality Act (CEQA) and the CEQA Guidelines (California Public Resources Code [PRC] 21000 et seq., 14 California Code of Regulations [CCR] 15000 et seq.) the El Dorado Irrigation District (District) is considering the potential environmental consequences of piping the water supply that is currently conveyed through the Upper Main Ditch (Photo ES-1) in Pollock Pines, California (Figure ES-1). Piping of the Upper Main Ditch aligns with the District’s mission statement and achieves the District’s water and energy conservation efficiency goals, protects the water quality of the District’s raw water supply, and reduces the District’s system-wide operational and maintenance costs in an environmentally and fiscally responsible manner.

Photo ES-1 The Upper Main Ditch

The Upper Main Ditch is the upper section of the District’s Main Ditch raw water delivery system (also known as the “El Dorado Ditch”). The Main Ditch system, built in the late 1800s for mining and irrigation purposes. Today, the Upper Main Ditch (or the “ditch”) is an open and unlined earthen conveyance facility that delivers a maximum of 15,080 acre-feet of raw water supplies annually from the El Dorado Forebay Reservoir (Forebay) to the District’s Reservoir 1 Water Treatment Plant (WTP) where it is then treated and distributed throughout the District’s public drinking water system. The uncovered and unlined characteristics of the Upper Main Ditch result in substantial water losses due to seepage and evapotranspiration, as well as potential contamination from run-off from adjacent lands and other inputs.

The District proposes the Upper Main Ditch Piping Project (Project) which involves the conversion of the Upper Main Ditch from its current open conveyance status to a secure raw water buried transmission pipeline. The Project would help meet the water conservation and water supply reliability goals of the District, as well as the state mandate to reduce per capita urban water usage by 20 percent by the year 2020 (also known as the “20 x 2020” mandate), by eliminating the current water losses from the open ditch. Based upon the most recent demands the Project would result in an estimated average water savings of up to 1,800 acre-feet annually and result in a reduced demand on other District water supplies. The District is considering this Project as part of an overall strategy to meet these goals and improve service to its customers by reducing water losses and improving water quality entering the WTP from the existing unlined and uncovered ditch.

Additionally, an interim benefit of the Project would be an increase in the generation of hydroelectric power resulting from a decrease in water losses from the ditch (i.e. more water left in the raw water system means more power can be generated) until consumptive demands increase to the point where the conserved water is needed for future District customers.

The Project would also provide water quality benefits. Due to the Upper Main Ditch passing through rural residential areas that are adjacent to homes and backyards, the potential for contamination and water quality degradation from
humans and animals is high. Previous water quality analysis of the Upper Main Ditch conducted by the District has identified increases in such contaminants as total coliform, E. Coli, and turbidity as the water travels through the earthen ditch downstream from the Forebay Reservoir to the WTP (Domenichelli and Associates 2017; HydroScience 2016).
The Upper Main Ditch Piping Project (Project) discussed below is described in further detail in Chapter 2.0 and potential environmental impacts are evaluated in Chapter 3.0 of this Environmental Impact Report (EIR). As a result of public input received during the scoping process (CEQA Guidelines Section 15201), the District has developed alternatives to piping the ditch in place (referred to as the proposed Project). The Project alternatives considered within this EIR include the proposed Project, the Blair Road Alternative, and the Combined Alternative as described below and collectively referred to as the Project or Upper Main Ditch Project (shown on Figure ES-2). While CEQA and its implementing regulations (CEQA Guidelines Section 15126.6[d]) only require an EIR to include sufficient information about each alternative to allow a meaningful analysis, the District has elected to evaluate the alternatives at a level equal to that conducted for the proposed Project to provide full consideration and disclosure of potential environmental impacts. The proposed Project and alternatives considered are as follows:

**ES.1.2.1 The Proposed Project**

The proposed Project involves piping of the Upper Main Ditch from Forebay Reservoir to the inlet to the Reservoir 1 WTP (See Figure ES-1 and Section 2.6 of the Project Description for more details). The proposed Project includes installation of approximately 15,400 linear feet of buried 42-inch pipe. The alignment would occur within the existing ditch alignment and would include components such as tying into the outlet pipe downstream of the Forebay Reservoir Valve House and improvements to the inlet facility at the WTP. By piping the ditch, the proposed Project would reduce water losses and water contamination potential, improve overall water quality, and reduce the treatment levels needed at the Reservoir 1 WTP. Various other proposed Project components include obtaining temporary and permanent easements, tree removal along the ditch corridor, pipeline grading and compaction, and placement of appurtenances such as isolation valves, blow-offs, air relief valves and manways along the pipeline. Construction related activities would occur over 12-months (approximately 30 weeks), spread over two construction seasons, during the annual ditch outage that typically occurs each fall and winter.

**ES.1.2.1 Blair Road Alternative**

The Blair Road Alternative would have an alignment in which portions of the pipe are within the existing ditch alignment, other portions traverse cross-country terrain, and the majority of the pipeline would be located within the Blair Road public right-of-way. The Blair Road Alternative would follow the existing ditch alignment for 1,500 feet, an additional 2,600 feet through cross-country terrain, and approximately 8,200 feet within Blair Road and has a total length of 12,300 feet (See Figure ES-1 and Section 2.7.2.1 of the Project Description for more details). The Blair Road Alternative components that would be the same as the proposed Project include construction of the tie-in downstream of the Forebay Reservoir Valve House as well as improvements to the inlet facility at the WTP. Components of the Blair Road Alternative that would be similar to the proposed Project include the placement of appurtenances along the pipeline, tree removal, and potential access roads and staging areas. The portions of the Blair Road Alternative that would differ from the proposed Project include pipeline grading and compaction, construction related traffic, the extent and location of temporary and permanent easements, and slight differences to construction equipment needed for saw cutting, asphalt removal, structural backfill, road repair, pavement/slurry placement, centerline restriping, and traffic control within portions of Blair Road.
**ES.1.2.2 Combined Alternative**

The Combined Alternative would have components similar to the proposed Project and the Blair Road Alternative, along with additional cross-country sections. The Combined Alternative would have an alignment in which portions of the pipe are within the existing ditch alignment, other portions traverse cross-country terrain, and other portions are located within the Blair Road public right-of-way. Starting at the Forebay Valve House, the Combined Alternative alignment follows the Blair Road Alternative going cross-country approximately 400-feet then following Blair Road for approximately 3,200-feet. Once the Combined Alternative is west of Apple Creek Court the alignment heads south traveling cross-country approximately 700-feet until it meets the existing ditch. From there the Combined Alternative follows the proposed Project alignment for approximately 2,200 feet before cutting cross-country for approximately 800-feet and rejoining the existing ditch for another 2,400-feet. It is in this segment where the existing ditch crosses under Blair Road that the Combined Alternative would follow the Blair Road Alternative again as it goes cross-country out of the ditch to Reservoir 1 WTP for approximately 2,200-feet (See Figure ES-1 and Section 2.7.2.2 of the Project Description for more details). Due to the similarities of the Combined Alternative footprint with the proposed Project and the Blair Road Alternative, the distinct analysis for the Combined Alternative related to the cross-country portions of the alignment that differ from the other alignments is discussed in each resource chapter of the EIR under the Combined Alternative, while the analysis for those portions of the Combined Alternative that overlap with either the proposed Project or the Blair Road Alternative is covered in the discussion of the other alignments.

**ES.1.2.3 No Project Alternative**

The No Project Alternative includes the existing conditions and reasonably foreseeable future conditions that would exist if the proposed Project was not approved and/or implemented. Under the No Project Alternative, the District would continue to use the Upper Main Ditch to convey raw water supply from Forebay to the WTP. The environmental impacts identified as resulting from the proposed Project in Sections 3.1 through 3.14 would not occur. Furthermore, implementation of the No Project Alternative would not meet any of the proposed Project objectives, as outlined in Section 2.5, and may result in other environmental impacts as also discussed in Chapter 3.0.
ES.1.2 RESPONSIBLE AND TRUSTEE AGENCIES

In accordance with CEQA, a responsible agency is a public agency, other than the Lead Agency, that has responsibility to carry out or approve a project (PRC Section 21069). A trustee agency is a State agency that has jurisdiction by law over natural resources that are held in trust for the people of the State of California (PRC Section 21070).

The following public or State agencies may serve as responsible and/or trustee agencies for the Project:

- California Air Resources Board (CARB);
- El Dorado Air Quality Management District (AQMD);
- Central Valley Regional Water Quality Control Board (CVRWQCB);
- California Department of Fish and Wildlife (CDFW);
- California State Water Resources Control Board – Division of Drinking Water (DDW); and
- Office of Historic Preservation (OHP).

ES.1.3 AREAS OF CONTROVERSY/ISSUES TO BE RESOLVED

The following have been identified as potential areas of controversy raised by the public over the proposed Project:

- Potential impacts to biological resources (including tree removal and loss of riparian habitat) due to the piping of flows carried in the ditch (Discussed in Section 3.4, Biological Resources).
- Potential impacts to recreational activities along the ditch (Discussed in Section 3.3, Aesthetics and in Section 3.13, Recreation).
- Potential impacts to the historic nature of the ditch (Discussed in Section 3.5, Cultural Resources).
- Potential impacts to the aesthetic nature of the Project site due to tree removal and changes in water flows within the ditch (Discussed in Section 3.1, Aesthetics).
- Potential impacts to an increased fire risk due to loss of open flows in the ditch (Discussed in Section 3.8, Hazards and Hazardous Materials and Section 3.11, Public Services).
- Potential impacts to groundwater and utilities, such as drinking water wells (Discussed in Section 3.9, Hydrology and Water Quality).

ES.1.4 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table ES-1 summarizes the potential environmental effects of the Project, the recommended mitigation measures, if applicable, and the level of significance after mitigation. Pursuant to CEQA Guidelines Section 15093, if the Project is approved as proposed, any impact noted in the summary as “significant” after mitigation would require the adoption of
a statement of overriding considerations. As shown in Table ES-1, development of the Project with mitigation measures would not result in any significant and unavoidable impacts. Therefore, a statement of overriding considerations would not be required.

Additionally, CEQA requires public agencies to establish a monitoring and reporting program for the purpose of ensuring compliance with those mitigation measures adopted as conditions of approval in order to mitigate or avoid significant environmental impacts identified in an EIR. A Mitigation Monitoring and Reporting Program (MMRP), incorporating the mitigation measures set forth in this document, would be adopted at the time of certification of the Final EIR.
## EXECUTIVE SUMMARY OF IMPACTS AND MITIGATION MEASURES

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<tr>
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</thead>
<tbody>
<tr>
<td><strong>3.1 Aesthetics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AES-1: The Project would not substantially degrade the existing visual character or quality of the site and its surroundings.</td>
<td>LTS</td>
<td>LTS</td>
</tr>
<tr>
<td><strong>3.2 Agriculture and Forest Resources</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AG-1: The Project would not result in the loss of forestland or conversion of forestland to non-forest use.</td>
<td>LTS</td>
<td>LTS</td>
</tr>
<tr>
<td><strong>3.3 Air Quality</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIR-1: The Project would not conflict with or obstruct implementation of the applicable air quality plan.</td>
<td>LTS/M</td>
<td>LTS/M</td>
</tr>
<tr>
<td>AIR-2: The Project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.</td>
<td>LTS/M</td>
<td>LTS/M</td>
</tr>
<tr>
<td>AIR-3: The Project would not expose sensitive receptors to substantial pollutant concentrations.</td>
<td>LTS/M</td>
<td>LTS/M</td>
</tr>
<tr>
<td>AIR-4: The Project would not create objectionable odors affecting a substantial number of people.</td>
<td>LTS</td>
<td>LTS</td>
</tr>
</tbody>
</table>
# UPPER MAIN DITCH PIPING PROJECT

## Executive Summary

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<tr>
<td></td>
<td>Proposed Project</td>
<td>Blair Road Alternative</td>
</tr>
<tr>
<td><strong>3.4 Biological Resources</strong></td>
<td>LTS/M</td>
<td>LTS/M</td>
</tr>
<tr>
<td><strong>BIO-1:</strong> The Project would not 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 Wildlife or U.S. Fish and Wildlife Service.</td>
<td>• MM BIO-1: Pre-Construction Botanical Surveys</td>
<td>• MM BIO-2: Pre-Construction Environmental Awareness Training</td>
</tr>
<tr>
<td><strong>BIO-2:</strong> The Project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish or U.S. Fish and Wildlife Service.</td>
<td>LTS/M</td>
<td>LTS/M</td>
</tr>
<tr>
<td><strong>BIO-3:</strong> The Project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.</td>
<td>LTS/M</td>
<td>LTS/M</td>
</tr>
<tr>
<td><strong>BIO-4:</strong> The Project would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.</td>
<td>NI</td>
<td>LTS/M</td>
</tr>
</tbody>
</table>
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</thead>
<tbody>
<tr>
<td>BIO-5: The Project would not 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.</td>
<td>LTS</td>
<td>LTS</td>
<td>LTS</td>
<td>NI</td>
<td>None Required</td>
</tr>
</tbody>
</table>

### 3.5 Cultural Resources

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>MM CUL-1: Unanticipated Discovery of Cultural Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUL-1: The Project would not cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5.</td>
<td>LTS/M</td>
<td>LTS/M</td>
<td>LTS/M</td>
</tr>
<tr>
<td>CUL-2: The Project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to Section15064.5.</td>
<td>LTS/M</td>
<td>LTS/M</td>
<td>LTS/M</td>
</tr>
<tr>
<td>CUL-3: The Project would not disturb any human remains, including those interred outside of formal cemeteries.</td>
<td>LTS/M</td>
<td>LTS/M</td>
<td>LTS/M</td>
</tr>
</tbody>
</table>

### 3.6 Geology and Soils

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>MM GEO-1: Prepare and Implement a Stormwater Pollution Prevention Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEO-1: The Project would not result in substantial soil erosion or the loss of topsoil.</td>
<td>LTS/M</td>
<td>LTS/M</td>
<td>LTS/M</td>
</tr>
<tr>
<td>GEO-2: The Project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, or potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.</td>
<td>LTS</td>
<td>LTS</td>
<td>LTS</td>
</tr>
</tbody>
</table>
### 3.7 Greenhouse Gasses

<table>
<thead>
<tr>
<th>Environmental Impact</th>
<th>Proposed Project</th>
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<th>No Project Alternative</th>
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</tr>
</thead>
<tbody>
<tr>
<td>GHG-1: The Project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.</td>
<td>LTS</td>
<td>LTS</td>
<td>LTS</td>
<td>NI</td>
<td>None Required</td>
</tr>
<tr>
<td>GHG-2: The Project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>None Required</td>
</tr>
</tbody>
</table>

### 3.8 Hazards and Hazardous Materials

<table>
<thead>
<tr>
<th>Environmental Impact</th>
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<th>No Project Alternative</th>
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</tr>
</thead>
<tbody>
<tr>
<td>HAZ-1: The Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.</td>
<td>LTS/M</td>
<td>LTS/M</td>
<td>LTS/M</td>
<td>LTS</td>
<td>MM HAZ-1: Prepare and Implement a Hazardous Materials Release Prevention Plan</td>
</tr>
<tr>
<td>HAZ-2: The Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.</td>
<td>LTS/M</td>
<td>LTS/M</td>
<td>LTS/M</td>
<td>LTS</td>
<td>MM TRA-1: Prepare and Implement a Traffic Control Plan</td>
</tr>
<tr>
<td>HAZ-3: The Project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.</td>
<td>LTS</td>
<td>LTS</td>
<td>LTS</td>
<td>NI</td>
<td>None Required</td>
</tr>
</tbody>
</table>

### 3.9 Hydrology and Water Quality

<table>
<thead>
<tr>
<th>Environmental Impact</th>
<th>Proposed Project</th>
<th>Blair Road Alternative</th>
<th>Combined Alternative</th>
<th>No Project Alternative</th>
<th>Mitigation Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYD-1: The Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality.</td>
<td>LTS/M</td>
<td>LTS/M</td>
<td>LTS/M</td>
<td>NI</td>
<td>MM GEO-1: Prepare and Implement a Stormwater Pollution Prevention Plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MM HYD-1: Avoid/Minimize Potential Impacts from Construction Material Release</td>
</tr>
</tbody>
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<tr>
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</thead>
<tbody>
<tr>
<td><strong>HYD-2:</strong> The Project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).</td>
<td>Proposed Project</td>
<td>Blair Road Alternative</td>
</tr>
<tr>
<td><strong>HYD-3:</strong> The Project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site.</td>
<td>Proposed Project</td>
<td>Blair Road Alternative</td>
</tr>
<tr>
<td><strong>HYD-4:</strong> The Project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.</td>
<td>Proposed Project</td>
<td>Blair Road Alternative</td>
</tr>
</tbody>
</table>

- **MM GEO-1:** Prepare and Implement a Stormwater Pollution Prevention Plan
- **MM HYD-1:** Avoid/Minimize Potential Impacts from Construction Material Release
### 3.10 Noise

**NOS-1:** The Project would not expose persons to or generate noise levels in excess of standards established in the local general plan, noise ordinance, or applicable standards of other agencies nor would the project result in a non-exempt substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels.

<table>
<thead>
<tr>
<th>Environmental Impact</th>
<th>Proposed Project</th>
<th>Blair Road Alternative</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>LTS</strong></td>
<td><strong>LTS</strong></td>
<td><strong>LTS</strong></td>
<td><strong>NI</strong></td>
<td><strong>None Required</strong></td>
<td></td>
</tr>
</tbody>
</table>

- **MM NOS-1:** Restriction of Construction Operational Hours and Resident Coordination

**NOS-2:** The Project would not expose persons to or generate excessive groundborne vibration or groundborne noise levels.

<table>
<thead>
<tr>
<th>Environmental Impact</th>
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</thead>
<tbody>
<tr>
<td><strong>LTS</strong></td>
<td><strong>LTS</strong></td>
<td><strong>LTS</strong></td>
<td><strong>NI</strong></td>
<td><strong>None Required</strong></td>
<td></td>
</tr>
</tbody>
</table>

### 3.11 Public Services

**PUB-1:** The Project would not 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; Police protection; or Schools.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>LTS/M</strong></td>
<td><strong>LTS/M</strong></td>
<td><strong>LTS/M</strong></td>
<td><strong>NI</strong></td>
<td><strong>MM TRA-1</strong></td>
<td></td>
</tr>
</tbody>
</table>

- **MM TRA-1:** Prepare and Implement a Traffic Control Plan

### 3.12 Recreation

**REC-1:** The Project would not have the potential to affect current or future recreational activities.

<table>
<thead>
<tr>
<th>Environmental Impact</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>NI</strong></td>
<td><strong>LTS/M</strong></td>
<td><strong>LTS/M</strong></td>
<td><strong>NI</strong></td>
<td><strong>MM TRA-1</strong></td>
<td></td>
</tr>
</tbody>
</table>

- **MM TRA-1:** Prepare and Implement a Traffic Control Plan
## Environmental Impact

<table>
<thead>
<tr>
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<th>Blair Road Alternative</th>
<th>Combined Alternative</th>
<th>No Project Alternative</th>
<th>Mitigation Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REC-2:</strong> The Project would not 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.</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
</tr>
</tbody>
</table>

### 3.13 Transportation and Traffic

<table>
<thead>
<tr>
<th>TRA-1: The Project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, considering all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.</th>
<th>LTS</th>
<th>LTS/M</th>
<th>LTS/M</th>
<th>NI</th>
<th>MM TRA-1: Prepare and Implement a Traffic Control Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRA-2: The Project would not conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways.</td>
<td>LTS</td>
<td>LTS/M</td>
<td>LTS/M</td>
<td>NI</td>
<td>MM TRA-1: Prepare and Implement a Traffic Control Plan</td>
</tr>
<tr>
<td>TRA-3: The Project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).</td>
<td>LTS/M</td>
<td>LTS/M</td>
<td>LTS/M</td>
<td>NI</td>
<td>MM TRA-1: Prepare and Implement a Traffic Control Plan</td>
</tr>
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</table>
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<tbody>
<tr>
<td><strong>TRA-4</strong>: The Project would not result in inadequate emergency access.</td>
<td>Proposed Project: LTS/M</td>
<td>MM TRA-1: Prepare and Implement a Traffic Control Plan</td>
</tr>
<tr>
<td></td>
<td>Blair Road Alternative: LTS/M</td>
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<tr>
<td></td>
<td>Combined Alternative: LTS/M</td>
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<tr>
<td></td>
<td>No Project Alternative: NI</td>
<td></td>
</tr>
<tr>
<td><strong>TRA-5</strong>: The Project would not conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.</td>
<td>Proposed Project: LTS</td>
<td>MM TRA-1: Prepare and Implement a Traffic Control Plan</td>
</tr>
<tr>
<td></td>
<td>Blair Road Alternative: LTS/M</td>
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<tr>
<td></td>
<td>Combined Alternative: LTS/M</td>
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<td></td>
<td>No Project Alternative: NI</td>
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### 3.14 Utilities and Service Systems

<table>
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<tr>
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<tbody>
<tr>
<td><strong>UTL-1</strong>: The Project would not require or result in the construction of new water, wastewater treatment, or new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.</td>
<td>Proposed Project: NI</td>
<td>None Required</td>
</tr>
<tr>
<td></td>
<td>Blair Road Alternative: NI</td>
<td></td>
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<tr>
<td></td>
<td>Combined Alternative: NI</td>
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<tr>
<td></td>
<td>No Project Alternative: NI</td>
<td></td>
</tr>
<tr>
<td><strong>UTL-2</strong>: The Project would have sufficient water supplies available to serve the Project from existing entitlements and resources or identify if new or expanded entitlements would be needed.</td>
<td>Proposed Project: LTS</td>
<td>None Required</td>
</tr>
<tr>
<td></td>
<td>Blair Road Alternative: LTS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Combined Alternative: LTS</td>
<td></td>
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<td></td>
<td>No Project Alternative: NI</td>
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</tr>
</tbody>
</table>

Key:
- LTS = Less than Significant
- LTS/M = Less than Significant with Mitigation
- NI = No Impact
- MM = Mitigation Measure
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UPPER MAIN DITCH PROJECT

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1.0 INTRODUCTION

1.1 PROJECT INTRODUCTION

The Upper Main Ditch is the upper section of the El Dorado Irrigation District’s (the District) Main Ditch raw water delivery system (also known as the “El Dorado Ditch”). The Main Ditch system was built in the late 1800s to supply water for mining and irrigation purposes. Today, the Upper Main Ditch (or the “ditch”) is an open and unlined earthen conveyance facility that annually delivers up to a maximum of 15,080 acre-feet of raw water supplies from the El Dorado Forebay Reservoir (Forebay) to the District’s Reservoir 1 Water Treatment Plant (WTP) where it is then treated and distributed throughout the District’s public drinking water system. The uncovered and unlined characteristics of the Upper Main Ditch result in substantial water losses due to seepage and evapotranspiration, as well as potential contamination from run-off from adjacent lands and other inputs.

The District proposes the Upper Main Ditch Piping Project (Project) which involves the conversion of the Upper Main Ditch from its current open conveyance status to a secure raw water buried transmission pipeline. The Project would help meet the water conservation and water supply reliability goals of the District, as well as the state mandate to reduce per capita urban water usage by 20 percent by the year 2020 (also known as the “20 x 2020” mandate), by eliminating the current water losses from the open ditch. The District is considering this Project as part of an overall strategy to meet these goals and improve service to its customers by reducing water losses, reducing operations and maintenance costs, and improving water quality entering the WTP from the existing unlined and uncovered ditch.

As a result of public input received during the scoping process (CEQA Guidelines Section 15201), the District has developed alternatives to piping the ditch in place (referred to as the proposed Project). The Project alternatives considered within this EIR include the proposed Project, the Blair Road Alternative, and the Combined Alternative collectively referred to as the Project or Upper Main Ditch Project. While CEQA and its implementing regulations (CEQA Guidelines Section 15126.6[d]) only require an EIR to include sufficient information about each alternative to allow a meaningful analysis, the District has elected to evaluate the alternatives at a level equal to that conducted for the proposed Project to provide full consideration and disclosure of potential environmental impacts.

1.2 THE ENVIRONMENTAL REVIEW PROCESS

The California Environmental Quality Act (CEQA) requires public agencies to identify, disclose, and consider the potential environmental impacts of proposed discretionary actions that the agencies are considering for approval. A project that may have a significant impact on the environment cannot be approved unless the Lead Agency makes the approval contingent upon the implementation of mitigation measures that would reduce or avoid that impact to the fullest extent feasible. When a project may have significant environmental impacts, the Lead Agency must prepare an environmental impact report (EIR) before it considers whether to approve the project.

The District, as the Lead Agency for the Project, has prepared this Draft EIR for public review and comment per the requirements of Article 7, Sections 15080 to 15097 of the CEQA Guidelines, which describes the EIR process, as well as other requirements set forth in the regulations. As discussed below, the Draft EIR will be available for review and comment by public agencies and the general public for a period of 45 days. Prior to considering the Project, the District will prepare a Final EIR that includes the Draft EIR, the comments received on the Draft EIR, written
responses to those comments, a list of the commenter, and any revisions made to the Draft EIR in response to the comments per Section 15132 of the CEQA Guidelines. As required under Section 15090, prior to considering the approval of the Upper Main Ditch Piping Project, the District Board of Directors will certify that the information contained in the Final EIR has been completed in compliance with CEQA; that the Board reviewed and considered the information contained in the Final EIR before making a decision; and that the Final EIR reflects the District’s independent judgment and analysis.

1.2.1 CEQA Purpose and Authority

This Draft EIR has been prepared pursuant to CEQA and the CEQA Guidelines (CEQA Guidelines Title 14 California Code of Regulations Chapter 3 Section 15000 et seq.). CEQA requires that State and local government agencies consider the environmental consequences of projects over which they have discretionary authority before taking action on those projects (California Public Resources Code [PRC] 21000 et seq.).

The purpose of this Draft EIR is to analyze the environmental impacts of the Project, while describing ways to reduce or avoid these potential impacts. Additionally, this Draft EIR identifies alternatives to the proposed Project that would meet the Project objectives while reducing one or more potential environmental impacts.

CEQA requires that each public agency mitigate or avoid the significant environmental effects of projects it approves or implements whenever feasible. An EIR is an informational document used in State, regional, and local planning and decision-making processes to disclose potential environmental effects. The purpose of the EIR is not to recommend approval or denial of a project. However, the public agency’s decision whether to approve or to deny the Project must take into consideration the information provided by the EIR.

When considering a project, the public agency may approve the project even if it would result in significant and unavoidable adverse environmental impacts so long as the EIR discloses the project’s environmental effects, including:

- Significant effects;
- Those that cannot be avoided;
- Growth inducing effects;
- Effects found not to be significant; and
- Cumulative impacts.

CEQA provides that a lead agency that intends to approve a project with significant and unavoidable effects must identify the “[s]pecific economic, legal, social, technological, or other considerations...” that make infeasible particular mitigation measures or alternatives identified in the EIR. In addition, the lead agency in such a case must identify the benefits of the Project that outweigh the significant effects on the environment (Statement of Overriding Considerations, California Public Resources Code Section 21081).
UPPER MAIN DITCH PROJECT

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This Draft EIR describes and evaluates the potential impacts associated with the Project. Additional resource-specific studies, such as air quality, biological resources, and cultural resources, as well as others, have been prepared for this Draft EIR to provide detailed information about the Project's potential impacts on the environment. The mitigation measures identified in this Draft EIR are designed to include enough detail and specificity to ensure that they would be effectively carried out to avoid or reduce any of the Project's potentially significant adverse impacts to a level that is not significant.

1.2.2 Lead Agency Determination

As the public agency undertaking the Project, the District is designated as the Lead Agency for the Project. CEQA Guidelines Section 15367 defines the Lead Agency as "... the public agency, which has the principal responsibility for carrying out or approving a project." Other public agencies may use this document in their decision making or permit processes related to the Project.

This Draft EIR was prepared for the District by Stantec Consulting Services Inc., an environmental consultant. Prior to public review, this Draft EIR was extensively reviewed and evaluated by District staff and, as such, this Draft EIR reflects the independent judgment and analysis of the District staff. A list of report preparation personnel is provided in Section 7.0 of this Draft EIR.

1.2.3 Draft EIR Scoping Process

1.2.3.1 Notice of Preparation

CEQA does not require formal hearings at any stage of the environmental review process (CEQA Guidelines Section 15202[a]). However, it does encourage "wide public involvement, formal and informal, in order to receive and evaluate public reactions to environmental issues" (CEQA Guidelines Section 15201).

In accordance with the CEQA Guidelines, the District distributed a Notice of Preparation (NOP) of a Draft EIR for the Project on June 17, 2015, which included an Initial Study (IS) providing an initial assessment of the potential for the Project to have an effect on the environment and gave the public an opportunity to provide comment on the scope of the analysis that should be included in this Draft EIR (EID 2015). A public scoping meeting was held on June 29, 2015 and the public scoping comment period closed on July 16, 2015. The comments received by the District on the NOP/IS were considered in the preparation of this Draft EIR. The scope of this Draft EIR includes the potential environmental impacts identified in the NOP/IS, as well as any issues raised by agencies and the public in response to the NOP/IS. Copies of the NOP/IS, and comments received during the NOP/IS comment period are contained in Appendix A of this Draft EIR.

1.2.3.2 Scope of the Draft EIR

The analysis included in Chapter 3.0 focuses on the specific environmental resource topics that require further evaluation to determine if they have a potential impact. The findings of the IS as well as comments received during the scoping process were taken into consideration in development of this Draft EIR. Potential impacts and thresholds of significance were established based on comments received, a comparison with the CEQA Guidelines Appendix G checklist, and resource-specific policy guidance and available scientific information. Resource sections evaluated and determined to have no significant impact as a part of the NOP/IS that received no additional public comment, are
determined to have no significant impact and are not considered for further evaluation within this EIR. These resource areas are disclosed below in the Environmental Issues Determined Not to Be Significant section. Resource areas identified to have potential impact from the NOP/IS and scoping process or during subsequent scientific study are summarized below in the Effects Determined to be Potentially Significant section and further evaluated for their potential to result in significant impacts within Chapter 3.0.

Environmental Issues Determined Not To Be Significant

Pursuant to CEQA and the CEQA Guidelines, the discussion of the potential effects on the physical environment is focused on those impacts that may be significant or potentially significant. CEQA allows a Lead Agency to limit the details of discussion of the environmental effects that are not considered potentially significant. (CEQA Guidelines Sections 15126.2[a] and 15128). CEQA requires that the discussion of any significant effects on the environment be limited to substantial or potentially substantial adverse changes in physical conditions that exist within the affected area, as defined in PRC Section 21060.5 (Statutory definition of "environment").

Effects determined to be insignificant or unlikely to occur need not be discussed further in the Draft EIR unless the Lead Agency subsequently receives information inconsistent with the finding (CEQA Guidelines Section 15143).

As part of the NOP and Initial Study scoping process, it was determined that implementation of the Project would result in no impact or less than significant environmental impacts (without mitigation) related to the resource categories listed below. Analysis supporting the conclusions for these resource areas is included in Appendix A as part of the NOP and Initial Study. The following environmental resources areas are not discussed at further length in this Draft EIR:

**Land Use and Planning:** The Project would be located within public and District rights-of-way as well as private and District-owned property. Surrounding land uses include single-family residences located on low and medium density residential land uses and undeveloped forested lands. The Project would not require a change in zoning, nor would it conflict with the El Dorado County General Plan (EDCGP 2015). Additionally, there are no habitat conservation plans or natural community conservation plans in the area. Therefore, no impacts to land use or planning would occur and this issue is not discussed further in this Draft EIR.

**Mineral Resources:** Commercially available mineral resources are not known to exist on or immediately adjacent to the Project site. The Project site is not identified on the Mineral Resource (-MR) overlay of the El Dorado County General Plan Land Use Map (EDCGP 2015). Therefore, no impacts to mineral resources would occur and this issue is not discussed further.

**Population and Housing:** The Project would be located within private and District rights-of-way and private and District-owned property. The Project would not alter the number or type of residential units that exist, nor would it introduce land use or changes that would attract new residents creating a need for additional housing. Therefore, no impacts to population and housing would occur and this issue is not discussed further.
Effects Determined To Be Potentially Significant

The NOP/Initial Study and Scoping process found the following resource areas may contain potentially significant environmental issues that would require further analysis in the EIR. In accordance with Appendix G of the CEQA Guidelines, the following resources areas are evaluated in this Draft EIR:

- Aesthetics (AES)
- Agricultural and Forest Resources (AG)
- Air Quality (AQ)
- Biological Resources (BIO)
- Cultural and Tribal Cultural Resources (CUL)
- Geology and Soils (GEO)
- Greenhouse Gas Emissions (GHG)
- Hazards and Hazardous Materials (HAZ)
- Hydrology and Water Quality (HYD)
- Noise (NOS)
- Public Services (PUB)
- Recreation (REC)
- Transportation and Traffic (TRA)
- Utilities and Services Systems (UTL)

1.2.4 Previously Prepared Environmental Documents

The District has been planning for the rehabilitation of the Upper Main Ditch for many years, with the planning effort accelerated in 2011. The NOP/IS for the Project was released for public comment on June 17, 2015. Additional technical studies were completed as part of the preparatory work for the Project and used, where applicable to support the technical basis and analysis presented in this Draft EIR. Technical documents considered in preparation of the Draft EIR are included in Appendices B and C and are listed as follows:

- Upper Main Ditch Piping Project – Initial Study, El Dorado Irrigation District (June 17, 2015);
- Jurisdictional (Wetland) Determination, US Army Corps of Engineers- Sacramento District (January 24, 2014);
- California Red-Legged Frog Site Habitat Assessment for Main Ditch Project, AECOM (June 2013);
- California Red-Legged Frog Protocol Survey Report for the Upper Main Ditch Piping Project, AECOM (October 2016)
- Preliminary Wetland Delineation Report for El Dorado Irrigation District’s Main Ditch- Forebay to Reservoir 1 Project, EN2 Resources, Inc. (November 9, 2012);
- Cultural Resources Study for El Dorado Irrigation District’s Lower Main Canal Piping Project, Far Western Anthropological Research Group, Inc (April 2018);
- Upper Main Ditch Piping Basis of Design Report, Domenichelli and Associates, (July 24, 2014);
- FINAL Upper Main Ditch BODR Updates Technical Memorandum, Domenichelli and Associates, (January 29, 2016); and
- Upper Main Ditch Alignment Alternatives, Domenichelli and Associates (March 9, 2018);
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- Reservoir 1 Upper Main Ditch Pipeline Project - Water Quality Impacts Analysis, HydroScience, (December 21, 2016); and

- Main Ditch Loss Analysis Technical Memorandum, Tully and Young, (February 16, 2017);

- Groundwater Resources Impact Analysis for El Dorado Irrigation District Upper Main Ditch Piping Project Pollock Pines, California, Youngdahl Consulting Group, Inc, (April 2017);

- Main Ditch – Forebay Reservoir to Reservoir 1 Septic System and Domestic Well Locations Report, Pollock Pines, California, Westmark Group (May 22, 2013); and


1.2.5 Review of the Draft EIR

Upon completion of this Draft EIR, the District will file a Notice of Completion (NOC) with the State Office of Planning and Research along with a Notice of Availability to begin the public review period (PRC Section 21161). Concurrent with the NOC, this Draft EIR will be distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, including those requesting a copy of the Draft EIR in accordance with PRC 21092(b)(3).

The Notice of Availability will be posted and published in accordance with noticing requirements of CEQA Guidelines Section 15087. During the public review period, the Draft EIR, including the technical appendices, will be available for review at the following locations:

1. El Dorado Irrigation District, 2890 Mosquito Road, Placerville, California
2. El Dorado Irrigation District website
3. El Dorado County Recorder-Clerk Placerville Office, 360 Fair Lane, Placerville, California
4. Placerville Main Public Library, 345 Fair Lane, Placerville, California
5. Pollock Pines Public Library, 6210 Pony Express Trail, Pollock Pines, California
6. Pollock Pines – Camino Community Center, 2675 Sanders Drive, Pollock Pines, California

Agencies, organizations, and interested parties have the opportunity to comment on this Draft EIR during the 45-day public review period. Written comments concerning the Draft EIR for the Project should be directed to the District at the following address by the close of the comment period. Please include the commenter's full name and address.
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El Dorado Irrigation District
Attn: Dan Corcoran
Environmental and Water Resources Manager
2890 Mosquito Road
Placerville, CA 95667
Email: dcorcoran@eid.org.

The public comment period will be identified in the Notice of Availability, which will be available on the District’s website identified above.

1.2.5.1 Effectively Commenting on the EIR

Readers are invited to review and comment on the adequacy and completeness of this Draft EIR, particularly in describing the potential impacts of the Project, the level of severity, the mitigation measures being proposed to reduce or avoid those impacts, and the Project alternatives being considered.

In this regard, CEQA defines “significant effect on the environment” as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the Project, including land, air, water, minerals, flora, fauna, ambient noise and objects of historic or aesthetic significance (CEQA Guidelines section 15382).

“Mitigation” includes actions that would avoid the impact altogether, minimize the impact, rectify by repairing, rehabilitating or restoring the impacted environment, reducing the impact over time or compensating for the impact by replacing or providing substitute resources or environments (CEQA Guidelines section 15370).

The most effective comments are those that focus on the adequacy and completeness of the environmental analysis and that are supported by factual evidence. Comments that focus on whether the Project should be approved or denied are not comments on the adequacy of this Draft EIR.

1.2.6 Final EIR

Upon completion of the public review period, the District will review the comments received and will prepare written responses to environmental issues raised pursuant to CEQA Guidelines 15088 and, if necessary, will make any related revisions to the Draft EIR. Comments received and the responses to comments will be included as part of the record for consideration of the Project. Responses will be incorporated into the Final EIR available for public review and provided to any commenting public agencies at least 10 days prior to certification of the EIR (CEQA Guidelines 15088(b)). The general process for the preparation and certification of an EIR is described under Section 15096 of the CEQA Guidelines.

The Final EIR will be considered by the District Board of Directors prior determining whether to approve the Project, as per Section 15090 of the CEQA Guidelines. Specifically, the District Board of Directors must certify that:
The Final EIR has been completed in compliance with CEQA;

The Final EIR was presented to the Board, and that the Board reviewed and considered the information contained in the Final EIR prior to approving the Project; and

The Final EIR reflects the independent judgment and analysis of the District Board of Directors.

Following certification of the Final EIR, the District may then consider approval of the Project as described in Section 15092 of the CEQA Guidelines, which states that a public agency shall not decide to approve or carry out a project for which an EIR was prepared unless either: (1) the Project as approved will not have a significant effect on the environment, or (2) the agency has eliminated or substantially lessened all significant effects where feasible and made a determination that any remaining significant effects found to be unavoidable are acceptable due to overriding considerations.

If the Project is approved, Section 15091 of the CEQA Guidelines requires the District to adopt findings describing how each of the significant impacts identified in the EIR is being mitigated. The findings will describe the reasons why significant unavoidable impacts, if any, cannot be mitigated. The findings will also describe the District’s findings with respect to the Project alternatives that were analyzed in the EIR.

If the District decides to approve the Project, or any alternative to the Project, despite a finding that it will have significant and unavoidable impacts, the District will also adopt a statement of overriding considerations describing the benefits of the Project that in the District’s judgment outweigh its significant environmental impacts, pursuant to Section 15093 of the CEQA Guidelines. Finally, the District will adopt a Mitigation Monitoring and Reporting Plan (MMRP), as required under Sections 15096 (g) and 15097 of the CEQA Guidelines, which describes how it will ensure the mitigation measures being required of the Project will be carried out.

### 1.3 PERMITS REQUIRED

The following permits may be required for one or more of the Project alternatives:

- Section 404 Clean Water Act Permit
- Section 401 Clean Water Act Water Quality Certification
- Section 1602 California Department of Fish and Wildlife Streambed Alternation Agreement
- State Water Resources Control Board Construction General Permit
- Regional Water Quality Control Board Waste Discharge Requirement
- El Dorado County Encroachment Permit
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1.4  ABBREVIATIONS (INTRODUCTION)

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>CEQA</td>
<td>California Environmental Quality Act</td>
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<td>CWA</td>
<td>Clean Water Act</td>
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<tr>
<td>EIR</td>
<td>Environmental Impact Report</td>
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<td>MMRP</td>
<td>Mitigation Monitoring and Reporting Plan</td>
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<td>SWRCB or Water Board</td>
<td>State Water Resources Control Board</td>
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<td>WTP</td>
<td>Water Treatment Plant</td>
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</tbody>
</table>

1.5  REFERENCES

AECOM. 2013. California Red-Legged Frog Site Assessment for Main Ditch Project, El Dorado County by AECOM, Sacramento, California.


AECOM. 2015b. Results of Special-Status Plant Surveys for the Upper Main Ditch Piping Project, El Dorado County, California. Prepared for El Dorado Irrigation District by AECOM, Sacramento, California.


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Far Western Anthropological Research Group, Inc. 2018. Cultural Resources Study for El Dorado Irrigation District’s

HydroScience. 2016. Technical Memorandum. Reservoir 1 Upper Main Ditch Pipeline Project- Water Quality Impacts


U.S. Army Corps of Engineers (USACE). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation

U.S. Army Corps of Engineers (USACE). 2014. Letter to El Dorado Irrigation District for the Approved Jurisdictional

Westmark Group. 2013. Main Ditch – Forebay Reservoir 1 Septic System and Domestic Well Locations Report,

El Dorado Irrigation District Upper Main Ditch Piping Project
Draft Environmental Impact Report
Chapter 2.0 Project Description

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2.0 PROJECT DESCRIPTION

2.1 EL DORADO IRRIGATION DISTRICT OVERVIEW

The El Dorado Irrigation District (the District) is a public water agency located on the western slope of the Sierra Nevada mountain range in El Dorado County and serves a population of more than 100,000 people through more than 38,000 active water meter connections. The District’s water system contains more than 1,250 miles of pipe, 27 miles of ditches, five water treatment plants (WTPs), and 37 storage tanks and/or reservoirs. A total of thirty-seven pumping stations and two hundred pressure-regulating stations are needed for reliable operation of the system due to varying topography, which ranges in elevation from the heights of the Sierra Crest west of Lake Tahoe to lower foothills bordering the Central Valley near Folsom.

The District relies on surface water to meet its entire potable water demand, and one of the District’s main surface water conveyance facilities is the Upper Main Ditch, which is an unlined ditch located in the eastern region of the District within the community of Pollock Pines. Uses served by the Main Ditch include municipal, domestic, and agricultural purposes.

2.2 PROJECT OVERVIEW

The District proposes the Upper Main Ditch Piping Project (Upper Main Ditch Piping Project or Project) to convert the ditch from its current design as an open and unlined conveyance facility to a secure raw water transmission pipeline. The existing ditch is approximately 14- to 20-feet wide with the berm at bank-full width and up to five feet in depth and delivers a maximum of 15,080 acre-feet annually (afa) of raw water supplies from the El Dorado Forebay Reservoir (Forebay) near the community of Pollock Pines to the District’s Reservoir 1 WTP (a distance of approximately three miles) where it is then treated and distributed throughout the District’s public drinking water system.

The Upper Main Ditch passes through private property. The District asserts an easement across such property to own and operate the ditch for water supply conveyance. The easement right does not provide for public access along the ditch. However, a four- to five-foot side bench runs atop the outer ditch berm for District maintenance purposes, and the District is informed that some members of the public utilize this bench as a path. The ditch typically conveys raw water supplies during the spring and summer months, and is shut down for varying periods of time in the fall and winter months for maintenance. Because the ditch is open and unlined, it is susceptible to losses due to evaporation and seepage, and is also exposed to contamination from runoff and other sources.
2.3 PROJECT HISTORY

Thousands of miles of earthen/open ditches were constructed in the American River watershed in the 1800’s to support the gold mining industry. As land uses and water demands shifted from gold mining to agriculture and domestic and municipal uses, some of these ditch systems were incorporated into the water delivery systems of public and private water suppliers. Today, portions of this extensive system convey both treated and raw water to thousands of customers in the region. These earthen ditches have long served a valuable role in providing water service to the local foothill communities. However, seepage and evapotranspiration water losses from these unlined ditches presents a serious water management problem, especially during the historic drought period experienced by the State of California (State) during the period of 2011 to 2016.

In addition, substantial maintenance must be done on these systems to maintain operations, comply with water quality objectives and regulations, and meet increasing customer demand. Uncovered ditches are susceptible to contamination and failure, putting drinking water supplies at risk, and resulting in erosion and water quality issues.

The Main Ditch (also referred to as the “El Dorado Ditch”), of which the Upper Main Ditch is a part, was built by mining interests to serve mining, irrigation, and domestic water needs in the foothill area in the late 1800s. The Main Ditch historically flowed from Forebay Reservoir (Photo 2.3-1) downstream to the Placerville area. The section of the ditch from the Forebay Reservoir to the Reservoir 1 WTP is designated as the Upper Main Ditch.

![Photo 2.3-1 El Dorado Forebay Reservoir](image)

The Reservoir 1 WTP (Photo 2.3-2) has a maximum production capacity of 26-million gallons per day (mgd). Raw water supplies stored at the Forebay Reservoir are conveyed through the Upper Main Ditch to the WTP, where they receive treatment to meet potable water standards. There are currently four existing District raw water customers served from the existing Upper Main Ditch, that receive water directly from the ditch before it reaches the WTP. Potable water from the WTP is stored in the Reservoir 1 storage reservoir adjacent to the WTP, and then delivered by gravity to the Camino area and to Reservoir 2/2A for distribution to other portions of the District’s western service area. A portion of the potable supplies are also pumped back uphill to the Pollock Pines Reservoir for distribution to customers at higher elevations (EID 2015).

![Photo 2.3-2 Reservoir 1 WTP](image)
Prior to the transfer of ownership and water rights, the District purchased water from Pacific Gas and Electric Company (PG&E) and its predecessor, the Western States Gas and Electric Co. The original water right claims date back to 1856, with additional claims being filed in the 1860s and 1870s. The water rights for diversions from Echo Lake were established in 1880 through a California Supreme Court decision. In 1918, the California Railroad Commission (predecessor to the California Public Utilities Commission) recognized the use of water from the El Dorado Ditch for irrigation and domestic purposes.

The El Dorado Ditch and the related water rights were sold to the Western States Gas and Electric Company in the early 1900s, primarily for hydroelectric power generation, although a smaller portion of the water conveyed through the El Dorado Ditch was maintained for delivery to some agricultural users. Over time, after several name changes and through agreements, the District took over the rights and responsibilities for delivering the non-power generating water to irrigation and domestic water users.

In 1997, the District took over all water rights and facilities along the original El Dorado Ditch (Federal Energy Regulatory Commission [FERC] Project 184) and, in 1999, the District acquired the entire FERC Project 184 from PG&E, after obtaining FERC License approval. Project 184 includes numerous reservoirs and associated dams, 22 miles of conveyance, a 21 megawatt (MW) renewable energy generating hydroelectric powerhouse, and other ancillary facilities.

Although the District has been considering the piping of the Upper Main Ditch for many years, the District’s interest increased in response to the recent drought, as well as in compliance with the implementation of additional state-mandated conservation requirements. The District has applied for several grants to offset the Project cost, and with the recent heightened awareness of the need for water conservation, the Project has received funding support from the Bureau of Reclamation, California Department of Water Resources, and the El Dorado County Water Agency. The technical feasibility and scientific merit for this Project has been described in the following plans:

- Water Resources Development and Management Plan – El Dorado County Water Agency (2007 and 2014);
- Integrated Water Resources Master Plan – El Dorado Irrigation District (2013); and

## 2.4 PROJECT LOCATION

The Project is located in El Dorado County, California, within the community of Pollock Pines, on the north side of U.S. Highway 50, in the Pollock Pines United States Geological Survey (USGS) Quadrangle map, Sections 25, 26, 35 and 36, Township 11 North, Range 12 East and Range 13 East. The Project traverses parcels of land owned by the District, El Dorado County, and private landowners. from Forebay Reservoir at an elevation of 3,785 feet above mean sea level (amsl) to the inlet at the District’s Reservoir 1 WTP at an elevation of 3,754 feet msl (Figure 2.4-1). The three-mile long Upper Main Ditch is fairly uniform over its length, ranging from 14- to 20-feet in width and approximately 5-feet in depth, and maintaining a slope of approximately 0.1-percent to 0.2-percent. The specific location of individual elements of the Project are presented in the following sections. Figure 2.4-1 below illustrates the location of the proposed Project while Figures 2.7-2 and 2.7-4 illustrate the location of the Blair Road and Combined Alternatives in their respective descriptions in Section2.7.
2.5 PROJECT OBJECTIVES

The purpose of the Upper Main Ditch facility is to deliver water from the Forebay Reservoir to the Reservoir 1 WTP. This is an essential part of the District’s overall water distribution system. The purpose of the Project is to deliver the water from the Forebay to the Reservoir 1 WTP in a manner that conserves water, maximizes efficiency in both water and energy usage, improves water quality, increases the generation of renewable energy, reduces the District’s system-wide operational and maintenance costs, and improves water supply reliability. The Project would result in an estimated water savings of approximately 1,800 acre-feet on average depending on flow rates and total diversions. In addition, the Project would result in improved raw water quality and a reduced need for additional water supplies.

Because the Upper Main Ditch is currently uncovered and unlined, a portion of the water conveyed through the ditch is lost to seepage and evapotranspiration. Annual losses from the ditch due to seepage and evapotranspiration are estimated to be in the range of 11-percent to 33-percent (Tully and Young 2017), depending on flow rates and annual diversions. Based on 2009 to 2015 data, minimum water savings of approximately 1,350 acre-feet per year and an average of nearly 1,800 acre-feet can be expected to result from piping the ditch.
Implementation of the Project would assist the District in meeting water conservation mandates. Article X, Section 2, of the California Constitution requires that the State’s water resources be put to maximum beneficial use, and recognizes the role of conservation in meeting that objective:

*It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.*

In recent years, the Governor and State Legislature have undertaken several efforts aimed at maximizing water conservation, such as requiring local water purveyors to reduce water usage. Most notably, the State Legislature passed Senate Bill 7X-7 (SB 7X-7), the Water Conservation Act of 2009, which included a mandate to reduce per capita urban water usage by 20 percent by the year 2020. This is also known as the “20 x 2020” mandate. As an urban retail water supplier, the District must comply with this legislation. Also, in response to the historic drought of 2011-2016, Governor Brown issued Executive Order B-29-15, directing the State Water Resources Control Board (SWRCB) to adopt emergency regulations requiring mandatory reduction in potable usage by 25-percent statewide. The subsequently-adopted emergency regulations required the District to reduce per capita consumption by 32-percent during the height of the drought in 2015 and 2016. Also in 2016, Governor Brown issued Executive Order B-37-16 directing the SWRCB to establish a long-term framework for water conservation and drought planning that specifically targets water losses through system leaks. That Executive Order also required the SWRCB to adopt permanent regulations that eliminate water waste and such regulations are currently under consideration by the SWRCB. In response to the Governor’s call for a long-term framework for water conservation and drought planning, the SWRCB, along with several other Brown Administration agencies, issued a report titled, Making Water Conservation a California Way of Life in April, 2017. That report directs agencies at all levels of California government to implement actions aimed using water more wisely, eliminating water waste, strengthening local drought resilience, and improved drought planning. Finally, the State Legislature recently passed two bills, Assembly Bill 1668 by Assembly Member Friedman, and Senate Bill 606 by Senator Hertzberg. Together, these bills establish mandatory long-term water usage targets that will require the District to reduce water system losses, indoor residential per capita water use, outdoor irrigation, and commercial, industrial, and institutional water usage. Implementation of the Project will help the District achieve the water conservation mandates described above.

As an interim benefit of the Project, there is a potential for an increase in hydroelectric power generation in the District’s system by retention of interim supplies in Forebay Reservoir in normal water years until the full 15,080 acre-feet conveyed through the Project is needed to meet water demand. By reducing water losses from the Upper Main Ditch, more water can be left in the District’s raw water system to generate hydroelectric power. The Project’s long-term benefit, when the full 15,080 acre-feet of supply is needed to meet demand, would be a reduced need to pump water supplies out of Folsom Reservoir to meet increasing water demand.

Water used for generation at the El Dorado Powerhouse is returned to the South Fork American River, which eventually flows to Folsom Reservoir, a Bureau of Reclamation facility. Water conserved by piping the Project would be used to generate power at this powerhouse. Renewable energy generated at the El Dorado Powerhouse is sold to PG&E and distributed through the California independent system operator (ISO) grid.
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The Project would also provide the benefit of improved water quality. The existing unlined and uncovered Upper Main Ditch is currently susceptible to contamination and failure, resulting in erosion and water quality issues that increase the contaminant load that must be removed by the treatment process at the WTP.

The Upper Main Ditch alignment passes through a rural residential area and the ditch flows adjacent to homes and backyards. In addition, the ditch’s bench, the flat ledge along the side of the ditch that borders the ditch, has been used by some members of the public as a path despite the designation as private property. This location and use results in the direct human and animal access to the raw water prior to it reaching the WTP.

Previous water quality analysis conducted by the District has identified increases in such contaminants as total coliform, E. coli, and turbidity as the water travels through the earthen ditch downstream from the Forebay Reservoir to the WTP. Detection of increased coliform and E. coli samples are considered potential indicators of possible contamination from animal and human feces (USEPA 2012), which may come from a variety of sources, including: general storm runoff; runoff from upstream pastures; animals in the ditch, and adjacent septic systems.

Turbidity is a measure of suspended material in water. The most likely source of increased turbidity in the Upper Main Ditch is from soil erosion in and upstream of the ditch. Sediment and contaminants entering the waterway must be removed through the treatment process at the WTP to produce potable drinking water for the District’s public drinking water system. Reducing turbidity provides an opportunity to reduce chemical treatment and solids handling costs at the WTP, and potentially reduces disinfection by-product formation and the cost of future water treatment process improvements.

In summary, the primary objectives of the Project are to:

- Reduce water loss from the Upper Main Ditch resulting from seepage and evapotranspiration, contribute to the District’s overall water conservation goals and objectives, and improve the District’s water supply reliability and sustainability;
- Protect drinking water quality by eliminating the potential for intentional or unintentional contamination of the open ditch, and improve District water security; and
- Reduce operations and maintenance costs that result from increased treatment and pumping costs associated with the additional flows entering the ditch through uncontrolled stormwater runoff from the adjacent watershed.

The Project also contributes toward the following secondary objectives:

- Reduce reliance on Central Valley Project (CVP) supplies at Folsom Reservoir;
- Aid in compliance with California’s 20 percent water conservation by 2020 mandate and additional conservation requirements mandated by the State through Executive Order B-37-16 (Making Water Conservation a California Way of Life), conservation regulations adopted by the SWRCB, and long-term conservation legislation adopted by the Legislature;
- Improve sustainability in terms of maintaining existing water supplies for future needs; and
- Provide water for renewable hydroelectric power generation (interim).
2.6 PROPOSED PROJECT

2.6.1 Proposed Project Details

The purpose of the proposed Project is to convey the District’s raw water supplies from the Forebay Reservoir to the Reservoir 1 WTP in a manner that conserves and uses water more efficiently and effectively, improves water quality, conserves energy and improves energy efficiency, increases the generation of renewable energy, and assists in preventing water-related crises. The proposed Project would result in an estimated water savings of approximately 1,800 afa on average, improve raw water quality, and reduce the need for new water supplies.

The proposed Project begins at the outlet of the Forebay Reservoir (Photo 2.6-1) and ends at the inlet to the Reservoir 1 WTP (Figure 2.6-1). The proposed Project includes construction of a new pipe connection downstream of the Forebay Valve House, piping of the water supply currently conveyed through the ditch in a buried 42-inch pipeline and improvements to the inlet facility at the Reservoir 1 WTP to include construction of a new metering vault and a new energy dissipation structure at the end of the discharge pipe.

The major components and tasks for the proposed Project include:

- Obtaining construction access, staging, and temporary and permanent easements;
- Grading and compaction work associated with preparation of construction and staging areas;
- Grading and compacting of the existing ditch bed;
- Tying into outlet pipe downstream of Forebay Reservoir Valve House;
- Installing approximately 15,400 linear feet of 42-inch pipe;
- Removing vegetation within 10-feet of the existing top of uphill bank and within 10- to 20- feet on the downhill top of ditch bank (width varies within this range depending on exact location of pipeline within the alignment);
- Installing associated appurtenances such as access manholes, turnouts, meters, valves, and connections;
- Reestablishing four existing raw water services;
- Constructing a new WTP inlet structure and flow measurement vaults at the Reservoir 1 WTP headworks; and
- Improving the supervisory control and data acquisition (SCADA) system automation and instrument control for flow and water quality measurements.
Proposed Project Overview
2.6.2 Proposed Project Components

As part of the preliminary analysis for the proposed Project, the District considered maximum and minimum operating water surface elevations in the Forebay Reservoir as a baseline for its hydraulic calculations. Based on a maximum design flow of 40 cubic feet per second (cfs), and a minimum flow of seven (7) cfs, the analysis recommended a 42-inch diameter pipe to convey the water supply that is currently conveyed through the Upper Main Ditch. Various pipe materials were considered including: Polyvinyl Chloride (PVC), Ductile Iron Pipe (DIP), Steel, and High-Density Polyethylene Pipe (HDPE). Final pipe material selection will be made when the Project is bid for construction.

The District considered several pipeline alignment alternatives to achieve the goals and objectives of the Project, including the proposed Project alignment, which follows the existing ditch alignment for the entire 15,400 feet. The District selected the proposed Project as the preferred alignment based on a number of factors, including ease of installation and overall cost. A discussion of the unique characteristics of the other alternatives is found in Section 2.7. The proposed Project shares many components with the other alternatives and the proposed Project details and elements common to the proposed Project and the alternatives are discussed below.

The proposed Project would follow the existing ditch beginning at the upstream end, as shown in Figure 2.6-1, with an air/vacuum release valve at the Forebay Reservoir Valve House. The new pipe would be placed within the ditch and backfilled with engineered fill and select backfill material. A reshaped ditch would be left in the compacted surface to allow for passage of stormwater flows up to the current 10-year storm event capacity. There are currently four existing District raw water customers served from the existing Upper Main Ditch. Four new service lines from the proposed Project pipeline in the ditch will be required to reconnect to the existing raw water services pursuant to the District’s existing policies and procedures. At the downstream end, a metering and inlet structure would also be constructed within the ditch to turn water into the Reservoir 1 WTP. In addition, minor earthwork, including tree removal, would be required to improve channel geometry, and prevent groundwater from undermining the pipe. The method employed for construction of the pipe would utilize heavy equipment to grade the ditch section to a uniform slope, fill areas that have eroded and compact the soil to prevent settlement.

2.6.2.1 Temporary and Permanent Easements

The District’s existing easement for the Upper Main Ditch is 50-feet on either side from the marginal limit of the ditch and provides the District with the right to own, operate, and maintain the existing ditch and make necessary and appropriate improvements to the ditch for the purpose of conveying District water supplies. The ditch footprint (top of bank top to top of bank) varies between 10- and 20-feet, meaning that the existing easement varies between 110- and 120-feet.

In order to convert the existing unlined ditch to a piped system, the District will need to obtain new easements both permanent and temporary. Permanent easements across private property of approximately 40-feet in width along the pipeline alignment are necessary to provide the District with the rights to install, maintain, and operate the pipeline. In addition, temporary construction easements of varying width would be necessary to construct the new pipeline.

The proposed Project Footprint figure illustrates existing and proposed easements and boundaries (Figure 2.6-1). Like the District’s existing easement, the new permanent easement would provide the right for the District and its contractors to access the pipeline but would not include any public right of access.
Additional temporary construction easements would be necessary to provide staging areas and any required access outside the existing easement (also shown on Figure 2.6-1). Access to construction areas would be a minimum of 12-feet wide adjacent to and over the pipeline on the downslope side of the ditch. As such, construction activities would be focused within the existing ditch footprint and, for the most part, take place on the downslope half of the existing easement corridor, which would limit disturbance to the upslope side of the ditch, except for the removal of trees on the edge of the ditch that present a falling hazard. The pipeline would generally follow the existing ditch; however, where the pipeline is located on the uphill side of the ditch, construction activities would disturb up to 20-feet of that uphill half of the existing easement. Thus, the construction corridor would vary in width with an average maximum width of approximately 40- to 50- feet. Staging areas would be utilized for placement of a construction trailer, storing equipment, fill material, and construction materials.

2.6.2.2 Vegetation Removal

The existing ditch provides a utility corridor generally free of trees. However, some trees have established themselves within the ditch alignment. The proposed Project has been designed to minimize tree removal by following the existing ditch corridor as much as feasible. However, construction and operation of the proposed Project would require some removal of trees adjacent to the existing ditch corridor. To prevent degradation of the proposed Project pipe installation due to root intrusion, all existing woody vegetation, including trees, would be removed within the existing ditch up to the top of the uphill bank of the ditch. Also, any woody vegetation including trees within 10-feet of the top of bank on the uphill side of the ditch that are deemed a falling hazard or unsafe would be removed. Woody material including trees within 10- to 20-feet of the ditch downhill of the top of bank would also be removed and prevented from reestablishment. In limited areas where the pipeline alignment is uphill of the existing ditch, trees would be removed within 10- to 20-feet of ditch uphill of the top of bank.

Figure 2.6-2 (Panels 1 through 3) illustrates the approximate location of trees to be removed as a part of the Project. There are approximately 50 trees located on the existing ditch bench and roughly 400 trees located within the ditch alignment. Overall, approximately 335 trees at various locations on the proposed pipeline alignment would likely need to be removed as a part of the proposed Project. Figure 3.1-4 in the Aesthetics Section (3.1) illustrates additional details of tree removal. Trees may also be affected by fill placement resulting from berm reshaping.
2.6.2.3 Pipeline Grading and Compaction

The following steps are anticipated in the construction and installation of the proposed Project in the sections where the pipeline would be placed substantially under the existing ditch or the berm, and substantially within the ditch footprint:

- Step 1 – Clearing and grubbing existing ditch and bench to a maximum of 10-feet (as needed) of the uphill top of ditch bank to a maximum of 20-feet (as needed) of the downhill top of bank on either side in preparation for placement of pipe and access;

- Step 2 – Scarifying and compacting the existing ditch subgrade in preparation of fill;

- Step 3 – Reshaping and placing fill within the existing ditch;

- Step 4 - Trenching and installation of the pipe

- Step 5 – Backfilling the pipe with specified bedding material and compacting, with the final backfill reestablishing the ditch with the 10-year recurrence interval storm event capacity and incorporating a v-ditch for intermittent flow using soil from the trench that would be temporarily stored on the bench.

Where the pipeline alignment follows the existing ditch, the alignment would vary between being completely under the existing ditch to partially under the ditch and partially under the berm, to completely under the berm. In areas where the pipeline would be completely under the berm the pipeline would be farther below the ground surface than the portions under the ditch. Prior to pipe installation, the bottom of the trench would be prepared to be firm, smooth, free of standing water, and free of any soft or hard spots, large rocks, and any foreign material.

Figure 2.6-3 below provides an example of a cross-section showing what the proposed pipeline alignment would look like after construction. Backfill in the pipe trench above the pipe zone and in the remaining ditch section would be free from organic matter, debris, and rocks larger than six-inches in diameter or length, and compacted to at least 90-percent, and 95-percent at road crossings. Imported granular bedding material would be used to level out the irregular trench bottom and to allow an easily shaped bedding surface. Approximately 46,000 cubic yards of imported fill would be required for the proposed Project.

A remnant channel would be left in the compacted surface for sections of the alignment within the existing ditch to allow storm water flows from the upslope watershed to continue following pre-Project drainage patterns. For areas where the pipeline alignment is not within the existing ditch, the ditch would be partially filled and reshaped to provide a similar level of stormwater capacity for flows up to the 10-year event. Flows in excess of the 10-year event would pass over the alignment and follow the natural drainage courses as they do under existing conditions. The balance of the compacted cover surface would have an average two-percent downgradient slope.
Pipeline Access

Access to the proposed Project would be limited to a few locations due to the existing topography and lack of access roads. The proposed Project has sufficient area to allow District personnel to access all points along the alignment from public roads that cross the Upper Main Ditch and from new easements that would be acquired. The access is assumed to be a minimum of 12-feet wide adjacent to and over the pipeline. The entire access would be located within existing and any newly acquired easements.

To efficiently construct the new pipeline, it is anticipated that placement of the pipe would occur in one direction with construction traffic (i.e., excavation equipment, rock and water trucks, backhoes, and excavators) flowing in the same direction between the nearest upstream and downstream access points. The one-way traffic would keep equipment moving during construction, so the bench would need to be cleared and maintained open as construction moves along. Completed backfilling of the pipe trench to proposed finished grade would provide the necessary support for the construction equipment.

2.6.2.4 Appurtenances

Isolation Valves

The installed pipeline would connect to the Valve House at the Forebay Reservoir where a 36-inch bonneted knife gate valve (a valve which opens by lifting a round or rectangular gate/wedge out of the path of the water) would be available to isolate flows from the reservoir. A pair of additional throttling valves would be installed at the downstream end of the proposed Project at the inlet into the Reservoir 1 WTP. These valves would be utilized to accurately regulate the flows to the desired flow rate. This installation is common to all the alignments considered. An
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Intermediate isolation valve would be placed near the middle of the installed pipeline reach to allow for dewatering a portion of the pipeline (if necessary).

Air/Vacuum Release Valves

Combination air/vacuum release valves (AVRV) would be located at all significant high points along the installed pipe alignment, on constant slopes every 1,000 feet, and installed on the downstream side of isolation valves. AVRVs release air trapped in the line, primarily during filling, and allow air into the line during emptying of the pipeline. Based on preliminary design, it is anticipated that the AVRVs would be approximately six-inch valves, but actual size would be confirmed during final design.

Blow-off Valves

Blow-off valve (BOV) assemblies would be located at low points in the installed pipeline and upstream of isolation valves to facilitate line draining, and to allow the removal of sediments that may accumulate in the low areas. Based on a preliminary sizing, it is anticipated the BOVs would be six-inches to eight-inches in size, but size would be confirmed during final design.

Manways

Manways would be located at strategic locations (possibly near services and roadway access points) to facilitate inspection of the installed pipeline. A manway would consist of a vertical tee in the pipeline with a bolted blind flange. The vertical tee would be 24-inch in diameter for easy access. Accessories would likely include a concrete box cover and lid, and a lifting ring on the blind flange.

2.6.2.5 Pipeline Connection at Forebay Reservoir Valve House

As part of the El Dorado Forebay Dam Project (SCH#2013032036), the existing Valve House would be relocated further downstream along the Upper Main Ditch and a 36-inch steel pipe through the dam would be extended to accommodate the widened dam. Each of the alignments considered for the proposed Project would connect the 36-inch steel pipe to the new 42-inch pipe at this location. Depending on the sequence of this Project in relation to the El Dorado Forebay Dam Project, if the proposed Project is constructed first, then the Valve House relocation and associated improvements would be included in the proposed Project.

2.6.2.6 Inlet Structure at Reservoir 1 WTP

A new structure at the inlet to the WTP would be installed to house a magnetic flow meter and throttling valve and to dissipate energy from the pipeline entering the treatment plant headworks. The proposed structure would consist of two enclosed concrete boxes each approximately 15-feet long by 9-feet wide by 8-feet high. One would house the meter and throttling valve and the other would act as the energy dissipater.

The boxes would have appropriate openings in the structure for District access and cleaning. Due to anticipated daily fluctuations in the Forebay Reservoir water surface elevation, the throttling valve would be automated to regulate the flows to the Reservoir 1 WTP. The existing SCADA system that monitors flows in the Main Ditch would be expanded
to provide real-time data on the flow and volume entering the plant. The structure would have a sump to collect any debris that may enter the system at the Forebay Reservoir intake. The level of debris would be monitored and cleaned by the District, as needed. Emergency overflow would continue into the Main Ditch downstream of the Reservoir 1 WTP as it does currently.

2.6.2.7 Stormwater Considerations

In addition to water deliveries from Forebay Reservoir, the Upper Main Ditch passively intercepts stormwater runoff that would otherwise naturally flow down slope. The drainage area of the Upper Main Ditch between Forebay and Reservoir 1 WTP is approximately 315 acres (Figure 2.6-4). The final design of the constructed pipeline alignment surface leaves a remnant channel in place, thereby allowing stormwater for 10-year storm flows to continue following pre-Project drainage patterns (see Figure 2.6-3, Figure 2.6-4 and shown on the 60-percent design drawings in Appendix B.8).
2.6.2.8 Proposed Construction Activities

Construction of the proposed Project is anticipated to be completed within two consecutive construction seasons during the annual Upper Main Ditch outage (fall and winter months). Depending on construction sequencing and water demand patterns it is possible that construction could extend into the first quarter of the following year, but prior to the increase in consumptive water demands.

2.6.2.9 Construction Equipment

Contractor equipment could include construction office and equipment trailers; warehousing and equipment maintenance facilities; and fuel pumps and fuel storage tanks. Mobile construction equipment utilized for the Project would depend on the selected contractor’s planned operations, but may include the following equipment:

- Excavators
- Scrapers
- Bulldozers
- Graders
- Rollers
- Concrete trucks
- Asphalt trucks
- Compactors
- Conveyors
- Water trucks
- Off-road hauling trucks
- Vehicle maintenance truck
- Front-end loaders
- Pickup trucks
- Air compressors
- Welding equipment
- Pumps and piping
- Generators
- Back-up lighting systems
- Communications and safety equipment
- Timber harvesting equipment
- Erosion control materials
- Highway trucks
- Cranes
- Miscellaneous equipment customary to the mechanical and electrical crafts, and vehicles used to deliver equipment and materials

2.6.2.10 Access Roads and Staging Areas

Access to the Project site would be accomplished using established roads including, but not limited to, U.S. Highway 50, Sly Park Road, Pony Express Trail, Forebay Road, Blair Road, Gilmore Road, Patrick Lane, Pony Express Court, and Pinewood Lane, which are paved, all-weather roads suitable for the anticipated loads. Potential site access and staging areas are shown on Figure 2.6-1 and local construction access routes are shown in greater detail on Figure 2.6-5.

Project activities would require the limited use of private property driveways from these roads; roads and driveways would be repaired to pre-construction conditions. Staging areas would be selected and developed by the contractor within limits approved by the District and by separate agreements with landowners. Several potential staging areas and temporary easements have been identified (Figure 2.6-1).
2.6.2.11 Construction-Related Traffic

Highway and local road truck trips would include mobilization activities and transport of commercially-quarried materials, construction materials, and segments of pipe, as well as trips related to waste disposal and tree removal. Engineered fill would be obtained from a specified commercial sand and gravel operation or other suitable and authorized sites. The on-site haul trips include the transport of borrow and excavated materials, construction materials, pipe, waste disposal, and tree removal.

2.6.2.12 Backfill Material

California Department of Transportation (Caltrans) identified two available backfill material sites, Piney Point and Bullion Bend, which are located within a 6-mile radius (and 4-miles of one another) east of the Upper Main Ditch site along the Highway 50 corridor. Both sites are used by Caltrans to stockpile materials (i.e. soil, rock, debris) from landslide and highway maintenance operations. It is expected that the District could take as much material as needed from either site, although agreements/permits with both United States Forest Service (USFS) and/or Caltrans would be required. The material at these sites may not be suitable without significant processing (Domenichelli and Associates 2016). If the material is used, the District would be responsible for all costs associated with processing and hauling the material, and erosion and sediment control measures. Vehicle access and staging areas at both sites are considered adequate, though traffic control measures would likely be necessary to ensure public safety.

2.6.2.13 Construction Schedule

The preliminary Project schedule includes mobilization, construction, testing, and final completion of the proposed Project within a two-year period with mobilization and construction activities occurring during the annual fall/winter ditch outage. The Reservoir A WTP can typically satisfy demands through March if needed to accommodate an extended outage of the Upper Main Ditch. The work week for construction activities is generally anticipated to occur Monday through Friday although weekend work may be necessary due to weather limitations.

In total, approximately 15,400 feet of 42-inch waterline would be installed, tested, and accepted by the District. Pipe installation and backfill is the largest single activity and is estimated to occur over approximately 30 weeks (7-months) split between two construction seasons. Construction progress would vary from 100-feet per day to 200-feet of pipe per day depending on site specific conditions. An additional 4-6 weeks (approximately 1- to 1.5-months) would be required to construct the inlet structure at the Reservoir 1 WTP; however, some of these activities may be done concurrently. The total construction timeline for the proposed Project would be approximately 12 months spread over two construction seasons and the breakdown of the construction timeline would be as follows (Table 2.6-1):
### Table 2.6-1 Approximate Proposed Project Construction Timeline

<table>
<thead>
<tr>
<th>Construction Phase</th>
<th>Approximate Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobilization</td>
<td>1 Month</td>
</tr>
<tr>
<td>Clearing and Grubbing</td>
<td>1 Month</td>
</tr>
<tr>
<td>Placement of Pipeline Season 1</td>
<td>3.5 Months</td>
</tr>
<tr>
<td>Placement of Pipeline Season 2</td>
<td>3.5 Months</td>
</tr>
<tr>
<td>Placement of Tie-Ins, Services, and Other Appurtenances</td>
<td>2 Months</td>
</tr>
<tr>
<td>Final Testing, Surface Restoration, and Construction Closeout</td>
<td>2 Months</td>
</tr>
</tbody>
</table>

**Total** 12 Months

#### 2.6.3 Project Operation and Maintenance

Operation and Maintenance (O&M) of the pipeline would require less work and fewer interruptions of service than the current open and unlined ditch. The District would follow its standard O&M protocols as for other pipelines in the District's service area.

#### 2.7 ALTERNATIVES

The primary purpose of the proposed Project is to deliver water from the Forebay Reservoir to the Reservoir 1 WTP in a more safe, efficient, and effective manner than the current unlined and uncovered ditch system. The primary objectives are to conserve water conveyed by reducing seepage and evapotranspiration and improve water quality by reducing or eliminating potential contamination.

A range of conceptual alternatives were first identified and evaluated, including the required "No Project" alternative, which would leave the operation of the ditch system in its current state. Other alternatives included lining the ditch, as well as consideration of alternative pipeline alignments, including utilizing the existing ditch (the proposed Project), an alignment that utilized a portion of Blair Road, and a combined alternative.

Public comments received for the proposed Project were thoroughly evaluated and considered while developing project alternatives. In addition to written and verbal comments received since the Notice of Preparation/Initial Study (NOP/IS) was issued on June 17, 2015, the District held a scoping meeting at Pollock Pines Community Center on June 29, 2015, to accept comments on the proposed Project and potential alternatives. The alternative selection and descriptions are discussed in the following sections.

#### 2.7.1 Alternative Selection

#### 2.7.1.1 CEQA Requirements

Section 15126.6(a) of the California Environmental Quality Act (CEQA) Guidelines requires that an Environmental Impact Report (EIR) describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives.
An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that foster informed decision making and public participation. An EIR is not required to consider alternatives that are infeasible. The Lead Agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason. Section 15126.6(b) further states the purpose of the alternatives analysis, as follows:

Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code [PRC] Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

The CEQA Guidelines further require that the alternatives be compared to the project’s environmental impacts and that the “no project” alternative be considered (CEQA Guidelines Section 15126.6[d] [e]). In defining “feasibility” CEQA Guidelines Section 15126.6(f)(1) states:

Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.

In determining what alternatives should be considered in the EIR, it is necessary to acknowledge the goals and objectives of a project, the project’s significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). Although, as noted above, an EIR must contain a discussion of “potentially feasible” alternatives, the ultimate determination whether an alternative is feasible or infeasible is made by the Lead Agency’s decision-making body (Public Resources Code [PRC] Section 21081[a][3]).

The CEQA Guidelines suggest the EIR should identify any alternatives that were considered by the Lead Agency but have been rejected as infeasible during the planning or scoping process. This discussion must include a brief explanation regarding the reasons underlying the lead agency’s determination. Among the factors listed in the CEQA Guidelines to eliminate alternatives from further consideration are: failure to meet the basic objectives of the proposed Project; infeasibility; and inability to avoid significant environmental impacts. In this case, the purpose of the Project is to deliver water from the Forebay Reservoir to Reservoir 1 WTP in such a manner as to minimize system losses and reduce the potential for contamination.

Again, the alternatives considered are to be limited to those that would avoid or substantially lessen any of the significant effects of the proposed Project (CEQA Guidelines Section 15126.6 [f]), while still addressing the goals and objectives of the Project. Alternatives that are not considered feasible are not to be considered, and the range of alternatives that are considered must be reasonable. Section 15126 of the CEQA Guidelines requires an EIR to identify and discuss a No Project Alternative, as well as a reasonable range of alternatives to the proposed Project.
All alternatives considered involve conveyance of raw water from the Forebay Reservoir to the Reservoir 1 WTP. The alternatives originally considered, therefore, are as follows:

- No Project Alternative (i.e., maintaining the use of the existing unlined, uncovered ditch);
- Lining Alternative (i.e., maintaining use of the existing ditch alignment, but lining the ditch with an impervious material to reduce or eliminate water losses through percolation);
- Piping Alternative (i.e., conveying flows through an appropriately-sized pipe). Several pipeline alignments were considered as discussed below in Section 2.7.1.3.

Each of the alternatives shares some common features, including the connections to the outlet facility at the Forebay Reservoir and to the inlet facility at the Reservoir 1 WTP at the site where the existing ditch enters the headworks structure.

### 2.7.1.2 Alternatives Selection Methodology and Screening Criteria

A range of potential alternatives was developed and subjected to the screening criteria. Several representative alternatives were considered consistent with CEQA Guidelines. The following criteria were used to screen potential alternatives:

- Does the alternative meet most or all of the project objectives?
- Is the alternative potentially feasible?
- Would the alternative substantially reduce one or more of the significant impacts associated with the project?

Based on the State CEQA Guidelines, “feasible” is defined as “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors” (CEQA Guidelines Section 15364). CEQA does not require that an EIR determine the ultimate feasibility of a selected alternative, but rather that an alternative be potentially feasible.

The significant effects of the proposed Project may include those that are significant and unavoidable or that are less than significant with mitigation. The alternative should provide a means of reducing the level of impact that would otherwise result from implementation of the proposed Project. Those alternatives that meet all or most of the Project objectives, that are potentially feasible, and that would reduce one or more of the proposed Project’s impacts are discussed in greater detail below.

### 2.7.1.3 Alternatives Considerations

Three primary pipeline alignment alternatives are being considered in detail by the District (Figure 2.7-1):

- The proposed Project, which follows the existing ditch alignment between the Forebay Reservoir and Reservoir 1 WTP;
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- The Blair Road Alternative, which mainly follows Blair Road with short portions following the existing ditch alignment and a couple “cross-country” segments for the distance between the Forebay Reservoir and Reservoir 1 WTP; and

- The Combination Alternative, which combines components of the proposed Project with the Blair Road Alternative connecting the alignment in segments of Blair Road with the alignment in segments of the existing Upper Main Ditch by utilizing “cross-country” segments between the Forebay Reservoir and Reservoir 1 WTP.

Preliminary engineering studies and options reports, included in Appendix B, evaluated the feasibility of the three alternative alignments equally, including such factors as the ease of installation, easement acquisition requirements, O&M considerations, as well as on cost considerations.

Based on these evaluations, the proposed Project was selected as the preferred alignment by the District based on several factors, including: Project feasibility and effectiveness in achieving Project objectives compared to the alternatives, lack of substantial environmental benefits offered by the alternatives, and reduced impacts from the reduced O&M activities that would result from constructing the Project.
Proposed Alternatives Overview
2.7.1.4 Alternatives Considered but Eliminated from Further Consideration

Section 15126.6(f) states: “The range of alternatives required in an EIR is governed by a ‘rule of reason’ that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the objectives of the project.”

An alternative that would line the Upper Main Ditch using concrete, gunite, or other similar material, was considered by the District. This alternative could potentially address some of the objectives associated with piping the ditch, including reducing potential water losses due to percolation. However, the ditch would remain open with the lining and subject to evaporative losses, and the flows would still be vulnerable to stormwater inflow, resulting in sedimentation and potential contamination, and the impacts to water quality and to operations at the plant would still remain. As a result, this potential alternative was determined to not meet most of the project objectives and was eliminated from further consideration.

Other potential pipeline alignments were also dismissed from further evaluation due to such factors as lack of significant environmental benefits when compared with the preferred alternative, potential adverse effects on existing infrastructure (roads) and neighborhoods, ease of installation, easement acquisition requirements, hydraulic constraints, O&M considerations, as well as on cost considerations.

2.7.2 Proposed Alternatives

As noted, the alternatives considered in detail by the District include the No Project Alternative and the Piping Alternative, which includes several potential alignments, including the proposed Project, the Blair Road Alternative, and the Combined Alternative. The piping alternatives meet the basic objectives of the proposed Project and are considered potentially feasible. As such, the alternatives, along with the No Project Alternative, will be evaluated for their potential to lessen one or more potentially significant impacts (CEQA Guidelines Section 15126).

Based on the information received, the alternatives to the proposed Project are as follows:

- No Project Alternative
- Piping Alternatives
  - Existing Upper Main Ditch (the Proposed Project);
  - Blair Road Alternative; and
  - Combined Alternative.
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2.7.2.1 Blair Road Alternative

General Blair Road Alternative Details

The Blair Road Alternative (Figure 2.7-2 and 2.7-3), is approximately 12,300-feet in length. The Blair Road Alternative would begin at the Forebay Valve House and cut cross-country across District-owned property approximately 400-feet to reach Blair Road. The Blair Road alignment would then remain within the existing public right-of-way of Blair Road for approximately 8,200-feet until it reaches the existing ditch crossing. From there, the Blair Road Alternative alignment would continue in the existing ditch for approximately 1,500-feet before traveling approximately 2,200-feet cross-country across private property to the Reservoir 1 WTP.

The section of the Blair Road Alternative that would be installed in the existing ditch would be constructed in the same manner as the proposed Project. The transition between the non-constructed sections of ditch and constructed sections of ditch would leave a graded slope in place to allow normal gravity flow of stormwater within the channel to be conveyed as under the current (No Project) conditions.

Blair Road is a County road and approximately 24-feet in width. There are no sewer facilities located within Blair Road, but there is a six-inch asbestos cement (AC) potable water line located within a portion of Blair Road from Pinewood Lane to Apple Creek Court. Since the new line is a raw water pipeline, California Department of Public Health separation standards for the two pipelines will apply. An El Dorado County encroachment would be obtained and would define pavement replacement requirements.

Due to the road width of Blair Road, this alternative would primarily be within the paved roadway, and trenches along the roadway would need to be minimized. The depth of trench required for the pipe would require additional trench safety equipment including shoring and trench plates. Existing drainage along Blair Road includes multiple culverts that would require deeper trenching to cross the new pipeline under the culverts, which would require additional air release valves and blow-off valves. The trench in Blair Road would be approximately five feet in width, and the total width of pavement removal would be seven feet to allow an additional one foot on each side of the trench (T-trench) to be removed.

There are currently four existing District raw water customers served from the existing Upper Main Ditch, and continuation of service to these customers would be provided. Four new service lines would be required from the proposed pipeline in Blair Road to reconnect to the existing services.

Photo 2.7-1 Blair Road and Bridge Crossing
Blair Road Alternative Components
Temporary and Permanent Easements

The Blair Road Alternative would require the fewest number of permanent easements by utilizing the existing Blair Road public right-of-way. Most of this alternative follows Blair Road; thus easement acquisitions would not be necessary along the existing road. Under the Blair Road Alternative, the connection from the Forebay Valve House to Blair Road would be on District-owned property. The Blair Road Alternative would require new permanent easements on approximately 2,200 feet of private property along the cross-country sections and would require renegotiation of easements and access for 1,500-feet of right-of-way along the existing ditch alignment. The District will need to obtain new easements across private parcels to provide the District with the rights to install, maintain, and operate the pipeline.

Vegetation Removal

The Blair Road Alternative would avoid tree and vegetation removal where feasible. However, with this alternative, tree removal may be necessary at narrow points along Blair Road and would be required within the densely treed cross-country portions. Approximately 100 trees would be removed along the cross-country portions and another approximately 25 trees would be removed during construction within the ditch portion of this alternative. The pipeline alignment in Blair Road may require approximately 20 trees to be removed in narrow areas. Operations of the pipeline would prevent the establishment of woody vegetation over the top of the cross-country portions to prevent degradation of the proposed pipe due to root intrusion. A total of approximately 145 trees would be removed for this alternative. Actual trees to be removed would be determined during final design, based on proximity to pipe, construction access, and hazard trees.

Pipeline Grading and Compaction

Since this alternative follows Blair Road for most of the alignment, the grading and compaction would be different from the proposed Project. Trenches would have to be excavated along the road to approximately 7- to 8-feet in depth. The total width of pavement removal would be seven feet with an additional one foot on each side of the trench, however, due to the width of the road, it is essential for trenching to be minimized as much as possible. Trench safety measures such as shoring and trench plates will be utilized to support the minimized trenching efforts.

The culverts that intercept many portions of Blair Road would require deeper trenching and additional blow-off and air release valves (described under their respective headings in the Project Description of the proposed Project).

Appurtenances

Under this alternative, isolation valves, air release valves, blow-off valves, and manways would still all be required. As discussed above, additional blow-off valves and air release valves would be needed along the Blair Road portion of the alignment. Access to these valves and manways for operations and maintenance would be easier due to the location along Blair Road.

Blair Bridge Undercrossing

The Blair Road Alternative would cross under Blair Bridge. The District has coordinated with El Dorado County to ensure that the updates to the bridge would not impact the Blair Road Alternative should the District approve it.
Pipeline Connection at Forebay Reservoir Valve House

Under the Blair Road Alternative, the pipe would be connected at the Forebay Reservoir Valve House. No additional changes would be made to the construction or location of this connection from the proposed Project versus the Blair Road Alternative.

Inlet Structure at Reservoir 1 WTP

The Blair Road Alternative would require an inlet structure at Reservoir 1 WTP. The inlet structure under this alternative would be the same as the proposed Project.

Stormwater Considerations

Since this alternative would be located along Blair Road, additional stormwater factors would need to be considered for runoff from the road and the surrounding area. Additional blow-off valves and air release valves would be required due to presence of low points along this alternative. The stormwater considerations under the Blair Road Alternative would be similar to the proposed Project for the portions that will be piped within the Upper Main Ditch. The section of the Blair Road Alternative that would be installed in the existing ditch would be constructed in the same manner as the proposed Project and the transition between the constructed sections and non-constructed sections of ditch would include a graded slope to allow normal gravity flow of stormwater within the channel as under the current (No Project) conditions. The ditch would continue to have the capacity to passively receive and convey stormwater flows during storm events. Except where the Blair Road Alternative would be located within the existing ditch corridor, the District would no longer use the existing ditch under this alternative. As such, the District’s existing easements across private parcels to own and operate the unused portions of the ditch would revert to the underlying property owners. The District would take appropriate future maintenance actions within its pipeline easement rights to maintain the ditch as necessary to protect and maintain District facilities. Additionally, for the portions of the Blair Road Alternative that would go through cross-country terrain, the pipeline would be placed underground and the surface would be regraded with a two-percent cross slope over the pipe for maintenance purposes.

Proposed Blair Road Alternative Construction Activities

Construction Equipment

The construction equipment necessary for the Blair Road Alternative would be similar to the proposed Project, however, additional trench safety equipment including shoring and trench plates would be needed. Additionally, repaving and road repairs for impacts to Blair Road would be included.

Access Roads and Staging Areas

Similar to the proposed Project, access to the Blair Road Alternative site would be accomplished using established roads including, but not limited to, U.S. Highway 50, Sly Park Road, Pony Express Trail, Forebay Road, Blair Road, Gilmore Road, and Pony Express Court, which are paved, all-weather roads suitable for the anticipated loads.

Potential access routes and alternative access routes are described and shown in greater detail in Section 2.6.2.13 and on Figure 2.6-5. All staging areas would be selected and developed by the Contractor within limits approved by the District and by a separate agreement developed with landowners.
Construction-related Traffic

Traffic controls for operation within Blair Road would be implemented to maintain residential access along Blair Road. Lane closures would be required for construction within the roadway and traffic controls would be required. Additionally, long term operations and maintenance activities would require short-term lane closures to conduct inspections, and routine or emergency repair work.

Backfill Materials

The potential borrow sites for the Blair Road Alternative would be the same as the proposed Project.

Construction Schedule

The construction time for the Blair Road Alternative would be slightly longer than the proposed Project (described in Section 2.6.2.13) due to a significant length of pipeline installation within Blair Road; however, construction would be continuous and only one outage period would be needed to construct sections of pipeline in the existing ditch alignment. Construction of the Blair Road Alternative would include mobilization, clearing and grubbing work, placement of the pipeline, placement of tie-ins and other appurtenances, and a final testing stage followed by surfacing (paving) activities and construction site cleanup. The total construction timeline for the Blair Road Alternative would be approximately 13 months and the breakdown of the construction timeline would be as follows (Table 2.7-1):

Table 2.7-1 Approximate Blair Road Construction Timeline

<table>
<thead>
<tr>
<th>Construction Phase</th>
<th>Approximate Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobilization</td>
<td>1 Month</td>
</tr>
<tr>
<td>Clearing and Grubbing</td>
<td>1 Month</td>
</tr>
<tr>
<td>Placement of Pipeline in the Roadway</td>
<td>5 Months</td>
</tr>
<tr>
<td>Placement of the Pipeline in Cross-County Portions and</td>
<td>2 Months</td>
</tr>
<tr>
<td>within Existing Ditch</td>
<td></td>
</tr>
<tr>
<td>Placement of Tie-Ins, Services, and Other Appurtenances</td>
<td>2 Months</td>
</tr>
<tr>
<td>Final Testing, Surface Restoration, and Construction</td>
<td>2 Months</td>
</tr>
<tr>
<td>Closeout</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13 Months</strong></td>
</tr>
</tbody>
</table>

2.7.2.2 Combined Alternative

Combined Alternative General Details

The Combined Alternative as shown on Figure 2.7-4 and Figure 2.7-5, is approximately 11,900 feet in length and is a combination of portions of the proposed Project and the Blair Road Alternative, as well as additional cross-country sections. Starting at the Forebay Valve House, the Combined Alternative alignment follows the Blair Road Alternative going cross country approximately 400-feet then following Blair Road for approximately 3,200-feet. Once the Combined Alternative is west of Apple Creek Court, the alignment heads south traveling cross-country approximately 700-feet until it meets the existing ditch. From there the Combined Alternative follows the proposed Project alignment.
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for approximately 2,200-feet before cutting cross-country for approximately 800-feet and rejoining the existing ditch for another 2,400-feet. It is in this segment where the existing ditch crosses under Blair Road that the Combined Alternative would follow the Blair Road Alternative again as it goes cross-country out of the ditch to Reservoir 1 WTP for approximately 2,200-feet.

Combined Alternative Components

Temporary and Permanent Easements

The Combined Alternative would require fewer permanent easements than the proposed Project since part of the alignment is within Blair Road public right-of-way. As with the Blair Road Alternative the connection from the Forebay Valve House to Blair Road is on District-owned property. The Combined Alternative would require permanent easements on 3,700-feet of private property and renegotiation of easements and access for the 4,600-feet of right-of-way along the ditch. The District will need to obtain new easements across private parcels to provide the District with the rights to install, maintain, and operate the pipeline.

Vegetation Removal

The Combined Alternative would avoid tree and vegetation removal where feasible. However, with this alternative, tree removal may be necessary at narrow points along Blair Road and would be required within the densely treed cross-country portions. There are approximately 100 trees located within the existing ditch alignment that would likely need to be removed for the Combined Alternative and approximately 175 more trees that would need to be removed for the cross-country sections of the alignment. The pipeline alignment in Blair Road would be within the road as much as possible but may require approximately 20 trees to be removed in narrow areas. A total of approximately 295 trees are anticipated to be removed for this alternative. Actual trees to be removed would be determined during final design, based on proximity to pipe, construction access, and hazard trees.

Pipeline Grading and Compaction

The pipeline grading and compaction for the Combined Alternative would be similar to the proposed Project along the 4,600 feet in the existing ditch. Excavation would be needed for the 3,200 feet along Blair Road and grading along with excavation would be needed for the 4,100 feet through cross-country terrain. Access would be limited for the cross-country portion of this alternative.
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Appurtenances

Under the Combined Alternative, the appurtenances described in the proposed Project would still be necessary, however additional blow valves and air release/vacuum valves would be required. Isolation valves, air/vacuum release valves, blow-off valves, and manways would still be required under the Combined Alternative. The air release/vacuum valves would be located at the high points along the pipeline, while the blow-off valves would be located at low points along the pipeline to facilitate draining. This alternative would require additional blow-off valves at the low points under drainage crossings. Sediment may tend to deposit at these low points which would require periodic flushing. Additionally, isolation/flow control valves would still be needed at Reservoir 1 WTP and the Forebay Reservoir to accurately regulate the flows to the desired flow rate.

Connecting Pipeline at Forebay Reservoir Valve House

Under the Combined Alternative there would still be the need for a connecting pipe at the Forebay Reservoir Valve House. No additional changes would be made to the construction or location of this connection from the proposed Project versus the Combined Alternative.

Inlet Structure at Reservoir 1 WTP

The Combined Alternative would still require an inlet structure at Reservoir 1 WTP. The inlet structure under this alternative would be the same as the proposed Project.

Stormwater Considerations

The stormwater considerations under the Combined Alternative would be similar to the proposed Project for the portions that will be piped within the Upper Main Ditch. The section of the Combined Alternative that would be installed in the existing ditch would be constructed in the same manner as the proposed Project and the transition between the constructed sections and non-constructed sections of ditch would include a graded slope to allow normal gravity flow of stormwater within the channel as under the current (No Project) conditions. The ditch would continue to have the capacity to passively receive and convey stormwater flows during storm events. For the portions of the Upper Main Ditch where the pipeline would not be constructed in the ditch alignment, the District would no longer use those portions of the ditch. As such, the District’s existing easements across private parcels to own and operate the unused portions of the ditch would revert to the underlying property owners. The District would take appropriate future maintenance actions within its pipeline easement rights to maintain the ditch as necessary to protect and maintain District facilities. For the portions of the Combined Alternative that would go through cross-country terrain, the pipeline would be placed underground, and the surface would be regraded with a two-percent cross slope over the pipe for maintenance purposes.

Combined Alternative Construction Activities

Construction Equipment

The construction equipment necessary for the Combined Alternative would be similar to the proposed Project and that described for the Blair Road Alternative.
Access Roads and Staging Areas

Similar to the proposed Project, access to the Combined Alternative site would be accomplished using established roads including, but not limited to, U.S. Highway 50, Sly Park Road, Pony Express Trail, Forebay Road, Blair Road, Gilmore Road, Patrick Lane, pony Express Court, and Pinewood Lane, which are paved, all-weather roads suitable for the anticipated loads. Potential access routes and alternative access routes are described and shown in greater detail in Section 2.6.2.13 and on Figure 2.6-5. Additional off-road access may be needed for the cross-country portions of this alternative. This has the potential to cause damage to the surrounding area as heavy construction equipment would need to enter the area. All staging areas would be selected and developed by the Contractor within limits approved by the District, and by separate agreement developed with landowners.

Construction-related Traffic

Construction-related traffic under the Combined Alternative would be similar to the proposed Project and the Blair Road Alternative.

Potential Borrow Site

The potential borrow sites for the Combined Alternative would be the same as the proposed Project.

Construction Schedule

The construction time for the Combined Alternative would be slightly longer than the proposed Project due to a significant length of pipeline installation within Blair Road and additional length constructed over cross-country alignments. However, construction would be continuous and only one outage period would be needed to construct sections of pipeline in the ditch alignment. Pipe installation and backfill would still be the largest single activity and is estimated to occur over approximately 30 weeks (approximately 7-months). Construction progress would vary from 80-feet per day to 100-feet of pipe per day depending on site-specific conditions. Construction of the Combined Alternative would require similar steps as the proposed Project and the Blair Road Alternative and would include mobilization, clearing and grubbing work, placement of the pipeline, placement of tie-ins and other appurtenances, and a final testing stage with surfacing (paving) followed by cleanup of the construction site. The total construction timeline for the Combined Alternative would occur over approximately 13 months and the breakdown of the construction timeline would be as follows (Table 2.7-2):

<table>
<thead>
<tr>
<th>Construction Phase</th>
<th>Approximate Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobilization</td>
<td>1 Month</td>
</tr>
<tr>
<td>Clearing and Grubbing</td>
<td>1.5 Months</td>
</tr>
<tr>
<td>Placement of Pipeline in the Roadway</td>
<td>2 Months</td>
</tr>
<tr>
<td>Placement of the Pipeline in Cross-County Portions and within Existing Ditch</td>
<td>4.5 Months</td>
</tr>
<tr>
<td>Placement of Tie-Ins, Services, and Other Appurtenances</td>
<td>2 Months</td>
</tr>
</tbody>
</table>


### No Project Alternative

CEQA Guidelines Section 15126.6(e)(1) requires that the No Project Alternative be described and analyzed “to allow decision makers to compare the impacts of approving the project with the impacts of not approving the project.” The No Project Alternative analysis is required to discuss “the existing conditions at the time the notice of preparation is published . . . as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services” (Section 15126.6(e)(2)).

As directed by the CEQA Guidelines [Section 15126.6 (e)(3)(B)], when a project consists of a development project on identifiable property, the “no project” alternative is the circumstance under which the project does not proceed. If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, the “no project” consequence should be discussed.

The No Project Alternative assumes that if selected, the proposed Project would not be implemented, and the Upper Main Ditch would remain operating under existing conditions and the District would not derive the benefits of the proposed Project in terms of improved water conservation, and water quality.

According to Section 15126.6(e) of CEQA Guidelines, discussion of the No Project Alternative must include a description of existing conditions and reasonably-foreseeable future conditions that would exist if the proposed Project was not approved. Under the No Project Alternative, the District would not approve or implement the proposed Project. None of the environmental impacts identified in Sections 3.1 through 3.14 would occur. Furthermore, implementation of the No Project Alternative would not meet any of the proposed Project objectives.
2.8 ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>advisory circular</td>
</tr>
<tr>
<td>Afa</td>
<td>acre-feet annually</td>
</tr>
<tr>
<td>Amsl</td>
<td>above mean sea level</td>
</tr>
<tr>
<td>A/VRV</td>
<td>air/vacuum release valves</td>
</tr>
<tr>
<td>BOV</td>
<td>Blow-off valve</td>
</tr>
<tr>
<td>Caltrans</td>
<td>California Department of Transportation</td>
</tr>
<tr>
<td>CEQA</td>
<td>California Environmental Quality Act</td>
</tr>
<tr>
<td>Cfs</td>
<td>cubic feet per second</td>
</tr>
<tr>
<td>CVP</td>
<td>Central Valley Project</td>
</tr>
<tr>
<td>DIP</td>
<td>Ductile Iron Pipe</td>
</tr>
<tr>
<td>District</td>
<td>El Dorado Irrigation District</td>
</tr>
<tr>
<td>EIR</td>
<td>Environmental Impact Report</td>
</tr>
<tr>
<td>FERC</td>
<td>Federal Energy Regulatory Commission</td>
</tr>
<tr>
<td>Forebay</td>
<td>El Dorado Forebay Reservoir</td>
</tr>
<tr>
<td>HDPE</td>
<td>High-Density Polyethylene Pipe</td>
</tr>
<tr>
<td>ISO</td>
<td>independent system operator</td>
</tr>
<tr>
<td>Mgd</td>
<td>million gallons per day</td>
</tr>
<tr>
<td>MW</td>
<td>Megawatt</td>
</tr>
<tr>
<td>NOP/IS</td>
<td>Notice of Preparation/Initial Study</td>
</tr>
<tr>
<td>O&amp;M</td>
<td>operations and maintenance</td>
</tr>
<tr>
<td>PG&amp;E</td>
<td>Pacific Gas and Electric Company</td>
</tr>
<tr>
<td>PRC</td>
<td>Public Resources Code</td>
</tr>
<tr>
<td>Upper Main Ditch Piping Project or Project</td>
<td>Upper Main Ditch Piping Project</td>
</tr>
<tr>
<td>PVC</td>
<td>Polyvinyl Chloride</td>
</tr>
<tr>
<td>SB</td>
<td>Senate Bill</td>
</tr>
<tr>
<td>SCADA</td>
<td>supervisory control and data acquisition</td>
</tr>
<tr>
<td>State</td>
<td>State of California</td>
</tr>
<tr>
<td>SWRCB</td>
<td>State Water Resources Control Board</td>
</tr>
<tr>
<td>USFS</td>
<td>United States Forest Service</td>
</tr>
<tr>
<td>USGS</td>
<td>United States Geological Survey</td>
</tr>
<tr>
<td>WTP</td>
<td>Water Treatment Plant</td>
</tr>
</tbody>
</table>

2.9 REFERENCES

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3.0 ENVIRONMENTAL IMPACT ANALYSIS

In accordance with California Environmental Quality Act (CEQA) Guidelines Section 15126.2, this Draft Environmental Impact Report (EIR) identifies and focuses on the potentially significant direct and indirect environmental effects of the proposed Upper Main Ditch Piping Project (Project) compared to baseline conditions, considering both its potential short-term and long-term effects. Short-term effects are generally those associated with construction of the Project, while long-term effects are generally those associated with operation of Project components.

Organization of Discussion

Environmental resource topics are discussed throughout Chapter 3.0 as related to the Project for aspects that apply for the proposed Project but are also similar for the alternatives. Where the alternatives differ from the proposed Project, the differences are highlighted under separate headings, labeled in terms of the Blair Road Alternative, the Combined Alternative, and the No Project Alternative.

Organization of Issue Areas

Each environmental issue analyzed in Chapter 3.0 contains the following components:

Basis for Analysis presents the thresholds of significance used in this Draft EIR that were developed using criteria from the CEQA Guidelines and Appendix G Checklist; state, federal, and local regulatory schemes; local/regional plans and ordinances; accepted practice; consultation with recognized experts; and other professional opinions.

Regulatory Framework presents the laws, regulations, plans, and policies that are relevant to each issue area. Regulations originating from the Federal, State, and/or local levels are each discussed as appropriate.

Environmental Setting presents the existing environmental conditions within the Project boundaries and within the surrounding Project area as appropriate to establish baseline conditions, in accordance with CEQA Guidelines Section 15125. The extent of the environmental setting area evaluated (the study area) appropriately differs among resources, depending on the locations where potential impacts would be expected. For example, air quality impacts are assessed for the air basin (macro-scale), as well as the site vicinity (micro-scale), whereas aesthetic impacts are assessed for the project vicinity only.

Environmental Impacts includes the Methodology for Analysis and the Project Impact Analysis. The Methodology for Analysis section includes any resource-specific procedures for assessing impacts. The Project Impact Analysis includes an analysis of the Project’s potential to cause a significant environmental impact (referred to generally as Project Impacts). Potential impacts are assessed by evaluating the Project’s potential to result in a substantial adverse change from the baseline conditions established in the Environmental Setting determined by a comparison with the thresholds of significance set forth in the Basis for Analysis. Where a potentially significant impact is identified, mitigation, where feasible is identified and described for how it reduces potential impacts.

The potential impacts are organized numerically in each subsection with a discussion of the Project Impacts (e.g., Impact AES-1, Impact AES-2, Impact AES-3, etc.). Evaluation of the impact is organized by a discussion of impacts
potentially resulting from the proposed Project (Impact AES-1a Proposed Project Analysis) and any differences in impacts that potentially result from the Alternatives (Impact AES-1b Blair Road Alternative Analysis, AES-1c Combined Alternative Analysis, and AES-1d No Project Alternative Analysis). A bold-font environmental impact statement precedes the evaluation of each potential impact and a finding of significance follows the evaluation and lists required mitigation.

Required Mitigation includes specific details of the mitigation identified in the Environmental Impacts with performance standards, timing, and responsible parties identified.

Format Used for Impact Analysis and Mitigation Measures

The format adopted in this Draft EIR to present the evaluation of potential environmental impacts is described and illustrated below. Abbreviations used in the impact analysis and mitigation measure numbering are listed in the Introduction Chapter of this EIR in Section 1.2 (Draft EIR Scoping Process).

Summary Heading of Impact (Example)

<table>
<thead>
<tr>
<th>Impact AIR-1:</th>
<th>An impact summary heading appears immediately preceding the impact description (Summary Heading of Impact in this example). The impact abbreviation identifies the section of the report (AIR for Air Quality in this example) and the sequential order of the impact (1 in this example) within that section. To the right of the impact number is the impact statement, which identifies the potential impact.</th>
</tr>
</thead>
</table>

Impact [AIR-1a Proposed Project] Analysis

A narrative analysis follows the impact statement assessing the change from baseline conditions due to the proposed Project compared to the established threshold of significance. This analysis identifies any potential mitigation required and explains how the mitigation would mitigate the potential impact. The level of significance is determined following consideration of all factors.

Level of Significance: Less than Significant with Mitigation (The evaluated Level of Significance as determined by the analysis is included here, such as Less than Significant with Mitigation in this example)

This section explains the determination of the severity of potential project impacts. This is fundamental to achieving the objectives of CEQA. CEQA Guidelines Section 15091 and Public Resources Code Section 21002 require that decision makers apply mitigation measures where feasible to avoid or substantially lessen the significant impacts identified in the Draft and Final EIRs that are under the jurisdiction of the decision-making agency. If the EIR identifies any significant unmitigated impacts, CEQA Guidelines Section 15093 requires decision makers to adopt a statement of overriding considerations that explains why the benefits of the project outweigh the adverse environmental consequences identified in the EIR.

The level of significance for each impact examined in this Draft EIR is determined by considering the predicted magnitude of the potential impact against the applicable threshold. This section also identifies the resulting level of significance of the impact, including the implementation of feasible mitigation measures (if required).
Mitigation Required: [MM AIR-1] (this finding lists all mitigation measures required to make the significance finding listed above for a specific impact).

The Mitigation Required section lists any feasible measures that could avoid, minimize, rectify, reduce, or compensate for significant adverse impacts. Mitigation measures must be fully enforceable through incorporation into the project, or through permit conditions, agreements or other measures. (PRC Section 21081.6(b)) as discussed under the impact analysis.

Mitigation measures are not required for environmental impacts that are found to be less than significant. Where feasible mitigation for a potentially significant environmental impact is available, it is described following the impact. Where sufficient feasible mitigation is not available to reduce environmental impacts to a less than significant level, or where the Lead Agency lacks the authority to ensure that the mitigation is implemented when needed, the impacts are identified as significant and unavoidable.

In some cases, following the impact discussion, reference is made to State and Federal regulations and agency policies that would fully or partially mitigate the potential impact. In addition, policies and programs from applicable local land use plans that partially or fully mitigate the impact may be cited.

Project-specific mitigation measures, beyond those contained in other documents, are identified with a summary heading and described using the format presented below:

Mitigation Measure AIR-1 [Title]: [Description] indicates Project-specific mitigation is identified that would reduce the potentially significant impact to the lowest degree feasible.

Impact [AIR-1b-d Alternative] Analysis

In the same format as the proposed Project Analysis, analyses of differences between the proposed Project and proposed Alternatives is included under Impact Analysis headings ‘b’-‘d’ which evaluates areas in which the alternative would have a different impact than the proposed Project. Where no difference is specified, the analysis for the proposed Project applies to the Upper Main Ditch Piping Project as a whole including any project alternatives.
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3.1 AESTHETICS

3.1.1 Basis for Analysis

The California Environmental Quality Act (CEQA) Guidelines’ Appendix G Environmental Checklist was assessed during the Notice of Preparation/Initial Study (NOP/IS) scoping process (included in Appendix A) to identify the Project components that have the potential to cause a significant impact. The following potential impact was determined to warrant further evaluation within this Environmental Impact Report (EIR):

- Substantially degrade the existing visual character or quality of the site and its surroundings.

The following potential impacts were determined to have a less than significant or no impact during the NOP/IS scoping process (included in Appendix A) and are not discussed further in this section:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway; or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

The remainder of this section describes the regulatory and environmental setting to support the evaluation of the potential impacts and describes the potential impacts to the existing visual character that may result from implementation of the Project and identifies mitigation for significant impacts, where feasible.

3.1.2 Regulatory Framework

Applicable regulations for aesthetics and visual resources are listed below. There are no officially designated eligible State Scenic Highways in the Project area, nor are there any locally designated scenic roads in the vicinity of the Project.

3.1.2.1 Local

El Dorado County General Plan

The Project is proposed by El Dorado Irrigation District (District), a special district that supplies water to customers throughout much of El Dorado County (County). Pursuant to Government Code sections 53091(D) and (E), many of The District’s activities are not subject to local zoning or land use requirements, as stated below.

*Building and zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code.*
As a special district with equal authority, the District is exempt from following goals and policies within the County’s General Plan and Zoning Ordinance. However, the District aims to comply with those goals and policies outlined in the General Plan and uses these goals and policies as a metric for formulating an impact analysis (EDCGP 2015).

Policy 5.4.1.2 Discretionary development shall protect natural drainage patterns, minimize erosion, and ensure existing facilities are not adversely impacted while retaining the aesthetic qualities of the drainage way.

Objective 7.3.3: Wetlands: Protection of natural and man-made wetlands, vernal pools, wet meadows, and riparian areas from impacts related to development for their importance to wildlife habitat, water purification, scenic values, and unique and sensitive plant life.

Objective 7.4.4: Forest and Oak Woodland Resources: Protect and conserve forest and woodland resources for their wildlife habitat, recreation, water production, domestic livestock grazing, production of a sustainable flow of wood products, and aesthetic values.

3.1.3 Environmental Setting

3.1.3.1 Methodology for Establishing Setting

The Project’s existing visual environment was evaluated through a combination of site photography, assessment of aerial imagery, and review of data related to land uses in the Project vicinity. This approach allowed for the description of the Project area’s visual character, as well as identification of potentially sensitive visual receptors.

In this analysis, “viewshed” refers to the total area within which potential changes to the visual environment could be visible to viewers. “Viewer sensitivity” is defined both as the viewers’ concern for scenic quality and the viewers’ response to change in the visual resources that make up the view. For the purposes of this analysis viewer sensitivity is categorized into low, moderate, and high sensitivity levels.

3.1.3.2 General Visual Character

The Project is set within a landscape that is typical of the broader Sierra foothills area. This region is characterized by rural residential communities surrounded by mountainous terrain with steep river canyons and dense conifer hardwood forests. The elevation of the Project site ranges from 3,785 to 3,754 feet above mean sea level (amsl) and is approximately one mile south of the South Fork of the American River. Figure 2.6-1 in the Project Description shows an aerial view of the Project area and demonstrates the forested nature of the existing Upper Main Ditch corridor.
The Project area is characterized visually by mature forest in a rural residential area where the Upper Main Ditch is a linear feature bounded by elevated berms (referred to as the “bench”) (Photo 3.1-1 and Photo 3.1-2) that extend for approximately three miles from the Forebay Reservoir to the Reservoir 1 Water Treatment Plant (WTP). The Project corridor consists of the ditch and its bench which vary in width from 14- to 20- feet and is relatively flat across the corridor. The change in elevation between the forebay and WTP is approximately 30 feet. The ditch and the bench are also generally clear of vegetation (Photo 3.1-2). As such, the ditch corridor appears as a clearly defined break in the otherwise generally forested area similar to a winding road. The aesthetics of the Project corridor include the managed ditch and bench within surrounding dense conifer hardwood forests (See Section 3.4, Biological Resources for more details). Pine, cedar, fir, and oaks are the dominant species making up the surrounding hardwood forest. Plant species in the area include dogwood, Himalayan blackberry, thimbleberry, and bracken fern (AECOM 2013). Other non-woody species in the area include Baltic rush, slender rush, Indian rhubarb, and tall flatsedge (AECOM 2015b). These species are not established within the ditch due to existing District operations, limited flows, and seasonal changes. The District typically clears vegetation within the ditch as part of its ongoing maintenance operations.
While the ditch and bench are a long-standing feature in the landscape, the water flows in the ditch vary (Photo 3.1-1 through Photo 3.1-3) throughout the year, based on District operations and also local weather conditions. Under existing District operations, flows in the ditch are not continuous. Under current operations, the ditch typically conveys raw water supplies during the spring and summer months (Photo 3.1-2) and is shut down for varying periods of time in the fall and winter months for maintenance (Photo 3.1-3). When the District is not utilizing the ditch to convey District water supplies, the ditch either remains dry or passively receives intermittent stormwater.

The Upper Main Ditch traverses private property under the District’s existing easement rights. The District’s rights do not include the right for the general public to access the ditch corridor; however, the District is aware that some members of the public use the ditch bench as an informal trail across private property.

There are a few roads in the area that provide access to properties in the Project area. Residents and property owners make up a large number of the motorists in the region. Access to the Project site is primarily via Blair Road, Forebay Road, and Gilmore Road. The Project area is not visible from Highway 50, which is the nearest highway, and an officially designated State Scenic Highway.

3.1.3.3 Proposed Project Visual Receptors

Land uses within the proposed Project area and its vicinity consist of rural residential and mixed commercial uses along with the District’s Forebay Reservoir. Primary potential viewers of the proposed Project include: 1) private property viewers; 2) passing motorists, and 3) recreational viewers.

Private Property Viewers

Private property viewers are those who experience views on the properties surrounding the proposed Project. These viewers typically experience the majority of views from within a stationary structure such as a house but may experience views from outdoor use across an entire privately-owned parcel. Individual residences and structures that could be used by private citizens along the ditch were identified using aerial imagery and categorized by proximity to the ditch to facilitate evaluation of potential changes in viewshed for stationary individual visual receptors. For assessment purposes, stationary viewing locations (“receptors”) were classified into four categories based on distance from the ditch (not necessarily indicative of an actual view of the ditch since other factors such as vegetation and topography are factors for actual visibility). Potential visual receptors within 500-feet of the ditch were classified into the following groupings to represent the change in views from a particular vantage point (the closer the receptor the greater the potential for unobstructed views of Project activities): 0- to 50- feet, 51- to 100- feet, 101- to 250- feet,
and 251- to 500- feet. A total of 104 residences were identified within 500-feet of the proposed Project alignment. Figure 3.1-1 and Table 3.1-1 illustrate the number of identified receptors in each distance category.

### Table 3.1-1 Potential Receptor Distances from the Proposed Project Alignment

<table>
<thead>
<tr>
<th>Distance from Ditch Corridor</th>
<th>Potential Receptors</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-50 feet</td>
<td>4</td>
</tr>
<tr>
<td>51-100 feet</td>
<td>14</td>
</tr>
<tr>
<td>101-250 feet</td>
<td>28</td>
</tr>
<tr>
<td>251-500 feet</td>
<td>58</td>
</tr>
<tr>
<td>Total: 104</td>
<td></td>
</tr>
</tbody>
</table>

Private property viewers are presumed to generally be highly sensitive to changes in the visual environment experienced from their homes and from their properties. Proximity to the Upper Main Ditch varies for homes and structures on private property in the proposed Project area. Existing forest vegetation and local topography provide a visual buffer for many of the private property viewers in the area that can partially or fully obstruct views of the ditch and reduce viewer exposure, tempering any sensitivity to potential changes. However, other viewers adjacent to the ditch could experience more exposure in areas where less vegetation or topography is present or in areas where people recreate on these private properties, resulting in high sensitivities to change in visual environment (see Photo 3.1-4 and Photo 3.1-5). As such, direct views of the ditch vary based on distance, topography, and vegetation. It is assumed that views of water in the ditch are restricted by the grade of the berm relative to the elevation of the water in the ditch even from short-distance homes.
Passing Motorists

Passing motorists with views of the proposed Project would primarily be those traveling along Blair Road and Pinewood Lane. Motorist sensitivity here is presumed to be moderate, given the forested setting, which would allow for intermittent views of the Project, combined with the relatively slow speeds allowed on the roads within and near the Project area. However, the winding and narrow nature of the roads in the vicinity calls for motorists to pay careful attention to the road in front of them and does not allow much time for sight-seeing while driving, indicating that motorists may have a lower sensitivity to changes in visual character. Views of the ditch from outside the roadway corridor are mostly obstructed by adjacent trees.

The ditch can only be seen from roadways for a limited time when it crosses under Pinewood Lane and again when it crosses under Blair Road as shown in Photos 3.1-6 and 3.1-7. Motorists’ exposure level for the Project is therefore considered to be low to moderately low.

Recreational Viewers

Recreational viewers in the Project area primarily include hikers at Forebay Reservoir, as well as people fishing in Forebay Reservoir (See Photo 3.1-6). Recreational viewers are assumed to have a high degree of visual sensitivity due to potential for a project’s effects to long-duration views or enjoyment of a particular landscape. While people do currently use the ditch bench as in informal trail, this is considered private land use as discussed under the Private Property Viewers heading above.

Passage granted by individual land owners to members of the public is discretionary to each individual land owner; thus, persons walking along the ditch bench are considered private property viewers rather than recreational viewers. Further, recreational access is not within the District’s authority to grant since its easement rights for the ditch are for water conveyance operations and maintenance only. Since the majority of the ditch is on private property, public recreational uses are not present within the proposed Project footprint given that no public easements or rights-of-way exist along the ditch.
3.1.3.4 Alternatives

Blair Road Alternative

Under the Blair Road Alternative, visual receptors would be similar to those of the proposed Project. Recreational receptors would be located in the same areas and have similar sensitivities to those described under the proposed Project conditions. Private property viewers would also be similar to the proposed Project in their visual sensitivities, in those areas in which the Blair Road Alternative alignment overlaps with the proposed Project alignment. However, due to the differences in alignment between the proposed Project and the Blair Road Alternative, the number of receptors and distances from construction activities would differ as described under the following “Private Property Viewers” heading below. Passing motorists along Blair Road would be subject to more direct visual changes and would experience a more prominent temporary change to visual character than under the proposed Project as described under the “Passing Motorists” heading below.

Private Property Viewers

The Blair Road Alternative would have more private property viewers than the proposed Project since receptors along the ditch and receptors along Blair Road would be exposed to temporary construction views, along with the residents who would experience changes in the visual landscape of the ditch from the changes in spring and summer water flows. Like the proposed Project, there are approximately 104-potential receptors within 500-feet of the existing ditch easement based on aerial imagery interpretation of structures and private property receptors along the ditch. Unlike the proposed Project, sensitivity to visual change for these users would be moderate since only operational changes would occur in the area and no construction activities would occur along most of the existing ditch alignment except for short sections at the upstream and downstream ends of the alignment. As described for the proposed Project, changes in flow conditions in the ditch would only be visible in areas where the topography allows for seeing the below-grade water levels in the ditch. In addition to private property views being altered along the ditch, private property viewers along Blair Road would also be subject to changes in visual character. The Blair Road Alternative introduces approximately 24 additional receptors, bringing the total number of potential private property receptors to approximately 128 for this alternative. Private property viewers along the existing ditch or along Blair Road would have a moderate to high sensitivity to any changes in view. The distance from the cross-country portion of this alternative and density of vegetation would restrict views of any potential private property viewers to a negligible amount and thus those persons would not be considered as additional sensitive receptors.

A total of 128 residences were identified within 500-feet of the Blair Road Alternative alignment. Figure 3.1-2 and Table 3.1-2 illustrate the number of identified residences in each distance category.

Table 3.1-2 Potential Receptor Distances from the Blair Road Alternative

<table>
<thead>
<tr>
<th>Distance from Ditch Corridor</th>
<th>Potential Receptors</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-50 feet</td>
<td>19</td>
</tr>
<tr>
<td>51-100 feet</td>
<td>35</td>
</tr>
<tr>
<td>101-250 feet</td>
<td>79</td>
</tr>
<tr>
<td>251-500 feet</td>
<td>128</td>
</tr>
<tr>
<td>Total: 128</td>
<td></td>
</tr>
</tbody>
</table>
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Passing Motorists

Motorists using Blair Road would have longer temporary views of Project construction activities under the Blair Road Alternative than the proposed Project because the construction would occur mostly along Blair Road. Photo 3.1-9 illustrates typical motorists’ views along Blair Road. These motorists would generally have high sensitivity to these views since they would be immediately adjacent to Project changes that occur along Blair Road. Motorist views of the existing ditch under the Blair Road Alternative are limited to where the ditch crosses under Blair Road.

Photo 3.1-9 Representative Motorist Views Along Blair Road
Combined Alternative

The Combined Alternative would have similar motorist and recreationalist visual receptors and sensitivities as described above in the proposed Project and Blair Road Alternative. The differences are described under the following “Private Property Viewers” and “Passing Motorists” headings.

Residents

Private Property Viewers

Overall, there would be a few more private property visual receptors for the Combined Alternative than the proposed Project. While there would be no additional private property visual receptors along the ditch and Blair Road, the Combined Alternative would introduce approximately two additional residential homes within 50 feet of the other cross-country portions of this alignment. Similar to the receptors identified for the other alignments, these private property viewers would have a moderate to high sensitivity to any changes made to their views. A total of 101 residences were identified within 500 feet of the Combined Alternative alignment. Figure 3.1-3 and Table 3.1-3 illustrate the number of identified residences in each distance category. The number of private property visual receptors for the Combined Alternative would be fewer than for the Blair Road Alternative since only portions of this alternative would be constructed within Blair Road.

<table>
<thead>
<tr>
<th>Distance from Combined Alternative</th>
<th>Potential Receptors</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-50 feet</td>
<td>2</td>
</tr>
<tr>
<td>51-100 feet</td>
<td>21</td>
</tr>
<tr>
<td>101-250 feet</td>
<td>28</td>
</tr>
<tr>
<td>251-500 feet</td>
<td>101</td>
</tr>
<tr>
<td><strong>Total: 101</strong></td>
<td></td>
</tr>
</tbody>
</table>

Passing Motorists

Motorists under the Combined Alternative would have a higher sensitivity to Project activities than the proposed Project but less than the Blair Road Alternative, because construction within Blair Road would be slightly less. Motorists along Blair Road would have prolonged views of the Project under the Combined Alternative and would, therefore, also have a generally high sensitivity under this alternative.
3.1.4 Environmental Impacts

This section analyzes the Project’s potential to result in significant impacts to aesthetic resources. When the Project’s impact was determined to be significant, feasible mitigation measures were identified to reduce or avoid that impact.

3.1.4.1 Project Impact Analysis

This section discusses potential impacts associated with the Project and identifies mitigation measures for potentially significant impacts, where feasible.

Impact AES-1 The Project would not substantially degrade the existing visual character or quality of the site and its surroundings.

Impact AES-1a Proposed Project Analysis

Temporary Construction Impacts

Private property, motorists, and recreational user views are limited in the proposed Project area due to the densely forested character of the area, the steep and dramatic topography, and elevation of a receptor in relation to the grade of the ditch and the bench. The amount the proposed Project would be visible through the forested setting varies dependent on the density of the forest between the ditch and receptor. Some receptors in close proximity to the ditch have almost entirely restricted views because of dense vegetation between viewing locations and the ditch, while others, such as residents near Pinewood Lane, have more open and exposed views to the general alignment of the ditch corridor. When combined with the forested character, the topography of the area limits views of the ditch even further for many receptors since the elevation of the ditch is higher than the viewing point of many receptors. Where the ditch is lower in elevation, viewers have increased distances from the proposed Project and Project activities if forest densities are not too thick.

Short-term changes to the existing visual character or quality of the Project site and its surroundings would result from construction activities. Changes would include temporary views of construction activities, staging areas, and construction equipment. Typically, construction activities are not considered to result in a substantial change to visual character when they do not result in permanent alterations to the visual environment. Temporary changes to the visual character of the area resulting from the construction activities of the proposed Project are anticipated to last a total of approximately 12-months; however, this work would be completed during the ditch outages spanning the duration of two outage periods over the course of two years. The bulk of construction activities anticipated to have the most visual impact would occur during the three-and-a-half-month period of pipe installation during the two seasons and during approximately one additional month total for clearing and grubbing activities as outlined in the Project Description (Section 2.6). Further, construction activities would occur in the upstream half of the ditch the first season and then downstream half during the second construction. Sensitive receptors throughout the Project area would be exposed to the movement of construction equipment, however, the greatest exposure to construction activities and equipment would occur to sensitive receptors in the upstream half of the ditch in the first season and the downstream half of the ditch in the second season. Private property receptors within their houses or structures and walking on their property would have the longest exposure to these temporary activities, while passing motorists and recreational users of Forebay and Blair Road would have limited exposures and views to construction traffic entering and exiting the roadway and glimpses of equipment while passing by on the surrounding roadways.
Since the proposed Project is linear in nature, pipeline installation would move at a rate of approximately 80- to 100-feet a day and overall construction impacts would be limited at any one particular location. Depending on vegetation and topography present at the particular location of a receptor, views of the ditch would vary from full to obstructed for receptors identified within 500-feet of the proposed Project. Given the approximate rate of construction, the exposure duration for receptors during construction would be approximately one to two weeks. Of the 104 private property receptors identified within 500-feet of the ditch, the four receptors within 50-feet of the ditch would have the greatest exposure with limited obstructions of construction activities. The further away from construction activities the more obstructed the views become; the 58 receptors that are between 251- to 500- feet of the Project would be expected to have obstructed, if any, view of the proposed Project. While the forested visual character of the Project area would be temporarily modified by the introduction of construction equipment and earth movement, the change in visual character would not be considered substantial because the change would be temporary, limited to 12 months, and the timing of activities would be further limited at any particular receptor. Therefore, Project construction impacts to visual character are considered less than significant.

Motorist views of the proposed Project are limited to the Project area at Pinewood Lane and where the ditch crosses under Blair Road. Due to the short viewing duration, limited proximity, changes in topography, and the surrounding dense vegetation, the potential impacts to the visual character experienced by motorist's viewers associated with the proposed Project are considered less than significant.

Permanent Operational Impacts

Long-term degradation to visual character could result from operational changes such as the discontinuation of raw water flows within the ditch, as well as physical changes such as regrading the ditch and vegetation removal. Under current conditions, flows within the ditch are intermittent and only visible within close proximity (estimated to be visible within approximately 25- to 50-feet) of the ditch corridor. Under the proposed Project the water released from Forebay Reservoir for conveyance to the treatment plant would be piped underground. Stormwater would continue to be received in the regraded ditch. While the alteration of the flow regime in the ditch would be a change to the existing visual conditions, it would not be a substantial deviation since the similar visual character of the ditch would be retained. The ditch under proposed Project conditions would display similar visual character to the existing ditch and would seasonally continue to convey stormwater flows. Intermittent flows are an existing annual condition as shown in the pictures in the Environmental Setting (Section 3.1.3), which contribute to the overall character of the visual landscape. Since current operational conditions exhibit varying flow conditions, changes to visual character from flows in the ditch would be within the range of those experienced currently.

While the seasonality and frequency of flows would be limited to stormwater runoff, the overall reduction in flow frequency within the ditch under the proposed Project would not substantially alter the overall visual character experienced in the Project area since water levels in the ditch are not generally visible beyond approximately 50-feet away and only four stationary receptors were identified within 50-feet of the Project corridor. Despite the fact that private property users may experience the ditch in closer proximity than the identified stationary structures, the proposed Project would not alter the forested rural nature of the Project area's visual character. Receptors who may experience a range of flows during summer months would no longer see flows except during storm events where runoff is generated. This would be a variation from the existing pattern of flows but would not constitute a substantial change to the visual character since ditch outages already occur and the current pattern of flows includes periods of no-flow and intermittent flows.
Therefore, changes in flows and associated potential visual effects, such as reduced summertime flows, would be considered a relatively moderate change as compared to the existing pattern of ditch flows, since flows are already intermittent due to operational maintenance periods and visual receptors are limited to a few private property viewers immediately adjacent to the ditch. Water in the ditch could be considered an aesthetic amenity and reduced flows could result in an alteration to perceptions of visual quality. However, under existing operational conditions, flows are not continuous and outage periods have occurred, with the potential to cease operational flows at any given time. For example, due to storm damage to the El Dorado Canal, during 2017 the Main Ditch did not convey releases from Forebay Reservoir until June and releases ceased at the end of September for the annual outage of the El Dorado Canal. Thus, even under existing operations, the ditch flows are variable and interruptible due to District operations. Under the proposed Project, the timing of flows in the ditch would change, but the overall pattern of non-continuous flows that only occur during limited periods of time would continue. As such, the proposed Project would not substantially change or degrade any character of aesthetic amenity. Given the current establishment of the ditch corridor, its retention as a cleared, linear feature, and limited departure from the general pattern of flow conditions, the proposed Project would not substantially degrade the visual character of the Project area.

In general, vegetation is not established within the ditch due to operations and maintenance, intermittent water flows and seasonal changes; these factors, limit the contribution of any vegetation present in the ditch to the visual character of the Project area. Substantial changes to the visual character from non-woody vegetation removal would be limited since non-woody vegetation is limited within the ditch. Removal of the small pockets of non-woody vegetation within the ditch is within the operational authority of the District and as such would not result in a substantial degradation of visual character. Since the non-woody vegetation is not considered a consistent visual feature of the Project site and the views of the ditch are limited for sensitive receptors, the impacts to existing visual character or quality of the site from non-woody vegetation removal would be less than significant.

Woody vegetation removal such as trees would be required to construct and maintain the proposed pipeline and Project. To evaluate impacts to visual character for private property viewers along the proposed Project alignment receptors were classified into distance from the proposed Project corridor categories as shown in Table 3.1-1 above. Trees to be removed were classified by distance to potential receptors shown in Table 3.1-4 below using global information system (GIS) buffer analysis. Figure 3.1-4 graphically illustrates this analysis showing the location of nearby receptors, trees within the ditch corridor, and trees proposed to be removed under the proposed Project.

<table>
<thead>
<tr>
<th>Distance from Potential Receptor</th>
<th>Trees to be Removed</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-50 feet</td>
<td>0</td>
</tr>
<tr>
<td>51-100 feet</td>
<td>142</td>
</tr>
<tr>
<td>101-250 feet</td>
<td>89</td>
</tr>
<tr>
<td>251-500 feet</td>
<td>61</td>
</tr>
<tr>
<td><strong>Total: 292</strong></td>
<td></td>
</tr>
</tbody>
</table>
Together Table 3.1-4 and Figure 3.1-1 illustrate the limited impact to visual character that would occur due to the distance of tree removal from receptors and the densities of trees remaining relative to those removed and the dampening of impact to identified private property viewers. Approximately 335 trees (292 within 500 feet of private property visual receptors) would be removed over the three-mile-long ditch corridor; trees would not be replanted or allowed to re-establish within 10- to 20- feet within the proposed pipeline along the ditch corridor. Although woody vegetation would be precluded from re-establishment within the pipeline alignment, herbaceous vegetation would be allowed to assimilate with the native community. Additionally, the ditch currently creates a utility corridor that is a generally woody-vegetation-free component within the overall forested visual environment of the surrounding Project area. Tree removal resulting from Project construction would slightly expand the footprint of this existing linear utility corridor. However, the long-term visual impact of mature tree removal would be extremely limited and not substantially noticeable. As shown on Figure 3.1-1, this expanded footprint would not substantially alter the visual character for receptors (private property viewers, motorists, or recreational users) along the ditch based on the distance of the receptor from the removal, the density of trees in relation to receptors and tree removal, and the existing tree-less utility corridor in place. The existing wooded forested character of the area would remain intact and changes from the proposed Project would be considered less than significant. Impacts to existing visual character or quality of the site and its surroundings would be less than significant.

In sum, based on the linear nature and temporary and limited duration of construction activities, linear dispersion of tree removal, surrounding forest density, and the existing intermittent flows of the ditch, construction and operation of the proposed Project would not substantially alter the visual character of the surrounding environment. Therefore, the potential for the proposed Project to substantially degrade the existing visual character or quality of the site and its surroundings would be less than significant.

**Level of Significance:** Less than Significant

**Mitigation Required:** None Required

Impact AES-1b Blair Road Alternative Analysis

Similar to the proposed Project (Impact AES-1a), the Blair Road Alternative contains a predominantly cleared linear feature within a generally forested area and would result in similar impacts to the existing visual character of the area. Similar to the proposed Project, construction impacts would result in temporary impacts to visual receptors but would not be permanent nor result in a substantial degradation of the visual character of the area.

Under the Blair Road Alternative, the ditch would continue to receive stormwater but would also no longer receive District water delivery flows; therefore, water flows in the ditch and the associate impact on visual character would be similar to the proposed Project.

Vegetation removal within the ditch would not be required under the Blair Road Alternative for the alignment where it is not located within the ditch. Any locations along the cross-country portions of the Blair Road Alternative between the existing ditch alignment and Blair Road where vegetation removal was required would be restored to original contours. Tree removal would occur along Blair Road, within the cross-country portions of this alignment, and within the ditch where the Blair Road Alternative would be located within the ditch. The Blair Road Alternative would require the removal of approximately 145 trees compared to the 335 trees required for removal for the proposed Project. As
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with the proposed Project, removal of trees would be distributed throughout the alignment and no one receptor would experience a substantial change to the visual character of the Project area.

The cross-country portion of the Blair Road Alternative introduces additional sensitive receptors along the alignment (See Figure 3.1-2 above). However, these additional sensitive receptors would be unlikely to see the alignment due to their location and the surrounded forested landscape and therefore the linear feature created through this alternative would not be a significant impact. Unlike the proposed Project which would require construction activities intermittently over the duration of two years, the Blair Road Alternative is planned to be constructed in one continuous construction period over approximately 13 months, reducing total exposure viewers would have to construction equipment and activities. Additionally, like the proposed Project, the Blair Road Alternative construction would occur starting from upstream to downstream, however, the pipeline would be constructed mostly within the Blair Road right-of-way. For the reasons cited for the proposed Project, impacts from construction activities would be less than significant. Since construction and operations would not substantially degrade the visual character, the Blair Road Alternative would have a less than significant impact.

Level of Significance: Less than Significant

Mitigation Required: None Required

Impact AES-1c Combined Alternative Analysis

In general, impacts from the Combined Alternative would be similar to those of the proposed Project (Impact AES-1a) and the Blair Road Alternative (Impact AES-1b) and the same as each respective alternative in the areas where the Combined Alternative overlaps with each of those other alignments. Similar to the Blair Road Alternative, the Combined Alternative would have an overall shorter duration than the proposed Project, approximately 13 months over one continuous construction season, reducing construction activity exposure times, and like the proposed Project and the Blair Road Alternative, this exposure is considered less than significant. Construction and operation impacts for the Combined Alternative differ through the cross-country sections of the Combined Alternative since construction of the pipeline would occur in a relatively undisturbed forested area. Approximately 295 trees would be required for removal along the Combined Alternative (100 trees located within the Upper Main Ditch, approximately 175 in the cross-country sections, and 20 trees located within Blair Road) compared to the 335 trees required for removal for the proposed Project. Similar to the proposed Project and the Blair Road Alternative evaluations, tree removal for the Combined Alternative would not be concentrated in any one particular location and no one sensitive receptor would be impacted by a concentrated number of tree removal. Instead, removal of trees would occur in a dispersed fashion along the Combined Alternative pipeline. Additionally, for the approximately 175 trees required for removal along the cross-country portions, sensitive receptors in these locations are limited to approximately two residences that could have the potential to be sensitive to tree removals near their respective residences. These residences would be unlikely to be subject to significant changes in their existing views because of the limited number of trees that would be removed compared to the remaining trees in the area and their distance from the alignment (See Figure 3.1-3 above). Therefore, the Combined Alternative would have a less than significant impact to the visual character of the Project area.

Level of Significance: Less than Significant

Mitigation Required: None Required
Impact AES-1d No Project Alternative Analysis

The Upper Main Ditch, under the No Action Alternative, would remain operating under existing conditions. The views in the Project area would not be altered, and there would be no impact to the existing aesthetics of the Project area. Therefore, because the Project area would remain unchanged this alternative would result in fewer aesthetic impacts than the proposed Project.

**Level of Significance:** No Impact

**Mitigation Required:** None Required

### 3.1.5 Aesthetics Mitigation

No mitigation measures are required.
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3.1.6 Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>amsl</td>
<td>above mean sea level</td>
</tr>
<tr>
<td>CEQA</td>
<td>California Environmental Quality Act</td>
</tr>
<tr>
<td>County</td>
<td>El Dorado County</td>
</tr>
<tr>
<td>District</td>
<td>El Dorado Irrigation District</td>
</tr>
<tr>
<td>EIR</td>
<td>Environmental Impact Report</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographic Information System</td>
</tr>
<tr>
<td>MM</td>
<td>Mitigation Measure</td>
</tr>
<tr>
<td>NOP/IS</td>
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<td>NRCS</td>
<td>Natural Resources Conservation Service</td>
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<td>WTP</td>
<td>Water Treatment Plant</td>
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3.1.7 References


AECOM. 2013. California Red-Legged Frog Site Assessment for Main Ditch Project, El Dorado County by AECOM, Sacramento, California.

AECOM. 2015b. Results of Special-Status Plant Surveys for the Upper Main Ditch Piping Project, El Dorado County, California. Prepared for El Dorado Irrigation District by AECOM, Sacramento, California.


El Dorado Irrigation District Upper Main Ditch Piping Project
Draft Environmental Impact Report
Chapter 3.2 Agricultural Resources

June 2018
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3.2 AGRICULTURAL RESOURCES

3.2.1 Basis for Analysis

The California Environmental Quality Act (CEQA) Guidelines’ Appendix G Environmental Checklist was assessed during the Notice of Preparation/Initial Study (NOP/IS) scoping process (included in Appendix A) to identify the Project components that have the potential to cause a significant impact. The following potential impact was determined to warrant further evaluation within this Environmental Impact Report (EIR):

- Result in the loss of forest land or conversion of forest land to non-forest use.

The following potential impacts were determined to have a less than significant or no impact during the NOP/IS scoping process (included in Appendix A) and are not discussed further in this section:

- 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;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract;
- 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));
- 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.

The remainder of this section describes the regulatory and environmental baseline setting to support the evaluation of the potential impacts and describes the potential impacts to agricultural and forest land resources that may result from implementation of the Project, and identifies mitigation for potentially significant impacts, where feasible.

3.2.2 Regulatory Framework

This section discusses the federal, state regulations and local policies and objectives that related to agricultural resources and are relevant to the Project.

3.2.2.1 State

Z'Berg-Nejedly Forest Practice Act of 1973

The Forest Practice Act was enacted in 1973 to ensure that logging is done in a manner that will preserve and protect California’s fish, wildlife, forests and streams. The California Department of Forestry and Fire Protection (CAL FIRE) ensures that private landowners abide by these laws when harvesting trees. Although there are specific exemptions in some cases, compliance with the Forest Practice Act and the State Board of Forestry and Fire Protection rules apply to all commercial harvesting operations for landowners of small parcels, ranchers owning hundreds of acres, and large timber companies with thousands of acres.
The Timber Harvesting Plan (THP) is the environmental review document submitted by landowners to CAL FIRE outlining the timber proposed for harvest, how it would be harvested, and the steps that will be taken to prevent damage to the environment. THPs are prepared by Registered Professional Foresters who are licensed to prepare these comprehensive, detailed plans. Timber harvest activities must be performed by a Licensed Timber Operator. THPs are the functional equivalent of an EIR in that they evaluate the potential impacts of a proposed project regarding logging and timber harvesting. A THP can implement feasible mitigation measures that can reduce potentially significant impacts to a level of less than significant, similar to that of an EIR.

Public Resources Code (PRC) Section 4628 and California Code of Regulations (CCR) Title 14 Section 1104.1(b) exempts public agencies from the requirement to file an application for Timberland Conversion (TLC) or a THP when they construct or maintain rights-of-way on their own property or that of another public agency. This exemption extends to easements over lands owned in fee by private parties. However, if the harvested trees are sold, bartered, or traded for commercial purposes, a timber operation has occurred pursuant to PRC Section 4527, and a notice of exemption is required to be filed by the Timber Owner. This is true if the timber is owned by the public agency, sold or given by the agency to another party, or the timber is owned by a private landowner subject to a public agency easement. If the harvested trees are not sold, bartered, or traded for commercial purposes, a notice of exemption is not required. The timber owner is responsible to pay all yield taxes for timber harvested (RM-73 (14 CCR § 1104.1bc)).

California Public Resources Code

The following California Public Resources Code sections are discussed in the impact analysis Section 3.2.3 below.

California Public Resources Code Section 12220(g): "Forest land" is land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including: timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.

California Public Resources Code Section 4526: "Timberland" means land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including: Christmas trees. Commercial species shall be determined by the board on a district basis.

California Public Resources Code Section 51104(g): "Timberland production zone" or "TPZ" means an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h). With respect to the general plans of cities and counties, "timberland preserve zone" means "timberland production zone".

3.2.2.2 Local

El Dorado County General Plan

The Project is proposed by El Dorado Irrigation District (the District), a special district that supplies water to customers throughout much of the west slope of the County. Pursuant to Government Code sections 53091(D) and (E), many of the District’s activities are not subject to local zoning or land use requirements, as stated below.
Building and zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code.

As a special district with equal authority, the District is exempt from following goals and policies within the County’s General Plan and Zoning Ordinance. However, the District aims to comply to with those goals and policies outlined in the General Plan and uses these goals and policies as a metric for formulating an impact analysis (EDCGP 2015).

**Policy 7.1.1.1:** Conserve and maintain important agricultural soils for existing and potential agricultural and forest uses by limiting non-agricultural/non-forestry development on those soils.

**Objective 7.4.4:** Forest and Oak Woodland Resources: Protect and conserve forest and woodland resources for their wildlife habitat, recreation, water production, domestic livestock grazing, production of a sustainable flow of wood products, and aesthetic values.

**Policy 7.4.4.1:** The Natural Resource land use designation shall be used to protect important forest resources from uses incompatible with timber harvesting.

**Goal 8.3:** Forest Land Conservation: Maintain healthy sustainable forests that provide for raw materials while limiting the intrusion of incompatible uses into important forest lands.

**Policy 8.3.1.1:** Lands suitable for timber production which are designated Natural Resource (NR) on the General Plan land use map and zoned Timber Production Zone (TPZ) or Forest Resource (FR) are to be maintained for the purposes of protecting and encouraging the production of timber and associated activities.

**Objective 8.3.2:** Conservation of Forest Lands: Protect and conserve lands identified as suitable for commercial timber production within the County that are important to the local forest product industry and forest lands that serve other values such as watershed, wildlife habitat, recreation, hydroelectric power generation, grazing, mineral extraction, or other resource-based uses.

**Objective 8.3.3:** Long-Term Forest Resources: Ensure long-term viability of forest resources and timber production.

**Policy 8.3.3.1:** Forest lands are reserved for multiple use purposes directly related to timber production, mineral resource extraction, wildlife, grazing, and recreation.

**Policy 8.3.3.2:** The Natural Resource land use designation shall be applied for the purposes of conserving and protecting important forest lands and maintaining viable forest-based communities. In determining whether particular lands constitute important forest lands, the Board of Supervisors shall consider the advice of the Agricultural Commission.

**Goal 8.4:** Sustainable and Efficient Forest Production: Minimized constraints inhibiting sustainable and efficient forest resource production.
3.2.3 Environmental Setting

3.2.3.1 Regional Setting

The Project site is located on parcels of land owned either by the District or private landowners and may occur within the public right-of-way of roadways. The Project area is largely rural residential.

3.2.3.2 Local Setting

The local agricultural setting can be described as rural forested woodland Sierra foothills containing rural low density residential development.

Elevation of the proposed Project site ranges between 3,770 feet and 3,820 feet above mean sea level (amsl). The lands in the proposed Project vicinity support a minimum of 10-percent native tree cover under natural conditions, meeting the definition of “Forest Land” as defined by the California Public Resources Code section 12220(g).

The forested land on the proposed Project site consists of a mix of conifers and hardwoods. Coniferous species present on the Project site are Ponderosa pine (Pinus ponderosa), Douglas fir (Pseudotsuga menziesii), Jeffrey pine (Pinus jeffreyi), sugar pine (Pinus lambertiana), and incense cedar (Calocedrus decurrens). The hardwood species present include black oaks (Quercus kelloggi), big leaf maple (Acer macrophyllum), and canyon live oak (Quercus chrysolepis). Mountain dogwood (Cornus nuttali) are also present on the site. Clear cuts have occurred within the Project area between some of the staging areas.

No lands within the Project area are designated as NR in the General Plan. Four parcels are designated TPZ.

3.2.3.3 Alternatives Setting

The environmental setting for the Blair Road Alternative and the Combined Alternative are similar to the proposed Project. No additional NR or TPZ designations are located along either alignment.

3.2.4 Environmental Impacts

This section analyzes the Project’s potential to result in significant impacts to agriculture and forestry resources. When the Project’s impact was determined to be significant, feasible mitigation measures were identified to reduce or avoid that impact.

3.2.4.1 Project Impact Analysis

This section discusses potential impacts associated with the Project and identifies mitigation measures for potentially significant impacts where feasible.
The Project would not result in the loss of forest land or conversion of forest land to non-forest use.

Impact AG-1a Proposed Project Analysis

The proposed Project would be considered to have a significant impact if construction or operation of the proposed Project would result in a direct or indirect substantial loss of forest land or a permanent conversion of forest land to a non-forest use.

The proposed Project area meets the definition of "Forest Land" (PRC section 12220(g)) since a majority of the Project area has 10-percent native tree cover under natural conditions and four parcels are zoned TPZ. However, the existing ditch alignment currently transects these 'forest lands' maintaining a non-forested corridor that is used for water conveyance. During construction, tree removal would be required on and immediately adjacent to the ditch. Approximately 335 trees were identified for removal within the Project footprint, linearly dispersed over approximately three miles and removal would occur on approximately 21-parcels from Forebay Reservoir to the Reservoir 1 Water Treatment Plant (WTP). Additionally, tree removal on staging areas would be required. The staging areas that would require tree removal are located on parcels currently zoned as TPZ. Tree removal on TPZ property could be considered significant if it were to permanently convert the TPZ use to non-forest use. The proposed Project would be consistent with current timber harvesting operations of these parcels and would not result in a permanent conversion of the TPZ property. Trees removed from these temporary staging areas on forest lands would be done so in agreement with property owners and any trees removed would be given to the landowner and the parcel would remain consistent with its current production use. Therefore, the proposed Project would not result in the permanent conversion or loss of forest land.

Trees that are located within the footprint of the proposed Project are discussed further in the Project Description (Section 2.6.2.1) (Figure 2.6-2) and are also described in the Aesthetics Section 3.1. As shown on Figures 2.6-2, trees removed would not substantially impact forested uses on any particular property since the removal would be distributed along the entire corridor. The proposed Project would not substantially convert these forest lands to non-forest uses since existing uses on the properties the alignment crosses would remain a utility corridor with a ditch on top, and the removal of select trees along the corridor would not result in conversion of the remainder of the parcels to non-forest use. Consequently, tree removal is not considered detrimental to a single parcel, adjacent parcels, or the Project area for long-term forest resource production value and would not conflict with forest resource production in the Project area.

In addition, because there are no current harvest activities included as part of the proposed Project, the proposed use would not intensify existing conflicts or add new conflicts between adjacent proposed uses and timber production and harvesting activities. The proposed Project may remove some trees along the parcels that are zoned TPZ, including parcels near the staging areas and the Reservoir 1 WTP; however, any trees removed would not be sold but instead would be offered to the property owner for their use, not requiring a THP or THP exemption. The proposed use would not create a clear-cut effect wherein timber production lands are negatively affected because the existing ditch already maintains a corridor that would be only slightly enlarged with the distributed removal of trees. Additionally, the TPZ properties within the proposed Project area would not be permanently converted to alternative uses or out of tree production since the permanent components of the proposed Project are within the existing ditch corridor. Therefore,
the proposed Project would not hinder timber production and harvesting access to water and public roads, or otherwise conflict with the continuation or development of timber production harvesting.

As such, the proposed Project would not result in significant impact due to permanent loss or conversion of forest land.

**Level of Significance:** Less than Significant

**Mitigation Required:** None Required

**Impact AG-1b Blair Road Alternative Analysis**

Similar to the proposed Project (Impact AG-1a), the existing conditions for the Blair Road Alternative include the non-forested corridors along the ditch and Blair Road that were described above for the proposed Project (Impact AG-1a) within the surrounding predominantly forested lands. However, the cross-country portion of the Blair Road Alternative requires crossing undeveloped land where these existing right-of-way corridors do not exist. As such, a larger number of trees in forested areas meeting the PRC definition of forest land would require removal; but, the total number of trees removed for this alternative would be less than for the proposed Project since tree removal along the ditch corridor would not be required.

The alignment along Blair Road is not designated as NR or zoned TPZ. As mentioned with the proposed Project, most of the staging areas are located on properties zoned TPZ that are currently operated for timber production. As described for the proposed Project, these staging areas that would require tree removal would be located on TPZ properties and have existing timber operations therefore, impacts would be temporary, in agreement with the property owners and would be consistent with existing operations. The necessary agreement of placing a staging area on the property and the temporary nature of Project staging would not result in the permanent conversion or loss of forest land.

The Blair Road Alternative is largely directly in the roadway and thus requires minimal tree removal for construction along the existing road corridor. A total of approximately 20 trees would require removal directly within the Blair Road portions of this alternative, 100 trees would be removed within the cross-country portions, and 25 trees would be removed within the ditch portion of this alternative for a total of approximately 145 trees. The majority of tree removal for the Blair Road Alternative would occur within the cross-country portions of this alignment.

The removal of approximately 145 trees for the Blair Road Alternative would not result in significant permanent loss or conversion of forest land, since, like the proposed Project the majority of this alignment is along an existing right-of-way corridor where trees do not grow and because it would be consistent with current operations of the TPZ properties. Therefore, the impact of this alternative would be less than significant.

**Level of Significance:** Less than Significant

**Mitigation Required:** None Required
Impact AG-1c Combined Alternative Analysis

Similar to those the impacts described for the proposed Project and Blair Road Alternatives above, the Combined Alternative would require tree removal along the alignment and on the same staging areas. However, the number of trees removed under this alternative would be less than that of the proposed Project but more than the Blair Road Alternative. It is estimated that the total number of tree removals for this alternative would be approximately 295 (100 trees located within the Upper Main Ditch, approximately 175 in the cross-country section, and approximately 20 trees located with the Blair Road portion) compared to the 335 trees removed for the proposed Project. The overall impact would still be similar in nature to the proposed Project in that both require tree removal. While the Combined Alternative would result in the disturbance of undisturbed and contiguous forest land along the cross-country portions, it would not result in the loss of forest land or conversion of forest land to non-forest use since the cross-country portions of land are not designated as TPZ and current land uses would not change. As described for the proposed Project and the Blair Road Alternative, the four parcels zoned as TPZ within the Project area including the staging areas would require tree removal and any trees removed within these parcels would not result in the loss of forest land or conversion of forest land. Therefore, the impact of this alternative would be less than significant.

Level of Significance: Less than Significant

Mitigation Required: None Required

Impact AG-1d No Project Alternative Analysis

The No Project Alternative would likely eventually require the direct removal of some trees for maintenance purposes to protect against falling hazards within the ditch corridor. However, such removal would most likely involve individual trees, be infrequent, and the location and timing of such removal is unknown but estimated over a longer period of time. As noted in the Project Description (Chapter 2.0), the trees proposed for removal are growing within the ditch, on the banks of the ditch, and along the bench of the existing ditch. Because of this, it is anticipated that some of these trees would still likely need to be removed; although the number would be less than that required under the proposed Project. Therefore, the impacts to forest land from the No Project Alternative would be less than the proposed Project but would also be less than significant.

Level of Significance: Less than Significant

Mitigation Required: None Required

3.2.5 Agricultural Mitigation

No mitigation measures are required.
3.2.6 Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAL FIRE</td>
<td>California Department of Forestry and Fire Protection</td>
</tr>
<tr>
<td>CEQA</td>
<td>California Environmental Quality Act</td>
</tr>
<tr>
<td>County</td>
<td>El Dorado County</td>
</tr>
<tr>
<td>CCR</td>
<td>California Code of Regulations</td>
</tr>
<tr>
<td>District</td>
<td>El Dorado Irrigation District</td>
</tr>
<tr>
<td>EIR</td>
<td>Environmental Impact Report</td>
</tr>
<tr>
<td>Farmland</td>
<td>Farmland of Statewide Importance</td>
</tr>
<tr>
<td>FR</td>
<td>Forest Resource</td>
</tr>
<tr>
<td>NOP/IS</td>
<td>Notice of Preparation/Initial Study</td>
</tr>
<tr>
<td>NR</td>
<td>Natural Resource</td>
</tr>
<tr>
<td>PRC</td>
<td>Public Resources Code</td>
</tr>
<tr>
<td>THP</td>
<td>Timber Harvesting Plan</td>
</tr>
<tr>
<td>TLC</td>
<td>Timberland Conversion</td>
</tr>
<tr>
<td>TPZ</td>
<td>Timber Production Zone</td>
</tr>
<tr>
<td>WTP</td>
<td>Water Treatment Plant</td>
</tr>
</tbody>
</table>

3.2.7 References


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3.3 AIR QUALITY

3.3.1 Basis for Analysis

The California Environmental Quality Act (CEQA) Guidelines’ Appendix G Environmental Checklist was assessed during the Notice of Preparation/Initial Study (NOP/IS) scoping process (included in Appendix A) to identify the Project components that have the potential to cause a significant impact. The following potential impacts were determined to warrant further evaluation within this Environmental Impact Report (EIR):

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

The following potential impact was determined to have a less than significant or no impact during the NOP/IS scoping process (included in Appendix A) and is not discussed further in this section:

- Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or California ambient air quality standard (including releasing emissions which exceed quantitative thresholds for zone precursors);

The remainder of this section describes the regulatory and environmental baseline setting to support the evaluation of the potential impacts and describes the potential impacts to air quality that would result from implementation of the Project including mitigation for significant impacts, where feasible.

3.3.2 Regulatory Framework

The Project area is within the Mountain Counties Air Basin and is under the jurisdiction of the Environmental Protection Agency (USEPA), the California Air Resources Board (CARB), and the El Dorado Air Quality Management District (AQMD). The following federal, state, and local regulations were considered during the analysis of Project-related potential impacts to air quality.

3.3.2.1 Federal and State

The USEPA is responsible for national and interstate air pollution issues and policies. The USEPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, provides research and guidance for air pollution programs, and sets National Ambient Air Quality Standards (also known as federal standards). There are federal standards for the following criteria air pollutants, which were identified from provisions of the Clean Air Act of 1970:
• Ozone;
• Particulate matter (PM\textsubscript{10} and PM\textsubscript{2.5});
• Nitrogen dioxide;
• Carbon monoxide (CO); and
• Lead Sulfur dioxide.

The Federal standards were set to protect public health, including that of sensitive individuals; thus, the standards continue to change as more medical research is available regarding the health effects of the criteria pollutants. Primary federal standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health (CARB 2013).

A State Implementation Plan is a document prepared by each state describing existing air quality conditions and measures that would be followed to attain and maintain federal standards. The State Implementation Plan for the State of California is administered by the CARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. California's State Implementation Plan incorporates individual federal attainment plans for regional air districts—air districts prepare their federal attainment plans, which are sent to CARB to be approved and incorporated into the California State Implementation Plan. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms.

The CARB also administers California Ambient Air Quality Standards (state standards) for the 10 air pollutants designated in the California Clean Air Act (CAA). The 10 state air pollutants are the six federal standards listed above as well as visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride.

The federal and state ambient air quality standards, relevant effects, properties, and sources of the pollutants are summarized in Table 3.3-1. Several pollutants listed in Table 3.3-1 are not addressed in this analysis. Analysis of lead is not included in this report because the proposed Project is not anticipated to emit lead. Visibility-reducing particles are not explicitly addressed in this analysis because particulate matter is addressed. The Project is not expected to generate or expose sensitive receptors to vinyl chloride because the proposed Project would not use the chemical processes that create this pollutant, and there are no such uses in the Project vicinity. Hydrogen sulfide generated during the petroleum refining process is not part of the Project and is not discussed further. Hydrogen sulfide as it relates to diesel emissions is discussed in the diesel particular matter (DPM) discussion in the impact analysis below.
Table 3.3-1  California and Federal Ambient Air Standards and Description of Air Pollutants

<table>
<thead>
<tr>
<th>Air Pollutant</th>
<th>Averaging Time</th>
<th>California Standard</th>
<th>Federal Standard</th>
<th>Most Relevant Effects from Pollutant Exposure</th>
<th>Properties</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone</td>
<td>1 Hour</td>
<td>0.09 ppm</td>
<td>—</td>
<td>Irritate respiratory system; reduce lung function; breathing pattern changes; reduction of breathing capacity; inflame and damage cells that line the lungs; make lungs more susceptible to infection; aggravate asthma; aggravate other chronic lung diseases; cause permanent lung damage; some immunological changes; increased mortality risk; vegetation and property damage.</td>
<td>Ozone is a photochemical pollutant as it is not emitted directly into the atmosphere but is formed by a complex series of chemical reactions between volatile organic compounds (VOC), NOx, and sunlight. Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind.</td>
<td>Ozone is a secondary pollutant; thus, it is not emitted directly into the lower level of the atmosphere. The primary sources of ozone precursors (VOC and NOx) are mobile sources (on-road and off-road vehicle exhaust).</td>
</tr>
<tr>
<td></td>
<td>8 Hour</td>
<td>0.070 ppm</td>
<td>0.075 ppm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon monoxide (CO)</td>
<td>1 Hour</td>
<td>20 ppm</td>
<td>35 ppm</td>
<td>Ranges depending on exposure: slight headaches; nausea; aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; decreased exercise tolerance in persons with peripheral vascular disease and lung disease; impairment of central nervous system functions; possible increased risk to fetuses; death.</td>
<td>CO is a colorless, odorless, toxic gas. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, replaces oxygen as an attachment to hemoglobin, and reduces available oxygen in the blood.</td>
<td>CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources.</td>
</tr>
<tr>
<td></td>
<td>8 Hour</td>
<td>9.0 ppm</td>
<td>9 ppm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nitrogen dioxide (NO₂)</td>
<td>1 Hour</td>
<td>0.18 ppm</td>
<td>0.100 ppm</td>
<td>Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; contributions to atmospheric discoloration; increased visits to hospital for respiratory illnesses.</td>
<td>During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides—NOx (NO, NO₂, NO₃, N₂O, N₂O₃, N₂O₄, and N₂O₅). NOx is a precursor to ozone, PM10, and PM2.5 formation. NOx can react with compounds to form nitric acid and related small particles and result in PM related health effects.</td>
<td>NOx is produced in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. Nitrogen dioxide forms quickly from NOx emissions. NO2 concentrations near major roads can be 30 to 100 percent higher than those at monitoring stations.</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>0.030 ppm</td>
<td>0.053 ppm</td>
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### 3.3.4 Sulfur Dioxide (SO₂)

<table>
<thead>
<tr>
<th></th>
<th>1 Hour</th>
<th>0.25 ppm</th>
<th>0.075 ppm</th>
</tr>
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<tbody>
<tr>
<td>3 Hour</td>
<td>—</td>
<td>0.5 ppm</td>
<td></td>
</tr>
<tr>
<td>24 Hour</td>
<td>0.04 ppm</td>
<td>0.14 ppm</td>
<td>(for certain areas)</td>
</tr>
<tr>
<td>Annual</td>
<td>—</td>
<td>0.030 ppm</td>
<td>(for certain areas)</td>
</tr>
</tbody>
</table>

Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.

Sulfur dioxide is a colorless, pungent gas. At levels greater than 0.5 ppm, the gas has a strong odor, similar to rotten eggs. Sulfur oxides (SOₓ) include sulfur dioxide and sulfur trioxide. Sulfuric acid is formed from sulfur dioxide, which can lead to acid deposition and can harm natural resources and materials. Although sulfur dioxide concentrations have been reduced to levels well below state and federal standards, further reductions are desirable because sulfur dioxide is a precursor to sulfate and PM10.

### Particulate Matter (PM₁₀)

<table>
<thead>
<tr>
<th></th>
<th>24 hour</th>
<th>50 µg/m³</th>
<th>150 µg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>20 µg/m³</td>
<td>—</td>
<td></td>
</tr>
</tbody>
</table>

• Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravate existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias.

Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM10 refers to particulate matter that is between 2.5 and 10 microns in diameter, (1 micron is one-millionth of a meter). PM2.5 refers to particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair.

### Particulate Matter (PM₂.₅)

<table>
<thead>
<tr>
<th></th>
<th>24 Hour</th>
<th>35 µg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual</td>
<td>12 µg/m³</td>
<td>12.0 µg/m³</td>
</tr>
</tbody>
</table>

Viscosity-reducing particles 8 Hour See note below

- Long-term exposure: reduced lung function; chronic bronchitis; changes in lung morphology; death.

Sulfates are particulates formed through the photochemical oxidation of sulfur dioxide. In California, the main source of sulfur compounds is combustion of gasoline and diesel fuel.

### Sulfates

<table>
<thead>
<tr>
<th></th>
<th>24 Hour</th>
<th>25 µg/m³</th>
<th>—</th>
</tr>
</thead>
</table>

(a) Decrease in ventilatory function;
(b) aggravation of asthmatic symptoms;
(c) aggravation of cardio-pulmonary disease;
(d) vegetation damage;
(e) degradation of visibility;
(f) property damage.

The sulfate ion is a polyatomic anion with the empirical formula SO₄²⁻. Sulfates occur in combination with metal and/or hydrogen ions. Many sulfates are soluble in water.
<table>
<thead>
<tr>
<th>Substance</th>
<th>Time Period</th>
<th>Concentration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>30-day</td>
<td>1.5 µg/m³</td>
<td>Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction, behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQs.</td>
</tr>
<tr>
<td></td>
<td>Quarter</td>
<td>—</td>
<td>Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. Leaded gasoline was used in motor vehicles until around 1970. Lead concentrations have not exceeded state or federal standards at any monitoring station since 1982.</td>
</tr>
<tr>
<td></td>
<td>Rolling 3-month average</td>
<td>—</td>
<td>Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering.</td>
</tr>
<tr>
<td>Vinyl chloride</td>
<td>24 Hour</td>
<td>0.01 ppm</td>
<td>Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. In 1990, CARB identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor. Most vinyl chloride is used to make polyvinyl chloride plastic and vinyl products, including pipes, wire and cable coatings, and packaging materials. It can be formed when plastics containing these substances are left to decompose in solid waste landfills. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites.</td>
</tr>
<tr>
<td>Hydrogen sulfide</td>
<td>1 Hour</td>
<td>0.03 ppm</td>
<td>High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hydrogen sulfide (H₂S) is a flammable, colorless, poisonous gas that smells like rotten eggs. Manure, storage tanks, ponds, anaerobic lagoons, and land application sites are the primary sources of hydrogen sulfide. Anthropogenic sources include the combustion of sulfur containing fuels (oil and coal).</td>
</tr>
</tbody>
</table>
**Volatile organic compounds (VOC)**

There are no State or federal standards for VOCs because they are not classified as criteria pollutants.

Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, the kidneys, and the central nervous system. Many VOCs have been classified as toxic air contaminants.

Reactive organic gases (ROGs), or VOCs, are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROGs and VOCs, the two terms are often used interchangeably.

Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM10 and lower visibility.

**Benzene**

There are no ambient air quality standards for benzene.

Short-term (acute) exposure of high doses from inhalation of benzene may cause dizziness, drowsiness, headaches, eye irritation, skin irritation, and respiratory tract irritation, and at higher levels, loss of consciousness can occur. Long-term (chronic) occupational exposure of high doses has caused blood disorders, leukemia, and lymphatic cancer.

Benzene is a VOC. It is a clear or colorless light-yellow, volatile, highly flammable liquid with a gasoline-like odor. The USEPA has classified benzene as a “Group A” carcinogen.

Benzene is emitted into the air from fuel evaporation, motor vehicle exhaust, tobacco smoke, and from burning oil and coal. Benzene is used as a solvent for paints, inks, oils, waxes, plastic, and rubber. Benzene occurs naturally in gasoline at 1 to 2 percent by volume. The primary route of human exposure is through inhalation.

**Diesel particulate matter (DPM)**

There are no ambient air quality standards for DPM.

Some short-term (acute) effects of DPM exposure include eye, nose, throat, and lung irritation, coughs, headaches, light-headedness, and nausea. Studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Human studies on the carcinogenicity of DPM demonstrate an increased risk of lung cancer, although the increased risk cannot be clearly attributed to diesel exhaust exposure.

DPM is a source of PM2.5—diesel particles are typically 2.5 microns and smaller. Diesel exhaust is a complex mixture of thousands of particles and gases that is produced when an engine burns diesel fuel. Organic compounds account for 80 percent of the total particulate matter mass, which consists of compounds such as hydrocarbons and their derivatives, and polycyclic aromatic hydrocarbons and their derivatives. Fifteen polycyclic aromatic hydrocarbons are confirmed carcinogens, a number of which are found in diesel exhaust.

Diesel exhaust is a major source of ambient particulate matter pollution in urban environments. Typically, the main source of DPM is from combustion of diesel fuel in diesel-powered engines. Such engines are in on-road vehicles such as diesel trucks, off-road construction vehicles, diesel electrical generators, and various pieces of stationary construction equipment.
Notes:

ppm = parts per million (concentration) \( \mu g/m^3 \) = micrograms per cubic meter  
Annual = Annual Arithmetic Mean  
30-day = 30-day average  
Quarter = Calendar quarter

a Federal standard refers to the primary national ambient air quality standard, or the levels of air quality necessary, with an adequate margin of safety to protect the public health. All standards listed are primary standards except for 3 Hour \( SO_2 \), which is a secondary standard. A secondary standard is the level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

b To attain the 1-hour nitrogen dioxide national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (0.100 ppm).

c On June 2, 2010, a new 1-hour \( SO_2 \) standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 \( SO_2 \) national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

d Visibility reducing particles: In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are “extinction of 0.23 per kilometer” and “extinction of 0.07 per kilometer” for the statewide and Lake Tahoe Air Basin standards, respectively.

e The CARB has identified lead and vinyl chloride as ‘toxic air contaminants’ with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Asbestos

Asbestos is a fibrous mineral that both naturally occurs in ultramafic rock (a rock type commonly found in California) and is used as a processed component of building materials. Because asbestos has been proven to cause a number of disabling and fatal diseases, such as asbestosis and lung cancer, it is strictly regulated either based on its natural widespread occurrence or in its use as a building material. In the initial Asbestos National Emission Standards for Hazardous Air Pollutants rule promulgated in 1973, a distinction was made between building materials that would readily release asbestos fibers when damaged or disturbed (friable) and those materials that were unlikely to result in significant fiber release (non-friable). The USEPA has since determined that, when severely damaged, otherwise non-friable materials can release significant amounts of asbestos fibers. Asbestos has been banned from many building materials under the Toxic Substances Control Act, the CAA, and the Consumer Product Safety Act. Naturally occurring asbestos (NOA) is known to occur in many parts of California and is commonly associated with ultramafic or serpentine rock. There are no known likely areas of naturally occurring asbestos in the Project area (El Dorado County 2015).

Toxic Air Contaminants

A toxic air contaminant (TAC) is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. The California Almanac of Emissions and Air Quality (CARB 2013) presents the relevant concentration and cancer risk data for the ten TACs that pose the most substantial health risk in California based on available data. These TACs are as follows: acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and DPM.

Some studies indicate that DPM poses the greatest health risk among the TACs listed above. A 10-year research program (CARB 1998) demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. In addition to increasing the risk of lung cancer, exposure to diesel exhaust can have other health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. Diesel exhaust is a major source of fine particulate pollution as well, and studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems.

DPM differs from other TACs in that it is not a single substance but a complex mixture of hundreds of substances. Although DPM is emitted by diesel-fueled, internal combustion engines, the composition of the emissions varies, depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TACs, however, no ambient monitoring data are available for DPM because no routine measurement method currently exists. The CARB has made preliminary concentration estimates based on a DPM exposure method. This method uses the CARB emissions inventory’s PM$_{10}$ database, ambient PM$_{10}$ monitoring data, and the results from several studies to estimate concentrations of DPM.

The El Dorado AQMD has established screening levels as conservative indicators that a project would not result in significant emissions of TACs. The screening level relevant to the proposed Project includes: Construction emission of Reactive Organic Gases (ROG) and nitrogen oxides (NO$_x$) that meet the screening criteria.
California Public Resources Code

Public Resources Code Section 21151.4. (a) An environmental impact report shall not be certified or a negative declaration shall not be approved for any project involving the construction or alteration of a facility within one-fourth of a mile of a school that might reasonably be anticipated to emit hazardous air emissions, or that would handle an extremely hazardous substance or a mixture containing extremely hazardous substances in a quantity equal to or greater than the state threshold quantity specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code, that may pose a health or safety hazard to persons who would attend or would be employed at the school, unless both of the following occur:

1. The lead agency preparing the environmental impact report or negative declaration has consulted with the school district having jurisdiction regarding the potential impact of the Project on the school.

2. The school district has been given written notification of the Project not less than 30 days prior to the proposed certification of the environmental impact report or approval of the negative declaration.

(b) As used in this section, the following definitions apply:

1. “Extremely hazardous substance” means an extremely hazardous substance as defined pursuant to paragraph (2) of subdivision (g) of Section 25532 of the Health and Safety Code.

2. “Hazardous air emissions” means emissions into the ambient air of air contaminants that have been identified as a toxic air contaminant by the State Air Resources Board or by the air pollution control officer for the jurisdiction in which the Project is located. As determined by the air pollution control officer, hazardous air emissions also means emissions into the ambient air of a substance identified in subdivisions (a) to (f), inclusive, of Section 44321 of the Health and Safety Code.

[Amended by Stats. 2008, Ch. 148, Sec. 1. Effective January 1, 2009]

3.3.2.2 Local

El Dorado Air Quality Management District (AQMD)

The El Dorado AQMD has adopted Rules to improve air quality in the district. Below is a summary of these rules as they apply to the proposed Project:

Rule 202 - Visible Emissions: A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three (3) minutes in any one (1) hour which is:

A. As dark or darker in shade as that designated as No. 1 on the Ringlemann chart, as published by the United States Bureau of Mines, or

B. Of such opacity as to obscure an observer’s view to a degree equal to or greater than does smoke described in subsection (A) of this section.
Rule 207 - Particulate Matter: A person shall not release or discharge into the atmosphere from any source or single processing unit, exclusive of sources emitting combustion contaminants only, particulate matter emissions in excess of 0.1 grains per cubic foot of dry exhaust gas at standard conditions.

Rule 223 - Fugitive Dust - General Requirements

223.1 General:

A. Purpose: The purpose of this Rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.

B. Applicability: The provisions of this rule are applicable to specified outdoor fugitive dust sources. The definitions, exemptions, requirements, administrative requirements, recordkeeping requirements, and test methods set forth in this rule are applicable to Rules 223, 223-1 and 223-2 of the Rules and Regulations of the El Dorado County Air Quality Management District.

223.4 Requirements:

A. Visible Emissions Not Allowed Beyond Boundary Line: A person shall not cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area, such that the presence of such fugitive dust remains visible, or exceed shade darker as that designated as No. 0 on the Ringelmann Chart, or exceed zero percent opacity as determined in accordance with USEPA Method 9, in the atmosphere beyond the boundary line of the emission source.

B. Concentration Limit: A person shall not cause or allow PM$_{10}$ levels to exceed 50 micrograms per cubic meter, 24-hour average, when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other USEPA approved equivalent methods for PM$_{10}$ monitoring. Sampling, if deemed necessary and required by the Air Pollution Control Officer, shall be conducted in accordance with the procedures specified in Section 223.5.A.

Rule 223-1 Fugitive Dust - Construction,Bulk Material Handling, Blasting, Other Earthmoving Activities and Carryout and Trackout Prevention

223-1.1 General:

A. Purpose: The purpose of this rule is to limit fugitive dust emissions from construction, and construction related activities.

B. Applicability: This rule applies to any construction or construction related activities, including, but not limited to, land clearing, grubbing, scraping, travel on site, and travel on access roads. This rule also applies to all sites that are subject to this rule where carryout or trackout has occurred or may occur on paved public roads or the paved shoulders of a paved public road. This rule also applies to the construction of new landfill disposal sites or modification to existing landfill disposal sites prior to commencement of landfiling activities.

C. Discovery of Naturally Occurring Asbestos: If owner/operator discovers any naturally occurring asbestos, serpentine, or ultramafic rock after the Project has commenced, then:
1. If naturally-occurring asbestos, serpentine, or ultramafic rock is discovered by the owner/operator, a Professional Geologist, or the Air Pollution Control Officer in the area to be disturbed after the start of any construction or construction related activity, the owner/operator must report the discovery to the El Dorado County AQMD no later than the next business day; and

2. The Project must comply with applicable provisions of Rule 223-2 and the State of California Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations (CCR Title 17, Section 93105).

RULE 223-2 Fugitive Dust - Asbestos Hazard Mitigation

5-2.1 General:

A. Purpose: The purpose of this Rule is to reduce the amount of asbestos particulate matter entrained in the ambient air as a result of any construction or construction related activities that disturbs or potentially disturbs naturally occurring asbestos by requiring actions to prevent, reduce or mitigate asbestos emissions.

B. Applicability: Unless one of the exemptions specified in Section 223-2.2 Exemptions applies, this Rule shall apply to any construction or construction related activity that:

1. Is in excess of 20 cubic yards of graded material per project, or if required by the Air Pollution Control Officer and

2. Meets either of the following criteria:
   - Any portion of the area to be disturbed:
     o is located in a geographic ultramafic rock unit, or
     o has naturally-occurring asbestos, serpentine or ultramafic rock as determined by owner/operator, Professional Geologist or the Air Pollution Control Officer, or
     o is located within designated Naturally Occurring Asbestos Review Areas on the current El Dorado County Naturally Occurring Asbestos Review Area Map.
   - Naturally-occurring asbestos, serpentine, or ultramafic rock is discovered by the owner/operator, a Professional Geologist, or the Air Pollution Control Officer in the area to be disturbed after the start of any construction or construction related activity.

1-9.1 General Requirements:

1. Visible emissions shall not exceed the shade designated as No. 0 on the Ringelmann Chart, or 0% opacity as determined in accordance with USEPA Method 9, at 25 feet from the point-of-origin and at the property line. Visible emissions shall not exceed the shade designated as No. 1 on the Ringelmann Chart, or 20% opacity as determined in accordance with USEPA Method at the point of-origin.

2. Vehicle Speed Limitations and Posting of Speed Limit Signs
a. An owner/operator shall limit the speed of vehicles traveling within construction sites to a maximum of 15 miles per hour.

b. An owner/operator shall post speed limit signs limiting vehicle speed to maximum of 15 miles per hour that meet State and Federal Department of Transportation standards at each construction site’s uncontrolled unpaved access/haul road entrance.

3. When sustained wind speeds result in visible dust emissions in excess of the standards in Section 223-2.4 A., despite the application of dust mitigation measures, grading and earthmoving operations except for dust mitigation activities shall be suspended.

4. Warning Signs shall be posted at the main entrance(s) to the Project for the duration of soil disturbance activities. Signs shall be posted in letter of sufficient size as to be readily visible and legible. The following wording is recommended: “Warning. Solis in the area may contain naturally occurring asbestos. Asbestos is a known carcinogen. Report excessive fugitive dust to the contractor at (contractor phone number). NOA Hotline: 888-FYI4NOA or EDCAQMD: 530-621-6662”

1. The following operations and activities are expressly prohibited:
   - Rock crushing of asbestos-containing material;
   - Use of blower devices for any removal of asbestos-containing material.

The El Dorado AQMD has established significance thresholds to help determine the significance of a project. The AQMD has determined that mass emissions in excess of the ROG and NOx levels shown in Table 3.3-2, below, from any project, could affect the AQMD’s commitment to attain the federal one-hour ozone standard in the Sacramento Region, and thus could have a significant adverse impact on air quality in the Sacramento Region.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Pounds Per Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactive Organic Gases (ROG)</td>
<td>82</td>
</tr>
<tr>
<td>Oxides of Nitrogen (NOx)</td>
<td>82</td>
</tr>
</tbody>
</table>

El Dorado County General Plan

The Project is proposed by El Dorado Irrigation District (the District), a special district that supplies water to customers throughout much of El Dorado County (County). Pursuant to Government Code sections 53091(D) and (E), many of the District’s activities are not subject to local zoning or land use requirements, as stated below.

“Building and zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12809.5 of the Public Utilities Code.”

3.3.12
As a special district with equal authority, the District is exempt from following goals and policies within the County’s General Plan and Zoning Ordinance. However, the District aims to comply with those goals and policies outlined in the General Plan and to use these goals and policies as a metric for formulating an impact analysis (EDCGP 2015).

Objective 6.7.7: Construction Related, Short-Term Emissions: Reduce construction related, short-term emissions by adopting regulations which minimize their adverse effects.

Policy 6.7.7.1: The County shall consider air quality when planning the land uses and transportation systems to accommodate expected growth, and shall use the recommendations in the most recent version of the El Dorado County AQMD Guide to Air Quality Assessment: Determining Significance of Air Quality Impacts Under the California Environmental Quality Act, to analyze potential air quality impacts (e.g., short-term construction, long-term operations, toxic and odor-related emissions) and to require feasible mitigation requirements for such impacts. The County shall also consider any new information or technology that becomes available prior to periodic updates of the Guide. The County shall encourage actions (e.g., use of light-colored roofs and retention of trees) to help mitigate heat island effects on air quality.

3.3.3 Environmental Setting

3.3.3.1 Regional Air Quality

The proposed Project is located in El Dorado County within the Mountain Counties Air Basin. The County varies considerably with elevation, with predominately low elevations in the western valley and high elevations in the eastern mountains. The varied topography in the region leads to localized air quality conditions. Regional airflows are affected by the mountains and hills, which direct surface air flows, cause shallow vertical mixing, and create areas of high pollutant concentrations by hindering dispersion.

According to the CARB, the Mountain Counties Air Basin violates State ozone and PM$_{10}$ (particulate matter) standards; this can be attributed to the transport of pollutants from the Sacramento Valley, San Joaquin, and San Francisco Bay area air basins. Prevailing Eastward flowing surface winds can transport air pollution from these air basins up into the mountain valleys during the daytime, and back down at night (El Dorado County APCD 2002).

The CARB emissions inventory for the Mountain Counties Air Basin is listed in Table 3.3-3 below. All emissions are represented in tons per day and reflect the most current data provided to the CARB.
Table 3.3-3  2012 Mountain Counties Air Basin Emissions Inventory

<table>
<thead>
<tr>
<th>STATIONARY SOURCES</th>
<th>TOG</th>
<th>ROG</th>
<th>CO</th>
<th>NOx</th>
<th>SOx</th>
<th>PM</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>FUEL COMBUSTION</td>
<td>1.0</td>
<td>0.6</td>
<td>19.4</td>
<td>5.3</td>
<td>0.8</td>
<td>0.7</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>WASTE DISPOSAL</td>
<td>5.2</td>
<td>0.1</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>CLEANING AND SURFACE COATINGS</td>
<td>2.5</td>
<td>2.0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>PETROLEUM PRODUCTION AND MARKETING</td>
<td>13.8</td>
<td>1.1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>INDUSTRIAL PROCESSES</td>
<td>1.5</td>
<td>1.3</td>
<td>0.2</td>
<td>0.3</td>
<td>0.3</td>
<td>10.7</td>
<td>5.8</td>
<td>2.4</td>
</tr>
<tr>
<td>* TOTAL STATIONARY SOURCES</td>
<td>24.0</td>
<td>5.1</td>
<td>19.6</td>
<td>5.5</td>
<td>1.1</td>
<td>11.4</td>
<td>6.4</td>
<td>3.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AREA WIDE SOURCES</th>
<th>TOG</th>
<th>ROG</th>
<th>CO</th>
<th>NOx</th>
<th>SOx</th>
<th>PM</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLVENT EVAPORATION</td>
<td>8.1</td>
<td>7.5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>MISCELLANEOUS PROCESSES</td>
<td>58.8</td>
<td>18.6</td>
<td>193.0</td>
<td>1.6</td>
<td>0.9</td>
<td>82.1</td>
<td>53.6</td>
<td>20.3</td>
</tr>
<tr>
<td>* TOTAL AREA WIDE SOURCES</td>
<td>66.9</td>
<td>26.1</td>
<td>193.0</td>
<td>1.6</td>
<td>0.9</td>
<td>82.1</td>
<td>53.6</td>
<td>20.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MOBILE SOURCES</th>
<th>TOG</th>
<th>ROG</th>
<th>CO</th>
<th>NOx</th>
<th>SOx</th>
<th>PM</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON-ROAD MOTOR VEHICLES</td>
<td>11.0</td>
<td>10.2</td>
<td>90.5</td>
<td>22.2</td>
<td>0.1</td>
<td>1.2</td>
<td>1.2</td>
<td>0.7</td>
</tr>
<tr>
<td>OTHER MOBILE SOURCES</td>
<td>18.1</td>
<td>15.8</td>
<td>71.7</td>
<td>8.8</td>
<td>0.0</td>
<td>1.0</td>
<td>0.9</td>
<td>0.8</td>
</tr>
<tr>
<td>* TOTAL MOBILE SOURCES</td>
<td>29.1</td>
<td>26.0</td>
<td>162.2</td>
<td>31.1</td>
<td>0.1</td>
<td>2.3</td>
<td>2.2</td>
<td>1.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GRAND TOTAL FOR MOUNTAIN COUNTIES AIR BASIN</th>
<th>TOG</th>
<th>ROG</th>
<th>CO</th>
<th>NOx</th>
<th>SOx</th>
<th>PM</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>120.0</td>
<td>57.1</td>
<td>374.8</td>
<td>38.2</td>
<td>2.0</td>
<td>95.7</td>
<td>62.2</td>
<td>24.7</td>
</tr>
</tbody>
</table>

Source: CARB 2013

3.3.3.2 Local Air Quality

Table 3.3-4 describes El Dorado County Area Designations for State and Federal Ambient Air Quality (CARB, 2011 and USEPA 2018).

Table 3.3-4  El Dorado County Area Designations for State and Federal Ambient Air Quality

<table>
<thead>
<tr>
<th>Criteria Pollutants</th>
<th>State Designation</th>
<th>Federal Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone</td>
<td>Nonattainment</td>
<td>Severe Nonattainment</td>
</tr>
<tr>
<td>PM10</td>
<td>Nonattainment</td>
<td>Unclassified</td>
</tr>
<tr>
<td>PM2.5</td>
<td>Unclassified</td>
<td>Unclassified / Attainment</td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>Unclassified</td>
<td>Unclassified / Attainment</td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>Attainment</td>
<td>Attainment</td>
</tr>
<tr>
<td>Sulfur Dioxide</td>
<td>Attainment</td>
<td>Attainment</td>
</tr>
<tr>
<td>Sulfates</td>
<td>Attainment</td>
<td>-</td>
</tr>
<tr>
<td>Lead</td>
<td>Attainment</td>
<td>Unclassified / Attainment</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>Attainment</td>
<td>-</td>
</tr>
<tr>
<td>Visibility Reducing Particles</td>
<td>Unclassified</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: CARB 2011 and USEPA 2018
3.3.3 Alternatives

The air quality setting for the Blair Road Alternative and the Combined Alternative would be the same as described for the proposed Project regional and local setting.

3.3.4 Environmental Impacts

This section analyzes the Project's potential to result in significant impacts to air quality. When the Project's impact was determined to be significant, feasible mitigation measures were identified to reduce or avoid that impact.

3.3.4.1 Methodology for Analysis

Methodology and thresholds for criteria air pollutant impacts and community health risk, as set forth in the El Dorado AQMD Guide to Air Quality Assessment, first edition published in 2002, were utilized in this Draft EIR. The El Dorado AQMD screening thresholds of significance for criteria pollutants and the rules and regulations applicable to the Project are described above in the regulatory section.

To quantify the predicted air emissions, the Project was evaluated using the California Emissions Estimate Model (CalEEMod) with estimates from the Project Description contained in Section 2.0 of this Draft EIR and CalEEMod default information. CalEEMod calculates criteria air pollutant emissions from both construction and operation phases of a project and is the standard evaluation tool for these types of analyses in California and for projects subject to CEQA. Further details on CalEEMod inputs and CalEEMod emissions reports can be found in the Air Quality and Greenhouse Gases (GHG) Appendix (Appendix D).

The Project and alternatives were modeled using the following assumptions and Project details:

- The proposed Project construction activities would be anticipated to take approximately 12 months during two consecutive construction seasons to complete.
- The Blair Road Alternative construction activities would be anticipated to take approximately 13 months to complete over one construction season.
- The Combined Alternative construction activities would be anticipated to take approximately 13 months to complete over one construction season.
- The Project, once constructed, would have no emissions from operations (similar to the existing conditions at the site). Please see Section 2.0, Project Description, for more details related to operations. As such, operations emissions estimates were not included in this analysis for the Project.
- The following equipment would be used during the construction of the Project:
  - Excavators
  - Graders
  - concrete truck
  - compactors
  - water trucks
  - pickup trucks
  - communications and safety equipment
  - welding equipment
  - pumps and piping
  - generators
  - back-up lighting
  - cranes
  - vehicle maintenance truck
  - front-end loaders
  - timber harvesting equipment
  - erosion control materials
  - air compressors
  - miscellaneous equipment customary to the mechanical and electrical crafts, and vehicles used to deliver equipment and materials
3.3.4.2 Project Impact Analysis

This section discusses potential impacts associated with the Project and identifies mitigation measures for potentially significant impacts, where feasible.

Impact AIR-1 The Project would not conflict with or obstruct implementation of the applicable air quality plan.

Impact AIR-1a Proposed Project Analysis

The El Dorado County General Plan and the El Dorado AQMD have adopted goals and rules intended to improve air quality in the County and the air basin as a whole. The County is in nonattainment for state and federal ozone and state PM_{10}. The goals and rules of the County and the El Dorado AQMD that are applicable to the proposed Project are listed above in the regulatory framework of this section. Additionally, the El Dorado AQMD has determined that mass emissions in excess of the ROG and NO\textsubscript{x} levels shown in Table 3.3-2, from any project, could affect the AQMD’s commitment to attain the federal one-hour ozone standard in the Sacramento Region, and thus could have a significant adverse impact on air quality in the Sacramento Region (El Dorado AQMD 2002).

Air quality modeling was performed using Project-specific details in order to determine whether the proposed Project would result in criteria air pollutant emissions in excess of the applicable thresholds of significance. The proposed Project’s construction-related emissions were estimated using CalEEMod. The results of the unmitigated emissions modeling were compared to the El Dorado AQMD standards of significance, summarized in Table 3.3-5, in order to determine the associated level of impact.

Table 3.3-5 Project CalEEMod Predicted Maximum Daily Project Emissions Estimates

<table>
<thead>
<tr>
<th></th>
<th>ROG</th>
<th>NO\textsubscript{x}</th>
<th>CO</th>
<th>PM\textsubscript{10}</th>
<th>PM\textsubscript{2.5}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1 Maximum Daily</td>
<td>6.27</td>
<td>63.70</td>
<td>34.82</td>
<td>21.86</td>
<td>13.12</td>
</tr>
<tr>
<td>Unmitigated Construction Emissions (lbs/day)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 2 Maximum Daily</td>
<td>1.55</td>
<td>15.63</td>
<td>12.92</td>
<td>0.95</td>
<td>0.73</td>
</tr>
<tr>
<td>Unmitigated Construction Emissions (lbs/day)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Total Maximum Daily</td>
<td>7.82</td>
<td>79.34</td>
<td>47.73</td>
<td>22.8</td>
<td>13.85</td>
</tr>
<tr>
<td>Unmitigated Construction Emissions (lbs/day)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>El Dorado AQMD Significance</td>
<td>82</td>
<td>82</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Thresholds (lbs/day)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exceed Threshold</td>
<td>No</td>
<td>No</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

During construction of the proposed Project, various types of equipment and vehicles would temporarily operate on the proposed Project site. Construction exhaust emissions would be generated from construction equipment, earth movement activities, construction workers’ commutes, and construction material hauling for the entire construction period. The aforementioned activities would involve the use of diesel- and gasoline-powered equipment that would generate emissions of criteria pollutants, such as ROG and NO\textsubscript{x} which leads to the creation of ozone emissions.
Although the proposed Project would temporarily cause localized increases in emission levels, the Project-related emissions are estimated to be less than the El Dorado AQMD thresholds of significance for all criteria pollutants (Table 3.3-5, CalEEMod 2013). The proposed Project construction would occur over two construction seasons for a total of approximately 12 months, and as such increases to criteria pollutants would be temporary and minimal. However, CARB has adopted regulations to control emissions from portable equipment as a component of the state's air quality plans. All applicable portable engines and off-road equipment must be registered with CARB's portable engine and off-road equipment programs and would align with the requirements set forth in the attainment plans. Mitigation Measure (MM) AIR-1 would require compliance with CARB regulations and includes Best Management Practices (BMPs) to reduce air emissions from construction equipment, including reducing equipment idling times and ensuring properly maintained equipment, which would comply with required measures of regional and local air quality plans.

Further, Project construction activities also represent sources of fugitive dust, which includes PM$_{10}$ emissions, which is regulated as a criteria source pollutant but also is afforded additional protections in the air quality plans mentioned above. According to the El Dorado AQMD, a project is considered to have a significant impact on air quality if it will cause or contribute significantly to a violation of the applicable national or state ambient air quality standards. Because El Dorado County is listed as nonattainment for state PM$_{10}$, the AQMD has adopted rules to reduce PM$_{10}$ emissions; compliance with these rules would ensure that impacts are not significant. MM AIR-1 would require compliance with the El Dorado AQMD Rule 223: Fugitive Dust General Requirements and Rule 207: Particulate Matter in order to reduce potential impacts from fugitive dust. MM AIR-1 also would include BMPs and a Dust and Emissions Control Plan which would reduce air emissions from construction equipment, including reducing equipment idling times, ensuring properly maintained equipment, speed limits on dirt roads and watering of exposed soils and soils being transported off-site. These measures would effectively limit emissions of fugitive dust from Project construction activities.

Based on the factors presented above, the proposed Project would be consistent with the goals of the El Dorado AQMD through the implementation of MM AIR-1. Impacts are considered less than significant with mitigation incorporated.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM AIR-1

**Impact AIR-1b Blair Road Alternative Analysis**

The Blair Road Alternative would have similar temporary impacts to localized increases in emission levels due to the construction activities as the proposed Project, although the emissions would be anticipated to occur over one construction season rather than two as illustrated below. The same air quality plans apply to the Blair Road Alternative because the regional location is the same as that described in the proposed Project. As such, the temporary localized increases in emissions levels from construction of the Blair Road Alternative would need to be in compliance with the goals of the El Dorado AQMD. The construction activities for the Blair Road Alternative would occur over approximately 13 months over one construction season. The results of the unmitigated emissions modeling were compared to the El Dorado AQMD standards of significance, summarized in Table 3.3-6, in order to determine the associated level of impact.
Table 3.3-6  Blair Road Alternative CalEEMod Predicted Maximum Daily Project Emission Estimates

<table>
<thead>
<tr>
<th></th>
<th>ROG</th>
<th>NOx</th>
<th>CO</th>
<th>PM_{10}</th>
<th>PM_{2.5}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Total Maximum</td>
<td>6.21</td>
<td>63.71</td>
<td>38.59</td>
<td>21.80</td>
<td>13.14</td>
</tr>
<tr>
<td>Daily Unmitigated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction Emissions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(lbs/day)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>El Dorado AQMD</td>
<td>82</td>
<td>82</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Significance Thresholds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(lbs/day)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exceed Threshold</td>
<td>No</td>
<td>No</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Construction equipment would be similar as described under the proposed Project above; however, additional trenching and paving equipment would be needed to construct the pipeline within the Blair Road right-of-way and repave the roadway upon completion of the pipeline placement. Additionally, along the cross-country portion of this alternative additional vegetation removal equipment may be needed due to the forested nature of this area. However, the Blair Road Alternative emissions are less than the El Dorado AQMD thresholds of significance for all criteria pollutants (Table 3.3-6, CalEEMod 2013).

The movement and use of the construction equipment, including paving and tree removal equipment, would cause emissions of criteria pollutants and would create dust in the area. Although the Blair Road Alternative emissions are less than the El Dorado AQMD thresholds of significance for all criteria pollutants (Table 3.3-6, CalEEMod 2013), MM AIR-1 would apply and would effectively reduce emissions.

Based on the factors presented above, the Blair Road Alternative would be consistent with the goals of the El Dorado AQMD through the implementation of MM AIR-1. Impacts are considered less than significant with mitigation incorporated.

Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM AIR-1

Impact AIR-1c Combined Alternative Analysis

The Combined Alternative would have similar temporary impacts to localized increases in emission levels due to the construction activities as with the proposed Project and the Blair Road Alternative. The same air quality plans apply to the Combined Alternative because the regional location is the same as that described in the proposed Project. As such, the temporary localized increases in emissions levels from construction of the Combined Alternative would need to be in compliance with the goals of the El Dorado AQMD. The results of the unmitigated emissions modeling were compared to the El Dorado AQMD standards of significance, summarized in Table 3.3-7, in order to determine the associated level of impact.
Table 3.3-7  Combined Alternative CaIEEMod Predicted Maximum Daily Project Emission Estimates

<table>
<thead>
<tr>
<th></th>
<th>ROG</th>
<th>NO\textsubscript{x}</th>
<th>CO</th>
<th>PM\textsubscript{10}</th>
<th>PM\textsubscript{2.5}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Total Maximum</td>
<td>6.18</td>
<td>63.51</td>
<td>35.82</td>
<td>21.80</td>
<td>13.08</td>
</tr>
<tr>
<td>Daily Unmitigated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction Emissions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(lbs/day)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>El Dorado AQMD</td>
<td>82</td>
<td>82</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Significance Thresholds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(lbs/day)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exceed Threshold</td>
<td>No</td>
<td>No</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Construction equipment would be similar as described under the proposed Project and Blair Road Alternative above, and emissions are less than the El Dorado AQMD thresholds of significance for all criteria pollutants (Table 3.3-7, CaIEEMod 2013). MM Air-1 would apply and would be effective in reducing emissions.

Based on the factors presented above, the Combined Alternative would be consistent with the goals of the El Dorado AQMD through the implementation of MM Air-1. Impacts are considered less than significant with mitigation incorporated.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM Air-1

**Impact AIR-1d No Project Alternative Analysis**

Impacts to air quality would be related to construction of the proposed Project. As the No Project Alternative results in no construction, impacts to air quality would be less than the proposed Project. Therefore, the No Project Alternative would not conflict with or obstruct implementation of the applicable air quality plan and would have no impact.

**Level of Significance:** No Impact

**Mitigation Required:** None Required

**Impact AIR-2 The Project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.**

**Impact AIR-2a Proposed Project Analysis**

In order to assess the proposed Project’s potential to contribute to an existing or projected air quality violation, localized criteria pollutant emissions were analyzed since these are the pollutants with established ambient air quality standards. Potential localized impacts would include exceedances of state standards for PM. Particulate matter emissions, primarily PM\textsubscript{10}, are of concern during construction because of potential fugitive dust emissions during earth-disturbing activities.

The El Dorado AQMD has not established significance thresholds specifically for fugitive dust emissions but has adopted a threshold for total PM\textsubscript{10} of 82 lbs/day. This threshold includes emissions from both fugitive dust and PM emissions from vehicles. All PM\textsubscript{10} emissions estimates for the proposed Project were below the El Dorado AQMD
significance thresholds (See Table 3.3-5 above). However, to ensure that localized PM emissions do not contribute significantly to the existing state exceedance of PM$_{10}$, MM AIR-1 would include the preparation and implementation of a Construction Emissions and Dust Control Plan to mitigate for emissions generated during construction activities. Operational activities would be similar to existing conditions; therefore, no long-term impacts to air quality would occur. Potential impacts to air quality standards or contribution to an existing or projected air quality violation are considered less than significant with MM AIR-1 incorporated.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM AIR-1

**Impact AIR-2b Blair Road Alternative Analysis**

The Blair Road Alternative would have the same PM$_{10}$ threshold of 82 lbs/day as described under the proposed Project above. As shown in Table 3.3-6 in Impact AIR-1b above, the Blair Road Alternative would be below the El Dorado AQMD significance thresholds. However, similar to the proposed Project, MM AIR-1 would be required to ensure that localized PM$_{10}$ emissions do not contribute significantly to the exceedance of PM$_{10}$. Additionally, same as the proposed Project, the Blair Road Alternative would have operational activities that would be similar to existing conditions and therefore, no long-term impacts to air quality would occur. Potential impacts to air quality standards or contribution to an existing or projected air quality violation are considered less than significant with MM AIR-1 incorporated.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM AIR-1

**Impact AIR-2c Combined Alternative Analysis**

The Combined Alternative would have the same PM$_{10}$ threshold of 82 lbs/day as described under both the proposed Project and the Blair Road Alternative above. Table 3.3-7 in Impact AIR-1c above shows the Combined Alternative estimated PM$_{10}$ emissions, which would be below the El Dorado AQMD significance thresholds. As discussed under the proposed Project and the Blair Road Alternative, the Combined Alternative would require MM AIR-1 to ensure the localized PM$_{10}$ emissions do not contribute to the exceedance of PM$_{10}$. Additionally, the Combined Alternative would not involve any operational impacts related to air quality standards beyond existing conditions. Therefore, potential impacts to air quality standards or contribution to an existing or projected air quality violation are considered less than significant with MM AIR-1 incorporated.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM AIR-1

**Impact AIR-2d No Project Alternative Analysis**

Impacts to air quality would be related to construction of the proposed Project. As the No Project Alternative would result in no construction, impacts to air quality would be less than the proposed Project. Therefore, no impacts to air quality standards or projected air quality violations would occur.
Level of Significance: No Impact

Mitigation Required: None Required

| Impact AIR-3 | The Project would not expose sensitive receptors to substantial pollutant concentrations. |

Impact AIR-3a Proposed Project Analysis

The proposed Project construction involves operating heavy equipment and construction activities that would temporarily produce additional dust and air emissions. The nearest receptors in the vicinity of the proposed Project area that could be affected by construction-generated air emissions are residences located along the existing ditch, an elementary school located approximately 0.25 miles from the ditch, and the preschool located near the west end of the ditch near the Water Treatment Plant (WTP). Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, childcare centers, playgrounds, retirement homes, convalescent homes, hospitals, and medical clinics.

Fugitive Dust

Fugitive dust is typically generated during earth moving activities such as grading and excavation. Fugitive dust can cause health concerns when airborne due to potential inhalation. As discussed in Impact AIR-1a, in order to minimize potential impacts from fugitive dust, MM AIR-1 would be implemented, which includes watering exposed soils and soils being transported off-site, as well as watering and speed limits on dirt roads. These measures would effectively limit emissions of fugitive dust from Project construction activities.

TACs

The CARB has identified DPM from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Health risks from TACs are a function of both the concentration of emissions and the duration of exposure.

Construction activities have the potential to generate DPM emissions related to the number and types of equipment typically associated with construction. Off-road, heavy-duty diesel equipment used for site grading, paving, and other construction activities result in the generation of DPM. However, construction is temporary and occurs over a relatively short duration in comparison to the operational lifetime of the proposed Project. In addition, only portions of the site would be disturbed at a time, with operation of construction equipment regulated by federal, state, and local regulations, including El Dorado AQMD rules and regulations, and occurring intermittently throughout the course of a day. Therefore, the likelihood that any one sensitive receptor would be exposed to high concentrations of DPM for any extended period of time would be low. The El Dorado AQMD has established screening levels as conservative indicators that a project would not result in significant emissions of TACs. The screening level relevant to the proposed Project includes: Construction emission of ROG and NOx that meet the significant thresholds of maximum
daily emissions of 82 lbs/day. Thus, because the Project would not exceed the El Dorado AQMD significance thresholds for ROG or NO\textsubscript{x}, the Project would not result in significant emission of TACs. See Table 3.3-5.

California Public Resources Code, Pub Res C § 21151.4, requires that projects located within one-fourth of a mile of a school that might reasonably be anticipated to emit hazardous air emissions, or that would handle an extremely hazardous substance or a mixture containing extremely hazardous substances in a quantity equal to or greater than the state threshold quantity specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code, that may pose a health or safety hazard to persons who would attend or would be employed at the school, would either need to consult with the school or give written notification to the school. The Pinewood Elementary School and the preschool located near the west end of the ditch near the Water Treatment Plant (WTP) are both located within 0.25 miles of the existing ditch. However, because the TAC levels generated by the proposed Project construction would be below the EL Dorado AQMD significance thresholds, the Project would not pose a significant hazard and no consultation or noticing to these schools would be required.

**Localized CO Emissions**

Localized concentrations of carbon monoxide (CO) are related to the levels of traffic and congestion along streets and at intersections. Implementation of the proposed Project would temporarily increase traffic volumes on streets near the Project site; therefore, the proposed Project would be expected to increase local CO concentrations during construction. Concentrations of CO approaching the ambient air quality standards are only expected where background levels, traffic volumes, congestion levels are high. The proposed Project is located in a rural residential location where background concentrations of CO are low. The proposed Project would generate approximately 10 daily worker trips and 660 total hauling trips throughout Project construction. Although hauling and construction worker vehicle trips would increase during Project construction, it is not anticipated that these additional trips would expose sensitive receptors to substantial pollutant concentrations.

**Asbestos**

The Project is not located in an area mapped as having, or otherwise known to have, ultramafic rock, serpentine, or naturally occurring asbestos. The nearest mapped unit is approximately 9 miles to the west of the Project (El Dorado 2015). Therefore, the statewide Asbestos ATCM would not apply unless ultramafic rock/serpentine is discovered during grading or excavation. In the unexpected event ultramafic rock or serpentine is discovered, the El Dorado AQMD must be notified no later than the following business day and the Project must comply with applicable provisions of Rule 223-2 and the State of California ATCM for Construction, Grading, Quarrying, and Surface Mining Operations.

As discussed above, with implementation of Mitigation Measure AIR-1, the proposed Project would not cause or be exposed to substantial pollutant concentrations, including localized CO, TACs, or fugitive dust. Therefore, exposure of sensitive receptors to substantial pollutant concentrations would not occur and the impact is less than significant with mitigation.
Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM AIR-1

Impact AIR-3b Blair Road Alternative Analysis

The Blair Road Alternative would be located in approximately the same general location as the proposed Project with the exception of the pipeline installed along Blair Road and a cross-country portion that is outside the existing ditch alignment. For these reasons, that the Blair Road Alternative would have similar sensitive receptors as with the proposed Project and would include children from Pinewood Elementary School, the preschool located near the west end of the ditch near the Water Treatment Plant (WTP), and residences within the Project area. As with the proposed Project, the Blair Road Alternative would not result in excessive pollutant concentrations of localized CO, TACs, or fugitive dust, and asbestos would not be likely in the Project area.

Additional paving equipment and trenching equipment would be needed to place the pipeline within the Blair Road right-of-way, which could result in greater levels of TAC and localized CO emissions. These emissions were analyzed in the air quality modeling (Table 3.3-6, CalEEMod 2013), would be temporary, and would not be concentrated in any one area for extended periods of time, thus limiting the exposure of emissions to sensitive receptors in the Project area such as Pinewood Elementary students. Dust and debris generated during vegetation removal along the cross-country portion of this alternative would have the potential to result in greater amounts of fugitive dust due to the existing natural forested setting of these areas. Fugitive dust would be mitigated through the implementation of MM AIR-1, which includes the development and implementation of a Dust and Emissions Control Plan, thus reducing any potential impacts related to exposure of sensitive receptors to fugitive dust to a less than significant level.

Additionally, the District database indicated there could be a potential for this alternative to cross over asbestos-cement pipe. These pipelines would likely need to be removed during construction activities and replaced with non-asbestos containing materials once construction is complete. MM AIR-1 would be required to reduce the potential for exposure of nearby sensitive receptors to airborne asbestos particles. This mitigation measure includes compliance with Rule 223.2 for State of California ATCM for Construction, Grading, Quarrying, and Surface Mining Operations, thus reducing the impact to a less than significant level.

Therefore, exposure of sensitive receptors to substantial pollutant concentrations from the Blair Road Alternative would be less than significant with mitigation incorporated.

Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM AIR-1

Impact AIR-3c Combined Alternative Analysis

Similar to the proposed Project and the Blair Road Alternative, the Combined Alternative would be located in the same general Project location. Sensitive receptors would be the same as described for the proposed Project as well as for the Blair Road Alternative and the emissions of localized CO, TACs, fugitive dust and likelihood of asbestos would also be similar as discussed above. MM AIR-1 would be required to reduce dust generated during construction by including watering of exposed soils and slowing speed limits on all unpaved surfaces. Additionally, similar to the Blair Road Alternative, the Combined Alternative has the possibility of encountering asbestos-cement pipelines during
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construction. MM AIR-1 would be required to ensure compliance with Rule 223.2 for State of California ATCM for Construction, Grading, Quarrying, and Surface Mining Operations. Therefore, exposure of sensitive receptors to substantial pollutant concentrations from the Combined Alternative would be less than significant with mitigation incorporated.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM AIR-1

**Impact AIR-3d No Project Alternative Analysis**

The No Project Alternative would result in no construction activities, and therefore, there would be no impacts related to exposure of sensitive receptors to air pollutants.

**Level of Significance:** No Impact

**Mitigation Required:** None Required

**Impact AIR-4 The Project would not create objectionable odors affecting a substantial number of people.**

**Impact AIR-4a Proposed Project Analysis**

Odors are generally regarded as an annoyance rather than a health hazard. Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, quantitative methodologies to determine the presence of a significant odor impact do not exist. According to the CARB's Handbook, some of the most common sources of odor complaints received by local air districts are sewage treatment plants, landfills, recycling facilities, waste transfer stations, petroleum refineries, biomass operations, autobody shops, coating operations, fiberglass manufacturing, foundries, rendering plants, and livestock operations. The Project site is not located near any such land uses, and the proposed Project would not introduce any such land uses.

Diesel fumes from construction equipment are often found to have objectionable odors; however, construction is temporary and associated diesel emissions would be regulated per federal, state, and local regulation, including compliance with all applicable El Dorado AQMD's rules and regulations as part of the construction specifications, which would help to control construction-related odorous emissions. Therefore, construction of the proposed Project would not be expected to create objectionable odors affecting a substantial number of people and would have a less than significant impact.

**Level of Significance:** Less than Significant

**Mitigation Required:** None Required

**Impact AIR-4b Blair Road Alternative Analysis**

The potential odor impacts from the Blair Road Alternative would be the same as for the proposed Project. Construction odors from diesel equipment would be similar to the proposed Project and they would be temporary in nature. No additional odors would be associated with the operation of the Blair Road Alternative. Therefore, the Blair
Road Alternative would not be expected to create objectionable odors affecting a substantial number of people and would have a less than significant impact.

**Level of Significance:** Less than Significant

**Mitigation Required:** None Required

**Impact AIR-4c Combined Alternative Analysis**

The odor impacts from the Combined Alternative would be the same as for the proposed Project. Construction odors from diesel equipment would be similar to the proposed Project and they would be temporary in nature. No additional odors would be associated with the operation of the Combined Alternative. Therefore, the Combined Alternative would not be expected to create objectionable odors affecting a substantial number of people and would have a less than significant impact.

**Level of Significance:** Less than Significant

**Mitigation Required:** None Required

**Impact AIR-4d No Project Alternative Analysis**

Under the No Project Alternative, there would be no changes to the existing ditch and there would be no associated construction activities. Therefore, there would be no potential for the No Project Alternative to create objectionable odors affecting a substantial number of people.

**Level of Significance:** No Impact

**Mitigation Required:** None Required

### 3.3.5 Air Quality Mitigation

#### 3.3.5.1 Mitigation Measure AIR-1 Dust and Emissions Control Plan

The District shall require that the selected contractor prepare and implement a Project Dust and Emissions Control Plan that is approved by the El Dorado AQMD prior to construction. The following measures shall be conducted throughout the construction period to limit and control dust and air emissions:

- All material excavated, stockpiled, or graded shall be sufficiently watered, treated, or covered to prevent fugitive dust from leaving the property boundaries and/or causing a public nuisance;

- All areas with vehicle traffic shall be watered or have dust palliative applied as necessary to minimize dust emissions;

- All on-site vehicle traffic shall be limited to a speed of 15 mph on unpaved roads;

- All land clearing, grading, earth moving, or excavation activities on the Project shall be suspended as necessary to prevent excessive windblown dust when winds are expected to exceed 20 mph;
• All inactive portions of the development site shall be covered, seeded, or watered or otherwise stabilized until a suitable cover is established;

• All material transported off-site shall be either sufficiently watered or securely covered to prevent it from being entrained in the air and there must be a minimum of six (6) inches of freeboard in the bed of the transport vehicle;

• Paved streets adjacent to the Project shall be reasonably clean through methods such as sweeping or washing at the end of each day, or more frequently if necessary, to remove excessive accumulations or visibly raised areas of soil which may have resulted from activities at the Project area;

• Prior to the end of construction, the applicant shall re-establish ground cover on the site through seeding (per Natural Resource Conservation Service (NCRS) standards for the area) and watering;

• The Project contractor shall ensure that all construction equipment is properly maintained.

The Project is not located in an area mapped as having, or otherwise known to have, ultramafic rock, serpentine, or naturally occurring asbestos (El Dorado County 2015). However, if naturally occurring asbestos is discovered during Project construction the following would occur:

1. If naturally-occurring asbestos, serpentine, or ultramafic rock is discovered in the area to be disturbed after the start of any construction or construction related activity, a Professional Geologist, or the Air Pollution Control Officer must report the discovery to the El Dorado AQMD no later than the next business day; and

2. The Project must comply with applicable provisions of Rule 223-2 and the State of California Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations (CCR Title 17, Section 93105).

Mitigation Measure AIR-1 Implementation

**Responsible Party:** The District would require that the contractor prepare and implement a Construction Emissions and Dust Control Plan. The District shall be responsible for ensuring that all adequate dust control measures are implemented in a timely manner during all phases of Project development and construction by the contractor. This mitigation measure shall be referenced in the contract documents for the Project.

**Timing:** An Emissions and Dust Control Plan must be prepared and approved by the El Dorado AQMD prior to construction and implemented during all phases of grading and activities that generate dust.

**Monitoring and Reporting Program:** During construction, regular inspections shall be performed by a District representative and reports shall be kept on file by the District for inspection by the El Dorado AQMD or other interested parties.

**Standards for Success:** Visible emissions and dust are kept to the lowest practicable level during construction periods. The goal is to minimize dust and emissions during construction, including asbestos particulate matter as a result of any construction activities, and to the extent feasible, avoid activities that would generate air quality complaints from the public.
3.3.6 Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>AQMD</td>
<td>Air Quality Management District</td>
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<td>ATCM</td>
<td>Airborne Toxic Control Measure</td>
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<td>BMP</td>
<td>Best Management Practices</td>
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<td>CAA</td>
<td>Clean Air Act</td>
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<tr>
<td>CalEEMod</td>
<td>California Emissions Estimate Model</td>
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<td>CARB</td>
<td>California Air Resources Board</td>
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<td>CEQA</td>
<td>California Environmental Quality Act</td>
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<td>CO</td>
<td>Carbon monoxide</td>
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<tr>
<td>County</td>
<td>El Dorado County</td>
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<tr>
<td>DPM</td>
<td>Diesel Particulate Matter</td>
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<td>District</td>
<td>El Dorado Irrigation District</td>
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<td>EIR</td>
<td>Environmental Impact Report</td>
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<td>GHG</td>
<td>Greenhouse Gases</td>
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<td>LOS</td>
<td>Level of Service</td>
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<td>NCRS</td>
<td>Natural Resource Conservation Service</td>
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<td>NOA</td>
<td>Naturally occurring asbestos</td>
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<td>Notice of Preparation/Initial Study</td>
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<td>NOx</td>
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<td>TAC</td>
<td>Toxic Air Contaminant</td>
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<td>USEPA</td>
<td>United States Environmental Protection Agency</td>
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<td>WTP</td>
<td>Water Treatment Plant</td>
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3.3.7 References

California Emissions Estimator Model (CalEEMod). Copyright © 2011 South Coast Air Quality Management District. Developed by ENVIRON International Corporation in collaboration with SCAQMD and other California Air Districts. Analysis conducted by a Stantec Air Quality Specialist in 2013 and 2018.


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3.4 BIOLOGICAL RESOURCES

3.4.1 Basis for Analysis

The California Environmental Quality Act (CEQA) Guidelines’ Appendix G Environmental Checklist was assessed during the Notice of Preparation/Initial Study (NOP/IS) scoping process (included in Appendix A) to identify the Project components that have the potential to cause a significant impact. The following potential impacts were determined to warrant further evaluation within this Environmental Impact Report (EIR):

- 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 Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS);
- Have a substantial adverse effect on any riparian habitat or other sensitive natural communities identified in local or regional plans, policies, and regulations or by the CDFW or USFWS;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (CWA) (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

The following potential impact was determined to have a less than significant or no impact during the NOP/IS scoping process (included in Appendix A) and is not discussed further in this section:

- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

The remainder of this section describes the regulatory and environmental baseline setting to support the evaluation of the potential impacts and describes the potential impacts to the existing biological resources that may result from implementation of the Project including mitigation for significant impacts, where feasible.

3.4.2 Regulatory Framework

This section discusses the federal, state regulations and local policies and objectives that govern biological resources applicable to the Project.
3.4.2.1 Federal

Endangered Species Act of 1973

The Federal Endangered Species Act (ESA) was passed by Congress in 1973 to protect and recover imperiled species and the habitat upon which they depend. The ESA is administered by the USFWS and the National Oceanic and Atmospheric Administration (NOAA), which includes the National Marine Fisheries Service (NMFS). Under the ESA, protected species are either listed as “endangered”, in danger of extinction throughout all or a significant region of the species range; or as “threatened”, likely to become endangered within the foreseeable future (16 United States Code (USC) section 1531 et seq.). The ESA also designates “candidate” species as those plants and animals that the USFWS has sufficient data on their biological status to propose them to be listed under the ESA. Candidate species do not receive statutory protection under the ESA, but cooperative conservation activities are encouraged (16 USC section 1531 et seq.).

The ESA mandates the protection of federally-listed species and the habitats on which they depend (50 Code of Federal Regulations [CFR] 17.12 for listed plants, 50 CFR 17.11 for listed animals, and various notices in the Federal Register for proposed species). Specifically, USFWS and NMFS can designate critical habitats (i.e., Designated Critical Habitat [DCH]) that are to be protected from disturbances, essential to conservation, and/or are representative of the historical geographical and ecological distributions of a federally protected species. DCH only affect federal agency actions and/or federally funded and permitted activities. DCH does not affect activities by private landowners if there is no federal “nexus” (i.e., link) to activities by a federal agency (16 USC section 1531 et seq, USFWS 2018g).

Pursuant to the ESA, the USFWS and NMFS have authority over projects that may affect the continued existence of a federally listed threatened or endangered species. Section 9 of the ESA and federal regulations prohibit the “take” of federally listed species. “Take’ is defined as to hunt, pursue, catch, capture, or kill; or attempt to hunt, pursue, catch, capture, or kill” an endangered or threatened species. In addition, the USFWS requires that federal agencies avoid “destruction” and “adverse modification” to any DCH for a species when “prudent and determinable” (USFWS 2018g).

Consultation with the USFWS under Section 7 of the ESA would be necessary if a federal action (such as a federal permit or federal funding) is part of the proposed action and the project is likely to adversely affect federally-listed species or DCH. For projects with no federal nexus, the project proponent may choose to consult with USFWS and obtain incidental take authorization under Section 10 of the ESA if the project is likely to result in death or injury to a listed species¹, or if the project will modify critical habitat and all the three following conditions are met: 1. The habitat modification must be significant; 2. The modification must impair an essential behavior (such as feeding, breeding, or sheltering); and 3. The behavior impairment must result in the likelihood of an actual injury or death. No incidental take permit is required under the ESA for activities that involve habitat modification alone unless all three of these conditions are satisfied (USFWS 2018e).

2005 U.S. Fish and Wildlife Service Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog

The USFWS issued guidance on conducting site assessments and surveys for the California red-legged frog (*Rana aurora draytonii*) (CRLF) on February 18, 1997 and revisions to this Guidance in August 2005 (CRLF Guidance). The

¹ The USFWS defines likely as “reasonably certain to occur.”
revised guidance recommends two procedures for assessing the likelihood of CRLF in the vicinity of a project site: (1) an assessment of CRLF locality records and potential CRLF habitat in and around the project area and, (2) focused field surveys of breeding pools and other associated habitat to determine whether CRLF are likely to be present. For sites with no suitable aquatic breeding habitat, but where suitable upland dispersal habitat exists, it is difficult to support a negative finding with the results of any survey guidance. Therefore, the Guidance focuses on site assessments and surveys conducted in and around aquatic and riparian habitat.

If the CRLF Guidance is followed in its entirety, the results of the site assessments and surveys will be considered valid by the Service for two (2) years, unless determined otherwise on a case-by-case basis by the appropriate Service Fish and Wildlife Office. After two (2) years, new surveys conducted under the most current Service Guidance may be required, if deemed necessary by the appropriate Service Fish and Wildlife Office.

The CRLF Guidelines recommend beginning surveys anytime during January and completing surveys by the end of September. Multiple survey visits conducted throughout the survey-year (January through September) increases the likelihood of detecting the various life stages of the CRLF. A total of up to eight (8) surveys are recommended to determine the presence of CRLF at or near a project site. Two (2) day surveys and four (4) night surveys are recommended during the breeding season; one (1) day and one (1) night survey is recommended during the non-breeding season. Each survey must take place at least seven (7) days apart and at least one survey must be conducted prior to August 15th. The survey period must be over a minimum period of 6 weeks (i.e., the time between the first and last survey must be at least 6 weeks). Throughout the species' range, the non-breeding season is defined as between July 1 and September 30.

Migratory Bird Treaty Act of 1918 and the Bald and Golden Eagle Protection Act

The Migratory Bird Treaty Act (MBTA) (16 USC C Section 703-711) and the Bald and Golden Eagle Protection Act (BAGEPA) (16 USC Section 668) protect specific species of birds and prohibit intentional “take” of migratory birds (i.e., harm or harassment) when the purpose of an activity is to take migratory birds, the eggs or nests (USFWS 2018f). The MBTA protects migratory bird species from “take” through the setting of hunting limits and seasons and protecting occupied nests and eggs. BAGEPA prohibits the take or commerce of any part of the bald or golden eagle (USFWS 2018f). The USFWS administers both Acts and reviews actions that may affect the species protected.

Clean Water Act Section 401

The U.S. Environmental Protection Agency (USEPA) regulates surface water quality in waters of the United States under Section 401 of the federal CWA. CWA Section 401 Water Quality Certification provides states and authorized tribes with an effective tool to help protect the physical, chemical, and biological integrity of water quality, by providing them an opportunity to address the aquatic resource impacts of federally issued permits and licenses (33 USC section 1341). CWA 401 states that no federal permit or license can be issued if a proposed action may result in a discharge to waters of U.S., unless the USEPA/Tribe/State certifies that the discharge is consistent with standards and other water quality goals or waives certification (33 USC section 1341). CWA 401 compliance is required for any project that produces a federal action with construction that could have an impact to surface water quality. In the State of California (State), jurisdictional authority has been delegated to the Regional Water Quality Control Board (Regional Boards) (see CWA Section 401 under State).
Clean Water Act Section 404

The U.S. Army Corps of Engineers (USACE) and the USEPA regulate the discharge of dredge or fill material into "waters of the U.S." under Section 404 of the CWA. Waters of the U.S. include wetlands, lakes, rivers, streams, and their tributaries. Wetlands are defined, for regulatory purposes, as areas inundated or saturated by surface, or ground water; at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated solid conditions (33 CFR 328.3, 40 CFR 230.3) (USEPA 2018c). If a project discharges any fill materials into water of the U.S., including wetlands, before and after the project actions, then a permit must be obtained from the USACE.

3.4.2.2 State

California Endangered Species Act

The CDFW has jurisdiction over species listed as threatened or endangered under section 2080 of the California Fish and Game Code (CFGC). The California Endangered Species Act (CESA), enacted in 1970, prohibits take of state-listed threatened and endangered species. The State Act differs from the Federal ESA in that it does not include habitat destruction in its definition of take. The CFGC defines take as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" (CFGC section 86.)

With projects where CESA-listed species are or have the potential to be present, consultation with CDFW ensures that a proposed project or associated actions do not have a negative effect on state-listed species. During consultation, CDFW determines whether take will occur and identifies "reasonable and prudent alternatives" for the Project and conservation of special-status species. CDFW can authorize take of a state-listed species under Sections 2080.1 and 2081(b) of the CFGC in those cases where it is demonstrated that the impacts are minimized and mitigated. Take authorized under section 2081(b) must be minimized and fully mitigated. A CESA incidental take permit is required in order to authorize take of listed species that would occur either during construction or over the life of the Project. CDFW also maintains lists for Candidate-Endangered Species and Candidate-Threatened Species. California Candidate Species are afforded the same level of protection as listed species. California also designates Species of Special Concern (SSC), which are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational values. These species do not have the same legal protection as listed species but may be added to official lists in the future (CDFW 2018a).

In the 1960's, prior to the enactment of the CESA, California created a designation to provide protection to rare species. This designation remains today and is referred to as "Fully Protected" species, which "may not be taken or possessed at any time."

The Native Plant Protection Act: CFGC, Section 1900 et seq.

The Native Plant Protection Act (NPPA) (CFGC, Section 1900 et seq.) was enacted in 1977 and is administered by CDFW. The NPPA prohibits "take" of endangered, threatened, or rare plant species native to California, with the exception of special criteria identified in the CFGC. A "native plant" means a plant growing in a wild uncultivated state which is normally found native to the plant life of the state. Under the CFGC, species become endangered, threatened, or rare when the plants' prospects of survival and reproduction are in immediate jeopardy for one or more causes (CFGC, Section 1900 et seq.). “Rare” species can be defined as species that are: broadly disturbed but never
abundant where found, narrowly disturbed or clumped yet abundant where found, and/or narrowly disturbed or clumped and not abundant where found. If potential impacts are identified for a proposed project activity, then consultation with CDFW, permitting, and/or other mitigation may be required. Endangered, threatened, and/or rare plant species can be identified through the California Native Plant Society’s (CNPS) California Rare Plant Ranks (CRPR) (CNPS 2018a).

2009 California Department of Fish and Wildlife Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities

The conservation of special status native plants and their habitats, as well as natural communities, is integral to maintaining biological diversity. CDFW has adopted protocols to facilitate a consistent and systematic approach to the survey and assessment of special status native plants and natural communities so that reliable information is produced and the potential of locating a special status plant species or natural community is maximized. Protocols may also help those who prepare and review environmental documents determine when a botanical survey is needed, how field surveys may be conducted, what information to include in a survey report, and what qualifications to consider for surveyors. The protocols may help avoid delays caused when inadequate biological information is provided during the environmental review process; assist lead, trustee and responsible reviewing agencies to make an informed decision regarding the direct, indirect, and cumulative effects of a proposed development, activity, or action on special status native plants and natural communities; meet CEQA requirements for adequate disclosure of potential impacts; and conserve public trust resources (CDFW 2018).

Nesting Migratory Bird and Raptors: CFGC, Sections 3503, 3503.5, and 3800

Sections 3503, 3503.5, and 3800 of the CFGC prohibit the take, possession, or destruction of birds, their nests or eggs. Implementation of the take provisions requires that Project-related disturbance at active nesting territories be reduced or eliminated during critical phases of the nesting cycle. Disturbances that cause nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) or the loss of habitat upon which the birds depend is considered “taking” and is potentially punishable by fines and/or imprisonment (CFGC Section 3503-3503.5).

Lake and Streambed Alteration Agreement: CFGC, Sections 1600-1616

To protect, manage, and conserve rivers, streams, lakes, wetlands, etc., CDFW has jurisdictional authority, under CFGC sections 1600-1616, to regulate all work under the jurisdiction of the State. Such work includes those actions that would substantially divert, obstruct, or change the natural flow of a river, stream, or lake; substantially change the bed, channel, or bank of a river, stream, or lake; or use material from a streambed. In practice, CDFW marks its jurisdictional limit at the top of the stream or lake bank, or the outer edge of the riparian vegetation (where present) and extends its jurisdiction to the edge of the 100-year floodplain (CFGC sections 1600-1616). CDFW authorizes activity within its jurisdictional authority by entering into a streambed alteration agreement (SAA) with an applicant and can impose conditions on the agreement to ensure that no net loss of wetland values or acreage will be incurred. The streambed or lakebed alteration agreement is not a permit, but a mutual agreement between CDFW and the applicant.
California Environmental Quality Act: CEQA Guidelines, Section 15380

The CEQA Guidelines provide protection for federal- and/or state-listed species, as well as species not listed federally or by the state that may be considered rare, threatened, or endangered, if the species can be shown to meet specific criteria outlined in CEQA Guidelines section 15380(b). Species that meet these criteria can include “candidate species”, species “proposed for listing” and “species of special concern”. Plants appearing on CNPS CRPR are considered to meet CEQA’s Section 15380 criteria. Impacts to these species would therefore be considered “significant” requiring mitigation (CDFW 2018c).

Section 15380 was included to address a potential situation in which a public agency is to review a project that may have a significant effect on, for example a “candidate species”, which has not yet been listed by the USFWS or CDFW. Therefore, CEQA enables an agency to protect a species from significant Project impacts until the respective government agencies have had an opportunity to list the species as protected, if warranted (CDFW 2018c).

Porter-Cologne Water Quality Control Act, Section 401 of the Clean Water Act and National Pollutant Discharge Elimination System

Waters of the State are regulated by the Regional Water Quality Control Board (RWQCB) under the State Water Quality Certification Program, which regulates discharges of dredged and fill material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Waters of the State are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state.” Section 401 requires that an applicant for a federal license or permit that allows activities resulting in a discharge to Waters of the U.S. obtain a state certification administered by the RWQCB that the discharge complies with other provisions of the CWA. The RWQCB protects all waters in its regulatory scope but has special responsibility for isolated wetlands and headwaters that may not be regulated by other programs, such as Section 404 of the CWA. Projects that require a Section 404 CWA permit, or fall under other federal jurisdiction, and have the potential to impact waters of the State are required to comply with the terms of the Section 401 Water Quality Certification Program. If a project does not require a federal license or permit but does involve activities that may result in a discharge of harmful substances to waters of the State, the RWQCB has the option to regulate such activities under its State authority in the form of Waste Discharge Requirements or Certification of Waste Discharge Requirements (California Water Code section 13000 et seq., SWRCB 2016).

California Oak Woodlands Conservation Act: CFGC Sections 1360-1372, PRC 21083.4

The California Oak Woodland Conservation Act (COWCA) defines an oak as “any species in the genus Quercus” (CFGCC Sections 1360-1372). The COWCA defines an oak woodland as “an oak stand with greater than ten percent canopy cover, or that may have historically supported greater than ten percent canopy cover” (CFGCC Sections 1360-1372). The COWCA is designed to “support and encourage voluntary, long-term private stewardship and conservation of California’s oak woodlands by offering landowners financial incentives to protect and promote biologically functional oak woodlands over time” (CFGCC Sections 1360-1372); as mandated by the Wildlife Conservation Board (WCB). The WCB has established grant programs, the California Oak Woodlands Conservation Program, designed to protect and restore oak woodlands using conservation easements, cost-share and long-term agreements, technical assistance, and public education and outreach.
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CEQA, PRC Section 21083.4, requires counties to determine whether projects within their jurisdiction may result in significant impacts on the environment due to the conversion of oak woodlands and requires that counties adopt specified mitigation measures for significant impacts to oak woodlands. The requirement applies to non-commercial native oak trees five inches or more in diameter at standard height (DSH; 4.5 feet above ground level). Oaks less than five inches DSH would still be subject to any conservation measures contained in applicable local ordinances or general plans.

3.4.2.3  Local

El Dorado County General Plan

The Project is proposed by El Dorado Irrigation District (District), a special district that supplies water to customers throughout much of El Dorado County (County). Pursuant to Government Code sections 53091(D) and (E), many of the District’s activities are not subject to local zoning or land use requirements, as stated below.

Building and zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code.

As a special district with equal authority, the District is exempt from following goals and policies within the County’s General Plan and Zoning Ordinance. However, the District aims to comply to with those goals and policies outlined in the General Plan and uses the following goals and policies as a metric for formulating an impact analysis (EDCGP 2015).

Goal 7.4: Wildlife and Vegetation Resources: Identify, conserve, and manage wildlife, wildlife habitat, fisheries, and vegetation resources of significant biological, ecological, and recreational value.

Objective 7.4.1: Pine Hill Rare Plant Species: The County shall protect Pine Hill rare plant species and their habitats consistent with Federal and State laws.

Policy 7.4.1.1: The County shall continue to provide for the permanent protection of the eight sensitive plant species known as the Pine Hill endemics and their habitat through the establishment and management of ecological preserves consistent with County Code Chapter 130.71 and the USFWS’s Gabbro Soil Plants for the Central Sierra Nevada Foothills Recovery Plan (USFWS 2002).

Objective 7.4.2: Identify and Protect Resources: Identification and protection, where feasible, of critical fish and wildlife habitat including deer winter, summer, and fawning ranges; deer migration routes; stream and river riparian habitat; lake shore habitat; fish spawning areas; wetlands; wildlife corridors; and diverse wildlife habitat.

Policy 7.4.2.1: The County will coordinate wildlife and vegetation protection programs with appropriate Federal and State agencies.

Policy 7.4.2.2. The County shall continue to support the Noxious Weed Management Group in its efforts to reduce and eliminate noxious weed infestations to protect native habitats and to reduce fir hazards.
Policy 7.4.2.8. Conserve contiguous blocks of important habitat to offset the effects of increased habitat loss and fragmentation elsewhere in the County through a Biological Resource Mitigation Program (Program). The Program will result in the conservation of:

1. Habitats that support special status species;
2. Aquatic environments including streams, rivers, and lakes;
3. Wetland and riparian habitat;
4. Important habitat for migratory deer herds; and
5. Large expanses of native vegetation.

A. Habitat Protection Strategy. The Program establishes mitigation ratios to offset impacts to special-status species habitat and special-status vegetation communities within the County. Special-status species include plants and animals in the following categories:

- Species listed or proposed for listing as Threatened or Endangered under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA); S
- Species considered as candidates for listing as Threatened or Endangered under ESA or CESA;
- Wildlife species identified by California Department of Fish and Wildlife (CDFW) as Species of Special Concern;
- Wildlife species identified by US Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) as Species of Concern;
- Plants listed as Endangered or Rare under the California Native Plant Protection Act;
- Animals fully protected under the California Fish and Game Code;
- Plants that have a California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) of IA (plants presumed extirpated in California and either rare or extinct elsewhere), IB (plants rare, threatened, or endangered in California and elsewhere), 2A (plants presumed extirpated in California, but more common elsewhere), or 2B (plants rare, threatened, or endangered in California, but more common elsewhere). The CNPS CRPRs are used by both CDFW and USFWS in their consideration of formal species protection under ESA or CESA.

With the exception of oak woodlands, which would be mitigated in accordance with the ORMP (see General Plan Policy 7.4.4.4), and Pine Hill rare plant species and their habitat, which would be mitigated in accordance with County Code Chapter 130.71 (see General Plan Policy 7.4.1.1), mitigation of impacts to vegetation communities will be implemented in accordance with the table below. Preservation and creation of the following vegetation communities will ensure that the current range and distribution of special-status species within the County are maintained.
B. Wildlife Movement for future 4- and 6- and 8-lane roadway construction projects. Consideration of wildlife movement will be given by the County on all future 4-, 6-, and 8-lane roadway construction and widening projects. Impacts on public safety and wildlife movement for projects that include new roads of 4 or more lanes or the widening of roads to 4 or more lanes will be evaluated during the development review process (see Section C below). The analysis of wildlife movement impacts will take into account the conditions of the project site and surrounding property to determine whether wildlife under crossings are warranted and, if so, the type, size, and locations that would best mitigate a project's impacts on wildlife movement and associated public safety.

C. Biological Resources Assessment. A site-specific biological resources technical report will be required to determine the presence of special-status biological resources that may be affected by a proposed discretionary project. Vegetation communities and special-status plants shall be mapped and assessed in accordance with the CDFG 2009 Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities and subsequent updates, and the List of Vegetation Alliances and Associations (CDFG 2010) and subsequent updates. Any surveys conducted to evaluate potential presence of special-status wildlife species shall conform to practices recommended by CDFW and/or USFWS at the time of the survey. The report will include an assessment of direct, indirect and cumulative impacts to biological resources, including vegetation communities, plant and wildlife species and wildlife movement. The report shall include recommendations for:

- pre-construction surveys and avoidance/protection measures for nesting birds;
- pre-construction surveys and avoidance/protection measures for roosting bats;
- avoidance and minimization measures to reduce impacts related to entrapment, entanglement, injury, or poisoning of wildlife; and
- avoidance and minimization measures to reduce indirect impacts to wildlife in open space adjacent to a project site.

The results of the biological resources technical report shall be used as the basis for establishing mitigation requirements in conformance with this policy and the Oak Resources Management Plan (ORMP, see General Plan Policy 7.4.4.4).

D. Habitat Protection. Mitigation for impacts to vegetation communities defined above in Section A will occur within the County on a minimum contiguous habitat block of 5 acres. Wetlands mitigation may occur within
mitigation banks and/or outside the County if within the watershed of impact. Mitigation sites will be prioritized based on the following criteria:

- Location within PCAs and IBCs
- Location within other important ecological areas, as defined in the Updated INRMP Initial Inventory and Mapping (June 2010);
- Woodland, forest and shrub communities with diverse age structure;
- Woodland and forest communities with large trees and dense canopies;
- Opportunities for active land management to be used to enhance or restore natural ecosystem processes;
- Presence of or potential to support special-status species;
- Connectivity with adjacent protected lands; • Parcels that achieve multiple agency and community benefits;
- Parcels that are located generally to the west of the Eldorado National Forest; and
- Parcels that would preserve natural wildlife movement corridors such as crossings under major roadways (e.g., U.S. Highway 50 and across canyons).

E. Mitigation Monitoring. Prior to final approval of an individual development project, applicants shall submit to the County a Mitigation Monitoring Plan that provides for periodic monitoring of preserved lands to assess effectiveness of the measures implemented to protect special-status and native species. The Mitigation Monitoring Plan shall demonstrate that funding is secured to implement the monitoring strategy in perpetuity.

Objective 7.4.4: Forest and Oak Woodland, and Tree Resources: Protect and conserve forests, oak woodlands, and tree resources for their wildlife habitat, recreation, water production, domestic livestock grazing, production of a sustainable flow of wood products, and aesthetic values.

Policy 7.4.4.1: The Natural Resource land use designation shall be used to protect important forest resources from uses incompatible with timber harvesting.

Policy 7.4.4.3: Encourage the clustering of development to retain the largest contiguous areas of forests and oak woodlands possible.

Policy 7.4.4.4: For all new development projects or actions that result in impacts to oak woodlands and/or individual native oak trees, including Heritage Trees, the County shall require mitigation as outlined in the El Dorado County Oak Resources Management Plan (ORMP). The ORMP functions as the oak resources component of the County’s biological resources mitigation program, identified in Policy 7.4.2.8.

For projects that would result in soil disturbance on parcels that (1) are over an acre and have at least 1 percent total canopy cover, or (2) are less than an acre and have at least 10 percent total canopy cover by woodlands habitats as defined in this General Plan and determined from base line aerial photography or by site survey performed by a
qualified biologist or licensed arborist, the County shall require one of two mitigation options: (1) the project applicant shall adhere to the tree canopy retention and replacement standards; or (2) the project applicant shall contribute to the County’s Integrated Natural Resources Management Plan (INRMP) conservation fund described in Policy 7.4.2.8.

The ORMP identifies standards for oak woodland and native oak tree impact determination, mechanisms to mitigate oak woodland and native oak tree impacts, technical report submittal requirements, minimum qualifications for technical report preparation, mitigation monitoring and reporting requirements, and projects or actions that are exempt from this policy. The ORMP also establishes an in-lieu fee payment option for impacts to oak woodlands and native oak trees, identifies Priority Conservation Areas (PCAs) where oak woodland conservation efforts may be focused, and outlines minimum standards for identification of oak woodland conservation areas outside the PCAs. Requirements for monitoring and maintenance of conserved oak woodland areas and identification of allowable uses within conserved oak woodland areas are also included in the ORMP.

**El Dorado County Oak Resources Management Plan**

On October 24, 2017, the Board of Supervisors approved the General Plan Biological Resources Policy Update Project; adopted an ORMP that replaces the 2008 Oak Woodland Management Plan; adopted an In-Lieu Mitigation Fee to mitigate impacts to oak woodland areas and individual oak trees; and adopted an Oak Resources Conservation Ordinance to implement the ORMP. The new Ordinance became effective on November 23, 2017 and the In-Lieu Mitigation Fee took effect on December 23, 2017. The ORMP is intended to implement El Dorado County General Plan and fulfill mitigation requirements with respect to individual oak trees and oak woodlands. The ORMP provides a comprehensive approach for project-level oak woodland mitigation and simultaneously considers ‘landscape level’ conservation goals. The ORMP reviews both the State- and County-level requirements for oak woodland mitigation standards.

The ORMP mitigation requirements are more stringent than state law, which only requires mitigation of impacts to oak woodlands. The County’s ORMP also requires mitigation of individual native oak trees and greater mitigation (3-to-1 ratio) for Heritage Trees which are 36 inches diameter or greater, measured four feet six inches from ground level. It also provides greater protection to individual valley oak trees and valley oak woodlands, which is the only oak woodland type in El Dorado County designated by the CDFW as a Special Status Vegetation Community protected under State law.

**Mitigation Options under the ORMP**

The ORMP requires mitigation for permitted oak tree removal under the ORMP including: on-site retention; replacement planting on-site and off-site; and in-lieu fees that will be used to acquire land and/or conservation easements to conserve oak woodlands, and to plant and maintain native oak trees. (Under the prior General Plan Policy tree canopy retention was the only mitigation option available.) All mitigation requires additional permits depending upon the mitigation option chosen.

**Incentive for On-Site Retention of Oak Woodlands**

To encourage on-site retention of oak woodlands, the ORMP requires increasing mitigation ratios based on the amount of oak woodland removed: Removing 50 percent or less requires a 1-to-1 ratio of mitigation, removing up to 75 percent requires a 1.5-to-1 ratio of mitigation, and removing up to 100 percent requires a 2-to-1 ratio of mitigation.
Mitigation of oak woodlands would consist of one of the options described above: on-site retention; replacement planting on-site and off-site; and/or in-lieu fees.

**In-Lieu Fee Option**

The in-lieu fee for removal of oak woodlands is calculated based on total cost per acre, which is currently set at $8,285. The in-lieu fee for removal of individual oak trees is calculated on a total cost per inch, which is currently set at $153 for a non-Heritage Tree and $459 per inch for a Heritage Tree at a 3-to-1 ratio. The per-inch fee shall be multiplied by the total number of trunk diameter inches removed. The in-lieu fees collected will be deposited in the County’s Oak Woodland Conservation Fund. That fund will be used to acquire land and/or conservation easements to conserve oak woodlands, provide for native oak tree planting, and for ongoing conservation area monitoring and management activities.

**Oak Tree and Oak Woodland Removal Permits**

Permits for removal of Oak Resources are required for any non-exempt action requiring discretionary development entitlements or approvals from the County, or ministerial actions requiring a building or grading permit issued by the County. An Oak Resources Technical Report prepared by a certified arborist, qualified wildlife biologist or a Registered Professional Forester is required prior to issuing a permit to remove any Oak Resources.

**Mitigation Maintenance, Monitoring and Reporting**

Required care, inspection and documentation of replacement plantings (including replacement of any dead trees) shall be performed by all permittees for a seven (7) year period from the date of the planting. The County shall provide an annual reporting to the Board of Supervisors on the number of oak removal permits issued and estimated inches/ acres approved for removal during the reporting year. The County shall provide a biennial report to the Planning Commission and Board of Supervisors of the in-lieu fees collected and recommend fee adjustments as appropriate.

**Exemptions to Mitigation Requirements**

Exemptions to oak mitigation requirements include but are not limited to: existing single-family parcel of one acre or less; fire safe activities to protect existing structures; utility line maintenance; emergency operations; County road projects; affordable housing projects; some agricultural activities; removal of dead, dying or diseased trees; some exemptions for personal use (e.g., firewood) limited to no more than eight trees per parcel per year; tree removal under a Timber Harvest Plan. Exemptions from mitigation do not apply to Heritage Trees, individual valley oak trees, and valley oak woodlands (unless these trees are dead, dying, or diseased).

**Utility Line Maintenance.** Actions taken to maintain safe operation of existing utility facilities in compliance with state regulations (PRC 4292-4293 and California Public Utilities Commission (CPUC) General Order 95) are exempted from the mitigation requirements included in this ORMP. Actions associated with development of new utility facilities, including transmission or utility lines, are not exempt.

**Dead, Dying, or Diseased Trees.** Individual native oak tree removal (including individual valley oak trees and valley oak trees within valley oak woodlands) is exempted from the mitigation requirements included in this Chapter when:
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1. The tree is dead, dying, or diseased, as documented in writing by a Certified Arborist or Registered Professional Forester; and/or

2. The tree exhibits high failure potential with the potential to injure persons or damage property, as documented in writing by a Certified Arborist or Registered Professional Forester.

Pine Bark Beetle Infestations Emergency Guidance

Drought conditions and resulting bark beetle infestations have caused pervasive tree mortality across the Central and Southern Sierra Nevada Mountains. The United States Forest Service (USFS) estimates that over 102 million trees have died since 2010 throughout California (USFS 2017). Dead and dying trees threaten public safety and infrastructure and El Dorado County and the State have taken the following actions to mitigate the spread of infestations:

- On October 30, 2015, Governor Brown issued a State of Emergency proclamation. This proclamation recognizes and addresses the need for the removal of dead and dying trees throughout the State and authorized California Disaster Assistant Act (CDAA) funding which provides 75 percent reimbursement for all eligible costs related to removal of hazard trees that threaten public infrastructure.

- On March 28, 2016, the Board of Supervisors proclaimed a Local State of Emergency due to pervasive tree mortality.

- On May 17, 2016, the Board of Supervisors approved the County’s Tree Mortality Hazard Tree Removal Plan.

3.4.3 Environmental Setting

A combination of desktop analysis and field studies was performed to identify existing biological resources on the Project site and evaluate the potential for the Project area to support sensitive biological resources (e.g., special status plant and wildlife species; sensitive natural communities; and jurisdictional wetlands and drainages). The methodology and results of the desktop analysis and field studies are included below and describe the existing biological conditions of the Project area.

3.4.3.1 Methodology

Desktop Analysis

For this Draft EIR, the following resources were used to identify special status plant species, wildlife species, and associated habitats that occur or have the potential to occur within the Project region:

- A Manual of California Vegetation, Second Edition, was used to assess and classify vegetation communities and associated habitat within the Project area (Sawyer et al. 2009);

- Fire and Resource Assessment Program (FRAP) Data: Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) classification system was used to present vegetation types in the Project area (USDA 2018);
• A CDFW California Natural Diversity Database (CNDDB) records search of special status species observations in the Project area and in the five miles surrounding the Project area (CDFW 2018e);

• The CNPS online Inventory of Rare and Endangered Plants of California for the Pollock Pines, Tunnel Hill, Devil Peak, Robbs Peak, Slate Mountain, Riverton, Camino, Sly Park, and Stump Spring USGS 7.5-minute Quadrangles (Quads) (CNPS 2018b);

• The USFWS list of endangered, threatened, and candidate species for the proposed Project Alignment and in the five miles surrounding the Project area (USFWS 2018a);

• The USFWS list of Birds of Conservation Concern (BCC) for the proposed Project Alignment and in the five miles surrounding the Project area (USFWS 2018a);

• The USFWS Critical Habitat data for federally threatened and endangered species (USFWS 2016b);

• Calflora online database for the County (Calflora 2018). Calflora was used as a secondary tool for the purpose of assessing any and/or all other rare plant species that have the potential to occur within the County;

• The National Wetland Inventory (NWI) was used to identify potential wetlands, potential waters of the U.S., and associated habitats, that may occur within the Project area (USFWS 2016c); and

• Soil data, including hydric soil assessments for wetland habitat, was assessed and mapped using the United States Department of Agriculture (USDA) Web Soil Survey (USDA 2017).

The desktop data review informed reconnaissance-level and protocol level biological resource surveys for the Project. The methodologies for these surveys are described below.

Field Surveys

Tree Assessment

The District conducted a tree survey in 2015. Trees were surveyed along the proposed Project alignment and mapped using a GPS unit. Additional observations and notations of tree species and communities present were made during site visits that occurred between 2015-2017 and were used to support desktop evaluations.

Vegetation Community Assessment

The FRAP CALVEG classification was reviewed to develop an understanding of the general vegetation types within the Upper Main Ditch Piping Project area and adjacent areas. Although this classification system gives a relatively general and broad description of habitat types, it provides a good overview of potential vegetation that could be encountered within the Project area (USDA 2018).

The CDFW and the CNPS have developed a more detailed standard classification system for floristically describing vegetation communities and habitats statewide. The CDFW and CNPS system has been compiled in *A Manual for California Vegetation (MCV)- Second Edition* (CNPS 2000)] and has been accepted and adopted by state and federal agencies. Given the specificity of the MCV, the biological communities in the Project area have been ground-verified.
and classified using MCV standards and thus are more detailed than those evaluated in the FRAP CALVEG classification.

**Special-Status Species Surveys**

A reconnaissance-level biological resources field survey was conducted by a wildlife biologist and a botanist along the proposed Project alignment on May 21, 2015. The area surveyed included “staging areas, the bench along the ditch, and the area approximately ten (10) feet uphill and 40-feet downhill of the ditch” (AECOM 2016). The surveys were conducted in accordance with standard practices and applicable laws, including but not limited to USFWS and CDFW guidance documents and ESA requirements; the complete results are described in the Floristic Survey for Special-status Plants and Habitat Assessment for Special-status Wildlife for the Project, El Dorado County, California (AECOM 2016).

During the reconnaissance survey a botanist also completed a floristic survey in accordance with Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (AECOM 2015a, CDFG 2018). The survey was conducted during the appropriate blooming season (i.e., May 21, 2015) for the target species, and all plants encountered during the surveys were identified to a taxonomic level sufficient for special-status species determination.

Vegetation communities in the proposed Project area were characterized and evaluated for their potential to support the target special status species identified during desktop analysis conducted prior to the field survey. In addition, the botanist visited nearby reference populations to confirm that target species were blooming and identifiable, and to establish a visual image of special status plants known to occur in the proposed Project vicinity and their associated habitat and communities. (AECOM 2015a).

During the reconnaissance survey a wildlife biologist assessed habitat conditions and surveyed the forest canopy and trees in the proposed Project area. The wildlife biologist also surveyed within 200-feet of the proposed Project alignment for suitable nesting habitat for birds covered under the Migratory Bird Treaty Act, including raptors and passerine species, and for evidence of recent nesting activity. In areas where structures or trees would need to be removed, the presence of snags, large trees, trees with cavities or flaking bark, leafy trees were evaluated for potential habitat for tree-roosting bat species. The proposed Project area was also surveyed for amphibian and reptile habitat by visually scanning the Main Ditch and adjacent banks for appropriate water depth, flow rate, substrate along the bottom of the ditch, bank structure, as well as vegetation present in the ditch and along the banks. Lastly, potential burrowing or denning habitat was surveyed to identify species such as foxes, ringtails, and fishers. (AECOM 2015a). Additional details from these surveys can be found in the Floristic Survey for Special-status Plants and Habitat Assessment for Special-status Wildlife for the Project, El Dorado County, California (AECOM 2016).

On December 11, 2017, a biologist and environmental scientist conducted an updated reconnaissance-level survey, which included visual spot checks of the proposed Project, Blair Road Alternative and Combined Alternative alignments. The cross-country portion of the Blair Road and Combined Alternatives immediately adjacent to Reservoir 1 WTP and Blair Road were visually inspected for sensitive biological resources, including habitat for special status species, wetlands, and stream crossings. The results of these surveys are incorporated into the baseline and impact analyses of this CEQA document.
California Red-Legged Frog Protocol Level Assessment

In June 2014, a biologist conducted the first of several habitat assessments and surveys for CRLF (AECOM 2013) in accordance with the Revised Guidance on Site Assessments and Field Surveys for the California Red-Legged Frog (USFWS 2005). During 2015, protocol-level CRLF surveys were also conducted in accordance with the USFWS CRLF Guidance (USFWS 2005). These protocol-level surveys are the accepted method for USFWS to confirm presence or absence of this species within potentially suitable habitat. Therefore, beginning in May 2015, qualified biologists implemented the USFWS protocol including eight field surveys to determine the presence or absence of CRLF in the proposed Project area. The surveys included two day-surveys and four night-surveys during the breeding season (April 15 – July 1), and one day and one night-survey during the non-breeding season (after July 1) in accordance with the 2005 guidance. Reclamation, in its role as lead federal agency for the District’s request for grant funding to the Project, is undergoing formal consultation with USFWS, and is requesting a “may affect, but is not likely to jeopardize the continued existence of CRLF” finding from USFWS. More details regarding the methodologies and results of these surveys can be found in the following two reports:

- California Red-Legged Frog Site Assessment for Main Ditch Project, El Dorado County (AECOM, June 2013)

Jurisdictional Delineation

Jurisdictional waters of the U.S. include wetlands and “other waters”, such as creeks and intermittent drainages that fall under the jurisdiction of the USACE, in accordance with the Clean Water Act. According to guidance provided by the USACE, jurisdictional wetlands must meet three wetland assessment criteria: hydrophytic vegetation, hydric soils, and wetland hydrology. Jurisdictional waters of the U.S. can also be defined by exhibiting a defined bed and bank and an ordinary high-water mark (OHWM).

A USACE jurisdictional delineation was completed in October 2012 for the Upper Main Ditch and verified by the USACE on January 24, 2014 (EN2 2013; USACE 2014). The delineation was conducted using the routine determination method provided in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (USACE 2010). Vegetation communities, including riparian canopy, were also documented during the delineation. The Preliminary Wetland Delineation Report for the Upper Main Ditch – Forebay to Reservoir 1, El Dorado County, California (EN2 Resources, Inc. 2013) is included in Appendix C.3 and provides further detail regarding the methodology used during the jurisdictional delineation.

The routes of the Blair Road and Combined Alternative alignments were specifically selected to avoid potential impacts to Waters of the United States. These alignments were examined by District environmental staff for potentially jurisdictional features. District staff determined that no potentially jurisdictional features would be affected under these alternatives and, as a result, no USACE, RWQCB, and/or CDFW permits would be required for either alternative.
3.4.3.2 Results

The Project area is located within the California Floristic Province, which is characterized by a Mediterranean climate with cool, wet winters and hot, dry summers. Generally, El Dorado County encompasses gently rolling oak woodland slopes in the lower elevation slopes in the western sections of the county transitioning to more dominant coniferous pine and fir forests at higher elevations of the western slope. Some areas of eastern El Dorado County contain more arid landscapes given the transition to the eastern Sierra Nevada. The County supports a variety of habitats that provide movement corridors and resident, breeding, and foraging habitat areas for wildlife species. A discussion of wildlife movement corridors, sensitive habitats, and special status species that occur within the Project vicinity are discussed in detail below.

Elevations within the Project range from approximately 3,785 at the Forebay Reservoir to 3,753 feet above mean sea level at the existing inlet to the Reservoir 1 Water Treatment Plant (WTP) (EID 2015). The Project descends from Forebay Reservoir to the Reservoir 1 WTP through mixed conifer forest, rural residential areas, and undeveloped parcels along the existing three miles of ditch. North of the ditch, rural residential development gradually eases into more natural habitats. South of the Upper Main Ditch, residential development and commercial development are clustered along U.S. Highway 50 (U.S. 50), a four-lane divided highway. Clear cuts have occurred on some of the Project staging areas. Potential staging areas are located on previously disturbed sites (e.g. the existing alignment) and are located within small clearings in the forest canopy. Portions of the staging areas are located within existing paved or aggregate base surfaces (AECOM 2013, AECOM 2015a).

Tree Assessment

The 2015 tree assessment identified approximately 50 trees on the existing ditch bench and roughly 400 trees within the ditch alignment. Overall, approximately 335 trees at various locations on the three miles of proposed Project alignment were identified for removal as a part of the proposed Project. Figure 2.6-2 depicts the trees mapped during this survey, including trees identified for removal. Species of trees identified include pine, fir, cedar, and oak. Tree health was also denoted, and dead trees that could be considered hazard trees were identified. The biological communities the trees reside in are discussed below.

Trees and vegetation communities along Blair Road and portions of the cross-country segments of the Blair Road Alternative and the Combined Alternative were surveyed during the December 2017 reconnaissance-level surveys. Vegetation communities observed in these portions of the alternatives were consistent with those identified in the proposed Project area. District assessments of required tree removal were estimated during alternative evaluations (Appendix B.3); these assessments identified approximately 145 trees for removal within the Blair Road Alternative corridor and approximately 295 trees for removal within the Combined Alternative.

Vegetation Communities

Ponderosa pine – Douglas-fir Forest Alliance

The Ponderosa pine (Pinus ponderosa) – Douglas-fir (Pseudotsuga menziesii) forest alliance best describes the vegetation community present within the Project area (Sawyer et al. 2009). The Ponderosa pine – Douglas-fir forest consists of both habitat types- montane hardwood conifer forest and mixed needle-leaved evergreen cold-deciduous forest (AECOM 2015b). This diverse vegetation community consists of a spectrum of mixed, vigorously growing
conifer and hardwood species. Dominant tree species within this community at the Project site include incense cedar (*Calocedrus decurrens*), Jeffrey pine (*Pinus jeffreyi*), sugar pine (*Pinus lambertiana*), black oak (*Quercus kelloggii*), canyon live oak (*Quercus chrysolepis*), and big-leaf maple (*Acer macrophyllum*). Co-dominant species include Pacific dogwood (*Cornus nuttallii*), beaked hazelnut (*Corylus cornuta*), thimbleberry (*Rubus parviflorus*), deer brush (*Ceanothus integerrimus*), Sierra coffeeberry (*Frangula rubra*), and mountain misery (*Chamaebatia foliolosa*) (AECOM 2015b). The tree canopy of this community is dense, with a thick layer of duff covering the ground. The herbaceous layer is subsequently poorly developed, with sparse cover of grasses and forbs (AECOM 2015b).

Generally, this vegetation community can be found throughout California, primarily west of Cascade-Sierra Nevada Crest and throughout the Northern Coastal Range. Elevations range from 3,280 to 5,905 feet (1,000 to 1,800 meters) above mean sea level (amsl). This community can occur along raised stream benches, terraces, slopes, and ridges of all aspects, with soils that are deep and well drained (Sawyer 1980). In the proposed Project area, this vegetation community is primarily located throughout residential and rural areas surrounding the roadways near the ditch. A full list of species observed within the Project area during baseline botanical surveys are identified in Appendix C.2.

**White fir – Douglas-fir Forest Alliance**

In general, incidences of the white fir – Douglas-fir vegetation community are minimal within the Project area, as they transition quickly into Sierran mixed conifer (AECOM 2013). As such, the White fir (*Abies concolor*) – Douglas-fir (*Pseudotsuga menziesii*) forest alliance is the secondary vegetation community present in the Project area. This community exists largely on raised stream benches, terraces, slopes and ridges. The parent materials and soils are variable (Sawyer et al. 2009). Although most of the Main Ditch has unvegetated and managed banks, this community is found primarily in places along the Upper Main Ditch below the adjacent dirt path, on private property, and in unmanaged areas. This community is also found along Blair Road and the cross-country alternative segments.

**Riparian assemblage**

Dominant riparian-associated vegetation species in the Project area include dogwood (*Cornus sp.*), Himalayan blackberry (*Rubus armeniacus*), thimbleberry (*Rubus parviflorus*), and bracken fern (*Pteridium aquilinum*). Other riparian species identified during the field survey of the proposed Project include Baltic rush (*Juncus balticus*), slender rush (*Juncus tenuis*), Indian rhubarb (*Darmera peltata*), and tall flatsedge (*Cyperus eragrostis*) (AECOM 2015b). Outside and adjacent to the Project area, additional riparian vegetation is found in the small ephemeral drainages running north of the ditch and along the potentially perennial channels fed by dam seepage that run north of the Forebay Reservoir. Lacustrine habitat (lake habitat) is located adjacent to the Project area within Forebay Reservoir. The shoreline of Forebay Reservoir below the Ordinary High-Water Mark (OHWM) supports limited plant cover, including native and nonnative grasses and occasional willows (AECOM 2013). The alternative alignment corridors were confirmed to intersect these ephemeral drainages and have similar species present during reconnaissance surveys.

**Wildlife**

Habitat types for wildlife species in the Project area include the aforementioned vegetation communities common to the Sierra Nevada foothills, including Ponderosa pine – Douglas-fir Forest Alliance, White fir – Douglas-fir Forest Alliance, and riparian areas. These vegetation communities support a variety of regional wildlife species. Wildlife species associated with Ponderosa pine – Douglas-fir Forest Alliance include disseminators of acorns such as
western scrub-jay (*)Aphelocoma californiastar*), acorn woodpecker (*)Melanerpes formicivorusstar*), and western gray squirrel (*)Sciurus griseusstar*). Species that use acorns as a major food source are also associated with these vegetation communities, such as mule deer (*)Odocoileus hemionusstar*). Riparian habitats, or ditch edges, can provide water, thermal cover, and diverse nesting and feeding opportunities (Thomas 1979). Common wildlife species can use these habitats during all stages of their life cycles including breeding, feeding, nesting, and/or migration (SFSU 2016). Riparian corridors and waterways can provide habitat to a variety of wildlife species including mule deer, raccoon (*)Procyon lotorstar*), Sierra gartersnake (*)Thamnophis couchistart*), and song sparrow (*)Melospiza melodiastart*), among other common species.

The following wildlife species were observed in the Project area: western fence lizard (*)Sceloporus occidentalsstar*), Stellar’s jay (*)Cyanocissus stelleristart*), turkey vulture (*)Cathartes aurastart*), pacific wren (*)Troglydites pacificustart*), Townsend’s warbler (*)Setophaga townsendistart*), American robin (*)Turdus migratoriusstar*), spotted towhee (*)Pipilo maculatustart*), mallard (*)Anas platyrhynchosstar*), northern flicker (*)Coloptes aurustart*), western tiger swallowtail (*)Papilio rutulusstar*), and Western gray squirrel (*)AECOM 2015astart*). Additional common species such as American black bear (*)Ursus americanustart*), coyote (*)Canis latranstar*), gray fox (*)Urocyon cinereoargenteustart*), and bobcat (*)Lynx rufusstart*), are known to frequent mixed coniferous forests at the Project elevation.

**Wildlife Corridors**

Wildlife movement corridors have been recognized by federal agencies and the State as important habitats worthy of conservation. Wildlife corridors provide migration channels seasonally (i.e., between winter and summer habitats), and provide non-migrant wildlife the opportunity to move within their home range for food, cover, and reproduction. The aforementioned vegetation communities present in the Project area as well as the cleared nature of the ditch right-of-way (ROW) and rural nature of the region have the potential to support wildlife movement in the Project area. The vegetation cover (e.g., over and understory), in association with wetland and/or stream channels, are highly favored riparian habitats to a variety of wildlife species. Undisturbed and continuous expanses of land are also useful for migration. In addition, a number of common wildlife species have been documented by local residents using the ditch corridor for movement; however, habitats in the area are fragmented by fences, busy roadways such as nearby Highway 50, and tree farms and other local land use practices.

**Special Status Species**

Special status species are defined as the following:

- Species listed, formally proposed, or designated as candidates for listing as threatened or endangered under the federal Endangered Species Act (50 CFR 17.12 for listed plants, 50 CFR 17.11 for listed animals, and various notices in the Federal Register for proposed species);
- Species that are listed, formally proposed, or designated as candidates for listing by California as threatened or endangered under the CESA (14 CCR 670.5);
- Plants listed as rare under the California Native Plant Protection Act of 1977 (CFGC 1900 et seq.);
- Plants considered by the CNPS to be Rank 1 - a) “plants presumed extirpated in California and either rare or extinct elsewhere, or b) “rare, threatened, or endangered in California and elsewhere”;

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- Plants considered by CNPS to be a Rank 2: a) Plants presumed extirpated in California, but common elsewhere, or b) “rare, threatened, or endangered in California and common elsewhere”;
- Bird species designated by USFWS as Birds of Conservation Concern or protected under the MBTA;
- Wildlife species designated as Species of Special Concern or Fully Protected by CDFW;
- Plant and wildlife species that are designated as “special animals” or “those of greatest conservation need”, by CDFW through the CNDDDB; and
- Species that meet the definition of rare, threatened, or endangered under Section 15380 of the CEQA guidelines.

During the desktop analysis, sources were queried for special status species documented within five miles of the proposed Project and within the nine USGS 7.5-minute quads (USGS 7.5-minute Quads for Pollock Pines, Tunnel Hill, Devil Peak, Robbs Peak, Slate Mountain, Riverton, Camino, Sly Park, and Stump Spring) surrounding the Project area. These species were then evaluated for the potential to occur on the Project site (considering the proposed Project, the Blair Road Alternative, and the Combined Alternative) based on site conditions and the presence of suitable habitat. The “potential for occurrence” for each species was then classified into one of the following four categories as listed below:

- **High**: The proposed Project site and/or immediate vicinity provide ideal habitat conditions for the species and/or known populations of the species occur within the Project’s area of impact.
- **Moderate**: The proposed Project site and/or immediate vicinity provide suitable habitat for the species and habitat for the species may occur within the Project’s area of impact.
- **Low**: The proposed Project site and/or immediate vicinity provides only limited habitat for the species and/or the Project’s area of impact is outside the known range for the species.
- **Very Low to Nil**: The proposed Project site and/or immediate vicinity do not support suitable habitat for the species and/or the proposed Project is outside the species known range.

Species with the potential to occur within the vicinity of the Project are included in Table 3.4-1. Impacts to species with high or moderate potential to occur on the proposed Project site are considered under Impact BIO-1 below. CRLF (*Rana draytonii*) is also considered below based on its high-profile status in the County. Species with low or very low to nil potential to occur in the proposed Project area are included in Appendix C.7.
# Upper Main Ditch Piping Project

**Biological Resources**

**June 2018**

## Table 3.4-1 Special Status Species with Potential to Occur on the Project Site

<table>
<thead>
<tr>
<th>Common name</th>
<th>Scientific name</th>
<th>Federal</th>
<th>State</th>
<th>CNPS</th>
<th>Geographic distribution/Floristic province</th>
<th>Preferred habitat</th>
<th>Identification period</th>
<th>Level of potential to occur within proposed Project area</th>
</tr>
</thead>
<tbody>
<tr>
<td>brownish beaked-rush</td>
<td>Rhynchospora capitellata</td>
<td>–</td>
<td>S1</td>
<td>2B.2</td>
<td>148-6,562 feet (45-2,000 meters)</td>
<td>Lower and upper montane coniferous/yellow pine forest; meadows; seeps, (coastal) marshes, swamps, wetlands, riparian.</td>
<td>July-August</td>
<td>Low, Limited suitable habitat in the proposed Project area. One known occurrence within five miles northeast of the proposed Project area near Silver Creek.</td>
</tr>
<tr>
<td>Gray's monkeyflower</td>
<td>Mimulus grayi</td>
<td>–</td>
<td>S2/3</td>
<td>4.3</td>
<td>1,805-9,514 feet (550-2,900 meters)</td>
<td>Lower and upper montane coniferous forest.</td>
<td>May-July</td>
<td>Low, Limited suitable habitat in the proposed Project area. No known occurrences within five miles of the proposed Project area. In addition, botanical surveys conducted during the appropriate bloom period did not identify this species in the proposed Project area (AECOM, 2015).</td>
</tr>
<tr>
<td>Kellogg's lewisia</td>
<td>Lewisia kelloggii ssp. kelloggii</td>
<td>–</td>
<td>S2/3</td>
<td>3.2</td>
<td>4,905-7,760 feet (1,485-2,365 meters)</td>
<td>Upper montane coniferous, yellow pine, red fir forest; openings, ridgelines, often slate-mica-tuff geologic environments.</td>
<td>May-August</td>
<td>Low, Limited suitable habitat in the proposed Project area. No occurrences five miles of the proposed Project area. In addition, botanical surveys conducted during the appropriate bloom period did not identify this species in the proposed Project area (AECOM, 2015).</td>
</tr>
<tr>
<td>marsh skullcap</td>
<td>Scutellaria galericulata</td>
<td>–</td>
<td>S2</td>
<td>2B.2</td>
<td>0-6,890 feet (0-2,100 meters)</td>
<td>Lower montane coniferous forest; meadows and seeps (mesci); marshes and swamps.</td>
<td>June-September</td>
<td>Low, Limited suitable habitat in the proposed Project area. No known occurrences within five miles of the proposed Project area.</td>
</tr>
<tr>
<td>northern coral root</td>
<td>Corallorhiza trifida</td>
<td>–</td>
<td>S1</td>
<td>2B.1</td>
<td>4,495-6,725 feet (1,370-2,075 meters)</td>
<td>Mesic; lower montane coniferous forest; meadows and seeps (edges).</td>
<td>June-July</td>
<td>Low, Limited suitable habitat in the proposed Project area. No known occurrences within five miles of the proposed Project area.</td>
</tr>
<tr>
<td>Oregon fireweed</td>
<td>Epilobium oreganum</td>
<td>–</td>
<td>S2</td>
<td>1B.2</td>
<td>1,640-7,360 feet (500-2,240 meters)</td>
<td>Bogs and fens; lower and upper montane coniferous forest; mesic, meadows and seeps.</td>
<td>June-September</td>
<td>Low, Limited suitable habitat in the proposed Project area. No known occurrences within five miles of the proposed Project area.</td>
</tr>
<tr>
<td>Parry's horkelia</td>
<td>Horkelia parryi</td>
<td>–</td>
<td>S2</td>
<td>1B.2</td>
<td>262-3,510 feet (80-1,070 meters)</td>
<td>Clismontane woodland, chaparral; talus formation and other soils.</td>
<td>April-September</td>
<td>Low, Limited suitable habitat in the proposed Project area. The proposed Project area is outside the known elevation range for this species. Known occurrences within five miles northwest of the proposed Project area near the Slab Creek Reservoir. In addition, botanical surveys conducted during the appropriate bloom period did not identify this species in the proposed Project area (AECOM, 2015).</td>
</tr>
<tr>
<td>pine rose</td>
<td>Rosa pinetorum</td>
<td>–</td>
<td>S2</td>
<td>1B.2</td>
<td>7-3,100 feet (2-945 meters)</td>
<td>Closed-cone coniferous/yellow pine/red fir forest; clismontane woodland.</td>
<td>May-July</td>
<td>Low, Limited suitable habitat in the proposed Project area. The proposed Project area is outside the known elevation range for this species. Known occurrences within five miles of the proposed Project area, three miles east of Camino on Highway 50. In addition, botanical surveys conducted during the appropriate bloom period did not identify this species in the proposed Project area (AECOM, 2015).</td>
</tr>
<tr>
<td>Pleasant Valley mariposa lily</td>
<td>Calochortus clavatus var. avius</td>
<td>–</td>
<td>S2</td>
<td>1B.2</td>
<td>1,000-5,905 feet (305-1,800 meters)</td>
<td>Lower montane coniferous forest (Josephine silt loam and volcanic soils).</td>
<td>May-July</td>
<td>Low, Suitable habitat (Josephine silt loam soil) is located near but outside the proposed Project area. Known occurrences within five miles north and southwest of proposed Project area. According to CNDDB, there are some occurrences throughout the area. Multiple occurrences have occurred about 2.5 miles east of Camino, just south of Highway 50. Botanical surveys conducted during the appropriate bloom period did not identify this species in the proposed Project area (AECOM, 2015).</td>
</tr>
<tr>
<td>saw-toothed lewisia</td>
<td>Lewisia serrata</td>
<td>–</td>
<td>S2</td>
<td>1B.1</td>
<td>2,959-4,780 feet (900-1,435 meters)</td>
<td>Mesic environments; rocky slopes; broad-leaved upland forest; lower montane coniferous forest.</td>
<td>May-June</td>
<td>Low, Limited suitable habitat in the proposed Project area. Known occurrences within five miles north of proposed Project area. There are known occurrences northwest of the area near Silver Creek, per CNPS Inventory Database and CNDDB. In addition, botanical surveys conducted during the appropriate bloom period did not identify this species in the proposed Project area (AECOM, 2015).</td>
</tr>
<tr>
<td>Common name</td>
<td>Scientific name</td>
<td>Legal status</td>
<td>Geographic distribution/ Floristic province</td>
<td>Preferred habitat</td>
<td>Identification period</td>
<td>Level of potential to occur within proposed Project area</td>
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</tr>
<tr>
<td>Sierra arching sedge</td>
<td>Carex cyrtozicta</td>
<td>-</td>
<td>2,000-4,462 feet (610-1,360 meters)</td>
<td>Lower montane coniferous forest, mesic meadows and seeps, marshes and swamps, riparian forest (margins).</td>
<td>May-August</td>
<td>Low; Limited suitable habitat in the proposed Project area. No occurrences within five miles of the proposed Project area. In addition, botanical surveys conducted during the appropriate bloom period did not identify this species in the proposed Project area (AECOM 2015).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>three-bracted onion</td>
<td>Allium triternatum</td>
<td>-</td>
<td>3,608-8,442 feet (1,100-3,000 meters)</td>
<td>Seeps on volcanic outcrops; chaparral; lower and upper montane coniferous forest.</td>
<td>April-August</td>
<td>Low; Limited suitable habitat in the proposed Project area. No known occurrences within five miles of the proposed Project area. In addition, botanical surveys conducted during the appropriate bloom period did not identify this species in the proposed Project area (AECOM 2015).</td>
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<td></td>
</tr>
</tbody>
</table>

**Reptiles and Amphibians**

| California red-legged frog  | Rana draytoni | T, X | SSC | N/A | Coastal Range of California, foothill range of Sierra Nevada mountains. | Year-round             | Low; No suitable breeding habitat within the proposed Project area. Forebay Reservoir is stocked with trout, known predators to CRLF. One known occurrence exists approximately 1.8 miles south of the proposed Project in Spilvy Pond, on the North Fork of Weber Creek, an adjacent watershed across Hwy 50. Designated Critical Habitat Unit ELD-1 is located 0.3 miles from the proposed Project, also on the other side of Hwy 50. Marginal aquatic nonbreeding dispersal habitat is present in the Main Ditch (AECOM 2015); however, protocol-level surveys (diurnal and nocturnal) indicated no CRLF in the proposed Project area (AECOM 2016). |

**Mammals**

<p>| long-legged myotis          | Myotis volans  | -    | -   | N/A | In California, from the coast to high elevation in the Sierra Nevada and White Mountains. May occurs from sea level to 10,500 feet (3,200 meters), but typically observed at elevations of 6,000-9,800 feet (1,800 to 3,000 meters). | Year-round             | Low; Limited suitable roosting habitat exists in trees along the ditch within the proposed Project area. Typically found at higher elevations. One known occurrence just east of Happy Valley west of Marshall Mine approximately five miles southeast of the proposed Project from 2001. |
| pallid bat                  | Antrozous pallidus | -    | -   | SSC | Occurs in California except for the high Sierra Nevada from Shasta to Kern Counties to northern Mendocino County. Found at lower elevation, below 6,652 feet (2,010 meters). | Year-round (in most of its range) | Low; Limited suitable roosting habitat exists in the proposed Project area including the valve house and shed along the Upper Main Ditch close to the Forebay. No known occurrences within five miles of the proposed Project area. |
| silver-haired bat           | Lasionycteris noctivagans | -    | -   | N/A | In California, from the Oregon border south along the coast to San Francisco Bay, and along the Sierra Nevada and Great Basin region to Inyo County, in southern California from Ventura and San Bernardino Counties. Found generally below 9,000 feet (2,745 meters) in elevation. | Spring-Fall            | Low; Limited suitable roosting habitat exists in trees along the ditch within the proposed Project area. The most recent known occurrence from 1990 is located just east of the proposed Project area. The other known occurrence from 1916 is located at the western end of the proposed Project area. |
| Townsend's big-eared bat    | Lasiurus bistriatus | -    | CT, SSC | N/A | Found throughout most of California, mostly in areas with high concentrations of caves and other suitable roosting habitat. Typically found at elevations from sea level to approximately 6,000 feet (1,830 meters). | Year-round             | Low; Limited suitable roosting habitat exists in trees along the ditch within the proposed Project area. No known occurrences within five miles of the proposed Project area. |
| western red bat             | Lasiurus borealis | -    | SSC | N/A | Shasta County to the Mexican border west of the Sierra Nevada and Cascade Mountain ranges. | Year-round             | Low; Limited suitable roosting habitat exists in trees along the ditch within the proposed Project area. No known occurrences within five miles of the proposed Project area. |</p>
<table>
<thead>
<tr>
<th>Common name Scientific name</th>
<th>Legal status</th>
<th>Geographic distribution/ Floristic province</th>
<th>Preferred habitat</th>
<th>Identification period</th>
<th>Level of potential to occur within proposed Project area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yuma myotis Myotis yumanensis</td>
<td>– – N/A</td>
<td>Throughout California, uncommon in Mojave and Colorado Desert regions. Found from sea level to 11,000 feet (3,350 meters) in elevation.</td>
<td>Closely associated with water. Found in open forests, woodlands with sources of water to forage. Roosts in caves and mammal nests such as bridges and abandoned mines.</td>
<td>Spring-Fall</td>
<td>Low. Limited suitable roosting habitat exists in trees along the ditch within the proposed Project area. Two known occurrences within approximately three miles north of the proposed Project area exist from 2002/2003.</td>
</tr>
<tr>
<td>Bald Eagle Haliaeetus leucocephalus</td>
<td>BCC, MBTA E, FP N/A</td>
<td>Throughout California, breeding mainly limited to mountainous habitats near reservoirs, lakes, and rivers.</td>
<td>Large trees close to lakes and large rivers.</td>
<td>Year-round</td>
<td>Low. Limited suitable habitat within the proposed Project area. Suitable foraging habitat occurs on the Project site at Forebay Reservoir and surrounding forested area. There are no known occurrences within five miles of the proposed Project area.</td>
</tr>
<tr>
<td>California Spotted Owl Strix occidentalis occidentalis</td>
<td>BCC, MBTA SSC N/A</td>
<td>Found throughout northern California extending into southern California along the Sierra Nevada, Coastal, and transverse ranges.</td>
<td>Multi-layered forest habitat with high canopy closure with a mixture of tree sizes and densities, including large diameter old-growth trees for nesting and roosting.</td>
<td>Year-round</td>
<td>Low. Limited suitable nesting and foraging habitat within the proposed Project area. The California spotted owl is not likely to nest within the proposed Project area due to the small patch size of suitable habitat and proximity to human establishment and activity. There are multiple known occurrences within five miles of proposed Project area, the closest being approximately one mile to the northwest of the proposed Project area.</td>
</tr>
<tr>
<td>Cooper's Hawk Accipiter cooperi</td>
<td>MBTA WL N/A</td>
<td>Found throughout California.</td>
<td>Nests in open woodlands and forest edges. Forages in riparian woodlands.</td>
<td>Year-round</td>
<td>Low. Limited suitable habitat such as forested areas near clear-cut patches adjacent to the Upper Main Ditch may provide potential nesting and foraging habitat.</td>
</tr>
<tr>
<td>Fox Sparrow Passerella iliaca</td>
<td>BCC, MBTA – N/A</td>
<td>In California, northern and Inner Coast Ranges, Siskiyou and Warner Mountains, and in Sierra Nevada to Mono Lake, and mountains of southern California. Found approximately 4,000 to 9,850 feet (1,220-3,005 meters) in elevation.</td>
<td>Prefers thick cover, especially brushy woodland edges, grove-up fields, cut-over woodlands, and scrubby woods. Nests in montane chaparral consisting of brushy fields.</td>
<td>Year-round</td>
<td>Low. Limited suitable habitat within the proposed Project area and adjacent areas. No known occurrences within five miles of the proposed Project area.</td>
</tr>
<tr>
<td>Loggerhead Shrike Lanius ludovicianus</td>
<td>BCC, MBTA SSC N/A</td>
<td>Throughout California, primarily in the Central Valley.</td>
<td>Open woodland.</td>
<td>Year-round</td>
<td>Low. Limited suitable habitat within the proposed Project area and adjacent areas. No known occurrences within five miles of the proposed Project area.</td>
</tr>
<tr>
<td>Northern Goshawk Accipiter gentilis</td>
<td>BCC, MBTA SSC N/A</td>
<td>North American forests habitats, typically at elevations above 2,500 feet (760 meters) in mountainous areas south into central Mexico.</td>
<td>Mixed coniferous and deciduous forests. Nest stands generally consist of larger trees with greater canopy cover, with relatively open understory.</td>
<td>Year-round</td>
<td>Low. Limited suitable habitat such as forested areas near clear-cut patches adjacent to the Upper Main Ditch may provide potential foraging habitat. However, this species is not likely to nest within the proposed Project area due to the small patch size of suitable habitat and proximity to human establishment and activity. No known occurrences within five miles of the proposed Project area.</td>
</tr>
<tr>
<td>Oak Titmouse Baeolophus inornatus</td>
<td>BCC, MBTA – N/A</td>
<td>In California, breeds in the Coast, Transverse, Peninsular Ranges, and western foothills of Sierra Nevada to northwest Baja California, Mexico.</td>
<td>Live in open oak or oak-pine woodlands. Also found in western juniper woodlands.</td>
<td>Year-round</td>
<td>Low. Limited suitable habitat within the proposed Project area and adjacent areas. No known occurrences within five miles of the proposed Project area.</td>
</tr>
<tr>
<td>Olive-sided Flycatcher Contopus cooperi</td>
<td>BCC, MBTA SSC N/A</td>
<td>Breeds throughout northern California except Central Valley and eastern deserts. Also found in mountains of southern California.</td>
<td>Nests in mixed coniferous, montane-hardwood, and Douglas-fir forests. Prefers tall trees overlooking meadows and other open areas. Nesting</td>
<td>Year-round</td>
<td>Low. Limited suitable habitat within the proposed Project area. Forested areas adjacent to the proposed Project area including tall trees on the edge of clear cut, some of which may be used from staging area. No known occurrences within five miles of the proposed Project area.</td>
</tr>
<tr>
<td>Common name</td>
<td>Scientific name</td>
<td>Legal status</td>
<td>Geographic distribution/Floristic province</td>
<td>Preferred habitat</td>
<td>Identification period</td>
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</tr>
<tr>
<td>sharp-shinned hawk</td>
<td>Accipiter striatus</td>
<td>MBTA, WL</td>
<td>N/A</td>
<td>Nests in a variety of communities such as riparian deciduous and montane-hardwood forest in dense, even-aged forests near water. Forages along forest edge.</td>
<td>Year-round</td>
</tr>
<tr>
<td>white-headed woodpecker</td>
<td>Picoides albolarvatus</td>
<td>BCC, MBTA</td>
<td>N/A</td>
<td>In northern California, south in the Coast Ranges very locally to northwest Colusa County and inland through the Sierra Nevada. Also breeds eastward into western Nevada in Lake Tahoe region. On the western slope of the Sierra Nevada, typically found from 3,280 to 8,040 feet (1,000-2,450 meters) in elevation.</td>
<td>Year-round</td>
</tr>
<tr>
<td>Williamson's sapsucker</td>
<td>Sphyrapicus thyroides</td>
<td>BCC, MBTA</td>
<td>N/A</td>
<td>Forested areas for nesting. Specifically, mixed western larch interior, Douglas-fir, and ponderosa pine forests.</td>
<td>Year-round</td>
</tr>
</tbody>
</table>
Special Status Plants

Of the 24 special status plant species identified during the desktop analysis, 12 species are considered to have a low potential to occur on or near the Project site (Table 3.4-1). These 12 species include brownish beaked-rush (Rhynchospora capitellata), Gray's monkeyflower (Mimulus grayi), Kellogg's lewisia (Lewisia kelloggii ssp. Kelloggii), marsh skullcap (Scutellaria galericulata), northern coral root (Corallorhiza trifida), Oregon fireweed (Epilobium oreganum), Parry's horkelia (Horkelia parryi), pine rose (Rosa pinetorum), saw-toothed lewisia (Lewisia serrata), Sierra arching sedge (Carex cyrtostachya), three-bracted onion (Allium tribracteatum), and Pleasant Valley mariposa lily (Calochortus clavatus var. avius) (AECOM 2015). The remaining 12 plant species, included in Appendix C.6, have a very low to nil potential to occur in the Project area.

No special status plant species were observed during botanical surveys nor have a high or moderate potential to occur in the proposed Project area (AECOM 2015b).

Special Status Wildlife

Of the 30 special status wildlife species identified during the desktop analysis, 18 species are considered to have a low potential to occur on or near the Project site (Table 3.4-1). There is potential for nesting birds covered under the MBTA to occur in the Project area and/or immediately adjacent areas to the Project. In addition, birds listed under the MBTA were observed in the Project area. Therefore, nesting birds are evaluated in Impact BIO-1 below. Although CRLF has a low potential to occur in the Project area, this species is also discussed in Impact BIO-1 below due to the high-profile nature of the species in the Sierra Nevada foothills and the Project’s proximity to CRLF Designated Critical Habitat.

No special status wildlife species were observed on or adjacent to the Project area during reconnaissance or protocol level field surveys. In addition, no special status wildlife species have a high or moderate potential to occur in the Project area.

California Red-Legged Frog (Rana draytonii)

Federal status: threatened, DCH; State status: special species of concern

The historic range of CRLF includes aquatic, riparian, and upland habitats throughout much of California and northern Baja California (USFWS 2002b). They occur in aquatic areas with dense, shrubby, or emergent riparian vegetation with a permanent source of deep still or slow-moving water. CRLFs prefer relatively deep (between one and a half and five feet in depth), still, or slow-moving water (Jennings and Hayes 1994). At seasonal spawning habitat, water must remain long enough in most years to allow for metamorphosis of most of the tadpoles (generally between July and September) (USFWS 2002b). Upland dispersal habitat includes areas within one mile of aquatic breeding habitat with no impassable dispersal barriers. Upland habitats are used primarily by CRLF during the non-breeding season for dispersal and/or aestivation (USFWS 2002b).

Most populations of CRLF are found in habitats that are free of introduced predators, which are believed to include American bullfrog (Lithobates catesbeianus), non-native crayfish species, and various other fish including bass (Micropterus spp.), catfish species, and mosquito fish (Gambusia spp.) (USFWS 2002b). The most significant threats to CRLF are habitat loss and alteration, introduced predators, water management, mismanagement of grazing...
livestock, chemical contamination from urban, agricultural, and industrial runoff, and extended drought conditions (AECOM 2013).

There is one known occurrence of CRLF within five miles of the Project. This occurrence from 2008 is thought to be extant and was located in Spivey Pond on the north fork of Weber Creek (CDFW 2018e), approximately one mile south of the Project. The Project area is not within federally Designated Critical Habitat; the closest critical habitat unit, the Spivey Pond Unit (ELD-1), is located approximately 0.3 miles south of the proposed Project, across Highway 50 and within an adjacent watershed. Critical Habitat Unit ELD-1, as well as the known population, is located within the adjacent watershed of Weber Creek (AECOM 2013).

2013 California Red-Legged Frog Habitat Site Assessment and 2016 Protocol-level Survey

A CRLF habitat site assessment was conducted by AECOM on June 13, 2013 in accordance with the Revised Guidance on Site Assessments and Field Surveys for the CRLF (USFWS 2005). The habitat assessment included the Main Ditch from Forebay Reservoir to the Reservoir 1 WTP. Specifically, the habitat assessment report focused on the suitability of on- and off-site aquatic and upland habitats that had the potential to support various CRLF life history stages. Descriptions of the habitats within one mile of the proposed Project area as well as known CRLF occurrences within five miles of the proposed Project area were provided (AECOM 2013).

The habitat assessment results concluded that the proposed Project area does not contain suitable breeding habitat for CRLF. The Forebay Reservoir is stocked with rainbow trout (Oncorhynchus mykiss) (a potential predator), experiences substantial recreational shoreline disturbance, is currently managed for water storage, and experiences regular (daily) changes in water levels associated with hydropower generation needs and therefore is unlikely to support breeding CRLF (AECOM 2013, AECOM 2015a). For these reasons, it is unlikely that the Forebay Reservoir would support breeding CRLF. This is relevant to the Project because if the reservoir is not likely breeding habitat then the ditch is not likely migratory habitat. In addition, the Main Ditch is unlikely to support CRLF due to high water velocities which would preclude breeding efforts. Long Canyon Creek, located below the Forebay also did not exhibit suitable breeding pools (AECOM 2013, AECOM 2015a).

Habitats within one mile of the proposed Project include Spivey Pond and the Weber Creek drainage. The known occurrence for CRLF identified during database searches is limited to this location, approximately one mile south of the proposed Project (AECOM 2013, CDFW 2018e). Spivey Pond provides suitable aquatic, upland, and dispersal habitats for CRLF. This population of CRLF is isolated from the Project due to physical barriers such as Highway 50 and commercial development, in a different watershed, approximately 600 feet lower in elevation than the proposed Project (AECOM 2013). Therefore, it is highly unlikely that CRLF would disperse into the Project area. In addition, the habitat site assessment yielded no suitable breeding habitat within one mile of the Project area during the field survey or during aerial photograph interpretation (AECOM 2013). In response to USFWS comments, the District also conducted protocol level surveys in accordance with USFWS methods (USFWS, 2005), which included multiple day and night searches. These surveys also indicated the absence of CRLF in the Main Ditch (and Forebay) (AECOM, 2016).

There is a very low potential for CRLF to occur in the Project area. Although potential nonbreeding aquatic habitat is located in and adjacent to the Project, the lack of suitable breeding habitat, the presence of physical dispersal
barriers, and isolation from known occurrences of the species indicate the proposed Project area is unlikely to support individuals or a viable population of the federally threatened CRLF.

Nesting Birds

**Federal status:** protected under MBTA; protected under CFGC Sections 3503, 3503.5, and 3800

Suitable habitat exists along the ditch and surrounding areas for nesting birds; therefore, a moderate potential exists for birds protected under the MBTA to nest in the Project area. Migratory bird species were observed during site surveys and may still occur in the Project area, including cavity-nesting species such as the northern flicker (*Colaptes auratus*); tree-nesting species such as Steller's jay (*Cyanocitta stelleri*) and American robin (*Turdus migratorius*); and ground-nesting species such as spotted towhee (*Pipilo maculatus*) and dark-eyed junco (*Junco hyemalis*) (Appendix C.6).

Special status species such as bald eagle (*Haliaeetus leucocephalus*), northern goshawk (*Accipiter gentilis*), California spotted owl (*Strix occidentalis occidentalis*), Cooper's hawk (*Accipiter cooperii*), and sharp-shinned hawk (*Accipiter striatus*) are not likely to nest within the Project area “due to the small patch size of suitable habitat and proximity to human establishment and activity” (AECOM 2015a). However, dense patches of montane hardwood forest adjacent to the Project area could provide potential nesting and foraging habitat for these species. In addition, adjacent areas may provide forest edge, which serves as foraging habitat for a number of avian species, and the Forebay may provide foraging habitat for bald eagles. Passerine species such as the olive-sided flycatcher (*Contopus cooperi*), have potential to occur and nest on or adjacent to the Project area in tall trees on the edge of the clear cuts, which may be used for staging areas (AECOM 2015a).

Potentially Jurisdictional Water Features

The USACE jurisdictional delineation completed in October 2012 for the Upper Main Ditch determined that no USACE-jurisdictional wetlands or other waters were present in the proposed Project area (Appendix C.3). Based on this delineation, the District received a Wetland Delineation Verification Letter from the USACE Regulatory Division (SPK-2013-00049) which came to the conclusion that no jurisdictional Waters of the United States occur in along the Upper Main Ditch (USACE 2014).

Most of the Upper Main Ditch in the Project area consists of unvegetated and managed banks absent from riparian canopy. Limited White fir – Douglas-fir forest is found in places along the Upper Main Ditch below the adjacent dirt bench, on private property, and in unmanaged areas. In these areas, the dominant species include dogwood, Himalayan blackberry, thimbleberry, and bracken fern. Other non-woody species identified during survey of the Project area include Baltic rush, slender rush, Indian rhubarb, and tall flatsedge. Outside and adjacent to the Project area, additional riparian vegetation is found in the small ephemeral drainages running north of the ditch towards Blair Road, and along the potentially perennial channels fed by dam seepage that run north of the Forebay Reservoir (AECOM 2013). Based on a review of 2015 and 2016 site photographs taken throughout different seasons, some Himalayan blackberry, big leaf maple, willow, and other species often found in riparian zones were identified along the ditch intermittently (AECOM 2015, AECOM 2016).

The desktop analysis, examination of previous reports, and reconnaissance-level survey confirmed previous studies (Appendix B.1 through B.3 and Appendix C.3) that approximately six drainages cross the Blair Road Alternative (Figure 2.7-2) and six drainages cross the Combined Alternative (Figure 2.7-3). In addition, six drainages are present...
in close proximity of the Blair Road Alternative (Figure 2.7-2) and four ditches are present in close proximity to the Combined Alternative (Figure 2.7-3).

District staff selected the alternative routes to reduce the severity of one or more potential environmental impacts associated with the proposed Project. As such, District environmental staff surveyed both the Blair Road and Combined Alternative alignments and determined that based on Project construction methodologies, all the potential jurisdictional water features could be avoided by, for example, undercrossing the culverts within the road without disturbing the drainages.

3.4.4 Environmental Impacts

This section analyzes the Upper Main Ditch Project’s potential to result in significant impacts to biological resources. When the Project’s impact was determined to be significant, feasible mitigation measures were identified to reduce or avoid that impact.

3.4.4.1 Project Impact Analysis

This section discusses potential impacts associated with the Project and identifies mitigation measures for potentially significant impacts, where feasible.

| Impact BIO-1 | The Project would not 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 Wildlife or U.S. Fish and Wildlife Service. |

Impact BIO-1a Proposed Project Analysis

Potential Impacts to Special Status Plant Species

As discussed in the Environmental Setting, all 24 special-status plant species assessed were determined to have a low or very low potential to occur in the proposed Project area. In addition, the species with a potential to occur on site have an overlapping bloom period such that if surveys are conducted between May and July (the mid-bloom period), target species are likely to be encountered. The botanical surveys did not identify any special status plant species in the proposed Project area (AECOM 2015b). Therefore, construction-related direct impacts to protected botanical species are considered to have a low likelihood of occurrence. However, since CDFW survey protocols stipulate that these surveys for seasonal plants are good for one-year, additional pre-construction surveys, as described by MM BIO-1: Pre-Construction Botanical Surveys, would be required during the May to July mid-bloom period to reassess the presence of special status plant species in the Project area.

MM BIO-1 would ensure that if special status plants are present in an area that would be disturbed by the proposed Project, they would be identified and appropriately avoided or relocated in accordance with consultation with the appropriate regulatory agency. Additionally, a preconstruction worker awareness training would be required through implementation of MM BIO-2: Preconstruction Environmental Awareness Training to educate construction staff to identify species listed with the potential to occur in Table 3.4-1 and any other special status species identified during
preconstruction surveys, to stop work in the immediate area in the event of identification and avoid/or mitigate to appropriate standards any encountered status species.

Indirect impacts to special status botanical species could result if construction equipment or workers were to introduce non-native or invasive species that have the potential to inhibit the success of native species survivorship by increasing competition for resources. To reduce the potential for spread of invasive species and the potential for their impact on any nearby special status botanical communities MM BIO-3: Reduce the Spread and Introduction of Invasive Noxious Weeds would be implemented. MM BIO-3 would require the District to reduce the potential introduction or spread of invasive noxious weeds by requiring Best Management Practices during construction to appropriately clean and inspect construction equipment brought in from other construction sites. With the implementation of MM BIO-1, BIO-2, and BIO-3, potential impacts to special status plants would be reduced to a less than significant level. Therefore, the impact would be less than significant with mitigation incorporated.

Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM BIO-1; MM BIO-2; MM BIO-3

Potential Impacts to California red-legged frog

CRLF is a federally threatened species and a California Species of Special Concern; therefore, both the species itself as well as its designated critical habitat are protected under federal and state law. The disturbance of its occupied upland or aquatic habitats may result in direct impacts to CRLF, with the potential for individuals to be impacted while they are above or in underground burrows. Indirect impacts include the degradation of aquatic, upland, or connecting habitats, increased human presence, or degradation to water quality.

The closest documented occurrence of CRLF from the proposed Project area is approximately one mile south of the proposed Project at Spivey Pond on the north fork of Weber Creek (CDFW 2018e). This population of CRLF is separated from the proposed Project by physical barriers such as U.S. 50 and residential and commercial development, in addition to being located in a different watershed than the proposed Project (AECOM 2013).

The proposed Project area is not within federally Designated Critical Habitat; however, the proposed Project area is located approximately 0.3 miles north of federally designated critical habitat Spivey Pond Unit (ELD-1). Unit ELD-1 is located on the opposite (south) side of Highway 50 and is located within the adjacent watershed of Weber Creek (AECOM 2013).

The proposed Project area does not contain suitable breeding habitat for CRLF. According to the USFWS Recovery Plan for the California Red-legged Frog (2002), "the primary constituent elements for California red-legged frogs are aquatic and upland areas where suitable breeding and nonbreeding habitat is interspersed throughout the landscape and is interconnected by un-fragmented dispersal habitat." In order to meet this requirement, a site must have "two (or more) suitable breeding locations, a permanent water source, associated uplands surrounding these water bodies up to 300 feet from the water’s edge, all within 1.25 miles of one another and connected by barrier-free dispersal habitat that is at least 300 feet in width." According to this description the proposed Project area does not include these primary constituent elements to support a sustainable CRLF population.

More specifically, the Main Ditch is very unlikely to support CRLF due to high water velocities and lack of suitable pool habitat and emergent vegetation for breeding. In addition, there is no suitable breeding habitat nearby. The
Forebay Reservoir is stocked with rainbow trout (*Oncorhynchus mykiss*) (a CRLF predator), experiences substantial recreational shoreline disturbance, is currently managed for water storage, and experiences regular (daily) changes in water levels associated with hydropower generation needs. Therefore, it is unlikely to support breeding CRLF (AECOM 2013, AECOM 2015a). Long Canyon Creek, located below the Forebay also does not exhibit suitable breeding pools (AECOM 2013, AECOM 2015a). Therefore, although the Main Ditch contains potentially suitable nonbreeding aquatic habitat, there are no adjacent breeding habitats that would attract such migration (AECOM 2013). This was further confirmed by targeted CRLF field surveys conducted in accordance with USFWS protocols (USFWS 2005) in 2016, which confirmed absence of CRLF in the proposed Project Area.

Likewise, it is unlikely that CRLF would disperse into the proposed Project area. AECOM’s habitat site assessment yielded no suitable breeding habitat within one mile of the proposed Project area and protocol –level surveys indicated an absence of the species within the Main Ditch (and Forebay). Limited areas north of Highway 50 accessible from the proposed Project may provide suitable habitat (i.e., agricultural or stock ponds on private property, drainages such as Long Canyon) (AECOM 2013).

With limited suitable CRLF non-breeding habitat and lack of breeding habitat within the proposed Project area and no CRLF observed during the habitat site assessment, biological surveys, and targeted protocol-level surveys conducted in the proposed Project area, the Project poses a very low risk of contact with CRLF. Therefore, it is highly unlikely that CRLF or their habitat would be impacted either directly or indirectly as a result of the proposed Project and no mitigation would be necessary.

**Level of Significance:** Less than Significant

**Mitigation Required:** None Required

**Potential Impacts to Nesting Birds**

There is a moderate potential for nesting raptors and other migratory birds protected under the MBTA to occur within the proposed Project area and surrounding area. Although any impact would be incidental to project construction, and not the purpose of the Project or project-related activity, construction activities during the nesting season (approximately March 1 through August 31) have the potential to cause direct impacts to birds including the loss of habitat and direct fatality. Any destruction or disturbance of breeding or foraging habitat could directly impact the survivorship of birds, and the removal or disturbance of nests may result in breeding failure or fatality of individual birds. Birds could be killed, injured, or disturbed by vehicles or equipment related to proposed Project construction. Any disturbance resulting in nest abandonment, the loss of eggs, or direct mortality to a nesting bird would be considered a significant impact. However, the implementation of MM BIO-2: Preconstruction Environmental Awareness Training and BIO-4: Avoid Disturbance to Nesting Raptors and other Nesting Migratory Birds would ensure protected bird species are identified and appropriately avoided. Therefore, no direct effects are expected to occur to raptors and other migratory birds.

Indirect impacts to birds could result from habitat changes that affect sources of food or breeding suitability. Construction disturbance such as noise may cause short-term avoidance of the proposed Project area by birds. The introduction of non-native or invasive species could alter breeding or foraging habitat suitability, and habitat fragmentation may impact bird dispersal and increase populations of species that prey on special status birds (e.g., raccoons, brown-headed cowbirds). However, no indirect effects to nesting raptors and other nesting migratory birds
protected under the MBTA are expected to occur with the implementation of the proposed MM BIO-2 and BIO-4, which ensure identification of nesting raptors and migratory birds and avoidance of any species identified.

If proposed Project activities are to occur during the nesting season for migratory birds and raptors, MM BIO-4 would require pre-construction surveys for nesting migratory birds and raptors and would establish a no disturbance buffer until the chicks fledge from the nest. If nesting birds are documented to initiate nesting in a given location within the proposed Project area where construction activities were initiated prior to the nesting season, then it shall be assumed that the nesting birds are habituated to the construction activities. Under this scenario, the active nest shall be monitored by a qualified biologist periodically until the young have successfully fledged, or the nest has been abandoned, as described above.

With the implementation of MM BIO-2 and BIO-4, potential impacts to nesting migratory birds or raptors would be reduced to a less than significant level.

Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM BIO-2; MM BIO-4

Potential Impacts to Special Status Bat Species

Five bat species are considered to have a low potential to occur in the proposed Project area: pallid bat (Antrozous pallidus), silver-haired bat (Lasionycteris noctivagans), Townsend’s big-eared bat (Corynorhinus townsendii), western red bat (Lasiurus blossevillii), and Yuma myotis (Myotis yumanensis). Three of the five bat species (pallid bat, Townsend’s big-eared bat, and Yuma myotis) potentially occurring in or near the proposed Project site may use features such as the valve house and shed for roosting, though evidence of bats was not observed during the reconnaissance-level survey conducted in May 2015. Silver-haired bats and western red bats are tree roosters and could potentially use trees in or near the proposed Project area as roost sites. These tree-roosting bats typically roost in tree hollows in trees or snags large in diameter, but also may roost in the foliage of trees as well (NorCalBats 2018). Only two of these species are considered for potential special-status listing and currently listed as State Species of Special Concern, the western red bat (a tree roost species) and Townsend’s big-eared bat (a cave or dwelling roost species).

Direct impacts to bats by injury or mortality may occur from proposed Project activities through the destruction of roosting habitat (e.g., removing trees). Indirect impacts to bat species include the removal of habitat, including roosting and foraging habitat, which could potentially cause displacement and decrease overall habitat availability. Construction disturbance such as noise may cause short-term avoidance of the proposed Project area by bats as well. The actual likelihood of this potential impact is considered low because there is limited potential roosting habitat in the area. Additionally, only a small percent of those trees proposed for removal exhibit potential for nest or roost cavities.

MM BIO-5: Avoid Disturbance to Roosting Bat Species would be implemented and would reduce potential impacts to bat species by requiring a pre-construction bat survey and protective measures such as avoidance of maternity colonies (May through mid-August) until bats have fully vacated the area and the installation of exclusion fencing that ensure potential impacts to bats species would be avoided or kept to a less than significant level. If removal of potential roost habitat occurs outside of the maternity season, no further mitigation would be required. Therefore, potential impacts to roosting bat species would be less than significant with mitigation incorporated.
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**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM BIO-2, BIO-5

**Overall Impact BIO-1 Level of Significance:** Less than Significant with Mitigation

**Overall Impact BIO-1 Mitigation Required:** MM BIO-1 through BIO-5

Impact BIO-1b Blair Road Alternative Analysis

Under the Blair Road Alternative, the pipeline alignment would be located in disturbed Blair Road and in undisturbed cross-country areas. Similar to the proposed Project, desktop research and analysis identified a low potential for special status species to occur in the Project area, other than nesting raptors and migratory birds. Additionally, reconnaissance-level surveys along Blair Road confirmed habitats described for the proposed Project are representative of the Blair Road Alternative as well and the potential for species to occur would be similar to the potential evaluated for the proposed Project as shown in Table 3.4-1. Because a large portion of the Blair Road Alternative is within Blair Road, the potential for impacts to sensitive species is limited; however, the cross-country portion has the potential to result in impacts to the relatively undisturbed habitats for special status botanical and wildlife species as described under the proposed Project. Additionally, any work outside of the Blair Road Right-of-Way would also pose the potential for impacts to nearby habitats and/or species. Therefore, as described for the proposed Project, MM BIO-1 through MM BIO-5 would be required to properly survey the exact Project alignment, to educate construction personnel of sensitive species in the area, to reduce the spread of invasive noxious weeds, to avoid impacts to nesting raptors, and to avoid disturbance to roosting bats. With the implementation of MM BIO-1 through MM BIO-5, the Blair Road Alternative would have less than significant impacts to special status species.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM BIO-1 through BIO-5

Impact BIO-1c Combined Alternative Analysis

Impacts associated with the Combined Alternative would be the same as those described for the proposed Project and the Blair Road Alternative in the respective areas of overlap. The additional cross-country sections of the Combined Alternative would have impacts similar to those described for the cross-country portion of the Blair Road Alternative. To reduce the potential for impact to a less than significant level, MM BIO-1 through MM BIO-5 would be required as described for the proposed Project. Therefore, the Combined Alternative would have a less than significant impact with mitigation to special status species.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM BIO-1 through BIO-5
Impact BIO-1d No Project Alternative Analysis

Under the No Project Alternative, no construction or changes to operational activities would result and therefore, there would be no impacts to biological resources from the No Project Alternative as compared to the proposed Project.

**Level of Significance:** No Impact

**Mitigation Required:** None Required

Impact BIO-2 The Project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

Impact BIO-2a Proposed Project Analysis

As previously mentioned in the Environmental Setting, most of the Upper Main Ditch in the proposed Project area consists of unvegetated and managed banks, within the Ponderosa pine – Douglas-fir forest alliance. The Upper Main Ditch is highly managed and runs dry for portions of the year. Riparian species documented within the Project area were primarily low stature hydrophytic vegetation within the canal itself, such as rushes, ferns, and some Himalayan blackberry. Opportunistic and invasive species, such as Himalayan blackberry, growing in regularly maintained canals are typically not considered a sensitive natural community because they typically occur in disturbed areas and displace native plant species (CAL-IPC 2018). This poor quality and limited habitat value combined with regular maintenance of vegetation associated with ongoing operations of the Upper Main Ditch prevent the establishment of riparian habitat that would constitute a sensitive natural community. Further, maintenance activities designed to keep the ditch free of vegetation combined with the limited marginal riparian canopy and intermittent high velocity flows present in the ditch provides extremely limited and marginal habitat for non-special status fish, amphibian, and bird species within the Upper Main Ditch. In addition, no amphibian or fish species were documented during the numerous surveys conducted of the proposed Project area. As such, the proposed Project would not have a substantial adverse effect on riparian habitat or other sensitive natural communities.

Outside and adjacent to the Project area, riparian vegetation was found along small ephemeral drainages running north of the Upper Main Ditch and along the potentially perennial channels fed by dam seepage north of the Forebay Reservoir (AECOM 2013). These areas are outside the proposed Project footprint and would not be directly impacted by the proposed Project. Indirect potential impacts, such as potential water quality impacts, would be avoided by compliance with existing water quality laws and regulations which require preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) and associated Best Management Practices (also required by MM GEO-1 as discussed in the Geology and Soils, Section 3.6 and Hydrology and Water Quality, Section 3.9) and thus, would not have a substantial adverse effect to riparian communities.

Beyond these limited areas of riparian habitat, the proposed Project area is dominated by patches of upland White fir – Douglas-fir forest alliance transitioning quickly into upland Ponderosa pine – Douglas-fir forest alliance. Black oak (Quercus kelloggii) is present in the surrounding area. Oaks and oak woodlands are provided special protection under the El Dorado County General Plan. The proposed Project would require limited removal of various tree
species, as shown on Figure 3.1-4 in the Aesthetics section. Potential impacts to oaks and oak woodlands are addressed separately in Impact BIO-3, and impacts would be mitigated to a less than significant level through MM BIO-6, Avoid and Minimize Impacts to Oak Trees and Oak Woodlands.

Therefore, the proposed Project would not have a significant impact on riparian habitat or other sensitive natural communities with MM BIO-6 incorporated.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM BIO-6

**Impact BIO-2b Blair Road Alternative Analysis**

As discussed in the Environmental Setting section, the pipeline alignment under the Blair Road Alternative would be located in the disturbed area along Blair Road, a short segment of the existing ditch, and in cross-country areas. The Blair Road Alternative was identified to result in less potential biological impacts than the proposed Project because this alternative is primarily located within an existing road corridor and would require less trees to be removed. Culverted drainages in the roadway would be crossed within the road base fill in the paved road or shoulder areas. No riparian areas would be affected by this alternative since the alignment would be designed to cross culvert alignments and be limited to the areas within the disturbed footprint of Blair Road and the existing ditch. Further, based on District environmental staff assessments, the cross-country portion of the alignment would not impact riparian communities since the alignment crosses only upland habitat within the cross-country areas. Vegetation communities along the Blair Road Alternative are similar to the proposed Project and construction under this alternative would be in compliance with applicable plans and regulations, as described for the proposed Project. Like the proposed Project, any required oak tree removal under this alternative would be mitigated through compliance with MM BIO-6, Avoid and Minimize Impacts to Oak Trees and Oak Woodlands, which would ensure that impacts to oaks and oak woodlands are less than significant as described for the proposed Project. Because the Blair Road Alternative would be within the roadway and/or areas lacking riparian habitat or other sensitive natural communities and impacts to oaks would be mitigated through MM BIO-6, the impact would be less than significant with mitigation.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM BIO-6

**Impact BIO-2c Combined Alternative Analysis**

The Combined Alternative alignment was designed to avoid riparian habitats. It is primarily located in roadways, and based on the assessment by District environmental staff it was determined that this alternative crosses only upland habitat in the cross-country segments. The cross-country portions have the potential to result in loss of oak trees. Any oak tree removal required for this alternative would be subject to MM BIO-6, as discussed in Impact BIO-3. Therefore, similar to the Blair Road Alternative, impacts to riparian habitat and sensitive natural communities from this alignment are considered less than significant with mitigation.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM BIO-6
Impact BIO-2d No Project Alternative Analysis

Under the No Project Alternative, no construction or changes to operational activities would result. There would be no impacts to biological resources from the No Project Alternative as compared to the proposed Project. Implementation of the No Project Alternative would avoid impacts to riparian habitats and sensitive communities. Therefore, the No Project Alternative would result in fewer impacts to biological resources than the proposed Project.

**Level of Significance:** No Impact

**Mitigation Required:** None Required

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Impact BIO-3  
**The Project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.**

Impact BIO-3a Proposed Project Analysis

This analysis pertains to conflicts with local policies or ordinances protecting biological resources. The proposed Project has the potential to conflict with policies from the El Dorado County General Plan Conservation and Open Space element relating to biological resources and the El Dorado County ORMP (El Dorado County 2017) and other oak woodland guidance documents relating to the spread of southern pine bark beetle. The Project’s potential to conflict with policies and ordinances governing impacts associated with forestlands is assessed within Section 3.2, Agricultural Resources.

**Potential to Conflict with the El Dorado County General Plan**

The proposed Project does not conflict with the El Dorado County General Plan Conservation Element. Specifically, in compliance with Goal 7.4 and Objective 7.4.2 and the associated policies, during proposed Project development the District reviewed the wildlife and vegetation resources present within the Project area to identify and protect resources with potentially significant biological, ecological, and recreational value. Extensive reviews and surveys were conducted for CRLF and wetlands allowing for impacts to be avoided, as discussed above.

In addition, as described under Impact BIO-1 above, the proposed Project does not have the potential to significantly impact rare, threatened, or endangered species and their habitats. As such the Project would not conflict with General Plan Objective 7.4.2.

The proposed Project would not conflict with the County’s policy (Policy 7.4.1.1) of protecting sensitive plant species known as Pine Hill endemics. A complete impact assessment for botanical species, including Pine Hill endemics, is included under the assessment for Impact BIO-1 above. In addition, in accordance with General Plan Objective 7.4.2 and as disclosed in Impact Assessments BIO-1 through BIO-5, the proposed Project would not significantly impact critical fish and wildlife habitat including deer winter, summer, and fawning ranges; deer migration routes; stream and river riparian habitat; lake shore habitat; fish spawning areas; wetlands; wildlife corridors; and diverse wildlife habitat. Compliance with Objective 7.4.4 and associated oak woodland policies, is assessed under the Potential to Conflict with Oak Woodland Management Policies impact section below.

**Level of Significance:** Less than Significant
Mitigation Required: None Required

Potential to Conflict with Oak Resources Management Policies

To minimize tree removal and undisturbed area impacts, the Project has been designed to maximize pipeline installations within existing utility or transportation corridors. As discussed in the Environmental Setting above, a range of tree species were identified within the proposed Project area during baseline biological surveys conducted on May 21, 2015 (AECOM 2015) and the tree assessment surveys. Oak species (i.e. black oaks) can be found at varying densities and areas within the proposed Project site. Tree removal along the alignment and in work spaces would be required due to construction associated with the proposed Project activities. Specifically, the proposed Project is expected to require the removal of approximately 36 oak trees. The DSH’s of these trees range from six- to 24-inches, and none of them are considered to be a Heritage Tree (i.e. oak trees greater than 36-inch diameter).

Figure 3.1-4 (Panel 1 through 3) and Section 3.1 Visual Resources and depict the proposed tree removals.

According to the El Dorado County ORMP (El Dorado County 2017), hardwood oak woodlands, which include black oaks, can contribute to soil retention and contribute to healthy lands and watersheds, as well as provide habitat and forage animals, among other benefits. As such the removal of individual oaks, including heritage oaks (36 inches or greater DSH), and/or oak woodlands, as defined in the El Dorado County ORMP could constitute a significant impact if not adequately mitigated. Since the District is an agency of equal authority with the County (Government Code sections 53091(D) and (E)), the District is not bound by the County’s policy, but aims to implement mitigation consistent with the County’s plans and policies associated with oak woodlands management as a metric for formulating avoidance and minimization measures.

As such, MM BIO-6, Avoid and Minimize Impacts to Oak Trees and Oak Woodlands, detailed below would be implemented in order to reduce and/or mitigate potential impacts to oaks and oak woodlands. MM BIO-6 requires the District to avoid impacts to oaks through use of exclusionary fencing during construction, and to follow applicable portions of the oak tree mitigation requirements in the County ORMP, which will ensure that impacts from removal of oaks larger than six inches diameter breast height are mitigated through retention of oak canopy and replacement, or payment of an in-lieu fee that is applied to the County’s oak tree mitigation program. Thus, with the implementation of MM BIO-6, the proposed Project would be consistent with the ORMP and would not conflict with a local plan or policy protecting biological resources.

Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM BIO-6

Potential to Conflict with the Pine Bark Beetle Infestations

The spread of pine bark beetle has been impacting forest habitat and affecting public safety. In drought conditions pine bark beetle has the potential to spread more rapidly due to the unhealthy characteristics of pines tree species from lack of proper water sources. This lack of water and associated unhealthy trees allows pine bark beetle to spread more rapidly which, in turn, kills more trees. The proposed Project would involve piping the existing ditch, which would result in less water for pine tree species near the existing ditch. However, because this is a mixed coniferous forested area, the root systems of these trees are typically deep and would not be significantly impacted by the removal of this water. There is no discernable difference between the overall health of the trees nearest to the ditch compared to the trees further away from the ditch, indicating that the direct relation between water loss from the
ditch and tree health is limited. Additionally, tree removal within the ditch corridor would occur in order to allow adequate space for the pipeline and to prevent hazards, which would limit the potential for trees nearest to the ditch to be impacted by a loss of a water source. The District would adhere to governing regulations for tree removal procedures as prescribed in the County’s Tree Mortality Tree Removal Plan (EDC 2016), by the California Department of Forestry and Fire Protection (CAL FIRE). Therefore, impacts related to the spread of pine bark beetle would be considered less than significant.

**Level of Significance:** Less than Significant

**Mitigation Required:** None Required

**Overall Impact BIO-3 Level of Significance:** Less than Significant with Mitigation

**Overall Impact BIO-3 Mitigation Required:** MM BIO-6

**Impact BIO-3b Blair Road Alternative Analysis**

Similar to the proposed Project, the Blair Road Alternative does not conflict with the El Dorado County General Plan Conservation Element. Specifically, the Blair Road Alternative is consistent with Goal 7.4 and the Objectives within this goal. Wildlife and vegetation resources were evaluated in order to identify resources with potentially significant biological, ecological, and recreational value and were found to not significantly harm biological, ecological, and recreational value of resources within the County.

Also, similar to the proposed Project, a range of tree species were identified within the Blair Road Alternative during vehicle-based and pedestrian reconnaissance surveys. Oak species (i.e. black oaks) can be found at varying densities and areas within the Blair Road Alternative, especially along the cross-country portion. Tree removal in the cross-country portion and in work spaces would be required due to construction. Specifically, the Blair Road Alternative involves the removal of approximately 145 trees. Based on the typical distribution of tree species within the Project areas, it is reasonable to assume some of these trees would be oaks. The alternative is not anticipated to impact Heritage Tree (i.e. oak trees greater than 36-inch diameter), based on the size and number of oak trees known to District staff and consultants to be in the Project area. General observations of tree species within the Blair Road Alternative alignment indicate that the composition of tree species along this alternative is similar to that of the proposed Project and, as such, it is anticipated that oak trees would comprise approximately 10 percent\(^2\) of the surrounding forest. The species and size of the trees that would require removal would be evaluated prior to construction and mitigated in accordance with MM BIO-6. MM BIO-6, Avoid and Minimize Impacts to Oak Trees and Oak Woodlands would be implemented for the Blair Road Alternative in order to avoid and minimize potential impacts to oaks and oak woodlands. Thus, with the implementation of MM BIO-6, the Blair Road Alternative would be consistent with the ORMP and not conflict with a local plan or policy protecting biological resources. Similar to the proposed Project, the District would be consistent with the tree removal procedures required by the County’s Tree Mortality Tree Removal Plan (EDC 2016), the California Department of Forestry and Fire Protection (CAL FIRE). Therefore, impacts related to the spread of pine bark beetle would be the same as that of the proposed Project.

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\(^2\) Conservative estimate based on proximity and similarity of forest character to the proposed Project where 129 oak trees were identified out of 1734 total trees adjacent to the proposed Project.
With the implementation of MM BIO-6, the Blair Road Alternative would have similar impacts to that of the proposed Project and would therefore be less than significant with mitigation.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM BIO-6

**Impact BIO-3c Combined Alternative Analysis**

Similar to the proposed Project and the Blair Road Alternative, the Combined Alternative does not conflict with the El Dorado County General Plan Conservation Element. Specifically, the Combined Alternative would be consistent with Goal 7.4, and the Objectives within this goal. Wildlife and vegetation resources were evaluated to identify resources with potentially significant biological, ecological, and recreational value and were found to not significantly harm biological, ecological, and recreational value of resources within the County.

Also, as with the proposed Project and the Blair Road Alternative, a range of tree species were identified within the Combined Alternative during vehicle-based and pedestrian reconnaissance surveys. Oak species (i.e. black oaks) can be found at varying densities and areas within the Combined Alternative, especially along the cross-country portion and along the ditch. Tree removal in the cross-country portion, along the ditch, and in work spaces would be required due to construct the Combined Alternative. Specifically, the Combined Alternative involves the removal of approximately 295 trees. The alternative is not anticipated to impact Heritage Trees (i.e. oak trees greater than 36-inch diameter), based on the size and number of oak trees known to District staff and consultants to be in the Project area. Like with the Blair Road Alternative, general observations of tree species within the Combined Alternative alignment indicate that the composition of tree species along this alternative is similar to that of the proposed Project and, as such, it is anticipated that oak trees would comprise approximately 10 percent\(^3\) of the surrounding forest. The species and size of these trees would be evaluated prior to construction and mitigated in accordance with MM BIO-6. MM BIO-6, Avoid and Minimize Impacts to Oak Trees and Oak Woodlands, would be implemented for the Combined Alternative in order to avoid and minimize potential impacts to oaks and oak woodlands. Thus, with the implementation of MM BIO-6, the Combined Alternative would be consistent with the approved local ORM and not conflict with a local plan or policy protecting biological resources.

Additionally, tree removal associated with the Combined Alternative would be required for construction. Similar to the proposed Project and the Blair Road Alternative, the District would adhere to the tree removal procedures required by the County’s Tree Mortality Tree Removal Plan (EDC 2016), the California Department of Forestry and Fire Protection (CAL FIRE). Therefore, impacts related to the spread of pine bark beetle would be the same as that of the proposed Project.

With the implementation of MM BIO-6, the Combined Alternative would have similar impacts to that of the proposed Project and would therefore be less than significant with mitigation.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM BIO-6

\(^3\) Conservative estimate based on proximity and similarity of forest character to the proposed Project where 129 oak trees were identified out of 1734 total trees adjacent to the proposed Project.
Impact BIO-3d No Project Alternative Analysis

Under the No Project Alternative, no construction or changes to operational activities would result and as such there would be no potential to conflict with local biological plans. There would be no impacts to biological resources from the No Project Alternative as compared to the proposed Project, which would be less than significant with mitigation. Therefore, the No Project Alternative would result in fewer impacts to biological resources than the proposed Project.

Level of Significance: No Impact

Mitigation Required: None Required

Impact BIO-4 The Project would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Impact BIO-4a Proposed Project Analysis

As discussed in the Environmental Setting, a wetland delineation was completed in October 2012 for the Upper Main Ditch, which determined that no wetlands or other waters were within the ditch area (Appendix C.3). The District received an approved jurisdictional determination from the USACE on January 24, 2014 verifying the ditch is not currently regulated by the USACE (USACE 2014). Construction activities surrounding the ditch would not impact nearby drainages or wetlands since activities would be within the proposed Project corridor or on upland staging area sites. Since there are no wetlands or other jurisdictional waters with the proposed Project site, there is not a potential for substantial adverse effect by the direct removal, fill or hydrologic interruption of federally protected wetlands. Therefore, the proposed Project would have no impact on federally protected wetlands.

Level of Significance: No Impact

Mitigation Required: None Required

Impact BIO-4b Blair Road Alternative Analysis

As discussed in the Environmental Setting, approximately six drainages cross the Blair Road Alternative and an additional six drainages are present in close proximity to the Blair Road Alternative (Figure 2.7-2). All these drainages have existing culverts that would be undercrossed or would be avoided by the proposed Project. In accordance with MM BIO-7, Exclusion Fencing for Sensitive Resources, the District has proposed construction methodologies and exclusion area delineations to avoid potential impacts to, placement of dredge or fill material in, waters of the US along this alignment. Therefore, with the application of MM BIO-7, impacts to potential waters of the US are considered less than significant.

Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM BIO-7

Impact BIO-4c Combined Alternative Analysis

...
As discussed in the Environmental Setting, the Combined Alternative would cross six drainages, with four additional drainages located in close proximity, and work within a 50-foot proximity of these areas would require the same restrictions detailed above for the Blair Road Alternative. In accordance with MM BIO-7, Exclusionary Fencing for Sensitive Resources, the District has proposed construction methodologies and exclusion area delineations to avoid potential impacts to, placement of dredge or fill material in, waters of the US along this alignment. Therefore, with the application of Mitigation BIO-7, impacts to potential waters of the US are considered less than significant.

Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM BIO-7

Impact BIO-4d No Project Alternative Analysis

Under the No Project Alternative, no construction or changes to operational activities would result. There would be no impacts to potentially jurisdictional features the No Project Alternative would also avoid impacts to biological resources, sensitive species, and habitat. Therefore, the No Project Alternative would result in fewer impacts to jurisdictional features than the proposed Project.

Level of Significance: No Impact

Mitigation Required: None Required

<table>
<thead>
<tr>
<th>Impact BIO-5</th>
<th>The Project would not 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.</th>
</tr>
</thead>
</table>

Impact BIO-5a Proposed Project Analysis

Wildlife movement includes migration (typically one direction per season), interpopulation movement (long-term genetic exchange), and smaller travel corridors (daily movement) within an animal’s territory or home range (AECOM 2013). Though small travel corridors generally facilitate movement for daily activities within a home range (e.g., foraging and avoiding predators), these corridors also provide connection between other populations, allowing gene flow between populations resulting in a healthier gene pool for the particular species.

The linkages between habitat types that allow for wildlife movement can extend for miles between key habitat areas and may occur on a large scale. These habitat linkages, or habitat corridors, enable the movement and intermingling between populations located in discrete areas and populations located in larger habitat areas. The mosaic of habitats found in large-scale landscapes result in wildlife populations that consist of discrete subpopulations composed of a large single population, often referred to as a metapopulation (McCullough 1996). Even where patches of pristine habitat are fragmented, the movement between wildlife populations are facilitated through migration and movement corridors. Depending on the condition of the linkage, gene flow between populations may be frequent resulting in high genetic diversity within a population; or less frequent gene flow resulting in low genetic diversity and complete isolation which if pressures are strong, potential local extinction (McCullough 1996, Whittaker 1998).

The ditch corridor currently has the potential to facilitate movement of species up and down the corridor within the local region. Under the proposed Project conditions, seasonal water deliveries would largely be eliminated from the
ditch during the spring and summer months, but the presence of flowing water would remain the same with implementation of the proposed Project during storm events as the existing ditch would continue to receive and convey the same capacity of stormwater flows. The ditch corridor would only be slightly widened through the implementation of the proposed Project not resulting in a significant impact to common species that would be able to continue to use the area.

According to CDFW, urban expansion may pose a threat to deer migration corridors. Critical habitat is defined by CDFW as habitat that is essential to the long-term productivity of the herd. The migratory deer herd that resides El Dorado and Placer Counties is referred to as the Pacific Deer Herd (CDFW 2018g, Hinz 1981). The Pacific Deer Herd is migratory and occurs west of the Sierra Nevada crest. The herd is defined by the Rubicon River on the north, the South Fork of the American River on the south, and roughly a north-south line above 2,500 feet elevation, paralleling Highway 49 between Placerville and Georgetown. The proposed Project site is outside of the defined herd boundaries, and temporary construction disturbance associated with Project construction as it moves along the alignment would not have a significant impact to migrating deer (EID 2015).

The Upper Main Ditch conveys raw water which is treated at the Reservoir 1 WTP. However, during the ditch outage each year the ditch is out of service for a minimum of three months. The ongoing maintenance of the ditch system and intermittent pattern of flows annually do not support a fishery, and therefore no impacts to migrating fish species would occur.

Under the proposed Project the season of flowing water in the ditch would be shifted from its historical pattern of highest flows during the peak usage of summer to a more natural season of flow with the implementation of the proposed Project. Other year-round water sources exist within the Project area, and the change to a more natural, historic flow pattern would not interfere substantially with established native resident migratory wildlife corridors or use of nursery sites. Therefore, the potential impact to migration would be considered less than significant and no mitigation would be required.

**Level of Significance:** Less than Significant

**Mitigation Required:** None Required

**Impact BIO-5b Blair Road Alternative Analysis**

Similar to the proposed Project, the Blair Road Alternative would eliminate seasonal water deliveries from the ditch, but would retain flowing stormwater during storm events, which is considered more of a natural flow regime of intermittent drainages in the Project area. Therefore, the potential impact to migration is considered similar to that of the proposed Project and less than significant. As such no mitigation would be required.

**Level of Significance:** Less than Significant

**Mitigation Required:** None Required

**Impact BIO-5c Combined Alternative Analysis**

Similar to the proposed Project and Blair Road Alternative, the Combined Alternative, would largely eliminate seasonal water deliveries from the ditch, but would retain flowing stormwater during storm events, which is
considered more of a natural flow regime of intermittent drainages in the Project area. Therefore, the potential impact to migration would be considered similar to that of the proposed Project and the Blair Road Alternative. As such the impact would be less than significant, and no mitigation is required.

**Level of Significance:** Less than Significant

**Mitigation Required:** None Required

Impact BIO-5d No Project Alternative Analysis

Under the No Project Alternative, no construction or changes to operational activities would result. There would be no impacts to migration corridors since no change would occur. Therefore, the No Project Alternative would result in fewer impacts to biological resources than the proposed Project.

**Level of Significance:** No Impact

**Mitigation Required:** None Required

### 3.4.5 Biological Resources Mitigation

#### 3.4.5.1 Mitigation Measure BIO-1: Pre-Construction Botanical Surveys

A qualified botanist shall conduct special-status plant surveys prior to construction activities in a given work area. Surveys shall follow protocols designated by CDFW (CDFW 2018) and CNPS (CNPS 2001) and shall occur during the appropriate floristic bloom periods for the 12 special-status species identified as having a potential to occur in the proposed Project area (Appendix C.6). The mid-bloom period overlaps for the 12 species identified occurring May through July and would be appropriate for the 12 species with the potential to occur in the Project area.

Given that previous rare plant surveys did not detect special status plant species within the Project area (AECOM 2015) and that proposed Project activities would largely be conducted within disturbed areas, the probability of impacting a special status plant species is low. If special status plants are not detected during pre-construction botanical surveys, no further mitigation is required. However, if special-status plant species are identified within the proposed Project area, their locations shall be mapped and the District shall require the implementation of the following measures:

a) If feasible, construction activities shall avoid special status plants by installing an exclusion area with fencing and signage located at least 10-feet from special status plant populations;

b) If avoidance is not feasible, the District shall consult with the appropriate regulatory agency (i.e. USFWS for federally listed species and CDFW for state- and CNPS- listed species) to identify appropriate procedural measures capable of reducing impacts to a less than significant level. Measures shall include compensation for any impacts to special status plants via replacement (seed collection and replanting or transplanting of plants) or substitute resources (e.g., mitigation fees) as defined by regulatory agencies. The District shall implement all measures recommended by the regulatory agencies.
Mitigation Measure BIO-1 Implementation

**Responsible Party:** The District.

**Timing:** Pre-construction rare plant surveys shall be conducted by a qualified botanist or biologist between May and July, or as otherwise deemed appropriate by a qualified botanist.

**Monitoring and Reporting Program:** The survey shall be conducted by a qualified botanist and a Rare Plant Survey Report shall be completed and kept on file with the District. If special status species are encountered, the Rare Plant Survey Report shall be submitted to the appropriate regulatory agencies (i.e., CDFW and/or USFWS).

**Standards for Success:** The presence or absence of special status plant species shall be documented and, if observed, shall be handled and mitigated according to the performance standards outlined above and developed with the appropriate regulatory agencies.

### 3.4.5.2 Mitigation Measure BIO-2: Pre-Construction Environmental Awareness Training

To reduce direct mortality of wildlife on the Project site during construction, EID will develop a Worker Environmental Awareness Program (WEAP). The program will identify the special-status species found on the Project site and identify the Project features and best management practices incorporated to prevent impacts to those species. The WEAP will initially be presented to the construction team and workers at Project kickoff. Printed handouts and other materials, if deemed appropriate, will be distributed and used for future reference by the construction team. Following Project kickoff, the Contractor construction foreman, or predetermined alternate Contractor designee, will be responsible for making sure that other workers on the Project receive WEAP training as they come onto the Project. A roster of WEAP-trained construction workers will be maintained in the Project construction office and made available for review by regulatory agencies if needed. Other measures to be addressed in the WEAP training include the following:

- Remove litter and other debris that might attract animals from the Project site daily and store it in enclosed containers.
- Exclude pets from the Project site, including access roads and staging areas.

The WEAP training shall be given to construction personnel to brief them on how to recognize special status plant species, wildlife species, and sensitive habitats that could occur in the proposed Project area (i.e., special status amphibian identification and habitat, special status avian identification and habitat, wetland habitats, riparian habitats, relevant BMPs, mitigation, and regulations as well as applicable civil and criminal penalties for violations). The training shall include, at a minimum, the species listed in Table 3.4-1 with moderate to high potential to occur in the Project area and shall include a general review of Table 3.4-1 for all species listed in the table.

WEAP materials shall be provided and kept onsite for use by an environmentally trained foreman for training new proposed Project personnel in the absence of the District representative. If special status species are encountered in the work area, construction shall cease, and the District and a qualified environmental representative shall be notified for guidance on appropriate mitigation measures (MM BIO-1 through MM BIO-7 of the Draft EIR) to be implemented before any construction activities are resumed within 200-feet of the identified resource. Depending on the listing of
the observed species and its persistence in the area, the District shall consult with the USFWS and/or CDFW for guidance in accordance with the other mitigation measures (MM BIO-1 through MM BIO-7 of the Draft EIR).

**Mitigation Measure BIO-2 Implementation**

**Responsible Party:** The District and the contractor.

**Timing:** Avoidance or buffer zones will be marked before construction begins. Worker training will be conducted before work begins, and new workers will be trained before initiating on-site work.

**Monitoring and Reporting Program:** The training shall be conducted by a qualified District representative and documented (by sign-in sheet or other method) by the District’s contractor for the dates the training occurred, and the staff trained. Retention of the Environmental Awareness Training reference pamphlets shall also be kept on the construction site and within District files.

**Standards for Success:** Construction personnel are trained in the key characteristics for identifying and avoiding impacts to special status species and sensitive habitats.

**3.4.5.3 Mitigation Measure BIO-3: Reduce the Spread and Introduction of Invasive Noxious Weeds**

Invasive and noxious weeds have the potential to directly and indirectly impact plant communities at or near the proposed Project area. To reduce the spread and introduction of weeds, the following measures shall be implemented:

a) All proposed Project-related equipment and vehicles shall be decontaminated of weeds and soils prior to initiation of work on the proposed Project; and

b) Any topsoil, mulch, and seed used in proposed Project-related activities (e.g. restoration, reseeding, erosion control, and soil stabilization) shall be certified weed-free.

**Mitigation Measure BIO-3 Implementation**

**Responsible Party:** The District.

**Timing:** Prior to the initiation of construction with each new piece of equipment and/or materials.

**Monitoring and Reporting Program:** The District shall verify that all equipment and other materials brought on site are certified weed-free through visual inspection and/or a signed affidavit from the Contractor.

**Standards for Success:** Minimize the potential for introduction of new weed species into the proposed Project Area through visual inspection of equipment and/or signed affidavits from the Contractor of weed free certification.
3.4.5.4 Mitigation Measure BIO-4: Avoid Disturbance to Nesting Raptors and Other Nesting Migratory Birds

To the extent feasible, vegetation removal activities shall be conducted during the non-nesting season (September 1 to February 28). If construction, such as tree removal, trench excavation, pipe installation, etc., that have the potential to disturb nesting birds occur during the nesting season (March 1 to August 31), a qualified biologist shall conduct a pre-construction nesting birds survey prior to vegetation removal or ground disturbing activities in a given area with the following criteria:

- Surveys shall be conducted within the proposed Project area and all potential nesting habitat for passerine species within 250 feet of this area and raptor species within 500 feet of the area;

- The surveys should be conducted within one week before initiation of construction activities at any time between March 1 and August 31. If no active nests are detected, then no additional mitigation is required;

- If surveys indicate the presence of nesting birds, the biologist shall establish an exclusion zone (consistent with Mitigation Measure BIO-7) around the nest in which no work would be allowed until the young have successfully fledged or the nest has been abandoned. The size of the exclusion zone shall be determined by a qualified biologist and shall depend on the status of the species present, the level of noise or construction disturbance, line of sight between the nest and the disturbance, ambient levels of noise and other disturbances, other topographical or artificial barriers, and the sensitivity of the nesting bird to the disturbance. In general, exclusion zones of up to 250 feet for raptors and 50 feet for passerines are sufficient to prevent substantial disturbance to nesting birds. However, these buffers may be increased or decreased at the discretion of the biologist, as appropriate. Active nest sites shall be monitored periodically throughout the nesting season to identify any sign of disturbance.

- If nesting birds are documented to have established themselves in a given location within the proposed Project area during pre-existing construction activities, then it shall be assumed that the nesting birds are habituated to the construction activities. Under this scenario, the active nest shall be monitored by a qualified biologist periodically until the young have successfully fledged, or the nest has been abandoned, as described above.

- If active nests are identified on or immediately adjacent to the proposed Project area, then all non-essential construction activities (e.g., equipment storage and meetings) should be avoided in the immediate vicinity of the nest site, but the remainder of construction activities may proceed.

Mitigation Measure BIO-4 Implementation

Responsible Party: The District

Timing: One nesting survey shall be conducted by a qualified biologist within one week prior to construction, should the proposed Project be initiated between March 1 and August 31.

Monitoring and Reporting Program: The survey shall be conducted by a qualified biologist and a brief survey report shall be documented and kept on file with the District.
Standards for Success: Special status species and nesting birds covered under the MBTA shall not be disturbed during the proposed Project construction activities; exclusion buffers will be installed and monitored.

3.4.5.5 Mitigation Measure BIO-5: Avoid Disturbance to Roosting Bat Species

Bats species known to occur in the proposed Project region may roost in manmade structures such as the valve house and shed along the Upper Main Ditch. Bat species may also use trees within the proposed Project for roosting sites.

The District shall conduct a habitat assessment of the Project site to identify potential habitat for bat maternity roosts (e.g., human-made structures, large-diameter trees, snags). Removal of potential roost habitat identified during the assessment shall be avoided if possible during the bat maternity season (May through mid-August). If removal of potential roost habitat occurs outside of the maternity season, no further mitigation shall be required. If the maternity colony is within the proposed footprint but not subject to removal, exclusion fencing shall be installed in accordance with Mitigation Measure BIO-7.

If removal of potential roost habitat must be conducted during the maternity season, preconstruction inspections for bats of potential roost habitat shall be conducted using appropriate methods (e.g., camera inspection, exit survey with night optics, acoustic survey) within the 14-day period prior to vegetation removal. If bats are found during inspections, removal of that roost feature shall be delayed until the end of the maternity season or until a qualified bat biologist has determined that the young are capable of flight.

Mitigation Measure BIO-5 Implementation

Responsible Party: The District

Timing: One pre-construction bat roost assessment survey shall be conducted by a qualified biologist within the two-week period prior to commencement of construction to identify if there are potentially active roost habitats. If a follow-up survey is required to determine presence of potential roosting habitats, it must be completed prior to the proposed Project construction, including any tree removal.

Monitoring and Reporting Program: The survey shall be conducted by a qualified biologist familiar with Sierra Nevada bat species, and a brief survey report shall be documented and kept on file with the District.

Standards for Success: State species of concern bat species shall not be disturbed during the proposed Project construction activities.

3.4.5.6 Mitigation Measure BIO-6: Avoid and Minimize Impacts to Oak Trees and Oak Woodlands

Oak woodlands (i.e., oak areas with a canopy greater than 10 percent), oak trees (i.e., six-inch DSH single stem, 10-inches DSH multi-stem trunks), and heritage oaks (DSH of 36 inches or greater) shall be protected where feasible. Specifically, the District shall protect oaks within the Project area whose removal is not required for project construction by installing and maintaining tree exclusion/protection fencing one foot outside of oak tree driplines, consistent with Mitigation Measure BIO-7.
If individual oaks to be removed are part of an oak woodland or are greater than 6 inches DSH, the District will implement the oak tree mitigation requirements in the County Oak Resources Management Plan, as applicable.

3.4.5.7 Mitigation Measure BIO-7: Exclusionary Fencing for Sensitive Resources

The District shall install environmentally sensitive area exclusionary fencing prior to construction. The fencing shall delineate construction “pinch points” and environmentally sensitive area buffers. For example, at culvert crossings where waters of the US impacts are to be avoided, the construction area shall be delineated with exclusion fencing to limit the extent of construction activities and avoid the placement of dredge and fill material into potentially jurisdictional features. These avoidance areas would be identified prior to initiating construction activities, included within construction plans as appropriate, and would be protected by the installation of appropriate exclusion zone fencing.

Mitigation Measure BIO-7 Implementation

**Responsible Party:** The District

**Timing:** Prior to construction.

**Monitoring and Reporting Program:** The District shall verify the exclusion area fencing is properly installed and maintained.

**Standards of Success:** Appropriate state and federal permit compliance and compensation, including no net loss of waters of the U.S. from the Project.
3.4.6 Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>amsl</td>
<td>above mean sea level</td>
</tr>
<tr>
<td>BAGEPA</td>
<td>Bald Eagle and Gold Eagle Protection Act</td>
</tr>
<tr>
<td>BCC</td>
<td>Birds of Conservation Concern</td>
</tr>
<tr>
<td>BMP</td>
<td>Best Management Practice</td>
</tr>
<tr>
<td>CAL FIRE</td>
<td>California Department of Forestry and Fire Protection</td>
</tr>
<tr>
<td>CALVEG</td>
<td>Classification and Assessment with Landsat of Visible Ecological Groupings</td>
</tr>
<tr>
<td>CDAA</td>
<td>California Disaster Assistant Act</td>
</tr>
<tr>
<td>CFGC</td>
<td>California Department of Fish and Game Code</td>
</tr>
<tr>
<td>CDFW</td>
<td>California Department of Fish and Wildlife</td>
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<td>CESA</td>
<td>California Endangered Species Act</td>
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<td>California Environmental Quality Act</td>
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<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
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<tr>
<td>cfs</td>
<td>cubic feet per second</td>
</tr>
<tr>
<td>CNDDB</td>
<td>California Natural Diversity Database</td>
</tr>
<tr>
<td>CNPS</td>
<td>California Native Plant Society</td>
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<tr>
<td>County</td>
<td>El Dorado County</td>
</tr>
<tr>
<td>COWCA</td>
<td>California Oak Woodland Conservation Act</td>
</tr>
<tr>
<td>CRLF</td>
<td>California red-legged frog</td>
</tr>
<tr>
<td>CRPR</td>
<td>California Rare Plant Rank</td>
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<tr>
<td>CWA</td>
<td>Clean Water Act</td>
</tr>
<tr>
<td>DCH</td>
<td>Designated Critical Habitat</td>
</tr>
<tr>
<td>DSH</td>
<td>diameter at standard height</td>
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<td>Endangered Species Act</td>
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<td>FRAP</td>
<td>Fire and Resources Assessment Program</td>
</tr>
<tr>
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<td>geographic information systems</td>
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<td>INRMP</td>
<td>Integrated Natural Resources Management Plan</td>
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<tr>
<td>MBTA</td>
<td>Migratory Bird Treaty Act</td>
</tr>
<tr>
<td>MCV</td>
<td>Manual of California Vegetation</td>
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<tr>
<td>MM</td>
<td>Mitigation Measure</td>
</tr>
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<td>National Marine Fisheries Service</td>
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<td>Native Plant Protection Act</td>
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<td>National Oceanic and Atmospheric Administration</td>
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<td>NOP/IS</td>
<td>Notice of Preparation/Initial Study</td>
</tr>
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<td>NWI</td>
<td>National Wetland Inventory</td>
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OHWM | Ordinary High Water Mark
---|---
ORMP | Oak Resources Management Plan
PCA | Priority Conservation Areas
PRC | Public Resources Code
ROW | Right-of-Way
RWQCB | Regional Water Quality Control Board
SAA | streambed alteration agreement
SSC | Species of Special Concern
SWPPP | Storm Water Pollution Prevention Plan
USACE | United States Army Corps of Engineers
USC | United States Code
USDA | United States Department of Agriculture
USEPA | United States Environmental Protection Agency
USFS | United States Forest Service
USFWS | United States Fish and Wildlife Service
U.S. 50 | U.S. Highway 50
WCB | Wildlife Conservation Board
WTP | Water Treatment Plant

### 3.4.7 References

AECOM. 2013. California Red-Legged Frog Site Assessment for Main Ditch Project, El Dorado County by AECOM, Sacramento, California.


AECOM. 2015b. Results of Special-Status Plant Surveys for the Upper Main Ditch Piping Project, El Dorado County, California. Prepared for El Dorado Irrigation District by AECOM, Sacramento, California.


UPPER MAIN DITCH PIPING PROJECT

Biological Resources
June 2018


El Dorado Irrigation District (EID). 2015. Upper Main Ditch Piping Project. Project Description/Initial Study Checklist. Project #11032.01


UPPER MAIN DITCH PIPING PROJECT

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Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.


UPPER MAIN DITCH PIPING PROJECT

Biological Resources
June 2018


Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Department of Fish and Game, Sacramento, California. Updates are noted in accounts that have been added or edited since original publication.
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Draft Environmental Impact Report
Chapter 3.5 Cultural Resources

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3.5 CULTURAL RESOURCES

3.5.1 Basis for Analysis

The California Environmental Quality Act (CEQA) Guidelines’ Appendix G Environmental Checklist was assessed during the Notice of Preparations/Initial Study (NOP/IS) scoping process (included in Appendix A) to identify the Project components that have the potential to cause a significant impact. The following potential impacts were determined to warrant further evaluation within this Environmental Impact Report (EIR):

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;
- Disturb any human remains, including those interred outside of formal cemeteries.

The following potential impact was determined to have a less than significant or no impact during the NOP/IS scoping process (included in Appendix A) and is not discussed further in this section:

- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

The remainder of this section describes the regulatory and environmental baseline setting to support the evaluation of the potential impacts and describes the potential impacts to the existing cultural resources that may result from implementation of the Project and identifies mitigation for potentially significant impacts, where feasible.

3.5.2 Regulatory Framework

This section discusses the federal, state regulations and local policies and objectives, particularly those in the El Dorado County (County) General Plan that related to agricultural resources and are relevant to the Project.

3.5.2.1 Federal

National Historic Preservation Act

The National Historic Preservation Act (NHPA) requires federal undertakings to consider the effects of the action on historic properties. Historic properties are defined by the Advisory Council on Historic Preservation (ACHP) regulations (36 Code of Federal Regulations [CFR] Part 800) for implementing Section 106 as follows:

Historic property means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP) maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization that meet the National Register criteria. (36 CFR Part 800.16[l])
To determine whether an undertaking could affect NRHP-eligible properties, cultural resources (including archaeological, historical, and architectural properties) must be inventoried and evaluated for listing in the NRHP.

For projects involving a federal agency, cultural resource significance is evaluated in terms of eligibility for listing in the NRHP. For a property to be considered for inclusion in the NRHP, it must be at least 50 years old and meet the criteria for evaluation set forth in 36 CFR Part 60.4, as follows:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of design, setting, materials, workmanship, feeling, and association and:

- That are associated with events that have made a significant contribution to the broad patterns of our history; or
- That are associated with the lives of persons significant in our past; or
- That embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master or that possess high artistic values or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- That has yielded, or may be likely to yield, information important in prehistory or history.

If a cultural resources professional meeting the Secretary of Interior’s Standards, determines a particular resource meets one of these criteria, it is considered as an eligible historic property for listing in the NRHP. Among other criteria considerations, a property that has achieved significance within the last 50 years is not considered eligible for inclusion in the NRHP unless certain exceptional conditions are met.

### 3.5.2.2 State

**California Environmental Quality Act**

The CEQA requires public agencies to evaluate the impacts of their project(s) on the environment and includes significant historical resources as part of the environment. According to CEQA, a project that causes a substantial adverse change in the significance of an historical resource has a significant effect on the environment (CCR 14 Section 15064.5; California Public Resources Code [PRC] Section 21098.1). CEQA defines a substantial adverse change as follows.

- Physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired (CCR 14 Section 15064.5[b][1]).

CEQA guidelines state that the significance of an historical resource is materially impaired when a project results in the following:

- Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources (CRHR); or
• Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to PRC Section 5020.1(k) or its identification in an historical resources survey meeting the requirements of PRC Section 5024.1(g), unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

• Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a Lead Agency for purposes of CEQA (CCR 14 Section 15064.5[b][2]).

California Register of Historical Resources: Public Resources Code Section 5024

The term historical resource includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of PRC (PRC Section 5020.1[j]).

Historical resources may be designated as such through three different processes:

1. Official designation or recognition by a local government pursuant to local ordinance or resolution (PRC Section 5020.1[k]);

2. A local survey conducted pursuant to PRC Section 5024.1(g); or

3. The property is listed in or eligible for listing in the NRHP (PRC Section 5024.1[d][1]).

The process for identifying historical resources is typically accomplished by applying the criteria for listing in the CRHR, which states that a historical resource must be significant at the local, state, or national level under one or more of the following four criteria.

It is associated with events that have made a significant contribution to the broad patterns of:

1. California’s history and cultural heritage;

2. It is associated with the lives of persons important in our past;

3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or

4. It has yielded, or may be likely to yield, information important in prehistory or history. (CCR 14 Section 4852).

To be considered a historical resource for the purpose of CEQA, the resource must also have integrity, which is the authenticity of a resource’s physical identity evidenced by the survival of characteristics that existed during the resource’s period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. It must also be
judged with reference to the particular criteria under which a resource is eligible for listing in the CRHR (CCR 14 Section 4852[c]).

Unique Archeological Resources

The PRC also requires the Lead Agency to determine whether or not the project would have a significant effect on unique archaeological resources (PRC Section 21083.2[a]).

The PRC defines a unique archaeological resource as follows.

- An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
  - Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
  - Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
  - Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC Section 21083.2).

In most situations, resources that meet the definition of a unique archaeological resource also meet the definition of historical resource. As a result, it is current professional practice to evaluate cultural resources for significance based on their eligibility for listing in the CRHR.

Discovery of Human Remains

Section 7050.5 of the California Health and Safety Code (CHSC) states the following in regard to the discovery of human remains:

a) Every person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the [PRC]. The provisions of this subdivision shall not apply to any person carrying out an agreement developed pursuant to subdivision (l) of Section 5097.94 of the [PRC] or to any person authorized to implement Section 5097.98 of the [PRC].

b) In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the California Government Code [CGC], that the remains are not subject to the provisions of Section 27491 of the CGC or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the PRC. The coroner shall make his or her determination within two working days from the time the person responsible for the
excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains.

c) If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC) (CHSC Section 7050.5).

Of particular note to cultural resources is subsection (c), which requires the coroner to contact the NAHC within 24 hours if discovered human remains are determined to be Native American in origin. After notification, NAHC would follow the procedures outlined in PRC Section 5097.98, which include notification of most likely descendants (MLD), if possible, and recommendations for treatment of the remains. The MLD would have 24 hours after notification by the NAHC to make their recommendation (PRC Section 5097.98). In addition, knowing or willful possession of Native American human remains or artifacts taken from a grave or cairn is a felony under State law (PRC Section 5097.99).

Assembly Bill 52

Assembly Bill (AB) 52 changes sections of the PRC to add consideration of Native American culture within CEQA. The goal of AB 52 is to promote the involvement of California Native American Tribes in the decision-making process when it comes to identifying and developing mitigation for impacts to resources of importance to their culture. To reach this goal, the bill establishes a formal role for tribes in the CEQA process. CEQA lead agencies are required to consult with tribes about potential tribal cultural resources in the project area, the potential significance of project impacts, the development of project alternatives, and the type of environmental document that should be prepared. AB 52 specifically states that a project that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment (PRC Section 21084.2).

AB 52 applies to all CEQA projects which have a Notice of Preparation (NOP) filed on or after July 1, 2015. As the Upper Main Ditch Project filed the NOP on June 17, 2015, AB 52 does not apply to the Upper Main Ditch Project. However, Native American outreach was conducted in 2012 as described in Section 3.5.3.2 below.

3.5.2.3 Local

El Dorado County General Plan

The Project is proposed by El Dorado Irrigation District (the District), a special district that supplies water to customers throughout much of the County. Pursuant to Government Code sections 53091(D) and (E), many of the District's activities are not subject to local zoning or land use requirements, as stated below.

Building and zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code.

As a special district with equal authority, the District is exempt from following goals and policies within the County’s General Plan and Zoning Ordinance. However, the District aims to comply to with those goals and policies outlined in the General Plan and uses these goals and policies as a metric for formulating an impact analysis (EDCGP 2015).
Goal 7.5: Ensure the preservation of the County’s important cultural resources.

Objective 7.5.1: Creation of an identification and preservation program for the County’s cultural resources

Policy 7.5.1.1: The County shall establish a Cultural Resources Ordinance. This ordinance shall provide a broad regulatory framework for the mitigation of impacts on cultural resources (including historic, prehistoric and paleontological resources) by discretionary projects. This Ordinance should include (but not be limited to) and provide for the following:

A. Appropriate (as per guidance from the Native American Heritage Commission) Native American monitors to be notified regarding projects involving significant ground-disturbing activities that could affect significant resources.

B. A 100-foot development setback in sensitive areas as a study threshold when deemed appropriate.

C. Identification of appropriate buffers, given the nature of the resources within which ground-disturbing activities should be limited.

D. A definition of cultural resources that are significant to the County. This definition shall conform to (but not necessarily be limited to) the significance criteria used for the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR) and Society of Vertebrate Paleontology.

E. Formulation of project review guidelines for all development projects.

F. Development of a cultural resources sensitivity map of the County.

Policy 7.5.1.2: Reports and/or maps identifying specific locations of archaeological or historical sites shall be kept confidential in the Planning Department but shall be disclosed where applicable.

Policy 7.5.1.3: Cultural resource studies (historic, prehistoric, and paleontological resources) shall be conducted prior to approval of discretionary projects. Studies may include, but are not limited to, record searches through the North Central Information Center at California State University, Sacramento, the Museum of Paleontology, University of California, Berkeley, field surveys, subsurface testing, and/or salvage excavations. The avoidance and protection of sites shall be encouraged.

Policy 7.5.1.4: Promote the registration of historic districts, sites, buildings, structures, and objects in the National Register of Historic Places and inclusion in the California State Office of Historic Preservation’s California Points of Historic Interest and California Inventory of Historic Resources.

Policy 7.5.1.5: Cultural Resources Preservation Commission shall be formed to aid in the protection and preservation of the County’s important cultural resources. The Commission’s duties shall include, but are not limited to:

A. Assisting in the formulation of policies for the identification, treatment, and protection of cultural resources (including historic cemeteries) and the curation of any artifacts collected during field collection/excavation;
B. Assisting in preparation of a cultural resources inventory (to include prehistoric sites and historic sites and structures of local importance);

C. Reviewing all projects with identified cultural resources and making recommendations on appropriate forms of protection and mitigation; and

D. Reviewing sites for possible inclusion in the National Register of Historic Places, California Register, and other State and local lists of cultural properties.

E. The County shall request to become a Certified Local Government (CLG) through the State Office of Historic Preservation. Certification would qualify the County for grants to aid in historic preservation projects. The Cultural Resources Preservation Commission could serve as the Commission required for the CLG program.

Policy 7.5.1.6: The County shall treat any significant cultural resources (i.e., those determined California Register of Historical Resources/National Register of Historic Places eligible and unique paleontological resources), documented as a result of a conformity review for ministerial development, in accordance with CEQA standards.

Objective 7.5.3: Recognition of the value of the County’s prehistoric and historic resources to residents, tourists, and the economy of the County, and promotion of public access and enjoyment of prehistoric and historic resources where appropriate.

Policy 7.6.1.1C: Maintaining areas of importance for outdoor recreation including areas of outstanding scenic, historic and cultural value; areas particularly suited for park and recreation purposes including those providing access to lake shores, beaches and rivers and streams; and areas which serve as links between major recreation and open space reservations including utility easements, banks of rivers and streams, trails and scenic highway corridors (El Dorado County General Plan 2004).

3.5.3 Environmental Setting

An overview of the baseline environmental setting is provided below. This information is provided as context within which to interpret the cultural resources identified in and around the Project area.

3.5.3.1 Methodology for Establishing Setting

This section was developed using the cultural resources study done for the Project and is included in Appendix D (Far Western Anthropological Research Group 2018).

Study Area and Field Survey

The Project cultural resources study area includes the Upper Main Ditch Project area and a quarter-mile around the Project area (Project Study Area). Specifically, the proposed Project Study Area comprises approximately three miles of the Upper Main Ditch and an area within 10-feet of the upslope top of bank and within 10- to 20- feet of downslope top of bank of the Upper Main Ditch from Forebay to Reservoir 1 Water Treatment Plant (WTP) as well as potential staging and access areas in proximity to the ditch. A vertical study area of approximately five feet deep was considered for areas of the pipe trench. Additionally, the Blair Road Alternative study area (Blair Road Alternative
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Cultural Resources
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Study Area) consists of a 50-foot-wide corridor along the Blair Road corridor. The Combined Alternative study area (Combined Alternative Study Area) would be the same in the portions where it overlaps with the Project and the Blair Road Alternative and includes an additional 50-foot-wide corridor along the cross-country portions. Additionally, the Blair Road and Combined Alternative Study Areas include an additional 7- to 8-feet vertical study area along the roadway for trenching activities.

A pedestrian survey of the proposed Project was conducted on October 22 and 23, 2012 and was then further surveyed with the addition of the Blair Road Alternative and Combined Alternative on December 21, 2017 and February 2, 2018. The study areas were surveyed using parallel transects following professional standards adjacent to the sides of the El Dorado Ditch and across proposed Project staging areas. Surface visibility was generally good across the proposed Project area.

Records Search

As part of the study, a records search was conducted at the North Central Information Center (NCIC) of the California Historical Resources Information System (CHRIS), on October 17, 2012 for the proposed Project Study Area. An updated records search was conducted on February 1, 2018 to include the additional Blair Road Alternative and Combined Alternative Study Areas (Far Western Anthropological Research Group 2018). The NCIC, an affiliate of the State of California Office of Historic Preservation, is the official state repository of archaeological and historic records and reports for a six-county area that includes the County, and is housed at California State University, Sacramento.

The records searches were performed in order to: (1) determine whether known cultural resources had been recorded within or adjacent to the study area; (2) assess the likelihood of unrecorded cultural resources based on archaeological, ethnographic, and historical documents and literature; and (3) to review the distribution of nearby archaeological sites in relation to their environmental setting.

Native American Outreach

Far Western Anthropological Research Group requested a sacred lands search and a list of Native American contacts for the Project from the NAHC on February 7, 2018 and sent letters soliciting information regarding the Project area to all the groups and individuals identified by the NAHC as part of the sacred lands search. The sacred lands search was completed by the NAHC on February 15, 2018 (Far Western Anthropological Research Group 2018, Appendix D).

Establishment of Environmental and Cultural Context

A combination of background desktop and literature reviews as well as a review of record search results was used to establish the environmental context and cultural context for the Project. The cultural context was developed through establishment of the prehistory, ethnography, and historic context.

3.5.3.2 Results

Records Search Results

The records search identified one known resource within the Project Study Area and three other resources adjacent to the Project Study Area. The updated records search completed by Far Western Anthropological Research Group
also identified that fifteen previous cultural resources studies have taken place within the Project Study Area (Olsen 1969; Snoke 1977; Ritter 1974; Wagener 1998; Kral 1999; Allen 2003; Allen 2004; Waechter, Sharon, et al. 2003; Jensen 2012; Mahoney, Shannon S., et al. 2015; Cardno Entrex 2012; ICF International 2011; AECOM 2013; Fryman, Leslie R. 2013; Walker, et al. 2007). Table 3.5-1 lists previously recorded cultural resources within the Project Study Area.

<table>
<thead>
<tr>
<th>Primary Number</th>
<th>Trinomial</th>
<th>Age</th>
<th>Description</th>
<th>Within Project Study Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-09-3675</td>
<td>CA-ELD-002400H</td>
<td>Historic</td>
<td>Western States Gas &amp; Electric Company's Construction Camp B</td>
<td>Adjacent to but not within the Project area</td>
</tr>
<tr>
<td>P-09-3717</td>
<td>CA-ELD-002424H</td>
<td>Historic</td>
<td>Loomer Homestead (also known as Schuhmann Homestead/Loomer Property/Boy Scout Camp)</td>
<td>Immediately adjacent to but not within the Project area</td>
</tr>
<tr>
<td>P-09-3718</td>
<td>-</td>
<td>Historic</td>
<td>El Dorado Irrigation District Main Ditch</td>
<td>Yes</td>
</tr>
<tr>
<td>P-09-4147</td>
<td>-</td>
<td>Historic</td>
<td>El Dorado Canal/Sierra Ditch</td>
<td>Immediately adjacent to but not within the Project area</td>
</tr>
</tbody>
</table>

Native American Outreach Results

The sacred lands search was completed by the NAHC February 7, 2018 and did not identify any sensitive Native American cultural resources either within or near the Project Study Area. None of the Native American groups and individuals contacted regarding the Project responded to the request for information (Far Western Anthropological Research Group 2018).

Field Survey Results

The pedestrian surface survey did not identify any previously unrecorded cultural resources but did identify that the Upper Main Ditch is crossed by bridges (i.e. five vehicular bridges) and pedestrian walkways (i.e., seven-foot bridges), and that segments of the ditch are bordered by private residences and landscaped areas (e.g., vegetation, rock walls, and sand bags). These features along the ditch were documented during the survey (Far Western Anthropological Research Group 2018).

The site record for the El Dorado Ditch (P-09-3718) was updated as part of the cultural resources investigations for the Project to reflect the current condition of the ditch between Forebay and Reservoir 1. This resource was still recommended as not eligible to the CRHR and NRHP. Additionally, the sites adjacent to the Project area, including the Loomer Homestead (also known as the Schuhmann Homestead/Loomer Property/Boy Scout Camp), the El Dorado Canal/Sierra Ditch, and the Western States Gas & Electric Company Construction Camp were evaluated and found to be not eligible to the CRHR and NRHP. No other cultural resources were observed within the Project area (Far Western Anthropological Research Group 2018).
Environmental Context Results

The Project is located in the north-central Sierra Nevada mountain range, but the surface topography of the Project area primarily varies from gently sloping to steep terrain.

The north-central Sierra Nevada has a long and complex natural history. Part of this history is represented in the various geologic and geographic features of the area. The area is dominated by the Sierra Nevada mountain range and its associated foothills, which are bisected by a number of steep canyons cut into the terrain by several large rivers and their tributaries. The rivers and their valleys provide water and habitat for flora and fauna, and also provide a system of travel corridors from the Central Valley of California the crest of the Sierra Nevada.

Cultural Context

The Project is primarily associated with historic sites and features; consequently, a detailed description of the prehistory and ethnography of the Project area is presented herein. The history of the Project area and the development of gold mining and water companies are highlighted.

Prehistory

The archaeology of the north-central Sierra Nevada is complex and related to the surrounding areas such as the Central Valley, Southern Sierra Nevada, and the Great Basin. The Project area, however, is primarily associated with the Martis Complex.

In 1950s, research into lifeways and subsistence practices were investigated and the north-central Sierra Nevada prehistoric chronology can be observed in two distinct material cultures: Martis (4,000 – 2,000 years Before Present [BP]) and Kings Beach (AD 1,000-Historic Period) (Heizer and Elsasser 1953). In the 1970s this chronology was expanded to divide the Martis Complex into three phases: Early (5,000-3,000 B.P.), Middle Martis (3,500-2,500 B.P.), and Late Martix (2,500-1,500 B.P.) (Elston et. al. 1977, 1994: 16).

Recent archaeological research in the area have identified sites such as CA-ELD- 145 near Camino (Jackson and Ballard 1999); Sly Park Reservoir (Boyd 1998); CA-ELD-175 at Sand Flat Campground (Rood 1999); along the Foresthill Divide (Baker 2000); and at the False Walrus site (Nadolski 2003) in the surrounding area. Site 05-03-56-730 has provided a wealth of information regarding occupation and use of the American River Watershed dating from the Archaic through the Late Sierran Period.

Ethnography

Prior to the arrival of EuroAmericans in the region, California was inhabited by groups of Native Americans speaking more than 100 different languages and occupying a variety of ecological settings. Kroeber (1925, 1936), and others (i.e., Murdock 1960; Driver 1961), recognized the uniqueness of California Native Americans and classified them as belonging to the California culture area. Kroeber (1925, 1936) further subdivided California into four subculture areas, Northwestern, Northeastern, Southern, and Central. The Central area encompasses the current Project area and includes the Nisenan or Southern Maidu and Northern Sierra Miwok. The Washoe also utilized the Project area but are included in the Great Basin culture area. Kroeber (1925:916), however, states that California and the Great Basin are regions of close cultural kinship that should be joined into a larger culture area with the Sacramento River Delta area as a center of major cultural development.
Nisenan inhabited the drainages of the Yuba, Bear, and American rivers, and also the lower reaches of the Feather River, extending from the east banks of the Sacramento River on the west to the mid-/high elevations of the western flank of the Sierra Nevada (Wilson and Towne 1978). Northern Sierra Miwok inhabited the southern end of the area bounded on the north by the Cosumnes River, extending beyond the Calaveras River to the south, demarcated on the west by the 500-foot elevation contour, and continuing toward the east to beyond the snowline (Levy 1978). Washoe historically inhabited the region east of the crest of the Sierra Nevada into Carson Valley, extending from the Walker River in the south to Honey Lake in the north, with peripheral territory extending to the mid-elevations of the west Sierra slope (d’Azevedo 1986). All three ethnographic groups probably exploited resources in the Project area.

Historical Context

California’s Gold Rush began in 1848 and attracted miners from around the world to the Mother Lode, the area between the Yuba River in northern California and Mariposa County in southern California. The earliest mining activity required water to wash lighter sands and gravels away from the heavier gold. From 1848 to 1850, miners could profitably work the easiest and most accessible diggings in or adjacent to water sources, along creeks, gulches, river bars, and river banks. During this early period, most miners worked independently and used relatively simple implements including pans, picks, shovels, rockers, long toms, and sluices.

Across California from the mid-1850s to the mid-1860s the era of the single miner working a successful placer operation came to an end as gold mining transitioned from small scale to large scale production away from rivers and easily accessible sources or water. Mining away from rivers required bringing water to a mining site. Consequently, miners began to convey water to their mining sites by building earthen ditches. The first ditches associated with mining activities were usually short and built with minimal effort in terms of design and construction.

As surface diggings produce smaller and smaller quantities of gold, miners turned to deeper auriferous beds and new mining techniques such as hydraulic mining that required large amounts and volumes of water. By the mid-1860s hydraulic mining was a common method of gold extraction in California, but it required large quantities of water. The large volumes of water necessary for hydraulic mining were delivered to mining sites from sources several miles away through the use of large scale systems that included reservoirs, ditches, tunnels, and flumes.

El Dorado Ditch

The 26-mile-long El Dorado Ditch is an example of a large-scale water conveyance system designed to deliver water to hydraulic mining operations near Placerville. The ditch was conceived by John Kirk and its construction between 1874 and 1876 was supervised by Francis A. Bishop. Following the 1884 decision in a landmark case involving the water quality effects of hydraulic mining (Woodruff vs. North Bloomfield Gravel Mining Company, also known as the “Sawyer Decision”), hydraulic mining dramatically declined and likewise did the need for water conveyance systems that supported their operations. Consequently, many water ditches were abandoned, but others were put to alternative uses such as providing water for irrigation, commercial and domestic use, and in some cases the generation of hydroelectric power.

Several upstream reservoirs and pipelines have been enlarged in this area since the District was formed in 1925. In 1925, the El Dorado Ditch, under the ownership of Pacific Gas and Electric (PG&E) and the District, began transitioning from providing water for hydraulic mining to providing water for irrigation, commercial and domestic use, and to generate hydroelectric power. Improvements and upgrades in this area over time led to increased capacity for
downstream customers in the latter part of the twentieth century. Currently, the El Dorado Ditch is owned and operated by the District and still provides water to a variety of users and its associated facilities generate electric power for commercial and residential consumption.

Blair Road

Uses along Blair Road contribute to the cultural context in which previously undiscovered resources could be attributed.

During the late nineteenth century, Blair Road was a dirt track that forked off from the Carson-Tahoe Road just east of Sportsman’s Hall at Fyffe and led to sawmills owned by the Four Blair Brothers, who had emigrated from Scotland to Ohio in 1850. The Blairs’ lumbering practice was to operate a sawmill for about 10 years close to the timber stands they were harvesting, and then move their milling operations to a new location, closer to the fresh harvest. From the 1870s through at least the 1890s, the Blairs had two different mill sites in Long Canyon, north of the Elk horn Mill. It was not until 1913 that they established a mill at the end of the road, currently known as “Old Blair Mill Road,” that forks off from Blair Road. The brothers operated that last mill in Long Canyon until 1925 (Parker 1988; Sioli 1883).

By 1950, a few buildings, presumably residences, were present along Blair Road, with the highest concentration in the lower stretch closest to US Highway 50 and Sportsman’s Hall. Most of the road remained unpaved until 1964, when El Dorado County paved the 1.7-mile stretch between Forebay Road and the bridge over the El Dorado Main Ditch. By 1976 a few more residences had been constructed along the lower stretch of the Blair Road. Today, the road has modern pavement and striping, and in 2017, El Dorado County replaced the Blair Road Bridge over El Dorado Main Ditch and created shoulders at each end of the bridge.

Schuhmann Homestead/Loomer Property/Boy Scout Camp

This property was part of a 160-acre parcel located in the timberlands of El Dorado County between the Carson Valley Road and the South Fork of the American River, near Fyffe. The Blairs had been operating sawmills in the area since 1860 and presumably logged the acreage before selling it in April of the following year to Henry Schuhmann and Peter Roemer (El Dorado County 1886a). During his 34-year ownership of the property, the local newspaper reported that Henry Schuhmann planted 200 fruit trees (Mountain Democrat 1891), and that the “Schuhmann brothers” set up a placer mine on their property (Mountain Democrat 1892). In 1956, the Loomers sold their 50-acre parcel including all of the buildings to the Boys Scouts of America, Oakland Area Council. From 1957 to 1973 the camp was operated as a Boy Scout Camp (See Figure 3.5-1 below).
3.5.4 Environmental Impacts

This section analyzes the Project's potential to result in significant environmental impacts to cultural resources. When the Project's impact was determined to be significant, feasible mitigation measures were identified to reduce or avoid that impact.

3.5.4.1 Project Impact Analysis

This section discusses potential impacts associated with the Project and identifies mitigation measures for potentially significant impacts where feasible.
Impact CUL-1 The Project would not cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5.

Impact CUL-1a Proposed Project Analysis

The records search, survey, and Native American outreach, identify four previously recorded cultural resources within the Project area.

The El Dorado Irrigation District Main Ditch (P-09-3718), the El Dorado Canal/Sierra Ditch (P-09-4147), and the Loomer Homestead (P-09-3717) were determined not to be eligible for the CRHR and NRHP and were determined not to meet eligibility requirements for inclusion on the NRHP or the CRHR because these resources do not appear to be directly associated with significant events in history or with individuals important in local history or the design and construction of other water conveyance systems (Far Western Anthropological Research Group 2018). Both the El Dorado Irrigation District Main Ditch and the El Dorado Canal/Sierra Ditch are examples of a large-scale water conveyance system, but they lack integrity of setting, feeling, association, design, and workmanship because they have been affected by maintenance, residential construction, installation of bridges/walkways, and installation of other facilities associated with modern use of the ditches. Previous research regarding the El Dorado Irrigation District Main Ditch and the El Dorado Canal/Sierra Ditch were thorough and compiled sufficient information regarding design, construction, and use of the ditches; consequently, the El Dorado Irrigation District Main Ditch and the El Dorado Canal/Sierra Ditch lack the potential to yield additional significant information in relation to the history of the ditches or the development of water conveyance systems in the County (Far Western Anthropological Research Group 2018). Additionally, the overall Loomer Homestead site and the buildings and earthen embankment dam on the Loomer Homestead property do not meet the National Register criterion due to the loss of integrity from prolonged neglect and for use of incompatible materials. Since the El Dorado Irrigation District Main Ditch, the El Dorado Canal/Sierra Ditch, and the Loomer Homestead were evaluated and recommended for a SHPO ineligibility determination for listing on the CRHR and NRHR, and are not listed on any other register as defined in Section 15064.5, the proposed Project would not cause an adverse change in the significance of the resource. Therefore, these resources require no further consideration in the EIR.

Additionally, the Western States Gas & Electric Company’s (WSG&E) Construction Camp B is located near Forebay Reservoir. This site was previously determined ineligible for the CRHR and NRHP and does not occur directly within the Study Area. Because the site is not eligible, and the site would not be directly impacted by proposed Project activities, the proposed Project has no potential to cause a substantial adverse change to the significance of a historical resource. Therefore, this resource requires no further consideration in the EIR.

However, given the historic uses of Blair Road and the El Dorado Ditch and the overall Project area, there is a potential during ground disturbing construction activities would unearth potentially significant historical resources which if not properly identified and evaluated could result in significant impacts to the resource. To ensure potential harm to unidentified resources does not occur the District would implement MM CUL-1: Unanticipated Discovery of Cultural Resources to ensure any resources identified are properly handled, evaluated, and treated. With the implementation of MM CUL-1, procedures including stopping all work and conducting appropriate assessment, treatment, and documentation of any inadvertent finds would be in place to ensure a substantial adverse change to the resource does not occur. With mitigation incorporated, the potential impact would be less than significant.

Level of Significance: Less than Significant with Mitigation
Mitigation Required: MM CUL-1

Impact CUL-1b Blair Road Alternative Analysis

The potential for the Blair Road Alternative to cause a substantial adverse change to the resources identified within the proposed Project discussion under Impact CUL-1a is nearly identical to that which would occur under the proposed Project. The potential for discovery of buried or unidentified resources remains similar to the proposed Project. The areas within the limits of Blair Road itself would have less of a potential to encounter unidentified resources due to the compacted and paved nature of the roadway. However, the cross-country segments of the Blair Road Alternative are relatively undisturbed and therefore have a slightly higher potential for encountering a historic resource. With implementation of MM CUL-1 the impact would be less than significant.

Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM CUL-1

Impact CUL-1c Combined Alternative Analysis

The Impact discussion for the proposed Project and the Blair Road Alternative would apply for the Combined Alternative also. The Combined Alternative would not cause a substantial adverse change in the significance of any resources. MM CUL-1 would also be required for the Combined Alternative for any unanticipated discoveries that could occur along this alignment. Therefore, the potential impact would be less than significant with mitigation incorporated.

Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM CUL-1

Impact CUL-1d No Project Alternative Analysis

The No Project Alternative would result in a continuation of existing conditions and no construction activities would occur. Therefore, there would be no potential for the No Project Alternative to cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5.

Level of Significance: No Impact

Mitigation Required: None Required

Impact CUL-2 The Project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.

Impact CUL-2a Proposed Project Analysis

As discussed under Impact CUL-1 above, none of the three evaluated resources were found to be eligible. Similar to the potential to encounter historic resources, the potential to uncover previously unidentified archaeological resources exists during construction of the proposed Project. If these resources were to go unidentified they would have the potential to be adversely changed. Therefore, MM CUL-1: Unanticipated Discovery of Cultural Resources would be
required to reduce impacts to a less than significant level. With mitigation incorporated, the potential impact would be less than significant.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM CUL-1

Impact CUL-2b Blair Road Alternative Analysis

Similar to the proposed Project, the Blair Road Alternative would not cause a substantial adverse change in the significance of any archaeological resources in the area. As discussed in Impact CUL-1a and Impact CUL-2a above, MM CUL-1 would be required for discovery of any previously unidentified resources. With mitigation incorporated, the potential impact would be less than significant.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM CUL-1

Impact CUL-2c Combined Alternative Analysis

For the same reasoning stated for the proposed Project and the Blair Road Alternative, the Combined Alternative would not cause a substantial adverse change in the significance of any archaeological resources with the implementation of MM CUL-1. With mitigation incorporated, the potential impact would be less than significant.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM CUL-1

Impact CUL-2d No Project Alternative Analysis

The No Project Alternative would result in a continuation of existing conditions and no construction activities would occur. Therefore, there would be no potential for the No Project Alternative to cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5.

**Level of Significance:** No Impact

**Mitigation Required:** None Required

**Impact CUL-3** The Project would not disturb any human remains, including those interred outside of formal cemeteries.

Impact CUL-3a Proposed Project Analysis

There are no known human burials or remains within the Project area and the likelihood of encountering a burial would be limited. However, given the historic use of the Project area, there is a potential for inadvertent discoveries of human remains. If human remains are encountered during construction of the proposed Project, MM CUL-2 would be employed, which would include procedures for stopping work and contacting the coroner. The potential impact would be less than significant with mitigation incorporated.
**Level of Significance:** Less than Significant with Mitigation

**Mitigation Measure:** MM CUL-2

Impact CUL-3b Blair Road Alternative Analysis

The Blair Road Alternative would occur within a similar area as the proposed Project and therefore, the likelihood of encountering a burial is limited. The Blair Road Alternative would occur largely along the existing Blair Road. This portion is a previously disturbed area, and the likelihood of discovering human remains during construction would be similar to the proposed Project. In the portion of this alternative that would go through cross-country terrain (approximately 2,600 feet), even though there would be a relatively low chance of occurring, there is an increased potential of encountering undiscovered human remains during construction. As discussed under the proposed Project, MM CUL-2 would be implemented in the unlikely event that human remains are discovered during construction activities. The potential impact would be less than significant with mitigation incorporated.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM CUL-2

Impact CUL-3c Combined Alternative Analysis

The Combined Alternative would overlap the proposed Project and the Blair Road Alternative and therefore, the likelihood of encountering a burial is limited as described in Impact CUL-3a and CUL-3b. Although the Combined Alternative would occur over undeveloped terrain for approximately 4,000 feet, there is still a limited chance of discovering human remains during construction. However, in the event that human remains are encountered during construction of the Combined Alternative, MM CUL-2 would be implemented. The potential impact would be less than significant with mitigation incorporated.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM CUL-2

Impact CUL-3d No Project Alternative Analysis

The No Project Alternative would result in a continuation of existing conditions and no construction activities would occur. Therefore, there would be no potential for the No Project Alternative to disturb any human remains.

**Level of Significance:** No Impact

**Mitigation Required:** None Required

**3.5.5 Cultural Mitigation**

**3.5.5.1 Mitigation Measure CUL-1: Unanticipated Discovery of Cultural Resources**

If subsurface cultural resources are uncovered during project ground disturbing activities, the District’s contractor shall complete the following steps:
1) Stop all work at that particular site when cultural resources are encountered;

2) Immediately contact the District Project Manager;

3) The District Project Manager shall direct the contractor to relocate work more than 150-feet away from the discovery or as otherwise directed by the District professional archaeologist (meeting the Secretary of the Interior’s Qualifications);

4) The District shall have an archaeologist confirm that no additional archaeological resources are in the area of potential disturbance;

5) The District or its contractor shall secure the discovery location until cleared by the archaeologist;

6) All spoils shall remain in their current location until directed to be moved by District staff or the archaeologist;

7) The District or its contractor shall treat the find as confidential and shall not publicly disclose the location. Only authorized personnel, or individuals with the permission of the District (and the land owner if different from the District) shall be allowed on the archaeological site;

8) The District archaeologist shall assess the significance of the find. All materials collected and secured by the District at an offsite District location. The District archaeologist shall not provide any materials to a tribal agency or other group unless so directed by District staff. All materials found shall be secured and provided to an appropriate tribal or museum of selection at the discretion of the District. The District shall make every effort to treat the sharing of materials such that the community is benefited by the find; and

9) No additional work shall take place within the immediate vicinity (150-feet) of the find until the District’s chosen archaeologist has given approval and obtained the concurrence of State Historic Preservation Officer (SHPO).

Archaeological materials: May include, but are not limited to: flaked stone tools (projectile point, biface, scraper, etc.) anddebitage (flakes) made of chert, obsidian, etc., groundstone milling tools and fragments (mortar, pestle, handstone, millingstone, etc.), faunal (non-human) bones, fire-affected rock, dark middens (domestic dump waste), house pit depressions, and human interments.

Historic-era Resources: may include, but are not limited to, small cemeteries or burial plots, cut (square) nails, containers or miscellaneous hardware, glass fragments, cans with soldered seams or tops, ceramic or stoneware objects or fragments, milled or split lumber, earthworks, feature or structure remains and trash dumps.

Mitigation Measure CUL-1 Implementation

Responsible Party: The El Dorado Irrigation District and its contractor would ensure the appropriate treatment for the unanticipated discovery of any cultural resources during construction.

Timing: During all ground disturbing activities.

Monitoring and Reporting Program: If subsurface cultural resources are uncovered during project ground disturbing activities, the District’s contractor shall complete the above steps.
Standards of Success: Avoidance where possible and the proper recording, evaluation, and treatment of any cultural resources.

3.5.5.2 Mitigation Measure CUL-2: Unanticipated Discovery of Human Remains

Section 7050 of the California Health and Safety Code states that it is a misdemeanor to knowingly disturb a human burial site. If human remains are encountered (or are suspected) during any project-related activity, the District’s contractor shall complete the following steps:

1) Immediately stop all work when human remains are encountered and notify the El Dorado County Coroner in accordance with Section 7050.5 of the California Health and Safety Code.

2) The District or its contractor shall relocate work if directed by the District within greater than 150 feet from the discovery or otherwise directed by the District Qualified Professional Archaeologist.

3) The District shall have the archaeologist confirm that no additional archaeological resources are in the area. If the District resumes work in a location where human remains have been discovered and cleared, the District shall have the professional archaeologist onsite to confirm that no additional human remains are in the area.

4) The District’s contractor shall not damage, touch, or remove any human remains or associated materials or remove associated spoils or pick through them.

5) Record the location and keep notes of all calls, site visits and events.

6) The District or its contractor shall treat the find as confidential and not publicly disclose the location. The District shall secure the area as needed. Only authorized personnel, or individuals with the permission of the District (and the land owner, if different from the District) shall be allowed onsite.

7) The County Coroner may assess the human remains. If the human remains are of Native American origin, the Coroner must notify the NAHC within 24 hours of such identification. The NAHC shall identify the most likely descendant (MLD).

8) Once given the permission by the District (and the land owner if different from the District) the MLD shall be allowed onsite. The MLD shall complete their inspection and make their recommendation to the District for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in PRC Section 5097.98. MLD recommendations must be made within 48-hours of the NAHC notification to the MLD.

9) No additional work shall take place within the immediate vicinity of the find until the District’s chosen professional archaeologist gives approval to resume work in that area.

Mitigation Measure CUL-2 Implementation

Responsible Party: The El Dorado Irrigation District and the District’s contractor would ensure the appropriate treatment for any discovery of human remains during construction.
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Timing: During all ground disturbing activities.

Monitoring and Reporting Program: If human remains are encountered (or are suspected) during any project-related activity, the District shall complete steps 1- through 9.

Standards of Success: The proper recording, evaluation, and treatment of any discovered human remains.
3.5.6 Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AB</td>
<td>Assembly Bill</td>
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<tr>
<td>ACHP</td>
<td>Advisory Council on Historic Preservation</td>
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<tr>
<td>BP</td>
<td>Before Present</td>
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<tr>
<td>CCS</td>
<td>cryptocrystalline silica</td>
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<tr>
<td>CEQA</td>
<td>California Environmental Quality Act</td>
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<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
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<tr>
<td>CGC</td>
<td>California Government Code</td>
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<tr>
<td>CHSC</td>
<td>California Health and Safety Code</td>
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<tr>
<td>CHRIIS</td>
<td>California Historical Resources Information System</td>
</tr>
<tr>
<td>CLG</td>
<td>Certified Local Government</td>
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<tr>
<td>County</td>
<td>El Dorado County</td>
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<td>CRHR</td>
<td>California Register of Historical Resources</td>
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<tr>
<td>The District</td>
<td>El Dorado Irrigation District</td>
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<tr>
<td>EIR</td>
<td>Environmental Impact Report</td>
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<tr>
<td>MLD</td>
<td>Most Likely Descendants</td>
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<td>MM</td>
<td>Mitigation Measure</td>
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<td>NAHC</td>
<td>Native American Heritage Commission</td>
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<td>NCIC</td>
<td>North Central Information Center</td>
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<td>NHPA</td>
<td>National Historic Preservation Act</td>
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<td>NOP</td>
<td>Notice of Preparation</td>
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<tr>
<td>NOP/IS</td>
<td>Notice of Preparation/Initial Study</td>
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<tr>
<td>NRHP</td>
<td>National Register of Historic Places</td>
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<td>PG&amp;E</td>
<td>Pacific Gas and Electric Company</td>
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<td>PRC</td>
<td>Public Resources Code</td>
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<tr>
<td>SHPO</td>
<td>State Historic Preservation Officer</td>
</tr>
<tr>
<td>WTP</td>
<td>Water Treatment Plant</td>
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<td>WSG&amp;E</td>
<td>Western States Gas &amp; Electric Company</td>
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3.5.7 References


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GEOLOGY AND SOILS

3.6.1 Basis for Analysis

The California Environmental Quality Act (CEQA) Guidelines’ Appendix G Environmental Checklist was assessed during the Notice of Preparations/Initial Study (NOP/IS) scoping process (included in Appendix A) to identify the Project components that have the potential to cause a significant impact. The following potential impacts were determined to warrant further evaluation within this Environmental Impact Report (EIR):

- Result in substantial soil erosion or the loss of topsoil; or
- 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.

The following potential impacts were determined to have a less than significant or no impact during the NOP/IS scoping process (included in Appendix A) and are not discussed further in this section:

- Exposure of people or structures to potential substantial adverse effects, including the risk of life, injury, or death involving:
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the state geologist for the area or based on other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Publication 42;
  - Strong seismic ground shaking;
  - Seismic-related ground failure, including liquefaction; or
  - Landslides
- Location on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property; or
- Having soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of water.

The remainder of this section describes the regulatory and environmental setting to support the evaluation of the potential impacts and describes the potential impacts to the existing geologic character that may result from implementation of the Project including mitigation for significant impacts, where feasible.

3.6.2 Regulatory Framework

This section discusses the federal, state regulations and local policies and objectives that related to geology and soils and are relevant to the Project.
3.6.2.1 Federal

Clean Water Act

The Clean Water Act (CWA, 33 USC 1344) primarily regulates waters of the United States. Further description of the Clean Water Act including its application to biological and hydrological resources is described in Sections 3.4 and 3.9 (Biological Resources and Hydrology and Water Quality). However, the CWA focuses on sediment control in two aspects. First, the United States Army Corps of Engineers (USACE) administers Section 404, which regulates the discharge of fill into waters of the United States. Secondly, the CWA applies to stormwater discharges, where erosion control is an integral part of achieving permit compliance (CWA, 33 USC 1344).

3.6.2.2 State

Seismic Hazard Mapping Act

The Seismic Hazard Mapping Act governs the responsibilities of city, county, and state agencies in identifying and mapping seismic hazard zones and mitigation seismic hazards to protect public health and safety in accordance with the provision of the California Public Resources Code, Division 2. Geology, Mines and Mining, Seismic Hazards Mapping – Chapter 7.8. The intent of this publication is to delineate zones where earthquakes could cause hazardous ground shaking and ground failure, including liquefaction and landslides. Currently, zones near the San Andreas Fault in the urban centers of the Greater San Francisco Bay Area and Los Angeles have been delineated. Local cities and counties within these zones regulate building construction in order to minimize loss associated with these seismic hazards.

State Water Resources Control Board

For the Project, the State Water Resources Control Board (SWRCB) has jurisdiction under National Pollutant Discharge Elimination System (NPDES) Statewide General Construction Stormwater Discharge Permit (General Permit) (Order No. 2009-0009-DWQ as amended by 2010-0014-DWQ), for construction projects that disturb greater than one acre or have the potential to impair water quality. The permit is required regardless of the time of year construction occurs and requires: a Notice of Intent to be submitted; a Stormwater Pollution Prevention Plan (SWPPP) to be developed and implemented; and monitoring to be conducted. The SWPPP must contain best management practices (BMP), other measures to prevent pollution, and a construction timeline. The SWPPP shall demonstrate compliance with erosion and sediment control standards and identify responsible parties. Furthermore, a BMP maintenance program is required by the SWPPP, which should include proper installation and regularly scheduled inspections to ensure the effectiveness of specific BMPs. The Project would require development of a SWPPP and inspection schedule under this permit (SWRCB 2017).

3.6.2.3 Local

El Dorado County General Plan

The Project is proposed by El Dorado Irrigation District (the District), a special district that supplies water to customers throughout much of El Dorado County (County). Pursuant to Government Code sections 53091(D) and (E), many of the District’s activities are not subject to local zoning or land use requirements, as stated below.
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Building and zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code. Zoning ordinances of a county or city shall apply to the location or construction of facilities for the storage or transmission of electrical energy by a local agency, if the zoning ordinances make provision for those facilities.

As a special district with equal authority, the District is exempt from following the goals and policies described in the County’s General Plan and Zoning Ordinance. However, the District aims to comply with the goals and policies outlined in the General Plan and uses these goals and policies as a metric for formulating an impact analysis (EDCGP 2015).

Objective 7.12: Erosion/Sedimentation- Minimize soil erosion and sedimentation.

Policy 7.1.2.1: Development or disturbance of slopes over 30 percent shall be restricted. Standards for implementation of this policy, including but not limited to exceptions for access, reasonable use of the parcel, and agricultural uses shall be incorporated into the Zoning Ordinance.

Policy 7.1.2.2: Discretionary and ministerial projects that require earthwork and grading, including cut and fill for roads, shall be required to minimize erosion and sedimentation, conform to natural contours, maintain natural drainage patterns, minimize impervious surfaces, and maximize the retention of natural vegetation. Specific standards for minimizing erosion and sedimentation shall be incorporated into the Zoning Ordinance.

Policy 7.1.2.3: Enforce Grading Ordinance provisions for erosion control on all development projects and adopt provisions for ongoing, applicant-funded monitoring of project grading.

Objective 7.3.1: Water Resources Protection- Preserve and protect the supply and quality of the County’s water resources including the protection of critical watersheds, riparian zones, and aquifers.

Policy 7.3.1.1: Encourage the use of Best Management Practices, as identified by the Soil Conservation Service, in watershed lands as a means to prevent erosion, siltation, and flooding.

Objective 7.3.2: Water Quality- Maintenance of and, where possible, improvement of the quality of underground and surface water.

Policy 7.3.2.1: Stream and lake embankments shall be protected from erosion, and streams and lakes shall be protected from excessive turbidity.

Grading, Erosion, and Sediment Control Ordinance

The Grading, Erosion, and Sediment Control Ordinance contained in the El Dorado County Code of Ordinances Chapter 15.14 regulates grading activity in the unincorporated area of El Dorado County to safeguard life, limb, health, property and public welfare; to avoid pollution of watercourses; and to ensure that the intended use of a graded site is consistent with the following: the El Dorado County General Plan; any Specific Plans adopted thereto; the adopted Stormwater Management Plan; California Fire Safe Standards; any applicable El Dorado County ordinances, including the Zoning Ordinance; and the California Building Code. The ordinance determines the administrative procedures for issuing permits and the approval of plans and inspections of grading construction in

3.6.3
accordance with the El Dorado Grading, Erosion and Sediment Control Chapter of the Design and Improvement Standards Manual adopted by the El Dorado County Board of Supervisors (El Dorado County 2010).

### 3.6.3 Environmental Setting

#### 3.6.3.1 Regional Geology

The Upper Main Ditch is located approximately one mile south of the South Fork of the American River and runs from the Forebay Reservoir at approximately 3,820 feet AMSL down to the Reservoir 1 WTP at approximately 3,770 feet AMSL (see Figure 2.4-1, Project Location). The Project site is located within the geomorphic province of the Sierra Nevada, which is a northwest trending mountain range that extends for 400 miles in length, and 40 to 100 miles in width. In a regional geomorphic context, the Sierra Nevada province is bounded by the Cascade Range to the north, by the Basin and Range Province on the east, the intersection of the Transverse Ranges and the Mohave Desert Provinces to the south, and the Great Valley Province to the west. Sierra Nevada bedrock consists of varied rock types and geological ages, from Paleozoic metamorphic to Holocene sedimentary and volcanic rock. Downslope of the Project, mostly loamy soils underlain by sand and gravel deposits make up much of the region. These characteristics, along with the natural steep and varied topography of the region, have led to frequent landslides and erosion. The California Geologic Survey (CGS) has also prepared an interactive geologic map of the Sacramento Area (Figure 3.6-1) (CGS 2017).

#### 3.6.3.2 Local Geology

The Project is located in a valley composed of deeply weathered metamorphic rocks, classified at infrequent exposures as micaceous and talcose phyllites and meta-sandstones. Geologic mapping at a regional scale has been provided by Wagner et al. (1987). A site-specific geologic map was prepared for the District in 2011 for analysis of the Forebay Reservoir Dam project. The map was compiled based on observations and information developed from results of exploratory borings and test pits (See Figure 3.6-2 below). The Forebay Reservoir site near the upper end of the Upper Main Ditch was found to consist of older Paleozoic-age metamorphic rocks of the Sierra Nevada, and Quaternary alluvium and colluvium (i.e., sand, silt, and clay with gravel).
3.6.3.3 Proposed Project Baseline

Soils

Based on the September 15, 2014 Natural Resources Conservation Service (NRCS) Soil Survey, there are five different soil series present within the Project site (See Figure 3.6-2 above) (NRCS 2014). The soil series map units are Cohasset loam, 8 percent to 15 percent and 15 percent to 30 percent slopes, Josephine gravelly loam, 9 percent to 15 percent slopes, Josephine very rocky loam, 15 percent to 50 percent slopes, Mariposa-Josephine very rocky loams, 15 percent to 50 percent slopes, and McCarthy cobbly loam, 9 percent to 50 percent slopes (EID 2015). None of these soil types are listed as a hydric soil by the National Soil Information System (NASIS) on the 2018 National List of Hydric Soils (NRCS 2018).

Cohasset loam, 9 percent to 15 percent slopes (CmC) and 15 percent to 30 percent slopes (CmD)

The Cohasset map unit consists of well-drained soils that are underlain by weathered andesitic conglomerate at a depth of more than 40 inches. These soils are gently sloping to strongly sloping on smooth ridges or are moderately steep to steep on sides of ridges. Surface runoff is slow to medium, and the erosion hazard is slight to moderate.

Josephine gravelly loam, 9 percent to 15 percent (JrC)

The Josephine map unit consists of well-drained soils, underlain by tilted schists, slates, and contact metamorphic rocks. These soils occur on gently rolling to very steep mountainous uplands. Runoff is medium to rapid, and erosion hazard is moderate to high.

Josephine very rocky loam, 15 percent to 50 percent slopes (JsE)

The Josephine map unit consists of well-drained soils, underlain by tilted schists, slates, and contact metamorphic rocks. These soils occur on gently rolling to very steep mountainous uplands. Runoff is medium to rapid, and erosion hazard is moderate to high.

Mariposa-Josephine very rocky loams, 15 percent to 50 percent slopes (McE)

The Mariposa-Josephine map unit consists of well-drained, very rocky loam soils underlain by vertically tilted schists and slate and contact metamorphic rock. These soils occur on hilly to steep mountainous uplands. Mariposa very rocky loam makes up about 60 percent of the complex and occurs on ridges, sharp breaks, and most south- and west-facing slopes. Josephine very rocky silt loam makes up about 35 percent of the complex and occurs on concave slopes and most of the north- and east-facing slopes. Inclusions of very rocky loam make up about 5 percent of the complex. Runoff is medium to rapid, and erosion hazard is moderate to high.

McCarthy cobbly loam, 9 percent to 50 percent slopes (MhE)

The McCarthy map unit consists of well-drained soils underlain by volcanic conglomerate and breccia. This soil occurs on side slopes of andesitic ridges. The texture is cobbly to very cobbly loam. Runoff is medium to rapid, and erosion hazard is moderate to high.
Based on preliminary investigations using the NRCS Web Soil Survey, most of the soils in the Project area along the ditch alignment are considered Hydrologic Soil Group B (Domenichelli and Associates 2014). Group B soils have moderate infiltration rates when thoroughly wetted, and consist chiefly of moderately deep to deep, and moderately well to well drained soils, with moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission, defined as between 28 to 86 inches per day (Youngdahl Consulting Group 2017). The aforementioned soil survey also found that the distance down to the groundwater table was more than 6.5 feet.

Ground failure/Liquefaction

Soil liquefaction occurs when ground shaking from an earthquake causes a sediment layer saturated with groundwater to lose strength and take on the characteristics of a fluid, thus becoming similar to quicksand. Factors determining the liquefaction potential are soil type, the level and duration of seismic ground motions, the type and consistency of soils, and the depth to groundwater. Loose sands and peat deposits, along with recent Holocene age deposits, are more susceptible to liquefaction, while older deposits of clayey silts, silty clays, and clays deposited in freshwater environments are generally stable under the influence of seismic ground shaking.

No seismic hazard zones have been delineated in the proposed Project area under the Seismic Hazard Mapping Act. The Foothills Fault System is the dominant structural feature of the western Sierra Nevada. The steeply dipping to vertical component faults that make up this system trend northwest through an area approximately 200 miles long and 30 miles wide, from Mormon Bar (east of Merced) in the south to Lake Almanor in the north. The East and West branches of the Bear Mountains Fault Zone are two of the largest fault zones in the Foothills Fault System.

Previous seismic stability analysis of the faults and associated parameters in the region was conducted for the Forebay Dam Modification Project and found that all faults within 25 miles of the Project site were most recently active in the Late Quaternary period and were estimated to have a Moment Magnitude range of 5.5 to 6.5 Mw (EID 2013). The West Tahoe Fault Zone is approximately 28 miles away from the proposed Project and was last active in the Holocene estimated to produce a Moment Magnitude of 6.7Mw.

The intensity of ground shaking depends on the distance from the earthquake epicenter to the site, the magnitude of the earthquake, site soil conditions, and the characteristics of the source. Ground motions from seismic activity can be estimated by probabilistic method at specified hazard levels and by site-specific design calculations using a computer model. The peak horizontal ground acceleration was calculated for the Forebay Dam Project by the District’s engineering consultant GEI for the two faults that were considered most critical to the Forebay Dam Modification Project: Spring Valley (0.32 g) and Jenkinson West (0.27 g) (where g is the percentage of gravity). Based on that study, relatively low levels of seismic ground shaking were projected to occur near the proposed Project if an earthquake occurred on any of these faults (EID 2013).

3.6.3.4 Alternatives

The geology and soils setting for the Blair Road Alternative and the Combined Alternative would be the same as described for the proposed Project.
3.6.4 Environmental Impacts

This section analyzes the Project’s potential to result in significant impacts to geology and soils. When an impact is determined to be significant, feasible mitigation measures were identified that would reduce or avoid that impact.

3.6.4.1 Impact Analysis

This section discusses potential impacts associated with the Project and identifies mitigation measures for potentially significant impacts, where feasible.

Impact GEO-1  The Project would not result in substantial soil erosion or the loss of topsoil.

Impact GEO-1a Proposed Project Analysis

The construction and post-construction phases of the proposed Project have the potential to increase the possibility of soil erosion or loss of topsoil due to soil disturbance from activities such as grading, soil and tree removal, the use of construction vehicles and equipment, and the potential failure to properly stabilize the site post-construction. Without proper BMPs, soil disturbed by construction is vulnerable to the elements, particularly rain from a storm event that could cause local runoff and erosion in the proposed Project area. Disturbed soil particles are also susceptible to being removed from the proposed Project site by wind. MM GEO-1: Prepare and Implement a SWPPP would implement proper BMPs. Specifically, MM GEO-1 supplements the requirements of the National Pollutant Discharge Elimination System (NPDES) General Permit (as described in Section 3.9 Hydrology and Water Quality), which contains requirements and standards that a SWPPP must meet to prevent and/or reduce erosion and stormwater pollution. By requiring the proposed Project contractor to develop and adhere to the plan set forth in the SWPPP, BMPs for handling soil disturbance during construction activities and post-construction standards by which to measure performance are guaranteed to be implemented, the General Construction permit and MM GEO-1 would effectively reduce any potential risk of substantial soil erosion or loss of topsoil from construction of the proposed Project either on site, or downstream. By following the conditions of the General Construction permit and MM GEO-1, the Project site would not experience substantial soil erosion or the loss of topsoil resulting from the proposed Project.

Operational flows within the existing ditch would not substantially contribute to soil erosion or loss of topsoil because although the existing ditch would be altered under the proposed Project, it would be compacted and returned to a state similar to existing conditions where it would continue to passively carry storm flows. Consequently, the proposed Project would have a less than significant impact related to erosion from stormwater flows.

Therefore, the overall potential for the proposed Project to have a significant impact on soil loss conditions is less than significant with mitigation incorporated.

Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM GEO-1
Impact GEO-1b Blair Road Alternative Analysis

Similar to the proposed Project, as described in Impact GEO-1a, the construction of the Blair Road Alternative would have the potential to result in the erosion or the loss of topsoil. Operational conditions under the Blair Road Alternative would not require any structural changes to the existing ditch and subsequently would not increase the potential for erosion or loss of topsoil. Therefore, operational impacts for the Blair Road Alternative would be less than significant. However, similar to the proposed Project, construction activities for the Blair Road Alternative do have the potential to result in erosion and loss of topsoil. MM GEO-1 would be implemented and would include BMPs and a SWPPP to reduce erosion and loss of topsoil. Therefore, the potential for the Blair Road Alternative to have a significant impact on erosion or soil loss conditions would be less than significant with mitigation incorporated.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM GEO-1

Impact GEO-1c Combined Alternative Analysis

The impact analysis would be similar as described in the proposed Project along the portions where the Combined Alternative follows the proposed Project and would be similar as the Blair Road Alternative along the portions where the Combined Alternative follows the Blair Road Alternative. Where the ditch is operated under existing conditions and where the Combined Alternative goes through cross-country areas, stormwater flows would be conveyed similar to the proposed Project and Blair Road Alternative respectively.

MM GEO-1 would be required for the Combined Alternative construction to reduce potential impacts of erosion and loss of top soil to a less than significant level through the implementation of BMPs and a SWPPP. Therefore, the potential for the Combined Alternative to have a significant impact on soil loss conditions would be less than significant with mitigation incorporated.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM GEO-1

Impact GEO-1d No Project Alternative Analysis

Under the No Project Alternative current conditions in the Project area would not be changed and therefore geology and soils would not be impacted. Therefore, there would be no potential for the No Project Alternative to result in substantial soil erosion or the loss of topsoil.

**Level of Significance:** No Impact

**Mitigation Required:** None Required
Impact GEO-2  The Project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, or potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

Impact GEO-2a Proposed Project Analysis

The Project area has a low potential for ground shaking and saturated soils to occur; therefore, the potential for soil liquefaction in this area would also be low. Furthermore, the proposed Project does not pose a significant risk of being located on a geologic or soil unit that is unstable since the proposed Project occurs in loamy Hydrologic Soil Group B (Domenichelli and Associates 2014) with moderate infiltration rates when thoroughly wetted, and consist chiefly of moderately deep to deep, and moderately well- to well-drained soils that have moderate water transmission rates (EID 2015 and NRCS 2014). Additionally, the groundwater table depth is greater than 6.5 feet (Domenichelli and Associates 2014), thus limiting the potential for Project construction to cause these soils to become unstable. Furthermore, the potential for ground shaking in the Project area is considered low, and it is not expected that soil issues resulting from interaction with groundwater from the groundwater table would occur. Therefore, the proposed Project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project and would not result in a potential for on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Therefore, any impacts would be considered less than significant with no mitigation required.

Level of Significance: Less than Significant

Mitigation Required: None Required

Impact GEO-2b Blair Road Alternative Analysis

The impact analysis as described in the proposed Project would be the same for the Blair Road Alternative because it would fall in the same Hydrologic Soil Group (B). Therefore, the Blair Road Alternative would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project and would not result in a potential for on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Therefore, any impacts would be considered less than significant with no mitigation required.

Level of Significance: Less than Significant

Mitigation Required: None Required

Impact GEO-2c Combined Alternative Analysis

The impact analysis as described in the proposed Project would be the same for the Combined Alternative because it would fall in the same Hydrologic Soil Group (B). Therefore, the Combined Alternative would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project and would not result in a potential for on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Therefore, any impacts would be considered less than significant with no mitigation required.

Level of Significance: Less than Significant

Mitigation Required: None Required
Impact GEO-2d No Project Alternative Analysis

Under the No Project Alternative current conditions in the Project area would not be changed and therefore geology and soils would not be impacted. The No Project Alternative would result in a lower impact than the proposed Project, and there would be no impact to off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

Level of Significance: No Impact

Mitigation Required: None Required

3.6.5 Geology and Soils Mitigation

3.6.5.1 Mitigation Measure GEO-1: Prepare and Implement a Stormwater Pollution Prevention Plan

The selected construction contractor shall be required to comply with a site-specific SWPPP to reduce the risk of substantial soil erosion or loss of topsoil in accordance with requirements of the latest amendment of the NPDES General Construction Permit Order 2009-0009-DWQ. The Construction General Permit requires the development of a SWPPP by a certified Qualified SWPPP Developer (QSD). The SWPPP is required to identify appropriate BMPs to prevent erosion or soil loss from the Project site. These measures would include the implementation of construction staging in a manner that minimizes the amount of area disturbed at any one time; secondary containment for storage of fuel and oil; and the management of stockpiles and disturbed areas by means of earth berms, diversion ditches, straw waffles, straw bales, silt fences, gravel filters, mulching, revegetation, and temporary covers as appropriate. The SWPPP shall also meet post-construction performance standards to ensure the post construction site is stabilized appropriately.

Mitigation Measure GEO-1 Implementation

**Responsible Party:** The District shall ensure the SWPPP is prepared by a QSD and implemented consistent with all applicable requirements.

**Timing:** The SWPPP shall be prepared prior to construction and implemented during the duration of construction, and the site should be stabilized post-construction.

**Monitoring and Reporting Program:** The District shall monitor implementation of the mitigation measure and a copy of the SWPPP shall remain on file at the Project site as well as District offices.

**Standards for Success:** Adherence to all applicable conditions and no substantial erosion or topsoil loss during or post-construction.
3.6.6 Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>amsl</td>
<td>Above Mean Sea Level</td>
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<tr>
<td>BMP</td>
<td>Best Management Practices</td>
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<tr>
<td>CEQA</td>
<td>California Environmental Quality Act</td>
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<tr>
<td>CGS</td>
<td>California Geologic Survey</td>
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<tr>
<td>County</td>
<td>El Dorado County</td>
</tr>
<tr>
<td>CWA</td>
<td>Clean Water Act</td>
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<tr>
<td>District</td>
<td>El Dorado Irrigation District</td>
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<tr>
<td>EIR</td>
<td>Environmental Impact Report</td>
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<tr>
<td>g</td>
<td>Percentage of Gravity</td>
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<tr>
<td>General Permit</td>
<td>Statewide General Construction Stormwater Discharge Permit</td>
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<td>MM</td>
<td>Mitigation Measure</td>
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<tr>
<td>NASIS</td>
<td>National Soil Information System</td>
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<td>NOI</td>
<td>Notice of Intent</td>
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<td>NOP/IS</td>
<td>Notice of Preparation/Initial Study</td>
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<tr>
<td>NPDES</td>
<td>National Pollution Discharge Elimination System</td>
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<td>NRCS</td>
<td>Natural Resources Conservation Service</td>
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<td>QSD</td>
<td>Qualified SWPPP Developer</td>
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<td>SWPPP</td>
<td>Stormwater Pollution Prevention Plan</td>
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<td>SWRCB</td>
<td>State Water Resources Control Board</td>
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<tr>
<td>USACE</td>
<td>United States Army Corps of Engineers</td>
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<td>WTP</td>
<td>Water Treatment Plant</td>
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3.6.7 References


UPPER MAIN DITCH PIPING PROJECT

Geology and Soils
June 2018


El Dorado Irrigation District Upper Main Ditch Piping Project
Draft Environmental Impact Report
Chapter 3.7 Greenhouse Gasses

June 2018
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3.7 GREENHOUSE GASSES

3.7.1 Basis for Analysis

The California Environmental Quality Act (CEQA) Guidelines' Appendix G Environmental Checklist was assessed during the Notice of Preparation/Initial Study (NOP/IS) scoping process (included in Appendix A) to identify the Project components that have the potential to cause a significant impact. The following potential impacts were determined to warrant further evaluation within this Environmental Impact Report (EIR):

- Generate greenhouse gas (GHG) emissions, either directly or indirectly, that may have a significant impact on the environment; or

- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

The remainder of this section describes the regulatory and environmental baseline setting to support the evaluation of the potential impacts and describes the potential impacts from greenhouse gasses that may result from implementation of the Project, and includes mitigation for significant impacts, where feasible.

3.7.2 Regulatory Framework

This section discusses the federal, state regulations and local policies and objectives that relate to greenhouse gas emissions and are relevant to the Project.

3.7.2.1 Federal

Prior to the last decade, there have been no concrete federal regulations of GHGs or major planning for climate change adaptation. Over the past decade a number of applicable federal requirements have been developed. The following are actions regarding the federal government, GHGs, and fuel efficiency.

**Greenhouse Gas Endangerment.** In Massachusetts v. Environmental Protection Agency (USEPA) (Supreme Court Case 05-1120), decided on April 2, 2007, the Supreme Court found that four GHGs, including carbon dioxide (CO2), are air pollutants subject to regulation under Section 202(a)(1) of the Clean Air Act (CAA) and that the Administrator must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride—in the atmosphere threaten the public health and welfare of current and future generations.
• **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution, which threatens public health and welfare.

These findings did not impose requirements on industry or other entities. However, this was a prerequisite for implementing GHG emissions standards for vehicles, as discussed in the section “Clean Vehicles” below. After a lengthy legal challenge, the U.S. Supreme Court declined to review an Appeals Court ruling that upheld the USEPA Administrator findings (USEPA 2009b).

**Clean Vehicles.** Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On May 7, 2010, the USEPA and the Department of Transportation’s National Highway Safety Administration announced a joint final rule establishing a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States. A petition for writ of certiorari to the United States Court of Appeals for the District of Columbia Circuit was denied by the Supreme Court on October 15, 2013.

The first phase of the national program applies to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these standards would cut carbon dioxide emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012–2016). The USEPA and the National Highway Safety Administration issued final rules on a second-phase joint rulemaking establishing national standards for light-duty vehicles for model years 2017 through 2025 in August 2012 (EPA 2012c). The new standards for model years 2017 through 2025 apply to passenger cars, light-duty trucks, and medium duty passenger vehicles. The final standards are projected to result in an average industry fleetwide level of 163 grams per mile of CO2 in model year 2025, which is equivalent to 54.5 miles per gallon (mpg) if achieved exclusively through fuel economy improvements.

The USEPA and the U.S. Department of Transportation issued final rules for the first national standards to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks and buses on September 15, 2011, effective November 14, 2011. For combination tractors, the agencies are proposing engine and vehicle standards that begin in the 2014 model year and achieve up to a 20 percent reduction in carbon dioxide emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10 percent reduction for gasoline vehicles and a 15 percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10 percent reduction in fuel consumption and carbon dioxide emissions from the 2014 to 2018 model years.

**Mandatory Reporting of Greenhouse Gases.** The Consolidated Appropriations Act of 2008, passed in December 2007, requires the establishment of mandatory GHG reporting requirements. On September 22, 2009, the USEPA issued the Final Mandatory Reporting of Greenhouse Gases Rule, which became effective January 1, 2010. The rule requires reporting of GHG emissions from large sources and suppliers in the United States and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or...
industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to the USEPA.

**New Source Review.** The USEPA issued a final rule on May 13, 2010 that establishes thresholds for GHGs that define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule “tailors” the requirements of these CAA permitting programs to limit which facilities would be required to obtain Prevention of Significant Deterioration and Title V permits. In the preamble to the revisions to the federal code of regulations, USEPA states:

> This rulemaking is necessary because without it the Prevention of Significant Deterioration and Title V requirements would apply, as of January 2, 2011, at the 100 or 250 tons per year levels provided under the Clean Air Act, greatly increasing the number of required permits, imposing undue costs on small sources, overwhelming the resources of permitting authorities, and severely impairing the functioning of the programs. EPA is relieving these resource burdens by phasing in the applicability of these programs to greenhouse gas sources, starting with the largest greenhouse gas emitters. This rule establishes two initial steps of the phase-in. The rule also commits the agency to take certain actions on future steps addressing smaller sources, but excludes certain smaller sources from Prevention of Significant Deterioration and Title V permitting for greenhouse gas emissions until at least April 30, 2016.

The USEPA estimates that facilities responsible for nearly 70 percent of the national GHG emissions from stationary sources would be subject to permitting requirements under this rule. This includes the nation’s largest GHG emitters—power plants, refineries, and cement production facilities.

**Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units.** As required by a settlement agreement, the USEPA proposed new performance standards for emissions of carbon dioxide for new affected fossil fuel-fired electric utility generating units on March 27, 2012. New sources greater than 25 megawatts would be required to meet an output based standard of 1,000 pounds of carbon dioxide per megawatt-hour, based on the performance of widely used natural gas combined cycle technology.

**Cap and Trade.** Cap and trade refers to a policy tool where emissions are limited to a certain amount and can be traded, or provides flexibility on how the emitter can comply. Successful examples in the United States include the Acid Rain Program and the NOx Budget Trading Program in the northeast. There is no federal cap and trade program currently; however, some states have joined to create initiatives to provide a mechanism for cap and trade.

### 3.7.2.2 State

**Legislative Actions to Reduce GHGs**

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation, such as AB 32 California Global Warming Solutions Act of 2006, was specifically enacted to address GHG emissions. Other legislation such as Title 24 and Title 20 energy standards were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major provisions of the legislation.

**Assembly Bill 32.** The California State Legislature enacted Assembly Bill 32 (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020.
“Greenhouse gases” as defined under AB 32 include CO₂, methane, nitrogen oxides (NOₓ), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Since AB 32 was enacted, a seventh chemical, nitrogen trifluoride, has also been added to the list of GHGs. The California Air Resources Board (CARB) is the state agency charged with monitoring and regulating sources of GHGs. AB 32 states the following:

Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

The CARB approved the 1990 GHG emissions level of 427 million metric tons of carbon dioxide equivalents (MMT CO₂e) on December 6, 2007 (CARB 2008a). Therefore, emissions generated in California in 2020 are required to be equal to or less than 427 MMT CO₂e. Emissions in 2020 in a “business as usual” scenario were estimated to be 596 MMT CO₂e, which do not account for reductions from AB 32 regulations (CARB 2008a). At that level, a 28 percent reduction was required to achieve the 427 MMT CO₂e 1990 inventory. In October 2010, CARB prepared an updated 2020 forecast to account for the recession and slower forecasted growth. The forecasted inventory without the benefits of adopted regulation is now estimated at 545 MMT CO₂e. Therefore, under the updated forecast, a 21.7 percent reduction from business as usual (BAU) is required to achieve 1990 levels (CARB 2010). The current emissions limit that was approved in the Scoping Plan Update on May 22, 2014 is 431 MMTCO₂e.

Progress in Achieving AB 32 Targets and Remaining Reductions Required

The State has made steady progress in implementing AB 32 and achieving targets included in Executive Order S-3-05. The CARB also prepared updated emission inventories for 2000 through 2011 to show progress achieved to date (CARB 2013). Executive Order S-3-05 includes a target for 2010 of reducing GHG emissions to 2000 levels. As shown below, the 2010 emission inventory achieved this target. Also shown are the average reductions needed from all statewide sources (including all existing sources) to reduce GHG emissions back to 1990 levels.

- 1990: 427 MMT CO₂e (AB 32 2020 Target)
- 2000: 463 MMT CO₂e (an average 8 percent reduction needed to achieve 1990 base)
- 2010: 450 MMT CO₂e (an average 5 percent reduction needed to achieve 1990 base)
- 2020: 545 MMT CO₂e BAU (an average 21.7 percent reduction from BAU needed to achieve 1990 base)
**CARB Scoping Plan.** The CARB’s Climate Change Scoping Plan (Scoping Plan) contains measures designed to reduce the State’s emissions to 1990 levels by the year 2020 to comply with AB 32 (CARB 2008b). The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 GHG target include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California’s clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State’s long-term commitment to AB 32 implementation.

In addition, the Scoping Plan differentiates between “capped” and “uncapped” strategies. Capped strategies are subject to the proposed cap-and-trade program. The Scoping Plan states that the inclusion of these emissions within the cap-and-trade program would help ensure that the year 2020 emission targets are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Implementation of the capped strategies is calculated to achieve a sufficient amount of reductions by 2020 to achieve the emission target contained in AB 32. Uncapped strategies that would not be subject to the cap-and-trade emissions caps and requirements are provided as a margin of safety by accounting for additional GHG emission reductions.

The CARB approved the First Update to the Scoping Plan (Update) on May 22, 2014. The Update identifies the next steps for California’s climate change strategy. The Update shows how California continues on its path to meet the near-term 2020 GHG limit, but also sets a path toward long-term, deep GHG emission reductions. The report establishes a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050. The Update identifies progress made to meet the near-term objectives of AB 32 and defines California’s climate change priorities and activities for the next several years. The Update does not set new targets for the State but describes a path that would achieve the long term 2050 goal of Executive Order S-05-03 for emissions to decline to 80 percent below 1990 levels by 2050 (CARB 2014).

The CARB is currently moving forward on a second update to the previously updated Scoping Plan in order to reflect the 2030 target set by Executive Order B-30-15 to achieve 40 percent reductions below the 1990 levels.
Senate Bill 32

On September 8, 2016, Senate Bill 32 (SB 32) was signed by Governor Brown, this bill would require the state board to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030.

Executive Orders Related to GHG Emissions

California’s Executive Branch has taken several actions to reduce GHGs through the use of Executive Orders. Although not regulatory, they set the tone for the state and guide the actions of state agencies.

Executive Order S-3-05. Former California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S 3-05, the following reduction targets for GHG emissions:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that would stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

Executive Order S-13-08. Executive Order S-13-08 states that “climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California’s economy, to the health and welfare of its population and to its natural resources.” Pursuant to the requirements in the order, the 2009 California Climate Adaptation Strategy (California Natural Resources Agency 2009) was adopted, which is the “... first statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States.” Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

Executive Order S-01-07 - Low Carbon Fuel Standard. The Governor signed Executive Order S 01-07 on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California’s transportation fuels by at least 10 percent by 2020. In particular, the executive order established a Low Carbon Fuel Standard and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, the CARB, the University of California, and other agencies to develop and propose protocols for measuring the “life-cycle carbon intensity” of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels (State Alternative Fuels Plan adopted by California Energy Commission on December 24, 2007) and was submitted to CARB for consideration as an “early action” item under AB 32. The CARB adopted the Low Carbon Fuel Standard on April 23, 2009. The Low Carbon Fuel Standard was challenged in the United States District Court in Fresno in 2011. The court’s ruling issued on December 29, 2011 included a preliminary injunction against CARB’s implementation of the rule. The Ninth Circuit Court of Appeals reversed the decision of the District Court in September 2013 and denied a petition to rehear a challenge on January 22, 2014. The Renewable Fuels Association and Growth Energy filed a petition to the US
Supreme Court on March 20, 2014 challenging the Court of Appeals decision. On June 30, 2014, the U.S. Supreme Court announced that it would not review the constitutionality of the California Low Carbon Fuel Standard (LCFS).

To address the Court ruling, CARB was required to bring a new LCFS regulation to the Board for consideration in February 2015. The proposed LCFS regulation was required to contain revisions to the 2010 LCFS as well as new provisions designed to foster investments in the production of the low-CI fuels, offer additional flexibility to regulated parties, update critical technical information, simplify and streamline program operations, and enhance enforcement. The LCFS regulation was adopted in September 2015 and the changes went into effect on January 1, 2016 (CARB 2016).

Executive Order B-30-15s. Governor Jerry Brown signed Executive Order B-30-15s on April 29, 2015. The following are major provisions of the Executive Order:

1. A new interim statewide greenhouse gas emission reduction target to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030 is established in order to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050.

2. All state agencies with jurisdiction over sources of greenhouse gas emissions shall implement measures, pursuant to statutory authority, to achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets.

3. The CARB shall update the Scoping Plan to express the 2030 target in terms of MMT CO2e.

The executive order does not apply directly to cities, counties, and special use districts such as El Dorado Irrigation District (the District), but would lead to the preparation of a new CARB Scoping Plan and the development of regulations to achieve post-2020 reduction targets.

3.7.2.3 Local

El Dorado County Air Quality Management District

The El Dorado County Air Quality Management District (AQMD) does not currently have an established threshold for construction or operational related GHG emissions.

El Dorado County General Plan

The Project is proposed by the District, a special district that supplies water to customers throughout much of El Dorado County. Pursuant to Government Code sections 53091(D) and (E), many of the District’s activities are not subject to local zoning or land use requirements, as stated below.

“Building and zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code.”
As a special district with equal authority, the District is exempt from following goals and policies within the County’s General Plan and Zoning Ordinance. However, the District aims to comply to with those goals and policies outlined in the General Plan and uses these goals and policies as a metric for formulating an impact analysis (EDCGP 2015).

**Goal 6.7A:** Strive to achieve and maintain ambient air quality standards established by the U.S. Environmental Protection Agency and the California Air Resources Board.

**Goal 6.7B:** Minimize public exposure to toxic or hazardous air pollutants and air pollutants that create unpleasant odors.

**Objective 6.7.1:** Adopt and enforce Air Quality standards to reduce the health impacts caused by harmful emissions.

**Objective 6.7.4:** Encourage project design that protects air quality and minimizes direct and indirect emissions of air contaminants.

**Objective 6.7.7:** Reduce construction related, short-term emissions by adopting regulations which minimize their adverse effects.

### 3.7.3 Environmental Setting

The Project is located in the County and involves the conversion of the existing Upper Main Ditch from its current status as an open unlined conveyance ditch to a secure raw water transmission pipeline.

#### 3.7.3.1 Greenhouse Gases

GHG and climate change are a cumulative global issue. Increasing cumulative GHG emissions are associated with global climate change and the resulting adverse environmental impacts. These impacts include loss of species diversity, increased severe weather events, sea level rise, ocean acidification, loss of snowpack, etc. (IPCC 2012).

CARB and the United States Environmental Protection Agency (USEPA) regulate GHG emissions within the State of California and the United States, respectively. While the CARB has the primary regulatory responsibility within California for GHG emissions, local agencies can also adopt policies for GHG emission reduction.

Many chemical compounds found in the Earth’s atmosphere act as GHGs, which allow sunlight to enter the atmosphere freely. When sunlight strikes the Earth’s surface, some of it is reflected back towards space as infrared radiation (heat). GHGs absorb this infrared radiation and trap the heat in the atmosphere. Many gases exhibit these “greenhouse” properties. Some of them occur in nature (water vapor, carbon dioxide, methane, and nitrous oxide), while others are exclusively human-made (like gases used for aerosols). Over time, the amount of energy sent from the sun to the Earth’s surface should be about the same as the amount of energy radiated back into space, leaving the temperature of the Earth’s surface roughly constant.

The principal climate change gases resulting from human activity that enter and accumulate in the atmosphere are listed below:

- **Carbon Dioxide (CO₂):** CO₂ enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and chemical reactions (e.g., the manufacture of cement). CO₂
is also removed from the atmosphere (or “sequestered”) when it is absorbed by plants as part of the biological carbon cycle.

- **Methane (CH₄):** CH₄ is emitted during the production and transport of coal, natural gas, and oil. CH₄ emissions also result from livestock and agricultural practices and the decay of organic waste in municipal solid waste landfills.
- **Nitrous Oxide (N₂O):** N₂O is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.
- **Fluorinated Gases:** Hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and hexafluoride (SF₆) are synthetic, powerful climate-change gases that are emitted from a variety of industrial processes. Fluorinated gases are often used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, hydrochloro fluorocarbons, and halons). These gases are typically emitted in smaller quantities, but because they are potent climate-change gases, they are sometimes referred to as high Global Warming Potential (GWP) gases.

**Global Warming Potential**

GWP serves as the quantified measure of the relative effectiveness of a gas to absorb infrared radiation, remain in the atmosphere, and contribute towards global warming. CO₂, the most abundant GHG, serves as the reference gas for the GWP, with a GWP of 1.16. The GWPs used by the Intergovernmental Panel on Climate Change (IPCC) in the Second Assessment Report (SAR) are shown in Table 3.5-1, where methane is 28 times more potent at contributing to global warming than CO₂, while nitrous oxide is 265 times more potent. Thus, CO₂ is used as the reference GHG for all GHGs. GHG emissions, which consider all GHGs, can also be presented as CO₂ equivalent (CO₂e). The CO₂ equivalent (CO₂e) measure takes into consideration all of the GHGs, as measured by the applicable GWP.

**Table 3.7-1 Global Warming Potential for Greenhouse Gases**

<table>
<thead>
<tr>
<th>Greenhouse Gas</th>
<th>Relative GWP (GWP of CO₂=1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO₂</td>
<td>1</td>
</tr>
<tr>
<td>Methane</td>
<td>28</td>
</tr>
<tr>
<td>Nitrous Oxide</td>
<td>265</td>
</tr>
</tbody>
</table>

Source: IPCC 2014

**3.7.4 Environmental Impacts**

This section analyzes the Project’s potential to result in significant impacts from greenhouse gas emissions. When the Project’s impact was determined to be significant, feasible mitigation measures were identified to reduce or avoid that impact.

**3.7.4.1 Methodology for Analysis**

To quantify the predicted GHG emissions from the Project, Stantec conducted an evaluation using the California Emissions Estimator Model (CalEEMod). CalEEMod calculates air and GHG emissions from construction and operation of a project. Project operational GHG emissions are estimated to be similar to existing operations with a
slight reduction in GHG emissions due to a temporary increase in hydroelectric operations, reduced pumping at the District’s Folsom Lake Raw Water Pump Station, reduced chemicals usage in raw water treatment, and reduced sludge handling and transport. These reductions will occur until the District experiences growth in demand equivalent to the volume of water lost through seepage and evapotranspiration. Therefore, the analysis focuses on the Project’s potential construction-related GHG emissions.

To meet targets established by AB 32, California must reduce current GHG emissions and achieve 1990 emissions levels of 427 MMT CO₂e by 2020. The 2020, business as usual, emissions baseline used in the 2008 Scoping Plan was 596 MMT CO₂e. On September 8, 2016, SB 32 was approved by California State Governor Jerry Brown. This bill would require CARB to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level 2030.

Due to the global implications of climate change it is difficult to determine the impacts of a relatively small contribution to GHG emission from an individual project. There is no simple metric that can determine if a project would impact cumulative GHG emission levels or conflict with the goals of AB 32. It is possible to estimate a project’s localized GHG emissions but it is difficult to determine how those emissions would translate into physical impacts to the environment. For this analysis, predicted Project GHG emissions were compared to AB 32 scoping plan action measures and the Sacramento Metropolitan Air Quality Management District (SMAQMD) Guidance GHG threshold for land use projects of 1,100 Metric Tons CO₂e/year (for construction GHG emissions).

As previously stated, the El Dorado AQMD has not set up GHG emissions thresholds; therefore, this impact analysis uses current significance thresholds developed by the SMAQMD. The SMAQMD has established GHG emission thresholds for construction phase, operational phase, and stationary source projects. Although these thresholds are not binding on the El Dorado AQMD, they are useful for comparative purposes. In addition, these thresholds are relevant to the El Dorado AQMD due to the regional scale of GHG emissions and impacts. The El Dorado AQMD and SMAQMD collaborate often to reduce GHG impacts within the region, and both are part of the Sacramento Clean Cities Coalition. SMAQMD emissions significance thresholds consider any construction phase of a project emitting over 1,100 metric tons/year of CO₂e to be considered significant (SMAQMD 2009a).

GHG emissions associated with the proposed Project and the proposed alternatives were estimated using CO₂e emissions as a proxy for all GHGs. This is consistent with the current reporting protocol of the California Climate Action Registry (CCAR). According to CalEEMod, all GHGs are reported in CO₂e. In order to obtain the CO₂e, an individual GHG is multiplied by its GWP. The GWP designates on a pound for pound basis the potency of the GHG compared to CO₂. CalEEMod uses GWP from the IPCC SAR. GWPs from the SAR were selected instead of more recent GWPs since it is the basis used in regulations and international protocols at this time (e.g., California and Federal GHG Reporting Programs, The Climate Registry) (CalEEMod, Appendix B: Calculation Details for CalEEMod, pg. 3).

### Findings

The potential Project-related impacts are discussed below. The results of the CalEEMod simulation are enumerated in Table 3.5-2 and form the basis for the impact assessment in this section.
Table 3.7-2 Upper Main Ditch Piping Project CalEEMod Predicted CO₂e Emissions Estimates

<table>
<thead>
<tr>
<th>Project</th>
<th>Total Construction Source CO₂e Emission Estimates (metric tons/year unmitigated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposed Project</td>
<td>319</td>
</tr>
<tr>
<td>Blair Road Alternative</td>
<td>349</td>
</tr>
<tr>
<td>Combined Alternative</td>
<td>330</td>
</tr>
<tr>
<td>SMAQMD CO₂e Emissions Significance Thresholds (metric tons/year)</td>
<td>1,100</td>
</tr>
</tbody>
</table>

3.7.4.3 Project Impact Analysis

This section discusses potential impacts associated with the Project and identifies mitigation measures for potentially significant impacts, where feasible.

<table>
<thead>
<tr>
<th>Impact GHG-1</th>
<th>The Project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.</th>
</tr>
</thead>
</table>

Impact GHG-1a Proposed Project Analysis

The primary sources of proposed Project-related GHG emissions are temporary and anticipated to be combustion of fossil fuels from the operation of internal combustion engines used during Project construction (portable equipment, off road equipment, and vehicles). CO₂e emissions during proposed Project operation are expected to be similar to existing operations and would not result in a substantial amount of GHG emissions and therefore were not assessed further in this impact analysis.

GHG emissions of the proposed Project construction were calculated using CalEEMod. The CalEEMod outputs were compared to the SMAQMD significance thresholds of 1,100 metric tons/year CO₂e. Construction of the proposed Project would emit GHG emission from both upstream emissions and direct sources. Upstream emissions sources refer to emissions that were generated during the manufacturing of products used during construction activities. Emissions from upstream sources could include, but are not limited to; emissions from the manufacture of cement, the manufacture of steel, and the transportation of building material to the seller (CalEEMod only calculates the emissions from transportation trips to the Project area). Upstream emissions are not within the control of the proposed Project and would be speculative; therefore, estimates were not included in this analysis. Pursuant to CEQA Guidelines Section 15144 and 15145, upstream/life cycle emissions are speculative and no further discussion is necessary.

The results of CalEEMod indicate that construction emissions would total 319 metric tons/year of CO₂e. (Table 3.7-2.) Because the total Project CO₂e emission estimates are well below the SMAQMD construction thresholds, which were adopted to avoid direct or indirect significant impacts on the environment, potential greenhouse gas emissions impacts are considered less than significant and no mitigation would be required.
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**Level of Significance:** Less than Significant

**Mitigation Required:** None Required

**Impact GHG-1b Bair Road Alternative Analysis**

Similar to the proposed Project, the Blair Road Alternative would result in short-term construction GHG emissions. As shown in Table 3.7-2 above, the CO₂e unmitigated emissions results are 349 metric tons/year for the Blair Road Alternative. As with the proposed Project, these emission results are well below the SMAQMD construction significance threshold, and GHG emissions impacts would be less than significant.

**Level of Significance:** Less than Significant

**Mitigation Required:** None Required

**Impact GHG-1c Combined Alternative Analysis**

As discussed under the proposed Project and the Blair Road Alternative, the Combined Alternative would result in short-term construction emissions. As shown in Table 3.7-2 above, the CO₂e unmitigated emission results are 330 metric tons/year for the Combined Alternative. This estimate is similar to both the proposed Project and Blair Road Alternative CO₂e emissions estimates and are well below the SMAQMD CO₂e emission significance thresholds of 1,100 metric tons/year CO₂e, and GHG emissions impacts would be less than significant.

**Level of Significance:** Less than Significant

**Mitigation Required:** None Required

**Impact GHG-1d No Project Alternative Analysis**

Primary impacts to GHG emissions are related to construction of the proposed Project. As the No Project Alternative results in no construction and no increase in GHG, impacts would be less than the proposed Project. Therefore, the No Project Alternative would have no impact to GHG emissions, either directly or indirectly.

**Level of Significance:** No Impact

**Mitigation Required:** None Required
Impact GHG-2  The Project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

Impact GHG-2a Proposed Project Analysis

The proposed Project would be considered significant if it conflicted with the emission reduction goals set forth by AB 32. As mentioned in the regulatory framework of this section, CARB adopted the Scoping Plan, which outlines actions recommended to obtain the emission reduction goals contained in AB 32. These goals include reducing GHG emissions to 1999 levels by 2020 and to maintain and continue reductions in emissions of GHG beyond 2020.

The proposed Project construction activities are estimated to take approximately two years. The estimated GHG emissions levels are well below the SMAQMD significance thresholds for construction activities. The proposed Project construction activities would not significantly add to 2020 and beyond emissions, nor would the Project obstruct the SB 32 goals of reaching 40 percent below 1990 levels by 2030. The proposed Project would not conflict with any regulations or policies in CARB’s Scoping Plan. Furthermore, the proposed Project would be consistent with CARB’s First Scoping Plan Update that suggests the need for future infrastructure planning of water resources to ensure adequate supplies during droughts, by eliminating water supply losses from seepage and evaporation. In addition, the proposed Project would result in a temporary slight reduction in GHG emissions during operations due to a temporary increase in hydroelectric operations, reduced pumping at the District’s Folsom Lake Raw Water Pump Station, reduced chemical usage to treat the raw water, and reduced sludge handling and transport. This reduction would occur until the District experienced a growth in demand equivalent to the volume of water lost through seepage and evapotranspiration.

Because the proposed Project is consistent with the CARB Scoping Plan and the SMAQMD thresholds devised to reduce GHG emissions, it would not conflict with an applicable plan, policy, or regulation with the purpose of reducing GHG emissions, and the Project would result in no impact.

Level of Significance: No Impact

Mitigation Required: None Required

Impact GHG-2b Blair Road Alternative Analysis

Similar to the proposed Project, the Blair Road Alternative would result in short-term construction emissions that are well below the SMAQMD significance thresholds for GHG emissions. For the same reasons stated for the proposed Project, this alternative would not conflict with an applicable plan, policy, or regulation with the purpose of reducing GHG emissions, and it would result in no impact.

Level of Significance: No impact

Mitigation Required: None Required

Impact GHG-2c Combined Alternative Analysis

Similar to the proposed Project and the Blair Road Alternative, the Combined Alternative would result in short-term construction emissions that are well below the SMAQMD significance thresholds for GHG emissions. For the same
reasons stated for the proposed Project, this alternative would not conflict with an applicable plan, policy, or regulation with the purpose of reducing GHG emissions, and it would result in no impact.

**Level of Significance:** No Impact

**Mitigation Required:** None Required

**Impact GHG-2-d No Project Alternative Analysis**

Primary impacts to GHG emissions are related to construction of the proposed Project. As the No Project Alternative would result in continued operations under exiting conditions, impacts related to GHG emissions would be less than the proposed Project. Therefore, the No Project Alternative would have no potential to conflict with an applicable plan, policy, or regulation with the purpose of reducing GHG emissions and therefore no impact would occur.

**Level of Significance:** No Impact

**Mitigation Required:** None Required

**3.7.5 Greenhouse Gases Mitigation**

No mitigation measures are required.
### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB 32</td>
<td>Assembly Bill 32</td>
</tr>
<tr>
<td>AQMD</td>
<td>Air Quality Management District</td>
</tr>
<tr>
<td>BAU</td>
<td>Business As Usual</td>
</tr>
<tr>
<td>CAA</td>
<td>Clean Air Act</td>
</tr>
<tr>
<td>CalEEMod</td>
<td>California Emissions Estimate Model</td>
</tr>
<tr>
<td>CARB</td>
<td>California Air Resources Board</td>
</tr>
<tr>
<td>CCAR</td>
<td>California Climate Action Registry</td>
</tr>
<tr>
<td>CEQA</td>
<td>California Environmental Quality Act</td>
</tr>
<tr>
<td>CH₄</td>
<td>Methane</td>
</tr>
<tr>
<td>CO₂</td>
<td>Carbon Dioxide</td>
</tr>
<tr>
<td>CO₂ₑ</td>
<td>CO₂ Equivalent</td>
</tr>
<tr>
<td>County</td>
<td>El Dorado County</td>
</tr>
<tr>
<td>District</td>
<td>El Dorado Irrigation District</td>
</tr>
<tr>
<td>EIR</td>
<td>Environmental Impact Report</td>
</tr>
<tr>
<td>GWP</td>
<td>Global Warming Potential</td>
</tr>
<tr>
<td>GHG</td>
<td>Greenhouse Gas</td>
</tr>
<tr>
<td>HFC</td>
<td>Hydrofluorocarbons</td>
</tr>
<tr>
<td>IPCC</td>
<td>Intergovernmental Panel on Climate Change</td>
</tr>
<tr>
<td>LCFS</td>
<td>Low Carbon Fuel Standard</td>
</tr>
<tr>
<td>MMT CO₂ₑ</td>
<td>Million Metric Tons of Carbon Dioxide Equivalents</td>
</tr>
<tr>
<td>mpg</td>
<td>Miles Per Gallon</td>
</tr>
<tr>
<td>N₂O</td>
<td>Nitrous Oxide</td>
</tr>
<tr>
<td>NOP/IS</td>
<td>Notice of Preparation/Initial Study</td>
</tr>
<tr>
<td>NOₓ</td>
<td>Nitrogen Oxides</td>
</tr>
<tr>
<td>PFC</td>
<td>Perfluorocarbons</td>
</tr>
<tr>
<td>SAR</td>
<td>Second Assessment Report</td>
</tr>
<tr>
<td>SB 32</td>
<td>Senate Bill 32</td>
</tr>
<tr>
<td>Scoping Plan</td>
<td>Climate Change Scoping Plan</td>
</tr>
<tr>
<td>SF₆</td>
<td>Sulfur Hexafluoride</td>
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<table>
<thead>
<tr>
<th>SMAQMD</th>
<th>Sacramento Metropolitan Air Quality Management District</th>
</tr>
</thead>
<tbody>
<tr>
<td>Update</td>
<td>First Update to the Scoping Plan</td>
</tr>
<tr>
<td>USEPA</td>
<td>United States Environmental Protection Agency</td>
</tr>
</tbody>
</table>

3.7.7 References

California Emissions Estimator Model (CalEEMod). Copyright © 2011 South Coast Air Quality Management District
Developed by ENVIRON International Corporation in collaboration with SCAQMD and other California Air Districts. Analysis conducted by a Stantec Air Quality Specialist in 2013 and 2018.


SMAQMD. 2009a. Thresholds of Significance Table.


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Environmental Impact Report
Chapter 3.8 Hazards and Hazardous Materials

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HAZARDS AND HAZARDOUS WASTE

3.8.1 Basis for Analysis

The California Environmental Quality Act (CEQA) Guidelines' Appendix G Environmental Checklist was assessed during the Notice of Preparation/Initial Study (NOP/IS) scoping process (included in Appendix A) to identify the Project components that have the potential to cause a significant impact. The following potential impacts were determined to warrant further evaluation within this Environmental Impact Report (EIR):

- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; and
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

The following potential impacts were determined to have a less than significant or no impact during the NOP/IS scoping process (included in Appendix A), and are not discussed further in this section:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- 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;
- Result in a safety hazard for people residing or working in the project area (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); and
- Result in a safety hazard for people residing or working in the project area (for a project within the vicinity of a private airstrip).

The remainder of this section describes the regulatory and environmental baseline setting to support the evaluation of the potential impacts and describes the potential impacts from hazards or hazardous materials that may result from implementation of the Project, including mitigation for significant impacts, where feasible.

3.8.2 Regulatory Framework

This section discusses the federal, state regulations and local policies and objectives that govern hazards and hazardous materials applicable to the Project.
3.8.2.1 Federal

Hazardous Material Management

Resources Conservation and Recovery Act

The Resources Conservation and Recovery Act (RCRA) set up the federal regulatory program for hazardous substances and gives the United States Environmental Protection Agency (USEPA) the authority to regulate the generation, transport, treatment, and disposal of hazardous substances in a “cradle to grave” system. Under the RCRA, USEPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances. This regulatory system includes tracking all generators of hazardous waste.

1984 Hazardous and Solid Waste Amendment Act

RCRA was amended by the 1984 Hazardous and Solid Waste Amendment Act, which prohibited the use of certain techniques for the disposal of certain hazardous wastes (USEPA 2018a). The Emergency Planning and Community Right-to-Know Act of 1986 imposes safety requirements to protect local communities in the event of accidental release of hazardous substances (USEPA 2018b). The requirements provide measures so that the risks from interaction with hazardous materials, such as handling, storage, and disposal, are mitigated or prevented. This law protects human health and the environment if the unintended release of hazardous materials was to occur (EPA 2016b). EPA has delegated fulfillment of many of the RCRA’s requirements to the California Department of Toxic Substances Control (DTSC).

Clean Air Act

Regulations under the Clean Air Act (CAA) (42 USC 7401 et seq. as amended) are designed to prevent accidental releases of hazardous materials. The regulations require facilities that store a threshold quantity or greater of listed regulated substances to develop a risk management plan, including hazard assessments and response programs to prevent accidental releases of listed chemicals.

Hazardous Materials Transportation

Hazardous Materials Transportation Act

The transport of hazardous materials is regulated by the U.S. Department of Transportation (DOT) under Hazardous Materials Transportation Act (HMTA). To accomplish this, the Federal Aviation Administration, Federal Motor Carrier Safety Administration, Federal Railway Administration, Pipeline and Hazardous Materials Safety Administration, and the U.S. Coast Guard have been given authority to enforce hazardous material transport regulations (DOT 2018).

Worker Safety

Occupational Safety and Health Administration

The Occupational Safety and Health Act of 1970 created the Occupational Safety and Health Administration (OSHA), which is responsible for protecting the health of workers, such as during the handling of hazardous materials. OSHA has created regulations to set federal standards of workplace safety including exposure limits, mandatory workplace...
training, accident and injury reporting, and safety procedures. These regulations are recorded in the Code of Federal Regulations (CFR) Title 29 (GPO 2018).

3.8.2.2 State

Hazardous Material Management

Hazardous Waste Control Act

The Hazardous Waste Control Act created the State hazardous waste management program. It is similar to, but more stringent than, the Federal RCRA program. The act is implemented by regulations contained in Title 26 of the California Code of Regulations (CCR), which describes the following required aspects for the proper management of hazardous waste: identification and classification; generation and transportation; design and permitting of recycling treatment, storage and disposal facilities; operation of facilities and staff training; and closure of facilities and liability requirements.

These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. Under the Hazardous Waste Control Act and Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste from generator to transporter to the ultimate disposal location. Copies of the manifest must be filed with the DTSC.

California Environmental Protection Agency

The California Environmental Protection Agency (CalEPA) is responsible for creating and enforcing environmental regulations within California. Within CalEPA is the California Department of Toxic Substances Control (DTSC), which was formed under the Hazardous Waste Control Act. The DTSC is responsible for regulating hazardous waste, remediating existing contamination, and identifying ways to reduce production of hazardous wastes. DTSC can delegate enforcement responsibilities to local jurisdictions.

Unified Program

The unified hazardous waste and hazardous materials management regulatory program (Unified Program) is a unified hazardous materials management program that was established by California’s Secretary for Environmental Protection following Senate Bill 1082 (1993). The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the following programs:

- Hazardous Materials Release Response Plans and Inventories
- California Accidental Release Prevention Program
- Underground Storage Tank Program
- Above Ground Petroleum Storage Act Program
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment Programs
- California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements
These six environmental programs are implemented at the local government level by Certified Unified Program Agencies (CUPAs). CUPAs provide a central permitting and regulatory agency for permits, reporting, and compliance enforcement. California Public Resources Code Section 21151.4 sets special requirements for environmental impact reports and negative declarations for projects that involve the construction or alteration of a facility within one-fourth of a mile of a school that creates the following conditions:

- Might reasonably be anticipated to emit hazardous air emissions;
- Would handle an extremely hazardous substance or a mixture containing extremely hazardous substances in a quantity equal to or greater than the state threshold quantity specified in Section 25532(j) of the Health and Safety Code; or
- May pose a health or safety hazard to persons who would attend or would be employed at the school.

As part of the CEQA process, the lead agency preparing the EIR must consult with the appropriate school district regarding the potential impact of the project on the school and the school district must be notified about the project in writing at least 30 days before the proposed certification of the EIR or adoption of the mitigated negative declaration (Public Resources Code section 21151.4; 14 California Code of Regulations Section 15186(b)).

Cortese List Government Code Section 65962

Government Code Section 65962 was enacted in 1985 and was amended in 1992. It is used as a planning document to comply with the CEQA and requires information about locations of hazardous materials release sites. It states that through the combined efforts of the DTSC, the Department of Public Health, the State Water Resources Control Boards (SWRCB) and local enforcement agencies a list of potential hazardous areas and sites will be compiled and remain up to date (at a minimum annually updated). The list is consolidated by the Secretary for Environmental Protection and is distributed to each city and county which sites on the list are located. The list can be found on the DTSC’s data management system known as EnviroStor.

Worker Safety

California Occupational Safety and Health Administration

The California Occupational Safety and Health Administration (Cal-OSHA) is responsible for enforcing workplace safety regulations and requirements in California, including hazardous materials requirements recorded under California Code of Regulations (CCR) Title 8 (DIR 2018). These regulations include requirements for safety training, availability of safety equipment, accident and illness prevention programs, warnings about hazardous substance exposure, and preparation of emergency action and fire prevention plans.

Cal-OSHA also enforces hazard-communication program regulations that contain training and information requirements. Such requirements include procedures for identifying and labeling hazardous substances, communicating information about hazardous substances and their handling, and preparing health and safety plans to protect workers and employees at hazardous waste sites. Under the hazard-communication program, employers must make Material Safety Data Sheets available to employees and document employee information and training programs.
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Emergency Response

California Emergency Services Act

The California Emergency Services Act provides the basic authority for conducting emergency operations following a proclamation of emergency by the governor and/or appropriate local authorities. Local government and district emergency plans are considered to be extensions of the California Emergency Plan, established in accordance with the Emergency Services Act.

The California Emergency Management Agency (Cal OES) is the state agency responsible for establishing emergency response and spill notification plans related to hazardous materials accidents. Cal OES regulates businesses by requiring specific businesses to prepare an inventory of hazardous materials (CCR Title 19). Cal OES is also the lead state agency for emergency management and is responsible for coordinating the state-level response to emergencies and disasters. The Inland Region of Cal OES has responsibility for areas served by the District.

Fire Protection

California state fire safety regulations apply to State Responsibility Areas (SRAs) during the time of year designated as having hazardous fire conditions. California Department of Forestry and Fire Protection (CAL FIRE) has developed a fire hazard severity scale that considers vegetation, climate, and slope to evaluate the level of wildfire hazard in all SRAs. A State Responsibility Area is defined as the part of the state where CAL FIRE is primarily responsible for providing basic wildland fire protection assistance. Areas under the jurisdiction of other fire protection services are considered to be Local Responsibility Areas or on Federal lands are considered Federal Responsibility Areas.

During the fire hazard season, these regulations include: (a) restrict the use of equipment that may produce a spark, flame, or fire; (b) require the use of spark arrestors on any equipment that has an internal combustion engine; (c) specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and (d) specify fire suppression equipment that must be provided onsite for various types of work in fire-prone areas. CAL FIRE has primary responsibility for fire protection within SRAs.

3.8.2.3 Local

El Dorado County General Plan

The Project is proposed by the El Dorado irrigation District (the District), a special district that supplies water to customers throughout much of El Dorado County. Pursuant to Government Code sections 53091(D) and (E), many of the District’s activities are not subject to local zoning requirements, as stated below:

> Building and zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code.
> Zoning ordinances of a county or city shall apply to the location or construction of facilities for the storage or transmission of electrical energy by a local agency, if the zoning ordinances make provision for those facilities.
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As a special district with equal authority, the District is exempt from following goals and policies within El Dorado County’s General Plan and Zoning Ordinance. However, the District aims to comply with those goals and policies outlined in the General Plan and uses these goals and policies as a metric for formulating an impact analysis (EDCGP 2015).

**Goal 6.1:** Coordination - A coordinated approach to hazard and disaster response planning.

**Objective 6.1.1:** El Dorado County Multi-Jurisdictional Local Hazard Mitigation Plan—The El Dorado County Multi-Jurisdictional Local Hazard Mitigation Plan shall serve as the implementation program for this Goal.

**Policy 6.1.1.1:** The El Dorado County Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP) shall serve as the implementation program for the coordination of hazard planning and disaster response efforts within the County and is incorporated by reference into this Element. The County will ensure that the LHMP is updated on a regular basis to keep pace with the growing population.

**Goal 6.2:** Fire Hazards - Minimize fire hazards and risks in both wildland and developed areas.

**Objective 6.2.1:** Defensible Space—All new development and structures shall meet “defensible space” requirements and adhere to fire code building requirements to minimize wildland fire hazards.

**Policy 6.2.1.1:** Implement Fire Safe ordinance to attain and maintain defensible space through conditioning of tentative maps and in new development at the final map and/or building permit stage.

**Policy 6.2.1.2:** Coordinate with the local Fire Safe Councils, California Department of Forestry and Fire Protection, and federal and state agencies having land use jurisdiction in El Dorado County in the development of a countywide fuels management strategy.

**Objective 6.2.2:** Limitations to Development—Regulate development in areas of high and very high fire hazard as designated by the California Department of Forestry and Fire Prevention Fire Hazard Severity Zone Maps.

**Policy 6.2.2.1:** Fire Hazard Severity Zone Maps shall be consulted in the review of all projects so that standards and mitigation measures appropriate to each hazard classification can be applied. Land use densities and intensities shall be determined by mitigation measures in areas designated as high or very high fire hazard.

**Policy 6.2.2.2:** The County shall preclude development in areas of high and very high wildland fire hazard or in areas identified as “urban wildland interface communities within the vicinity of Federal lands that are a high risk for wildfire,” as listed in the Federal Register of August 17, 2001, unless such development can be adequately protected from wildland fire hazard, as demonstrated in a Fire Safe Plan prepared by a Registered Professional Forester (RPF) and approved by the local Fire Protection District and/or California Department of Forestry and Fire Protection.

**Objective 6.2.3:** Adequate Fire Protection—Application of uniform fire protection standards to development projects by fire districts.

**Policy 6.2.3.1:** As a requirement for approving new development, the County must find, based on information provided by the applicant and the responsible fire protection district that, concurrent with development, adequate emergency water flow, fire access, and firefighting personnel and equipment will be available in accordance with applicable State and local fire district standards.
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Policy 6.2.3.2: As a requirement of new development, the applicant must demonstrate that adequate access exists, or can be provided to ensure that emergency vehicles can access the site and private vehicles can evacuate the area.

Policy 6.2.3.4: All new development and public works projects shall be consistent with applicable State Wildland Fire Standards and other relevant State and federal fire requirements.

Objective 6.2.4: Area-Wide Fuel Management Program—Reduce fire hazard through cooperative fuel management activities.

Policy 6.2.4.1: Discretionary development within high and very high fire hazard areas shall be conditioned to designate fuel break zones that comply with fire safe requirements to benefit the new and, where possible, existing development.

Policy 6.2.4.2: The County shall cooperate with the California Department of Forestry and Fire Protection and local fire protection districts to identify opportunities for fuel breaks in zones of high and very high fire hazard either prior to or as a component of project review.

Objective 6.6.1: Regulation of Hazardous Materials—Regulate the use, storage, manufacture, transport, and disposal of hazardous materials in accordance with State and Federal regulations.

Policy 6.6.1.1: The Hazardous Waste Management Plan shall serve as the implementation program for management of hazardous waste in order to protect the health, safety, property of residents and visitors, and to minimize environmental degradation while maintaining economic viability.

Policy 6.6.1.2: Prior to the approval of any subdivision of land or issuing of a permit involving ground disturbance, a site investigation, performed by a Registered Environmental Assessor or other person experienced in identifying potential hazardous wastes, shall be submitted to the County for any subdivision or parcel that is located on a known or suspected contaminated site included in a list on file with the Environmental Management Department as provided by the State of California and federal agencies. If contamination is found to exist by the site investigations, it shall be corrected and remediated in compliance with applicable laws, regulations, and standards prior to the issuance of a new land use entitlement or building permit.

El Dorado Hazardous Waste Management Plan

The El Dorado Hazardous Waste Management Plan serves as the implementation program for hazardous waste management in El Dorado County in order to protect residents, visitors, property, and the environment (El Dorado County 1990).

El Dorado County Code

El Dorado County Ordinance Code Chapter 8.38 regulates any person that would handle, store, use, transport, process or dispose of a hazardous material, hazardous waste, or extremely hazardous waste. Requirements under Chapter 8.38 include disclosure of hazardous materials release, possible hazardous materials inspection, and prevention of possible environmental impacts due to hazardous material (El Dorado County 2016a).
Certified Unified Program Agency

At the local level, a CUPA is responsible for addressing impacts from hazardous waste to ensure compliance with the requirements set by the Unified Program. The CUPA acts as a central regulatory agency for project permits and compliance enforcement (CalEPA 2016). The El Dorado County Department of Environmental Management, Hazardous Waste Division, is approved by CalEPA as the CUPA for El Dorado County.

As of January 1, 2013, all existing businesses that store threshold quantities of hazardous materials or hazardous waste are required to annually update their hazardous materials information on California Environmental Reporting System (CERS) (El Dorado County 2018).

Community Wildfire Protection Plan

The El Dorado County Fire Safe Council has developed a Community Wildfire Protection Plan (CWPP) based on the requirements of the Healthy Forest Restoration Act of 2003, which identifies measures that protect and restore forest land and the 2010 Federal Land Assistance Management and Enhancement (FLAME) Act, which lead to the development of a cohesive strategy of interagency cooperation to address wildfire problems. The CWPP coordinates with the Local Hazard Mitigation Plan (LHMP) on wildfire issues. The CWPP provides educational opportunities for the public to understand the complex issues of fire and fuels and to engage in the decision-making process for community safety (Fire Safe Council 2011).

El Dorado County Multi-Jurisdiction Local Hazard Mitigation Plan

As described under the El Dorado County General Plan, the El Dorado County Multi-Jurisdictional Local Hazards Mitigation Plan (LHMP) provides a risk assessment of all potential natural and selected human-caused hazards and identifies all potential types of disaster likely to occur in El Dorado County, including wildland fire. One purpose of the LHMP is to minimize the magnitude of potential wildfire disasters (El Dorado County 2004).

El Dorado County Operational Area Emergency Operations Plan

The 2006 El Dorado County Operational Area Emergency Operations Plan (EOP) is intended to guide the County in meeting the compliance requirements of the California Emergency Services Act, the Standardized Emergency Management System (SEMS), and the federal National Incident Management System (NIMS). The El Dorado County Operational Area EOP addresses El Dorado County's planned response to extraordinary emergency situations associated with natural disasters, technological (man-made) emergencies, acts of war and terrorism. The operational concepts reflected in the plan focus on large-scale emergencies and disasters that often generate situations requiring planned and coordinated responses by multiple disciplines, agencies, and jurisdictions. The plan is split into four federally defined phases: preparedness, response, recovery, and prevention.

The EOP states that it is expected that primary water sources could be compromised due to damage to their treatment plants, pump stations and/or the pipelines that distribute potable water. There will be high potential for contamination in open ditch systems during flooding, landslide, and disease outbreak.

The plan defines a hazardous materials incident as the result of an uncontrolled release of a hazardous substance(s) during storage or use from a fixed facility, residence, and agricultural operation or during transport. Because of the multitude of hazardous substances being transported, incidents are more likely to occur along highways. Fixed
facilities do have occurrences of hazardous materials incidents, too. However, stringent facility safety requirements help to limit these occurrences at fixed facilities. Command fixed facilities include manufacturing, industrial, retail, bulk fuel storage, water and wastewater treatment facilities.

The EOP identifies the District as a Principal Agency responsible for initial response to their utility systems during the following emergency events: wildland fire, severe weather, flooding, utility failure, HAZMAT event, dam/levee failure, landslide/avalanche, building fire/explosion, earthquake, civil disturbance, national security threat, terrorism, transportation mass casualty incident, public health threat, school emergency, and agricultural emergencies. Utilities, such as the District are also identified in the EOP as having a supporting role in evacuation alerting, public information, scene management and a shared role in situational analysis and public information in the emergency events that they have the responsibility for initial response to utility systems.

3.8.3 Environmental Setting

3.8.3.1 Definitions of Terms

Hazardous Materials

For purposes of this section, the term “hazardous materials” refers to both hazardous substances and hazardous wastes. A “hazardous material” is defined in the CFR as “a substance or material that...is capable of posing an unreasonable risk to health, safety, and property when transported in commerce” (49 CFR 171.8). California Health and Safety Code Section 25501 defines a hazardous material as follows:

Hazardous material means any material that, because of its quantity, concentration, or physical, or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Hazardous Wastes

Hazardous wastes are defined in California Health and Safety Code Section 25141(b) as wastes that:

Because of their quantity, concentration, or physical, chemical, or infectious characteristics, [may either] cause, or significantly contribute to an increase in mortality or an increase in serious illness or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Section 25532(j) of the Health and Safety Code defines “regulated substances accident risk” to mean a potential for the accidental release of a regulated substance into the environment that could produce a significant likelihood that persons exposed may suffer acute health effects resulting in significant injury or death.

Section (j) defines "regulated substance" to mean any substance that is either of the following (20 CFR Article 2 section 25532):
(1) A regulated substance listed in Section 68.130 of Title 40 of the Code of Federal Regulations pursuant to paragraph (3) of subsection (r) of Section 112 of the Clean Air Act (42 U.S.C. Sec. 7412(r)(3)).

(2) (A) An extremely hazardous substance listed in Appendix A of Part 355 (commencing with Section 355.10) of Subchapter J of Chapter I of Title 40 of the Code of Federal Regulations that is any of the following:

i. A gas at standard temperature and pressure.

ii. A liquid with a vapor pressure at standard temperature and pressure equal to or greater than 10 millimeters mercury.

iii. A solid that is one of the following:

   I. In solution or in molten form.

   II. In powder form with a particle size less than 100 microns.

   III. Reactive with a National Fire Protection Association rating of 2, 3, or 4.

iv. A substance that the office determines may pose a regulated substances accident risk pursuant to subclause (II) of clause (i) of subparagraph (B) or pursuant to Section 25543.3.

Acute Hazardous Wastes

Acute hazardous wastes have been found to be fatal to humans in low doses or, in the absence of data on human toxicity, it has been shown in studies to have an oral lowest dose (LD) 50 toxicity (rat) of less than 50 milligrams per kilogram, an inhalation lowest concentrate (LC) 50 toxicity (rat) of less than 2 milligrams per liter, or a dermal LD 50 toxicity (rabbit) of less than 200 milligrams per kilogram or is otherwise capable of causing or significantly contributing to an increase in serious irreversible, or incapacitating reversible, illness (CFR 40 261.11).

Hazardous Air Pollutants

The USEPA defines hazardous emissions, also known as Hazardous Air Pollutants (HAP), as those pollutants that are known or suspected to cause cancer or other serious health effects (USEPA 2017). These pollutants can come from sources such as gasoline, motor oils, and paint strippers and can be inhaled or ingested. Fuels such as diesel and gasoline would be required for the operation of construction equipment and are considered Class Three-flammable liquid, hazardous materials- which can lead to fires or explosions if handled incorrectly. Additionally, oils and lubricants would also be needed for operation of equipment and the control facilities and are also considered Class Three hazardous materials.

3.8.3.2 Proposed Project Baseline

Schools

The proposed Project site is located in the area served by Pollock Pines Elementary School District (K–8). The nearest school, Pinewood Elementary, is located approximately 0.25-miles from the proposed Project site, and there
is a preschool located near the west end of the Upper Main Ditch near the WTP. No other schools are located within 0.25 mile of the Project site.

**Cortese List Government Code Section 65962**

As discussed in the regulatory setting above, the Cortese list, which is compiled pursuant to Government Code Section 65962, is used to comply with CEQA requirements and provides a list of the known locations of hazardous material release sites. The EnviroStor database, which is managed by the DTSC, is used to determine the proximity of a project to the nearest hazardous materials site. The proposed Project site is not listed on the Cortese list and would not be eligible for listing based on the criteria outlined in Government Code Section 65962. The nearest DTSC hazardous site to the proposed Project site is the Amador El Dorado Ranger Unit, California Department of Forestry (CDF) which is located approximately three miles west of the proposed Project site. This site is designated as an evaluation site with no further action needed (EnviroStor 2017). The nearest SWRCB hazardous sites to the proposed Project are the 13-Mile Post and the Former Pollock Pines Elementary School site which are both located approximately 0.5-miles south of the proposed Project site. These sites are both designated as leaking underground storage tanks (LUST) sites with a cleanup status of open (SWRCB 2018).

**Hazardous Materials**

Hazardous materials associated with the proposed Project would be limited to those originating from construction and the construction equipment. Fuels such as diesel and gasoline would be required for the operation of construction equipment. Additionally, oils and lubricants would also be needed for operation of construction equipment.

**Emergency Response and Emergency Evacuation Plans**

The proposed Project site, and the District as a special district providing water and wastewater utility in the area, are covered in the 2006 El Dorado County Operational Area EOP as identified in the Local Regulatory Framework above.

**Wildland Fire Risk**

The severity of wildland fires is influenced primarily by vegetation, topography, and weather (temperature, humidity, and wind). The CAL FIRE hazard severity scale defined in the Regulatory Framework above considers vegetation, climate, and slope to evaluate the level of wildfire hazard in a SRA. CAL FIRE designates three levels of Fire Hazard Severity Zones (Moderate, High, and Very High) to indicate the severity of fire hazard in a particular geographical or SRA area.

The proposed Project is located within the SRA that is protected by the Amador-El Dorado CAL FIRE unit and is considered to have a Very High fire hazard severity rating (CAL FIRE 2007). As the proposed Project is in an SRA, the State of California is responsible for fire prevention and suppression. Fire hazard zoning is used to indicate both the likelihood for a fire (e.g., prevalence of fuels) and the potential for damage (e.g., proximity to residences).

**3.8.3.3 Alternatives**

The hazards and hazardous materials setting for the Blair Road Alternative and the Combined Alternative would be the same as described for the proposed Project.
**3.8.4 Environmental Impacts**

This section analyzes the Project’s potential to result in significant impacts to hazards and hazardous materials. When the Project’s impact was determined to be significant, feasible mitigation measures were identified to reduce or avoid that impact.

**3.8.4.1 Project Impact Analysis**

This section discusses potential impacts associated with the Project and identifies mitigation measures for potentially significant impacts, where feasible.

<table>
<thead>
<tr>
<th>Impact HAZ-1</th>
<th>The Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.</th>
</tr>
</thead>
</table>

**Impact HAZ-1a Proposed Project Analysis**

The proposed Project is located in a rural residential area that includes two schools within the vicinity of the Project area. These schools contain sensitive receptors that could potentially be negatively affected by the use of hazardous materials during construction. Pinewood Elementary School is located approximately 0.25 miles from the Upper Main Ditch connection with the Forebay Reservoir. Additionally, there is a preschool that is located near the Reservoir 1 WTP at the western section of the Upper Main Ditch (EID 2015).

During construction, the proposed Project is expected to involve the handling of materials such as fuel, oil, or lubricants due to the use of construction equipment and vehicles (EID 2015). Accidental release of these materials into the environment has the potential to cause a significant impact on the nearby schools and requires mitigation. MM HAZ-1 would require the preparation of a Hazardous Materials Release Prevention Plan which would include steps construction crews must follow to minimize release of hazards materials and appropriate response and clean up measures in the event of a hazardous material spill during construction. Additionally, MM HYD-1 development of a spill prevention and pollution plan (Described further in Section 3.9, Hydrology and Water Quality) would ensure the risk of a construction related spill of hazardous materials is minimized and that any spill would not cause a significant impact to nearby schools or other nearby receptors. By identifying appropriate control measures and an action plan in the case of a spill event, MM HAZ-1 and MM HYD-1 would ensure the risk of exposure to hazardous materials would be reduced to less than significant levels ensuring quick response and treatment in the event of a spill. Therefore, the risk of hazardous materials exposure within a quarter mile of a school is less than significant with MM HAZ-1 and MM HYD-1.

Additionally, the construction of the proposed Project has the potential to release toxic air contaminants (TAC) by construction equipment, worker vehicle trips, and haul truck trips as assessed further in the Air Quality analysis (Section 3.3). The emission of TACs above threshold health levels would have the potential to create significant impacts to the sensitive receptors at the nearby schools, particularly due to ongoing lung development of the children at these schools (Ritz and Wilhem 2008). As discussed in Section 3.3, Air Quality, the TAC levels generated by construction of the proposed Project would be below the El Dorado Air Quality Management District (AQMD) significance thresholds, which have been developed to protect human health. Thus, the Project would not pose a significant hazard and no consultation or noticing to the school would be required.
Operation of the Project would not involve handling of hazardous materials since the proposed Project operation would be limited to the flow of water through the buried pipeline. Maintenance of the pipeline would be consistent with existing operational activities along the ditch and would not increase the risk of hazardous materials exposure.

Although there is a potential for a significant impact from the accidental release of hazardous materials near a school during construction, MM HAZ-1 and HYD-1 would reduce any potential impacts to a less than significant level. Therefore, the potential emission of hazards within a quarter mile of a school resulting from construction or operation of the proposed Project would be considered a less than significant impact with the implementation of MM HAZ-1 and HYD-1.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM HAZ-1, HYD-1

**Impact HAZ-1b Blair Road Alternative Analysis**

Similar to the proposed Project, the Blair Road Alternative would have the potential for release of hazardous materials and TACs on site during construction. The analysis would be the same for the Blair Road Alternative as the proposed Project and therefore, MM HAZ-1 and MM HYD-1 would be required to reduce impacts from hazardous materials within one-quarter mile of a school to a less than significant level.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM HAZ-1, HYD-1

**Impact HAZ-1c Combined Alternative Analysis**

Similar to the proposed Project, the Combined Alternative would have the potential for release of hazardous materials and TACs on site during construction. The analysis for the proposed Project would be the same for the Combined Alternative and therefore, MM HAZ-1 and HYD-1 would be required to reduce impacts from hazardous materials within one-quarter mile of a school, to a less than significant level.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM HAZ-1, HYD-1

**Impact HAZ-1d No Project Alternative Analysis**

Under the No Project Alternative, current conditions in the proposed Project area would not be changed and no construction activities would occur. Therefore, there would be no exposure to hazards or hazardous materials exposure from construction activities and the No Project Alternative would have a lesser temporary impact than the proposed Project. However, under no Project conditions, the District would need to continue to treat water to remove pollutants from trash and debris accumulating in the flows of the unlined ditch requiring a greater use of chemicals and hazardous materials than needed for the proposed Project. However, this treatment would be the same as existing conditions and existing spill prevention procedures and hazardous materials business plans present at the WTP would continue to ensure this impact would not be substantial. Therefore, the potential for the No Project
Alternative to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school is less than significant.

**Level of Significance:** Less than Significant

**Mitigation Required:** None Required

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**Impact HAZ-2**  The Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

**Impact HAZ-2a** Proposed Project Analysis

The location of the proposed Project is within the operational management of the El Dorado County LHMP and the El Dorado County Operational Area EOP (El Dorado County 2004). These plans apply to the District and the proposed Project in the event of an emergency related to water supply, and the EOP identifies both the Emergency Response Plan and the Emergency Evacuation Plan for the proposed Project area. These plans are relevant to the District for planning and preparing for, and for response to emergency conditions.

Potential emergencies identified in the plans relating to the proposed Project involve disruption of potable water service through one of several identified hazards such as public health concerns, contamination, terrorist attack, or natural disaster. The proposed Project would not impair implementation of one of these adopted plans and would in fact be beneficial and in accordance with the planning purpose of the plans by reducing the risk of contamination or hazards to potable water supply by piping of the Upper Main Ditch. Additionally, by piping the Upper Main Ditch the District would have better control over flows through the pipeline and would have more real-time SCADA (supervisory control and data acquisition) data to identify potential damage to the pipeline, which would in turn lead to faster response times in the event of an emergency. Since the proposed Project improves water system resiliency and leads to faster emergency identification and response times, the potential to impair implementation of an adopted emergency plan is less than significant.

Access to the Project site is expected to utilize U.S. Highway 50, Sly Park Road, Pony Express Trail, Forebay Road, Blair Road, Gilmore Road, Patrick Lane, Pony Express Court, and Pinewood Lane. These roads provide access to homes adjacent to the Project site. It is possible that construction traffic along these roads, as well as temporary lane closures or detours within Pinewood Lane and Blair Road, could negatively affect traffic flow and limit access to homes for short durations of time throughout construction (EID 2015); however, as discussed in the Transportation and Traffic Section (Section 3.13), traffic controls would be implemented to maintain resident access during construction. While this use has the potential to reduce the ability to quickly access or exit these properties during an emergency, construction crews would be onsite during any temporary closure and would be able to restore emergency ingress/egress as needed and described by the traffic control plan required through MM TRA-1. As discussed in the Project Description (Chapter 2.0) and Transportation and Traffic (Section 3.13) sections of this EIR, the Traffic Control Plan as part of MM TRA-1 would be required for the proposed Project and emergency access would be maintained. Therefore, the risk that the potential Project would interfere with an adopted emergency response plan is less than significant.

**Level of Significance:** Less than Significant with Mitigation
Mitigation Required: MM TRA-1

Impact HAZ-2b Blair Road Alternative Analysis

The Blair Road Alternative would have the same potential to interfere with emergency response actions as with the proposed Project. However, because the Blair Road Alternative would include work within Blair Road, this may result in a greater potential to interfere with the El Dorado County Operational Area EOP. Access during construction along portions of Blair Road would be limited resulting in an increase in potential hazards related to emergencies. However, with the implementation of MM TRA-1, which would require a traffic control plan, any potential impacts to emergency response plans would not be substantial and emergency access would be maintained. Therefore, the risk that the Blair Road Alternative would interfere with an adopted emergency plan is less than significant with MM TRA-1 incorporated.

Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM TRA-1

Impact HAZ-2c Combined Alternative Analysis

Similar to the proposed Project and the Blair Road Alternative, the Combined Alternative would not impair or interfere with the emergency access to the area. The analysis described for the proposed Project as well as the Blair Road Alternative would be the same for the Combined Alternative and therefore, MM TRA-1 would be required to reduce impacts to emergency response plans in the area to a less than significant level.

Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM TRA-1

Impact HAZ-2d No Project Alternative Analysis

Under the No Project Alternative, current conditions in the proposed Project area would remain relatively unchanged, and the No Project Alternative would not interfere with adopted emergency response plans or emergency evacuation plans. Therefore, there would be no impact and the No Project Alternative would not to interfere with response activities outlined in an adopted emergency plan anymore than under existing conditions.

Level of Significance: Less than Significant

Mitigation Required: None Required

Impact HAZ-3 The Project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Impact HAZ-3a Proposed Project Analysis

The proposed Project area is located within a wildland-suburban interface, with rural residential development surrounding the Project. The forested/wildland nature of the project vicinity combined with the Very High fire hazard...
severity rating (CALFIRE 2016) indicates that the proposed Project has the potential to increase fire risk due to construction activity, such as the unintended release of sparks or heat from construction equipment onto nearby flammable material. However, the proposed Project would be constructed in compliance with all applicable local, state, and federal requirements, including the California Fire Code and the El Dorado County Ordinance 8.08-Fire Prevention (California 2016 and El Dorado County 2016b) which ensure the potential for construction equipment to spark a wildland fire is minimal. Additionally, construction of the proposed pipeline would be within the right-of-way, where groundcover vegetation is minimal and is less fire prone due to the moisture content from proximity to the Upper Main Ditch, and is located adjacent to nearby roadways (such as Blair Road) which would allow adequate access for emergency vehicles in the unlikely event of a fire. Further, construction of the proposed Project would be required during the ditch outage in the fall and winter months, when rain is more likely and fire risk is lower, which would also help to reduce the risk of wildfire. Since the contractor is required to follow existing fire prevention laws and the construction site fire severity is lower than the surrounding areas (due to lack of vegetation and higher soil moisture content), potential for construction to expose people to a risk of loss or injury due to fire is less than significant and no mitigation would be required.

The long-term fire hazard for the Project area would not be affected because operation of the Project would not create a fire hazard. The ditch itself is not a substantial water source with no appropriate infrastructure, permanent supply, or water rights sufficient for fighting fires. Operation of the proposed Project does not increase the risk of fire since the pipeline itself is passive and underground. Currently, the water in the ditch is intended for use as a drinking water supply and does not provide fire water supplies. The District maintains water rights to all the water within the ditch and it is not available to adjacent land owners for firefighting purposes. The intermittent nature of the flows in the ditch make the ditch an unreliable water source under existing conditions and removal of the sources, under the proposed Project, would not significantly alter available firefighting water supplies Additionally, mandatory evacuations would be put in place and firefighting operations would be handled by CAL FIRE, in the event of a wildfire in the Project area which would eliminate any potential for the proposed Project to further expose people or structures to the risks associated with wildfires beyond which are already present within the densely forested area. Because of all the reasons discussed, the impact from the proposed Project is expected to be less than significant.

**Level of Significance:** Less than Significant

**Mitigation Required:** None Required

**Impact HAZ-3b Blair Road Alternative Analysis**

The Blair Road Alternative would have similar impacts related to wildland fire risk as described under the proposed Project above and would remain in compliance with all applicable local, state, and federal requirements. Additionally, under this Alternative, 8,200 feet of piping would occur along Blair Road, which would further decrease the potential for a fire hazard from construction activities relative to the proposed Project because there is less groundcover and brush along the roads. Along the cross-country portion of this alternative, the risk for a fire started from construction activities is higher than that of the proposed Project. More trees, ground cover, and brush occur in the cross-country portion of this alternative; however, construction activities would not be concentrated in one area for very long and would be subject to the same requirements described for the proposed Project above; thus, the risk of fire would not be substantially greater than the proposed Project. Additionally, the alternative is located adjacent to nearby roadways (such as Blair Road) which would allow adequate access for emergency vehicles in the unlikely event of a fire.
3.8.17

UPPER MAIN DITCH PIPING PROJECT

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Fire. Therefore, the potential for construction to expose people to a risk of loss or injury due to fire is less than significant and no mitigation would be required.

Level of Significance: Less than Significant
Mitigation Required: None Required

Impact HAZ-3c Combined Alternative Analysis

The Combined Alternative would have a similar impact related to fire risk as described under the proposed Project and Blair Road Alternative above since the Combined Alternative has both components within the ditch, in Blair Road, and along cross-country segments. Similar to the proposed Project, construction of the portion of the Combined Alternative within the ditch would be limited to the period in the fall and winter during the ditch outage. More well-established trees, ground cover, and brush occur in the cross-country portion of this alternative; however, the same regulations and fire safe practices that apply for the Blair Road Alternative and the proposed Project would also apply for this alternative which would ensure risk of wildfire resulting from construction activities is limited. Additionally, the alternative is located adjacent to nearby roadways (such as Blair Road) which would allow adequate access for emergency vehicles in the unlikely event of a fire. Therefore, the potential for the Combined Alternative construction to expose people to a risk of loss or injury due to fire is less than significant and no mitigation would be required.

Level of Significance: Less than Significant
Mitigation Required: None Required

Impact HAZ-3d No Project Alternative Analysis

Under the No Project Alternative, current conditions in the Project area would not be changed, and thus this Alternative would result in a lesser risk to fire hazards than the proposed Project. Therefore, there would be no potential for the No Project Alternative to expose people to a risk of loss or injury due to fire.

Level of Significance: No Impact
Mitigation Required: None Required

3.8.5 Hazards and Hazardous Waste Mitigation

3.8.5.1 Mitigation Measure HYD-1 Avoid/Minimize Potential Impacts from Construction Material Release

See MM HYD-1, Section 3.9

3.8.5.2 Mitigation Measure TRA-1 Prepare and Implement a Traffic Control Plan

See MM TRA-1, Section 3.13
3.8.5.3 Mitigation Measure HAZ-1: Prepare and Implement a Hazardous Materials Release Prevention Plan

The District shall create and implement a hazardous materials release prevention plan to reduce the risk of sensitive receptors, including those in nearby schools, from being exposed to hazards due to the handling of hazardous materials during construction. The plan shall identify control measures to prevent the release of hazardous materials, as well as a detailed action plan to respond to an incidental spill in compliance with all local, state, and federal regulations relating to the handling of hazardous materials. This plan shall be combined with the stormwater spill prevention Best Management Practices identified under the Hydrology and Water Quality Section and required under MM HYD-1 to reduce the impact of spilled hazardous materials. The plan must meet containment details as identified in MM HYD-1. Furthermore, the plan must identify appropriate spill response materials required to be onsite and must appropriately follow the plan.

Mitigation Measure HAZ-1 Implementation

**Responsible Party:** El Dorado Irrigation District is responsible for verifying and documenting that the hazardous materials release prevention plan meets all applicable requirements. The selected construction contractor is responsible for following the plan and implementing the action plan in event of a spill.

**Timing:** Plan preparation is required prior to construction. Plan Implementation throughout construction.

**Monitoring and Reporting Program:** The Hazardous Materials Release Prevention Plan would be developed by the construction contractor and would be required to be kept onsite during construction. Additionally, the contractor must provide El Dorado Irrigation District a file copy to remain on file at the project site as well as El Dorado Irrigation District offices. The contractor must ensure all construction workers involved in the operation and movement of construction equipment are familiar with the plan and the plan is appropriately followed throughout construction.

**Standards for Success:** Hazardous materials release prevention and adherence to plan conditions and release prevention practices.
### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AQMD</td>
<td>Air Quality Management District</td>
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<td>BMP</td>
<td>Best Management Practices</td>
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<tr>
<td>CAA</td>
<td>Clean Air Act</td>
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<tr>
<td>CalEPA</td>
<td>California Environmental Protection Agency</td>
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<td>Cal OES</td>
<td>California Emergency Management Agency</td>
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<tr>
<td>CERS</td>
<td>California Environmental Reporting System</td>
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<tr>
<td>CAL FIRE</td>
<td>California Department of Forestry and Fire Protection</td>
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<td>Cal-OSHA</td>
<td>California Occupational Safety and Health Administration</td>
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<tr>
<td>CCR</td>
<td>California Code of Regulations</td>
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<td>CDF</td>
<td>California Department of Forestry</td>
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<td>CFR</td>
<td>Code of Federal Regulations</td>
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<td>County</td>
<td>El Dorado County</td>
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<tr>
<td>CUPA</td>
<td>Certified Unified Program Agency</td>
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<tr>
<td>CWPP</td>
<td>Community Wildfire Protection Plan</td>
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<td>DOT</td>
<td>Department of Transportation</td>
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<tr>
<td>DTSC</td>
<td>Department of Toxic Substances Control</td>
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<tr>
<td>The District</td>
<td>El Dorado Irrigation District</td>
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<td>EIR</td>
<td>Environmental Impact Report</td>
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<tr>
<td>EOP</td>
<td>Emergency Operations Plan</td>
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<td>FLAME</td>
<td>Federal Land Assistance Management and Enhancement</td>
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<td>HAP</td>
<td>Hazardous Air Pollutants</td>
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<td>HMTA</td>
<td>Hazardous Materials Transportation Act</td>
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<td>LC</td>
<td>Lowest Concentrate</td>
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<td>LD</td>
<td>Lowest Dose</td>
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<td>LHMP</td>
<td>Local Hazard Mitigation Plan</td>
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<td>LUST</td>
<td>Leaking Underground Storage Tanks</td>
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<td>MM</td>
<td>Mitigation Measure</td>
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<tr>
<td>NIMS</td>
<td>National Incident Management System</td>
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<tr>
<td>NOP/IS</td>
<td>Notice of Preparation/Initial Study</td>
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<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration</td>
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<tr>
<td>RCRA</td>
<td>Resources Conservation and Recovery Act</td>
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<tr>
<td>RPF</td>
<td>Registered Professional Forester</td>
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<tr>
<td>SCADA</td>
<td>Supervisory Control and Data Acquisition</td>
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<td>SEMS</td>
<td>Standardized Emergency Management System</td>
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<table>
<thead>
<tr>
<th>SRA</th>
<th>State Responsibility Area</th>
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<td>SWRCB</td>
<td>State Water Resources Control Board</td>
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<td>TAC</td>
<td>Toxic Air Contaminant</td>
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<tr>
<td>Unified Program</td>
<td>unified hazardous waste and hazardous materials management regulatory program</td>
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<tr>
<td>USEPA</td>
<td>United States Environmental Protection Agency</td>
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<td>WTP</td>
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3.8.7 References


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3.9 HYDROLOGY AND WATER QUALITY

3.9.1 Basis for Analysis

The California Environmental Quality Act (CEQA) Guidelines’ Appendix G Environmental Checklist was assessed during the Notice of Preparation/Initial Study (NOP/IS) scoping process (included in Appendix A) to identify the Project components that have the potential to cause a significant environmental impact. The following potential impacts were determined to warrant further evaluation within this Environmental Impact Report (EIR):

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

The following potential impacts were determined to have a less than significant or no impact during the NOP/IS scoping process (included in Appendix A) and are not discussed further in this section:

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

The remainder of this section describes the regulatory and environmental baseline setting to support the evaluation of the potential impacts and describes the potential impacts to hydrology and water quality that may result from implementation of the Project, and identifies mitigation for potentially significant impacts, where feasible.
3.9.2 Regulatory Framework

This section discusses the federal and state regulations, and local policies and objectives that govern hydrology and water quality applicable to the Project.

3.9.2.1 Federal

Federal Clean Water Act

The Clean Water Act (CWA) (33 U.S.C. Section 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). Section 401 of the CWA regulates surface water quality, and a Water Quality Certification is required for federal actions (including construction activities) that may entail impacts to surface water. In California, NPDES permitting authority is delegated to, and administered by, the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs).

NPDES General Construction Permit

The NPDES permit program was established per 1972 amendments to the Federal Water Pollution Control Act, in order to control discharges of pollutants from point sources (Section 402). In 1987, amendments to the CWA created a new section of the Act devoted to stormwater permitting (Section 402[p]), with the individual states designated for administration and enforcement of the provisions of the CWA and the NPDES permit program. The federal CWA prohibits certain discharges of stormwater containing pollutants except in compliance with a NPDES permit. The federal statutes and regulations require discharges to surface waters comprised of storm water associated with construction activity, including demolition, clearing, grading, and excavation, and other land disturbance activities (except operations that result in disturbance of less than one acre of total land area and/or discharges to municipalities with combined stormwater and sewer systems) to obtain coverage under an NPDES permit. The NPDES permit must require implementation of Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology to reduce or eliminate pollutants in storm water runoff.

National Flood Insurance Act

The Federal Emergency Management Agency (FEMA) is responsible for managing the National Flood Insurance Program (NFIP), which makes federally-backed flood insurance available for communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage.

The NFIP, established in 1968 under the National Flood Insurance Act, requires that participating communities adopt certain minimum floodplain management standards, including restrictions on new development in designated floodways, and a requirement that new structures in the 100-year flood zone be elevated to or above the 100-year flood level known as base flood elevation. To facilitate identifying areas with flood potential, FEMA has developed Flood Insurance Rate Maps (FIRMs) that can be used for planning purposes, including floodplain management, setting flood insurance premiums, and enforcement of mandatory flood insurance purchase requirements.

3.9.2
3.9.2.2 State

Porter Cologne Water Quality Control Act

The State of California established the SWRCB, which oversees the nine RWQCBs, through passage of the Porter-Cologne Water Quality Control Act (Porter-Cologne) in 1969. Through the enforcement of the act, the SWRCB determines the beneficial uses of the waters (surface and groundwater) of the State, establishes narrative and/or numerical water quality standards, and initiates policies relating to water quality. The SWRCB and, more specifically, each RWQCB, is authorized to prescribe Waste Discharge Requirements (WDRs) for the discharge of waste, which may impact the waters of the State. Furthermore, the development of water quality control plans, or Basin Plans, are required by Porter-Cologne to protect water quality in the state’s watersheds.

The SWRCB issues both General Construction Permits and individual permits under the auspices of the federal NPDES program. Projects disturbing more than one acre of land during construction are required to file a Notice of Intent (NOI) with the SWRCB to be covered under the State NPDES General Construction Permit for discharges of stormwater associated with construction activity. Construction activities that are subject to this General Permit include: clearing, grading, disturbances to the ground such as stockpiling, or excavation that results in soil disturbances of at least one acre of total land area. The project proponent must implement control measures that are consistent with the State General Permit. A Stormwater Pollution Prevention Plan (SWPPP) must be developed and implemented for each site covered by the General Permit. A SWPPP describes Best Management Practices (BMPs) the discharger would use to protect stormwater runoff and reduce potential impacts to surface water quality through the construction period. The SWPPP must contain the following: a visual monitoring program, a chemical monitoring program for “non-visible” pollutants to be implemented if there is a failure of BMPs, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment (SWRCB 2012).

California Well Standards

The Department of Water Resources (1990) has responsibility for developing standards for wells for the protection of water quality under California Water Code Section 231 (1949). Statewide standards for water wells were first formally published in 1968 as DWR Bulletin 74, Water Well Standards: State of California. Standards for cathodic protection wells followed in 1973 as Bulletin 74-1, Cathodic Protection Well Standards: State of California. Bulletins 74 and 74-1 Assembly Bill 3127 (Water Code Section 13801) requires that cities, counties, and water agencies adopt a well ordinance that meets or exceeds DWR well standards and subsequent Bulletins have been released. Currently Bulletins 74-81 and 74-90 govern water well standards.

California Safe Drinking Water Act (Chapter 7 of Part 1 of Division 5 of the Health Safety Code, State of California)

The SWRCB Division of Drinking Water (DDW) also has a concurrent interest in problems caused by improperly constructed, defective, or “abandoned” wells. This interest is evidenced in the Safe Drinking Water Act, which deals with the health aspects of public water supplies. Under this authorization, the DDW requires a water purveyor to apply for an amended water permit before a new well is constructed and connected to the water system. Before the amended (or new) permit is issued, a thorough review is made of (a) the location of the well with respect to potential contamination hazards, (b) design and construction of the well necessary to prevent contamination or the exclusion of undesirable water, and (c) the bacterial and chemical quality of the water produced. The DDW may issue a permit if it
finds that the water "under all circumstances is pure, wholesome, and potable and does not endanger the lives or health of human beings." Specific water quality and monitoring standards have been adopted by regulation. If at any time water produced from an existing well fails to comply with such standards, the DDW may require changes or modifications of the well, provisions of appropriate water treatment, or cause the curtailed use, even destruction of the well, in order to assure a safe supply to the public.

3.9.2.3 Local

El Dorado Irrigation District

**El Dorado Irrigation District Board Policy 5030 Water Conservation:** It is El Dorado Irrigation District (the District) Board policy to take reasonable and prudent measures to conserve all water and to adopt and implement water-use efficiency programs that will benefit its customers.

El Dorado County General Plan

The Project is proposed by the District, a special district that supplies water to customers throughout much of El Dorado County. Pursuant to Government Code sections 53091(D) and (E), many of the District’s activities are not subject to local zoning or land use requirements, as stated below.

*Building and zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code.*

As a special district with equal authority, the District is exempt from following goals and policies within the County’s General Plan and Zoning Ordinance. However, the District aims to comply to with those goals and policies outlined in the General Plan and uses the following goals and policies as a metric for formulating an impact analysis (EDCGP 2015).

**Goal 5.1: Provision of Public Services:** Provide and maintain a system of safe, adequate, and cost-effective public utilities and services; maintain an adequate level of service to existing development while allowing for additional growth in an efficient manner; and, ensure a safe and adequate water supply, wastewater disposal, and appropriate public services for rural areas.

**Objective 5.1.2: Concurrency:** Ensure through consultation with responsible service and utility purveyors that adequate public services and utilities, including water supply, wastewater treatment and disposal, solid waste disposal capacity, storm drainage, fire protection, police protection, and ambulance service are provided concurrent with discretionary development or through other mitigation measures provided, and ensure that adequate school facilities are provided concurrent with discretionary development to the maximum extent permitted by State law. It shall be the policy of the County to cooperate with responsible service and utility purveyors in ensuring the adequate provision of service. Absent evidence beyond a reasonable doubt, the County will rely on the information received from such purveyors and shall not substitute its judgment for that of the responsible purveyors on questions of capacity or levels of service.

**Policy 5.2.1.10:** The County shall support water conservation and recycling programs and projects that can reduce future water demand consistent with the policies of this General Plan.
Policy 5.2.1.13: The County shall encourage water purveyors to design water supply and infrastructure projects in a manner that avoids or reduces significant environmental effects to the maximum extent feasible in light of the water supply objectives of a given project.

Objective 5.2.3: Groundwater Systems: Demonstrate that water supply is available for proposed groundwater dependent development and protect against degradation of well water supplies for existing residents.

Goal 5.4: Storm Drainage: Manage and control stormwater runoff to prevent flooding, protect soils from erosion, prevent contamination of surface waters, and minimize impacts to existing drainage infrastructure.

Goal 7.3: Water Quality and Quantity: Conserve, enhance, and manage water resources and protect their quality from degradation.

Objective 7.3.1: Water Resource Protection: Preserve and protect the supply and quality of the County’s water resources including the protection of critical watersheds, riparian zones, and aquifers.

Objective 7.3.2: Water Quality: Maintenance of and, where possible, improvement of the quality of underground and surface water.

Objective 7.3.5: Water Conservation: Conservation of water resources, encouragement of water conservation, and construction of wastewater disposal systems designed to reclaim and re-use treated wastewater on agricultural crops and for other irrigation and wildlife enhancement projects.

Policy 7.3.5.4: Require efficient water conveyance systems in new construction. Establish a program of ongoing conversion of open ditch systems shall be considered for conversion to closed conduits, reclaimed water supplies, or both, as circumstances permit.

El Dorado County Well Standards Ordinance

Chapter 8.39 of the El Dorado County Code aims to protect the health, safety and general welfare of the people of the county by ensuring that the groundwaters of the county not be polluted or contaminated. To this end, minimum requirements for construction, reconstruction, repair and destruction of water wells, cathodic protection of wells and monitoring wells are contained within the code. (Ord. 4110 §1(part), 1990). Section 8.39.120 of the code represents that except as otherwise specified, the standards for the construction, repair or reconstruction or abandonment of wells shall be as set forth in Department of Water Resources Bulletins 74-81 and 74-90; the California Department of Water Resources Bulletins 74-81 and 74-90 “Water Well Standards, State of California” (Ord. 4110 §1(part), 1990; DWR 1990).

El Dorado County Environmental Management Department Guide for the Private Well Owner

The El Dorado County Environmental Management Department provides guidance to private well owners on proper well construction, destruction, and maintenance including water-quality testing and well owner responsibilities. The Guidance incorporates California Water Well Standards and requires that all drinking water wells maintain an annular seal to prevent the influence of poor quality surface waters migrating into drinking water fracture zones (El Dorado County Environmental Management Department 2004, DWR 1990). Wells that do allow the introduction of surface
waters or other materials are out of compliance with State and local requirements and are a threat to public health (El Dorado County 2004, DWR 1990).

3.9.3 Environmental Setting

The topography of the immediate Project area vicinity consists of rolling hills. The Project area elevation varies from approximately 3,785 feet above mean sea level (amsl) at the northeast end of the proposed Project (Forebay Reservoir) to approximately 3,754 feet amsl at the southwest end of the Project at the Reservoir 1 WTP. The 30-year average precipitation, as reported by the California Irrigation Management Information System (CIMIS), for the nearby Camino station, is 46-inches per year, with most precipitation occurring between the months of October and March (Youngdahl 2017).

3.9.3.1 Local Groundwater

The California Department of Water Resources (DWR) does not have data on the quality of groundwater in the proposed Project area basin, and the Sierra foothill region is not considered to have an identified aquifer (DWR 2016). Although local alluvial deposits may be developed for groundwater supply, it is much more common for wells drilled in the Sierra Nevada region to be installed in fractured rock. Fractured rock groundwater sources in the Sierra Nevada Mountain Range are highly variable in terms of water quantity and quality. The primary mode of groundwater transport to a bedrock well is through contacts between lithologic units, as well as secondary porosity developed through fractures and faults, which can often be limited in aerial extent. Accordingly, wells drilled in fractured bedrock typically have a low yield. Groundwater in fractured rock also has the potential for encountering naturally-occurring minerals such as iron, manganese, and mineral deposits, as well as potential natural contaminants such as arsenic and uranium, as well as radon gas and other elements.

The Westmark Group prepared a report for El Dorado County titled Main Ditch – Forebay Reservoir 1 Septic System and Domestic Well Locations Report, Pollock Pines, California dated May 22, 2013 that evaluated the locations of septic systems and domestic wells within the project area. Five water wells were reported to be located on parcels adjoining the Upper Main Ditch (Westmark 2013). A query of DWR’s Well Drillers Reports from DWR’s Well Completion Report governmental agency study request form identified seven additional wells within the Project area, however information on the location of these wells is held confidential by DWR and thus their existence could not be verified (Westmark 2013). Therefore, the total number of domestic water supply wells on parcels next to the ditch is assumed to be somewhere between five and twelve.

It is normal for groundwater wells to decrease in production capacity over their lifetime due to silting of the surrounding soil near the well screen, plugging and fouling of the well screen itself, and decreasing flow due to the wear of the pump, as well as general reduction in the output of the pump motors. Well production may also decrease due to continued draw down of local groundwater storage (predominantly storage in the fractures), as well as climatological factors affecting recharge such as extended drought conditions. Wells are typically constructed and maintained in a manner as to protect against direct connectivity with surface water flows in order to reduce the potential for contamination as required by the El Dorado County Environmental Management Department and California Water Well Standards, indicating that nearby wells should not be under the influence of any surface seepage from the ditch and, as of publication of this Draft EIR, no evidence of records of nearby wells under the influence of surface water exists (El Dorado County 2004, DWR 1990).
Seepage from the existing ditch may currently result in some passive recharge of the local groundwater. However, according to a study conducted by Youngdahl Consulting Group (2017) for this EIR, the potential contribution of ditch seepage to recharge a well would be expected to be minimal and decline as distance from the ditch increased, provided all other influencing factors remained uniform (geology/soils/climate, etc.). The study further indicated that the groundwater recharge from precipitation is significantly greater than the maximum existing and planned domestic use (Youngdahl Consulting Group 2017). Percolation from ditch seepage is expected to travel vertically through fractures in the bedrock, and the potential for groundwater recharge is limited in geographic scope and relatively small compared with natural recharge from precipitation and snowmelt.

Tully and Young (2017) evaluated the seepage information from previous modeling studies and analyzed available data related to water losses from the Upper Main Ditch in the water loss technical memorandum they prepared for the District. The memorandum concluded that total water loss from the ditch can range from 31- to 33- percent loss under low flow conditions (five- to 10-cubic feet per second (cfs) based on seasonal variations) and 11-12 percent loss under high flow conditions of (35.1-to 40-cfs). The quantity of seepage that contributes to groundwater recharge is unknown but would be less than the total seepage and would be dispersed along the entire ditch alignment.

### 3.9.3.2 Surface Water

The Upper Main Ditch is an open canal that passively receives stormwater along its reach. Based on the Domenichelli and Associates, Inc. Basis of Design Report Update (2016), the Upper Main Ditch can currently accommodate stormflows that are equivalent to a 10-year design stormflow. Existing swales along the ditch allow flows in excess of 10-year stormflows to overtop the ditch and follow their natural drainage course, eventually flowing towards the South Fork of the American River (Youngdahl Consulting Group 2017).

According to the water quality study conducted by HydroScience, the existing unlined ditch currently experiences a significant source of contamination from turbidity, organic loading, and pathogens during storm events (HydroScience 2016). Due to the location and design of the existing ditch, it is more susceptible to contamination from these sources through the interception of stormwater runoff into the ditch. In particular, the conclusion from this study found that since the Forebay Reservoir constitutes a settled source of water, the potentially harmful spiking from turbidity and organics occurs when water enters the open ditch and is disturbed from stormwater flows (HydroScience 2016).

### 3.9.4 Environmental Impacts

This section analyzes the Project’s potential to result in significant impacts to hydrology and water quality. When the Project’s impact was determined to be significant, feasible mitigation measures were identified to reduce or avoid that impact.

#### 3.9.4.1 Project Impact Analysis

This section discusses potential impacts associated with the Project and provides mitigation measures where necessary and feasible.
Impact HYD-1 The Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality.

Impact HYD-1a Proposed Project Analysis

Overall, the proposed Project is designed to improve water quality by piping the Upper Main Ditch, decreasing treatment needed and entry of potential pollutants by eliminating the ditch’s exposure to trash, surface runoff, and other pollutants.

Project construction activities have the potential to create short-term discharge of sediment, erosion material, and other nonpoint source pollutants into onsite stormwater that could drain to offsite areas and possibly degrade the local water quality, thereby potentially violating water quality standards or WDRs. However, the District and its chosen contractor would follow standard pollution prevention measures as required by the General Construction permit to prevent discharges that would impact water quality or substantially degrade water quality. Once constructed, the Project would be below grade and the disturbed surfaces would be regraded, limiting any long-term impacts to hydrology and water quality.

Potential temporary and indirect impacts to water quality are possible from construction activities and/or site stabilization. Approximately seven acres of temporary disturbance are assumed for the proposed Project. Construction activities would create the potential for soil erosion and possibly increase sedimentation, both onsite and downstream of the Project area. Construction activities also increase the potential for accidental release of pollutants that could affect not only surface waters, but also the beneficial uses associated with them. Such pollutants include oil and gas from machinery, and chemicals associated with construction (e.g. paints, lubricants, and greases, and waste material). Many construction-related pollutants have the potential to degrade water quality by increasing constituent levels in surface waters and could lead to an exceedance of water quality standards.

Project construction is expected to begin in early October and last approximately 15 weeks in each of two ditch outages. Because construction would occur during the typical California rainy season, the potential to increase erosion and sedimentation would be increased; however, the ditch would be dry during construction activities and open-cut trenching would be temporary. Open trenches would be backfilled, re-contoured, and compacted immediately following excavation and installation of pipeline sections. Regrading and restoration of affected areas would occur while the ditch is dry, thereby preventing the exposure of unsettled substrate to streamflow within the affected areas during the wet season. Because implementation of the proposed Project could result in the introduction of sediment and other nonpoint source pollutants into onsite drainage channels and ultimately offsite drainage channels as a result of temporary construction activities, short-term, construction-related water quality degradation could result in a potentially significant impact.

Implementation of MM GEO-1, which would include the preparation and implementation of a SWPPP, would reduce the potential temporary, short-term construction-related drainage and water quality impacts to a less than significant level. In addition, the implementation of applicable BMPs required by MM GEO-1 would maintain water quality conditions in drainages within the Project vicinity and downstream that receive discharge or runoff from the Project area. Therefore, the proposed Project would have a less than significant impact with mitigation incorporated.

Additionally, improper storage of hazardous materials on-site could pose a risk of release and lead to the degradation of water quality. MM HYD-1 would be implemented in order to reduce the potential of a hazardous material release.
Therefore, the potential impacts would be reduced to less than significant through the implementation of the MM GEO-1 and MM HYD-1. As such the proposed Project would have a less than significant impact to water quality degradation and water quality standards.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM GEO-1, MM HYD-1

### Impact HYD-1b Blair Road Alternative Analysis

The Blair Road Alternative would have similar potential to result in water quality degradation or violation of standards as the proposed Project (Impact HYD-1a) from ground disturbing activities associated with construction. The District would implement MM GEO-1 and MM HYD-1 for all construction activities, including those along Blair Road and within the cross-country portions of this alignment, substantially lessening the potential for substantial water quality degradation or violation of water quality standards. These mitigation measures would reduce the potential for water quality degradation during construction to a less than significant level.

Under operational conditions for the Blair Road Alternative, the existing ditch would continue to passively receive stormwater up to a 10-year storm event. Since soils in the ditch are currently compacted and reconstruction of the ditch where this alignment is within the ditch would be compacted post-construction, it is not anticipated any substantial amount of sediment or erosion would occur within the ditch. Where the Blair Road Alternative alignment would transition into and out of the ditch it would be recontoured to allow the stormwater capacity described for the proposed Project, which is equivalent to existing conditions. Storm flows would flow through the ditch as under existing conditions and then bypass the Reservoir 1 Water Treatment Plant (WTP) as they currently do during storm events. The Blair Road Alternative would not introduce new pollutants or otherwise contribute to water quality violations. Therefore, the impact would be less than significant with mitigation incorporated.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM GEO-1, MM HYD-1

### Impact HYD-1c Combined Alternative Analysis

Similar to the Blair Road Alternative, the Combined Alternative’s potential to result in water quality degradation or violation of standards would result from ground disturbing construction activities. Both construction and operational conditions under the Combined Alternative would be virtually the same as the Blair Road Alternative and have the same potential to degrade water quality and/or result in a water quality violation. The additional cross-country portions of this alternative would operate similar to the Blair Road Alternative where the pipeline would cross through Blair Road back into the existing ditch or into the cross-country portions. Stormwater flows would therefore continue to operate as under existing conditions and would not be impacted by the Combined Alternative. Similar to the proposed Project and the Blair Road Alternative, MM GEO-1 and HYD-1 would be required to reduce potential impacts related to water quality to a less than significant level by requiring preparation of a SWPPP and Best Management Practices reducing the potential for hazardous materials release into the Project area. Therefore, the potential for the Combined Alternative to result in water quality degradation or violation of standards would be less than significant with mitigation incorporated.
Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM GE0-1, MM HYD-1

Impact HYD-1d No Project Alternative Analysis

Under the No Project Alternative, the Upper Main Ditch would remain operating under existing conditions and no piping of the water would occur. As discussed in the Project Description (Section 2.5), the objectives of the Project include protecting water quality by eliminating contamination of the open ditch. Because the existing open, unlined ditch would remain unprotected under the No Project Alternative, water quality would be more difficult to maintain relative to the proposed Project and would continue to be subject to potential contamination from outside sources such as runoff from pesticides and chemicals. The existing ditch would continue to experience water losses due to evaporation and seepage, resulting in less available water supplies to serve District customers (on the order of a minimum of approximately 1,350 acre-feet per year and an average of nearly 1,800 acre-feet per year based upon recent usage during 2009-2015) (Tully and Young, 2017). Because there would be no change from existing conditions, there would be no adverse impact related to water quality from the No Project Alternative. However, there also would be no opportunity to address the adverse impacts to water resources (both water supply, due to system losses, and water quality) that have been identified.

Level of Significance: No Impact

Mitigation Required: None required

Impact HYD-2 The Project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

Impact HYD-2a Proposed Project Analysis

Seepage from the existing ditch may currently result in some passive recharge of the local groundwater supplies in the fractured bedrock. According to the Youngdahl Consulting Group Report (2017), the potential contribution of ditch seepage to recharge a well would be expected to be minimal and decline as distance from the ditch increased, provided all other influencing factors remained uniform (geology/soils/climate, etc.) since groundwater seepage is expected to travel vertically through fractures in the bedrock, and the potential for recharge is limited in geographic scope and relatively small compared with natural recharge from precipitation and snowmelt. Despite the minimal potential for recharge from seepage the study found that the groundwater recharge from precipitation is significantly greater than the maximum existing and planned domestic use (Youngdahl Consulting Group 2017) indicating that precipitation alone provides sufficient recharge of existing groundwater wells to support existing and planned land uses which permits have been granted. Thus, piping of the Upper Main Ditch would not cause a substantial depletion of groundwater supplies.

The Tully and Young (2017) water loss memorandum concluded that total water loss from the ditch can range from 31- to 33- percent loss under low flow conditions (5-10-cubic feet per second (cfs) based on seasonal variations) and 11- to 12- percent loss under high flow conditions of (35.1-to 40-cfs). The quantity of seepage that contributes to
groundwater recharge is unknown but would be less than the total estimated seepage and would be dispersed along the entire ditch alignment. Based on 2009 to 2015 data, the amount of water that can be saved by piping the ditch is estimated to be a minimum of approximately 1,350 acre-feet per year and an average of nearly 1,800 acre-feet per year (Tully and Young 2017). With implementation of the Project, this water would not be available to contribute to seepage or groundwater recharge, although seepage from stormwater would still occur.

In the foothills, the infiltration of groundwater to wells depends upon fractures in rocks and the local subsurface geology. Fractured bedrock typically produces varying rates of production in wells, as one well may produce less than five-gallons per minute (gpm), while another well in the near vicinity may produce more than 50-gpm. These foothill wells do not exhibit the same characteristics as wells found in typical groundwater basins (aquifers), such as those found in the valley floor. Contiguous clay layers act as barriers to vertical water migration and may result in minimal or no seepage from the ditch to the wells, when present in these localized areas. As described above, some property owners in the vicinity of the ditch may rely on private wells for domestic water supplies. The groundwater supply for these wells is unlikely to be substantially affected by seepage from the ditch, because per local and state guidance and regulation, wells should be located at depths that are unlikely to be significantly influenced by localized surface water, such as ditch seepage. In recognition of the potential risks to public health through the improper construction of private domestic wells, the El Dorado County Environmental Management Department produced a brochure titled: “A Guide for the Private Well Owner”, dated February 2004. Included in the directives listed in the brochure are the following requirements for private domestic well owners:

- “Wells must be constructed so that they do not allow poor quality surface water or water from shallow fracture zones to migrate into drinking water fracture zones.”
- “Wells must be maintained so that they do not allow the introduction of surface waters or other materials into them through improperly sealed well casings or gravel fill/sounding tubes.”
- “To protect the water quality in the deeper, drinking water zones from poor quality surface water and shallow fracture zone water, the driller also installs a concrete or cement seal (annular or sanitary seal) between the blank casing and the hole.”
- “In El Dorado County, the minimum annular seal depth is 20-feet for domestic wells.” (El Dorado County 2004)

Additionally, the SWRCB provides similar guidance for private well owners, providing further evidence that a connection between groundwater wells and seepage from the ditch is unlikely (SWRCB 2015). Based on groundwater well standards (El Dorado County 1990), the absence of a large groundwater aquifer to store groundwater in the Project area, and the estimated amount of groundwater recharge from precipitation relative to domestic demand, the proposed Project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in groundwater volume or a lowering of the local groundwater levels in individual wells such that the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted. Furthermore, County regulations (El Dorado County 1990) ensure that domestic wells do not receive direct recharge from raw water sources, such as the Upper Main Ditch, so the piping of the ditch would not result to change in domestic well water availability. Therefore, the proposed Project impacts would be less than significant.
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Level of Significance: Less than Significant

Mitigation Required: None Required

Impact HYD-2b Blair Road Alternative Analysis

The Blair Road Alternative would have similar impacts to local groundwater levels and groundwater recharge as the proposed Project (Impact HYD-2a). The water supply that is currently conveyed through the Upper Main Ditch would be piped and conveyed through the Blair Road Alternative, limiting the amount of seepage that would occur out of the ditch to that from stormwater as described for the proposed Project. Groundwater impacts would be identical to those described for the Proposed project and would be less than significant.

Level of Significance: Less than Significant

Mitigation Required: None required

Impact HYD-2c Combined Alternative Analysis

The Combined Alternative would have similar impacts to local groundwater levels and groundwater recharge as the proposed Project and the Blair Road Alternative. The water supply that is currently conveyed through the Upper Main Ditch would be piped and conveyed through the Combined Alternative, limiting the amount of seepage that would occur out of the ditch to that from stormwater as described for the proposed Project and/or the Blair Road Alternative. Groundwater impacts would be identical to those described for the Proposed project and would be less than significant.

Level of Significance: Less than Significant

Mitigation Required: None Required

Impact HYD-2d No Project Alternative Analysis

Under the No Project Alternative, the Upper Main Ditch would remain operating under existing conditions and no piping of the water would occur. Although no construction related impacts to hydrology or water quality would occur, water quality in the ditch would continue to be at risk of impact due to being an open system. Additionally, the existing ditch would continue to experience losses due to evaporation and seepage. However, the ditch would continue to operate as under existing conditions and therefore there would be no impact to groundwater supplies or groundwater recharge.

Level of Significance: No Impact

Mitigation Required: None required
Impact HYD-3 | The Project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site.

Impact HYD-3a Proposed Project Analysis

Drainage patterns could be temporarily altered during construction activities; however, MM GEO-1 would be implemented to control erosion or siltation from entering the watershed. Any potential impacts to surface water drainage patterns resulting from open-cut trenching would be minor and temporary in nature because the ditch would be dry during construction. Temporary channel impacts associated with open-cut trenching would be restricted to the ditch and would not impact smaller ephemeral waterways and would not increase the rate or amount of surface runoff or result in on-site or off-site erosion or siltation.

The Project would not result in any additional impermeable surfaces and the Project would allow for continued passage of stormwater flows along the ditch alignment, similar to the existing capacity of the ditch. As described in the Project Description (Section 2.6.2.6), once the pipeline is installed, the ditch would be reshaped to provide a designed storm channel at the ground surface that is intended to allow for passage of the same 10-year designed stormflows as the existing capacity of the ditch under the existing condition. As under the current condition, storm flows in excess of the 10-year stormflow event would overtop the re-graded ditch bench at historic rates and follow historic drainages. As evaluated in the Domenichelli and Associates, Inc. Basis of Design Report Update, the current ditch, when flowing at full capacity, conveys approximately 40 cfs in the upper reaches, 60 cfs at the Blair Road crossing, and nearly 70 cfs closer to Reservoir 1. The ditch can convey a 10-year storm event with peak flows ranging from approximately 6 to 71 cfs (Domenichelli and Associates 2016). Under the proposed Project, the reshaped channel would continue to have the capacity to allow for passage of flows equivalent to a 10-year storm event, and therefore, the proposed Project is not expected to alter drainage patterns. The District would take appropriate future maintenance actions within its easement rights to maintain the ditch as necessary to protect and maintain District facilities.

Therefore, with MM GEO-1 incorporated, the proposed Project would not substantially alter the existing drainage pattern of the area in a manner that would result in substantial erosion. Thus, impacts would be less than significant with mitigation incorporated.

Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM GEO-1

Impact HYD-3b Blair Road Alternative Analysis

The Blair Road Alternative would have similar impacts to hydrology and drainage as the proposed Project (Impact HYD-3a). The section of the Blair Road Alternative that would be installed in the existing ditch would be constructed in the same manner as the proposed Project and the transition between the constructed sections and non-constructed sections of ditch would include a graded slope to allow normal gravity flow of stormwater within the channel as under the current (No Project) conditions. The ditch would continue to have the capacity to passively receive and convey stormwater flows during storm events. Drainage for stormwater flows would follow the existing ditch as under current conditions as described under the proposed Project above and would have adequate capacity.
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to convey stormwater equal to existing conditions. For the portions of the Upper Main Ditch where the pipeline would not be constructed in the ditch alignment, the District would no longer use those portions of the ditch. As such, the District’s existing easements across private parcels to own and operate the unused portions of the ditch would revert to the underlying property owners. The District would take appropriate future maintenance actions within its pipeline easement rights to maintain the ditch as necessary to protect and maintain District facilities. Additionally, construction on the cross-country portions of this alignment would require construction on undeveloped land, which could cause adverse changes to the existing drainage pattern if handled incorrectly. The pipeline placement in these cross-country portions would occur over a short period of time and MM GEO-1 would be implemented to reduce any potential construction impacts to a less than significant level. The soils in this area would be recontoured post-construction to match the existing grade of the area and provide for adequate draining similar to historical flows. Therefore, the potential to substantially alter existing drainage patterns is less than significant with mitigation incorporated.

Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM GEO-1

Impact HYD-3c Combined Alternative Analysis

The Combined Alternative would have similar impacts to hydrology and drainage as the proposed Project (Impact HYD-3a) and the Blair Road Alternative (Impact HYD-3b). Construction-related erosion and sedimentation also could occur under the Combined Alternative. Additionally, similar to the Blair Road Alternative, the additional cross-country portions of this alternative would require trenching within undeveloped land which could cause adverse changes to the existing drainage pattern if handled incorrectly. The pipeline placement in these cross-country portions would occur over a short period of time, and MM GEO-1 would be implemented to reduce any potential construction impacts to a less than significant level. The soils in this area would be recontoured post-construction to match the existing grade of the area and provide for adequate draining similar to historical flows. Therefore, the potential to substantially alter existing drainage patterns is less than significant with mitigation incorporated.

Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM GEO-1

Impact HYD-3d No Project Alternative Analysis

Under the No Project Alternative, the Upper Main Ditch would remain operating under existing conditions and no construction would occur. Therefore, no impact would occur to the existing drainage in the area.

Level of Significance: No Impact

Mitigation Required: None required
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Impact HYD-4 The Project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

Impact HYD-4a Proposed Project Analysis

The proposed Project would not create or contribute runoff that would exceed the capacity of existing or planned stormwater drainage systems. During construction, open-trenching for the installation of the pipeline would temporarily modify the drainage in the Project area. Once the pipeline is installed, the ditch would be reshaped to allow for passage of the same level of stormflows as the existing capacity of the ditch under the existing condition. As under the current condition, storm flows in excess of the 10-year stormflow event would overtop the re-graded ditch bench at historic rates and follow historic drainages.

Erosion and sedimentation during construction activities could pose a risk of additional sources of polluted runoff; however, MM GEO-1 includes the development and implementation of a SWPPP, which would reduce the potential risk of turbid waters entering the stormwater drainage system.

Improper use and storage of hazardous materials and pollutants associated with Project construction could potentially result in adverse impacts to water quality. Therefore, MM HYD-1 would be implemented, which includes the development of a Spill Prevention and Contingency Plan for the Project. As such, hazardous materials and pollutants near waterbodies that could result in a threat to life or damage to property would be stored and handled to minimize and reduce environmental impacts. Potential impacts to quantitative or qualitative water quality criteria, standards, or objectives, including objectives promulgated by the Central Valley Regional Water Quality Control Board (CVRWQCB) and criteria set forth in the Proposed California Toxics Rule, would be short-term, and temporary. The potential impacts would be reduced to less than significant through the implementation of the MM GEO-1 and HYD-1. As such the proposed Project would have a less than significant impact to pollute water resources including runoff.

Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM GEO-1, MM HYD-1

Impact HYD-4b Blair Road Alternative Analysis

The Blair Road Alternative would have similar impacts to hydrology and water quality as the proposed Project (Impact HYD-4a). Drainage for stormwater flows would follow the existing ditch as under current conditions as described under the proposed Project above and would have adequate capacity for a 10-year storm event. Additionally, construction on the cross-country portions of this alignment would require construction on undeveloped land, which could cause adverse changes to the existing drainage pattern if handled incorrectly. MM GEO-1 would be implemented to reduce any potential construction impacts to a less than significant level. The soils in this area would be recontoured post-construction to match the existing grade of the area and provide for adequate draining similar to historical flows. MM HYD-1 would also be required for this alternative to reduce the potential impact to a less than significant level by incorporating a Spill Prevention and Contingency Plan for construction related spills. Therefore, with the implementation of these mitigation measures, impacts from the Blair Road Alternative to the existing stormwater facilities would be less than significant.
3.9.16 Hydrology and Water Quality Mitigation

3.9.5.1 Mitigation Measure GEO-1 Prepare and Implement a Stormwater Pollution Prevention Plan

See MM GEO-1, Section 3.6.

3.9.5.2 Mitigation Measure HYD-1 Avoid/Minimize Potential Impacts from Construction Material Release

Prior to construction, the contractor shall develop a Spill Prevention and Contingency Plan for the Project. The plan shall include, but would not be limited to, the following:

- Containment and cleanup equipment (e.g., absorbent pads, mats, socks, granules, drip pans, shovels, and lined clean drums) shall be at the staging areas and construction site for use, as needed;

- Staging areas where refueling, storage, and maintenance of equipment occur shall not be located within 100- feet of drainages to reduce the potential for contamination by spills;
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- Construction equipment shall be maintained and kept in good operating condition to reduce the likelihood of line breaks or leakage;

- No refueling or servicing shall be done without absorbent material (e.g. absorbent pads, mats, socks, pillows, and granules) or drip pans underneath to contain spilled material. If these activities result in an accumulation of materials on the soil, the soil shall be removed and properly disposed of as hazardous waste;

- If a spill is detected, construction activity shall cease immediately, and the procedures described in the Spill Prevention and Contingency Plan shall be immediately enacted to safely contain and remove spilled materials;

- Spill areas shall be restored to pre-spill conditions, as practicable; and

- Spills shall be documented and reported to the District and appropriate resource agency personnel.

Mitigation Measure HYD-1 Implementation

**Responsible Party:** The District shall require the construction contractor develop the Spill Prevention and Contingency Plan for all activities in the vicinity of drainages. This mitigation measure shall be referenced in the Contract Documents bid for the Project.

**Timing:** The Plan shall be implemented prior to and during all phases of construction.

**Monitoring and Reporting:** Evaluation of the Spill Prevention and Contingency Plan shall be conducted by the District. Reports of spills shall be documented and kept on file at the project site and the District office.

**Standard of Success:** Prevention of construction material spills in drainages near the Project area.
### 3.9.6 Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>amsl</td>
<td>above mean sea level</td>
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<tr>
<td>BMP</td>
<td>Best Management Practices</td>
</tr>
<tr>
<td>CEQA</td>
<td>California Environmental Quality Act</td>
</tr>
<tr>
<td>cfs</td>
<td>Cubic Feet per Second</td>
</tr>
<tr>
<td>CIMIS</td>
<td>California Irrigation Management Information System</td>
</tr>
<tr>
<td>County</td>
<td>El Dorado County</td>
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<tr>
<td>CVRWQCB</td>
<td>Central Valley Regional Water Quality Control Board</td>
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<tr>
<td>CWA</td>
<td>Clean Water Act</td>
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<tr>
<td>DDW</td>
<td>Division of Drinking Water</td>
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<tr>
<td>DWR</td>
<td>California Department of Water Resources</td>
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<tr>
<td>District</td>
<td>El Dorado Irrigation District</td>
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<td>EIR</td>
<td>Environmental Impact Report</td>
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<td>ETo</td>
<td>Evapotranspiration</td>
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<tr>
<td>FEMA</td>
<td>Federal Emergency Management Act</td>
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<tr>
<td>FIRM</td>
<td>Flood Insurance Rate Map</td>
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<tr>
<td>gpm</td>
<td>gallons per minute</td>
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<tr>
<td>MM</td>
<td>Mitigation Measure</td>
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<tr>
<td>NFIP</td>
<td>National Flood Insurance Program</td>
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<tr>
<td>NOI</td>
<td>Notice of Intent</td>
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<tr>
<td>NOP/IS</td>
<td>Notice of Preparation/Initial Study</td>
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<tr>
<td>NPDES</td>
<td>National Pollution Discharge Elimination System</td>
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<tr>
<td>Porter-Cologne</td>
<td>Porter Cologne Water Quality Control Act</td>
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<tr>
<td>RWQCB</td>
<td>Regional Water Quality Control Board</td>
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<td>SWPPP</td>
<td>Stormwater Pollution Prevention Plan</td>
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<td>SWRCB</td>
<td>State Water Resources Control Board</td>
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<td>WDR</td>
<td>Waste Discharge Requirement</td>
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3.10 NOISE

3.10.1 Basis for Analysis

The California Environmental Quality Act (CEQA) Guidelines’ Appendix G Environmental Checklist was assessed during the Notice of Preparation/Initial Study (NOP/IS) scoping process (included in Appendix A) to identify the Project components that have the potential to cause a significant impact. The following potential impacts were determined to warrant further evaluation within this Environmental Impact Report (EIR):

- Exposure of persons to or generate of noise levels in excess of standards established in the local general plan, noise ordinance, or applicable standards of other agencies or result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels; or
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

The following potential impacts were determined to have a less than significant or no impact during the NOP/IS scoping process (included in Appendix A), and are not discussed further in this section:

- Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- 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 expose people residing or working in the project area to excessive noise levels; or
- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

The remainder of this section describes the regulatory and environmental baseline setting to support the evaluation of the potential impacts and describes the potential impacts from noise that may result from implementation of the Project, and identifies mitigation for potentially significant impacts, where feasible.

3.10.2 Regulatory Framework

This section discusses the federal, state regulations and local policies and objectives that govern noise and vibrations applicable to the Project.

3.10.2.1 Federal

Federal, State, and local agencies regulate different aspects of environmental noise. Generally, the federal government sets noise standards for transportation-related noise sources closely linked to interstate commerce. These include aircraft, locomotives, and trucks. No federal noise standards are directly applicable to the Project.
3.10.2.2 State

The State government sets noise standards for transportation noise sources such as automobiles, light trucks, and motorcycles. Noise sources associated with industrial, commercial, and construction activities are generally subject to local control through noise ordinances and general plan policies. Local general plans identify general principles intended to guide and influence development plans.

The State of California General Plan Guidelines (Governor’s OPR 2017) establishes guidelines for the preparation of local general plan noise elements, including a sound level/land use compatibility chart that categorizes, by land use, outdoor day/night noise level (Ldn) ranges in four categories (normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable). For many land uses, the chart shows overlapping Ldn ranges for two or more compatibility categories.

The noise element guidelines identify the normally acceptable range of Ldn values for low-density residential uses as less than 60 dB and the conditionally acceptable range as 55–70 dB. The normally acceptable range for high-density residential uses is identified as Ldn values of less than 65 dB, and the conditionally acceptable range is identified as 60–70 dB. For educational and medical facilities, Ldn values of less than 70 dB are considered conditionally acceptable, and Ldn values of 60–70 dB are considered normally acceptable. For office and commercial land uses, Ldn values of less than 70 dB are considered normally acceptable, and Ldn values of 67.5–77.5 are categorized as conditionally acceptable. When noise levels are in the conditionally acceptable range, new construction should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation requirements are included in the design.

These overlapping Ldn ranges are intended to indicate that local conditions (existing sound levels and community attitudes toward dominant sound sources) should be considered in evaluating land use compatibility at specific locations.

3.10.2.3 Local

El Dorado County General Plan

The Project is proposed by El Dorado Irrigation District (the District), a special district that supplies water to customers throughout much of El Dorado County (County). Pursuant to Government Code sections 53091(D) and (E), many of the District’s activities are not subject to local zoning or land use requirements, as stated below.

*Building and zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code.*

As a special district with equal authority, the District is exempt from following goals and policies within the County’s General Plan and Zoning Ordinance. However, the District aims to comply to with those goals and policies outlined in the General Plan and uses these goals and policies as a metric for formulating an impact analysis (EDCGP 2015).

**Goal 6.5: Acceptable Noise Levels.** Ensure that County residents are not subjected to noise beyond acceptable levels.
The County has established maximum allowable noise exposure for non-transportation noise sources in rural regions as outlined in Table 3.10-1 below. However, as described in Policy 6.5.1.11, detailed below, these noise exposure levels do not apply to construction activities as long as construction occurs between the hours of 7 am and 7 pm on weekdays, and 8 am and 5 pm on weekends and federally recognized holidays.

### Table 3.10-1 Maximum Allowable Noise Exposure for Non-Construction Noise Sources in Rural Regions

<table>
<thead>
<tr>
<th>Land Use Designation</th>
<th>Time Period</th>
<th>Noise Level, dB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Leq</td>
</tr>
<tr>
<td>All Residential (LDR)</td>
<td>7 am – 7 pm</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>7 pm – 10 pm</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>10 pm – 7 am</td>
<td>40</td>
</tr>
<tr>
<td>Commercial, Recreation, and Public Facilities (C, TR, PF)</td>
<td>7 am - 7 pm</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>7 pm - 7 am</td>
<td>60</td>
</tr>
<tr>
<td>Rural Land, Natural Resources, Open Space, and Agricultural Lands (RR, NR, OS, AL)</td>
<td>7 am – 7 pm</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>7 pm – 7 am</td>
<td>60</td>
</tr>
</tbody>
</table>

Policy 6.5.1.11: The standards outlined in Table 3.10-1 shall not apply to those activities associated with actual construction of a project as long as such construction occurs between the hours of 7 am and 7 pm, Monday through Friday, and 8 am and 5 pm on weekends and federally recognized holidays. Further, the standards outlined in Table 3.10-1 shall not apply to public projects to alleviate traffic congestion and safety hazards.

As stated above, the District is exempt from the County’s noise ordinance as a jurisdiction with equal authority. However, the District has incorporated these standards to help define the CEQA significance criteria and establish what would constitute a substantial increase in ambient noise levels.

### 3.10.3 Environmental Setting

#### 3.10.3.1 Noise Baseline and Terminology

See Table 3.10-2 for terminology and definitions used throughout this section and Table 3.10-3 for typical noise levels.
### Table 3.10-2 Definitions of Acoustical Terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>dB, Decibel</td>
<td>Unit of measurement of sound level.</td>
</tr>
<tr>
<td>dBA, decibel</td>
<td>A unit of measurement of sound level corrected to the A-weighted scale, as defined in ANSI S1.4-1971 (R1976), using a reference level of 20 micropascals (0.00002 Newtons per square meter).</td>
</tr>
<tr>
<td>A – Weighted</td>
<td>A sound measurement scale, which corrects the pressures of individual frequencies according to human sensitivities. The scale is based upon the fact that the region of highest sensitivity for the average ear is between 2,000 and 4,000 Hz. Sound levels are measured on a logarithmic scale in decibels, dBA. The universal measure for environmental sound is the A-weighted sound level, dBA.</td>
</tr>
<tr>
<td>Scale</td>
<td></td>
</tr>
<tr>
<td>Hz, Hertz</td>
<td>Unit of measurement of frequency, numerically equal to cycles per second.</td>
</tr>
<tr>
<td>Loudness</td>
<td>A listener’s perception of sound pressure incident in his ear.</td>
</tr>
<tr>
<td>L10, L100, L50, L90</td>
<td>The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.</td>
</tr>
<tr>
<td>Leq, Equivalent Noise Level</td>
<td>Also called the equivalent continuous noise level. It is the continuous sound level that is equivalent, in terms of noise energy content, to the actual fluctuating noise existing at the location over a given period, usually one hour. Leq is usually measured in hourly intervals over long periods in order to develop 24-hour noise levels.</td>
</tr>
<tr>
<td>CNEL, Community Noise Equivalent Level</td>
<td>The CNEL is a measure of the cumulative noise exposure in the community, with greater weights applied to evening and night time periods. This noise descriptor is the equivalent noise level over a 24-hour period mathematically weighted during the evening and night when residents are more sensitive to intrusive noise. The daytime period is from 7 am to 7 pm; evening from 7 pm to 10 pm; and nighttime from 10 pm to 7 am. A weighting factor of 1 dB is added to the measured day levels defined as 7 am to 7 pm, evening levels (7 pm to 10 pm) have a weighting factor of three and 10 dB to the night time levels (10 pm to 7 am). The weighted levels over a 24-hour period are then averaged to produce the single number CNEL rating.</td>
</tr>
<tr>
<td>Ldn, Day/Night Noise Level</td>
<td>The same as CNEL except that the evening time period is not considered separately, but instead it is included as part of the daytime period. Measurements of both CNEL and Ldn in the same residential environments reveal that CNEL is usually slightly higher (by less than 1 dB) than Ldn due to the evening factor weighting.</td>
</tr>
<tr>
<td>Lmin, Lmax</td>
<td>The minimum and maximum A-weighted noise level during the measurement period.</td>
</tr>
<tr>
<td>Ambient Noise Level</td>
<td>The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.</td>
</tr>
<tr>
<td>Intrusive</td>
<td>That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.</td>
</tr>
</tbody>
</table>

The A-weighted decibel (dBA) is a method of sound measurement which assigns weighted values to selected frequency bands in an attempt to reflect how the human ear responds to sound. The range of human hearing is from 10 dBA (the threshold of hearing) to about 110 dBA which is the threshold of pain. Examples of noise and their A-weighted decibel levels are shown in Table 3.10-3. In general, a 3 to 5 dBA change in community noise levels starts to become noticeable, while 1 to 2 dBA changes are generally not perceived. Quiet suburban areas typically have noise levels in the range of 40–50 dBA, while those along arterial streets are in the 50–60 dBA or greater range. Normal conversational levels are in the 60–65 dBA ranges.
Table 3.10-3   Typical Sound Levels Measured in the Environment

<table>
<thead>
<tr>
<th>At a Given Distance from Noise Source (feet)</th>
<th>A–Weighted Sound Level in dBA</th>
<th>Noise Environments</th>
<th>Subjective Impression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>140</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Civil Defense Siren (100')</td>
<td>130</td>
<td>Rock Music Concert</td>
<td></td>
</tr>
<tr>
<td>Jet Takeoff (200')</td>
<td>120</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>110</td>
<td>Pain Threshold</td>
<td></td>
</tr>
<tr>
<td>Diesel Pile Driver (100')</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>90</td>
<td>Boiler Room Printing Press Plant</td>
<td>Very Loud</td>
</tr>
<tr>
<td>Freight Cars (50')</td>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pneumatic Drill (50')</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freeway (100')</td>
<td>70</td>
<td>In Kitchen with Garbage Disposal Running</td>
<td></td>
</tr>
<tr>
<td>Vacuum Cleaner (10')</td>
<td>60</td>
<td>Data Processing Center</td>
<td></td>
</tr>
<tr>
<td>Light Traffic (100')</td>
<td>50</td>
<td>Department Store</td>
<td></td>
</tr>
<tr>
<td>Large Transformer (200')</td>
<td>40</td>
<td>Private Business Office</td>
<td>Quiet</td>
</tr>
<tr>
<td>Soft Whisper (5')</td>
<td>30</td>
<td>Quiet Bedroom</td>
<td></td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>Recording Studio</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>Threshold of Hearing</td>
<td></td>
</tr>
</tbody>
</table>


3.10.3.2 General Noise and Vibration Setting

The existing noise environment in a project area is characterized by the area’s general level of development because the level of development and ambient noise levels tend to be closely correlated. Areas which are not urbanized are relatively quiet, while areas which are more urbanized are noisier as a result of roadway traffic, industrial activities, and other human activities. Table 3.10-4 summarizes typical ambient noise levels based on level of development. Given the rural residential nature of the Project area, ambient noise levels are expected to be in the range of 40 to 50 dBA.
Table 3.10-4  Population Density and Associated Ambient Noise Levels

<table>
<thead>
<tr>
<th>Population Density</th>
<th>dBA, Ldn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>40-50</td>
</tr>
<tr>
<td>Small Town or quiet suburban residential</td>
<td>50</td>
</tr>
<tr>
<td>Normal suburban residential</td>
<td>55</td>
</tr>
<tr>
<td>Urban residential</td>
<td>60</td>
</tr>
<tr>
<td>Noisy urban residential</td>
<td>65</td>
</tr>
<tr>
<td>Very noisy urban residential</td>
<td>70</td>
</tr>
<tr>
<td>Downtown, major metropolis</td>
<td>75-80</td>
</tr>
<tr>
<td>Area adjoining freeway or near major airport</td>
<td>80–90</td>
</tr>
</tbody>
</table>


The Project would be built within rural residential neighborhoods in the County. Noise levels throughout the Project area are typical of rural neighborhoods. Noise receptors, including homes, schools, and churches, are found throughout the area. The measurement of any sound level requires language used specifically for the measurement of acoustical conditions. Table 3.10-3 defines technical terms that are used in this section. The dB is the preferred unit used to measure sound levels utilizing a logarithmic scale to account for the large range in audible sound intensities. A general rule for the dB scale is that a 10-dB increase in sound is perceived as a doubling of loudness by the human ear. For example, a 55-dB sound level would sound twice as loud as a 45-dB sound level. The average healthy person cannot detect differences of one- dB whereas a five- dB change is clearly noticeable.

Several sound measurement descriptors are used to assess the effects of sound on the human environment. These include the equivalent sound level (Leq) which is the level of a constant sound that has the same sound energy as the actual fluctuating sound. It is similar to the average sound level. The day-night sound level, Ldn, is similar to the 24-hour Leq; except that a 10-dB penalty is added to sound levels between 10 pm and 7 am to account for the greater sensitivity of people to sound at night. The Community Noise Equivalent Level (CNEL) also places a weighted factor on sound events occurring in the evening hours. The Leq value is the sound level (L) that is exceeded 90 percent of the time and is often used to describe the background or residual sound level.

Effects of Noise

*Hearing Loss*

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise. According to the California Department of Industrial Relations, Division of Occupational Safety and Health, which enforces California Occupation Safety and Health Administration...
(Cal/OSHA) Occupational Noise Exposure Standard is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90- dBA averaged over an eight (8)-hour time period.

**Sleep and Speech Interference**

The thresholds for speech interference indoors are 45- dBA if the noise is steady and 55- dBA if the noise is fluctuating. Outdoor thresholds are 15- dBA higher. Steady noise of sufficient intensity (above 35- dBA), and fluctuating noise levels above 45- dBA have been shown to affect sleep. Interior residential standards for multi-family residences are set by the State of California at 45- dBA Ldn. Typically, the highest steady traffic noise level during the daytime is equal to the Ldn, and nighttime levels are 10- dBA lower. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses.

Typical structural attenuation is 12-17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is 20- dBA for an older structure and 25- dBA for a newer structure. Sleep and speech interference is therefore possible when exterior noise levels are 57-62 dBA Ldn with open windows and 65-70 dBA Ldn if the windows are closed. Levels of 55-60 dBA are common along collector streets and secondary arterials, while 65-70 dBA is a typical value for a primary/major arterial. Levels of 75-80 dBA are normal noise levels at the first row of development outside a freeway right-of-way (ROW).

**Annoyance**

Attitude surveys are used for measuring the annoyance felt in a community for noise intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that the causes for annoyance include: interference with speech, radio, and television; house vibrations; and interference with sleep and rest. The Ldn as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed.

People appear to respond more adversely to aircraft noise as opposed to general community noise levels. When the Ldn is 60- dBA; approximately 10- percent of the population is highly annoyed. Each decibel increase up to 70- dBA adds two percentage points to the number of people highly annoyed. Above 70- dBA, each decibel increase results in a three percent increase in the percentage of the population highly annoyed.

**Decibel Addition**

Because decibels are logarithmic units, sound pressure levels cannot be added or subtracted through ordinary arithmetic. On the dB scale, a doubling of sound energy corresponds to a three- dB increase. In other words, when two identical sources are each producing sound of the same loudness, their combined sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one source produces a sound pressure level of 70- dBA, two identical sources would not produce 140- dBA—rather, they would combine to produce 73- dBA. The cumulative sound level of any number of sources can be determined using decibel addition.

**Vibration**

Operation of heavy construction equipment, particularly pile driving and other impact devices such as pavement breakers, create seismic waves that radiate along the surface of the earth and downward into the earth. These surface waves can be felt as ground vibration. Vibration from operation of this equipment can result in effects ranging from annoyance of people to damage of structures. Varying geology and distance would result in different vibration
Noise
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levels containing different frequencies and displacements. In all cases, vibration amplitudes would decrease with increasing distance.

Perceptible groundborne vibration is generally limited to areas within a few hundred feet of construction activities. As seismic waves travel outward from a vibration source, they excite the particles of rock and soil through which they pass and cause them to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity (in inches per second) at which these particles move is the commonly accepted descriptor of the vibration amplitude, referred to as the peak particle velocity (PPV).

Table 3.10-5 summarizes typical vibration levels generated by construction equipment (Federal Transit Administration 2006).

**Table 3.10-5  Vibration Source Levels for Construction Equipment**

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Peak Particle Velocity at 25 Feet (in/sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pile driver (impact)</td>
<td>0.644 to 1.518</td>
</tr>
<tr>
<td>Pile drive (sonic/vibratory)</td>
<td>0.170 to 0.734</td>
</tr>
<tr>
<td>Vibratory roller</td>
<td>0.210</td>
</tr>
<tr>
<td>Hoe ram</td>
<td>0.089</td>
</tr>
<tr>
<td>Large bulldozer</td>
<td>0.089</td>
</tr>
<tr>
<td>Caisson drilling</td>
<td>0.089</td>
</tr>
<tr>
<td>Loaded trucks</td>
<td>0.076</td>
</tr>
<tr>
<td>Jackhammer</td>
<td>0.035</td>
</tr>
<tr>
<td>Small bulldozer</td>
<td>0.003</td>
</tr>
</tbody>
</table>

Source: Federal Transit Administration 2006

Vibration amplitude attenuates over distance and is a complex function of how energy is imparted into the ground and the soil conditions through which the vibration is traveling. The following equation can be used to estimate the vibration level at a given distance for typical soil conditions (Federal Transit Administration 2006). PPVref is the reference PPV from Table 3.10-5:

\[ PPV = PPV_{ref} \times (25/\text{Distance})^{1.5} \]

Table 3.10-6 summarizes guidelines vibration annoyance potential criteria suggested by Caltrans (California Department of Transportation 2004).
Table 3.10-6  Guideline Vibration Annoyance Potential Criteria

<table>
<thead>
<tr>
<th>Human Response</th>
<th>Maximum PPV (in/sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transient Sources</td>
</tr>
<tr>
<td>Barely perceptible</td>
<td>0.04</td>
</tr>
<tr>
<td>Distinctly perceptible</td>
<td>0.25</td>
</tr>
<tr>
<td>Strongly perceptible</td>
<td>0.9</td>
</tr>
<tr>
<td>Severe</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Notes: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seal equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: California Department of Transportation 2004.

Table 3.10-7 summarizes guideline vibration damage potential criteria suggested by Caltrans.

Table 3.10-7  Guideline Vibration Damage Potential Criteria

<table>
<thead>
<tr>
<th>Structure and Condition</th>
<th>Maximum PPV (in/sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transient Sources</td>
</tr>
<tr>
<td>Extremely fragile historic buildings, ruins, ancient monuments</td>
<td>0.12</td>
</tr>
<tr>
<td>Fragile buildings</td>
<td>0.2</td>
</tr>
<tr>
<td>Historic and some old buildings</td>
<td>0.5</td>
</tr>
<tr>
<td>Older residential structure</td>
<td>0.5</td>
</tr>
<tr>
<td>New residential structures</td>
<td>1.0</td>
</tr>
<tr>
<td>Modern industrial/commercial buildings</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Notes: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seal equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: California Department of Transportation 2004.

3.10.3.3 Proposed Project Noise Receptors

The specific receptors that would be subject to noise from construction activities associated with the proposed Project include receptors along the ditch. Figure 3.10-1 below shows the receptor distance from the existing ditch and is categorized into the following distances based on potential for exposure to construction noise: 0- to 25- feet, 26 to - 50- feet, and 51- to 100- feet from the ditch. Table 3.10-8 below shows the results from the figure and the specific number of receptors that fall into each of these categories.
Table 3.10-8  Receptor Distances from Proposed Project

<table>
<thead>
<tr>
<th>Distance from Proposed Project</th>
<th>Receptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-25 feet</td>
<td>0</td>
</tr>
<tr>
<td>26-50 feet</td>
<td>0</td>
</tr>
<tr>
<td>51-100 feet</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

3.10.3.4 Alternatives

The noise and vibration setting for the Blair Road Alternative and the Combined Alternative would be similar to that of the proposed Project due to the overlapping footprints. Where the proposed Project and the Alternatives differ generally consists in the proximity to certain receptors which is described in further detail below.

Blair Road Noise Receptors

The following figure (See Figure 3.10-2) shows the varying distances of receptors from the Blair Road Alternative alignment. Table 3.10-9 below shows the quantitative representation of receptor distances from the Blair Road Alternative including receptors with distances of: 0- to 25- feet, 26 to -50- feet, and 51- to 100- feet from the Blair Road Alternative.

Table 3.10-9  Receptor Distances from Blair Road Alternative

<table>
<thead>
<tr>
<th>Distance from the Blair Road Alternative</th>
<th>Receptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-25 feet</td>
<td>6</td>
</tr>
<tr>
<td>26-50 feet</td>
<td>5</td>
</tr>
<tr>
<td>51-100 feet</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

Combined Alternative Noise Receptors

Figure 3.10-3 shows the varying distances of receptors from the Combined Alternative alignment. Table 3.10-10 below shows the quantitative representation of receptor distances from the Combined Alternative including receptors with distances of: 0- to 25- feet, 26 to -50- feet, and 51- to 100- feet from the Combined Alternative.

Table 3.10-10 Receptor Distances from the Combined Alternative

<table>
<thead>
<tr>
<th>Distance from the Combined Alternative</th>
<th>Receptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-25 feet</td>
<td>6</td>
</tr>
<tr>
<td>26-50 feet</td>
<td>3</td>
</tr>
<tr>
<td>51-100 feet</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>
3.10.4 Environmental Impacts

This section analyzes the Project’s potential to result in significant impacts to noise and vibration. When the Project’s impact was determined to be significant, feasible mitigation measures were identified to reduce or avoid that impact.

3.10.4.1 Methodology for Analysis

Available documentation related to the existing noise environment and receptors applicable in the Upper Main Ditch Project area, including previous environmental documents prepared for projects in the area, were reviewed to evaluate potential noise impacts. Further, regulatory information was reviewed to address site specific concerns to these impacts by the Project.

Baseline ambient noise levels were identified by referring to the El Dorado County General Plan as well as Table 3.10-4, which defines population density noise levels. These baseline levels were used as an input to the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM). The RCNM is used as the FHWA’s national standard for predicting noise generated from construction activities. The RCNM analysis includes the calculation of noise levels (Lmax and Leq) at incremental distances for a variety of construction equipment. The spreadsheet inputs include acoustical use factors, Lmax values, and Leq values at various distances depending on the ambient noise measurement location. The results of the RCNM are shown in Table 3.10-11 below.

Table 3.10-11 Summary of Federal Highway Administration Roadway Construction Noise Model

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Acoustical Use Factor (%)</th>
<th>Sound Level at Residence (25 Feet)</th>
<th>Sound Level at Residence (50 Feet)</th>
<th>Sound Level at Residence (100 Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lmax</td>
<td>Leq</td>
<td>Lmax</td>
</tr>
<tr>
<td>Chain Saw</td>
<td>20</td>
<td>89.7</td>
<td>82.8</td>
<td>83.7</td>
</tr>
<tr>
<td>Backhoe</td>
<td>40</td>
<td>83.6</td>
<td>79.6</td>
<td>77.6</td>
</tr>
<tr>
<td>Excavator</td>
<td>40</td>
<td>86.7</td>
<td>82.8</td>
<td>80.7</td>
</tr>
<tr>
<td>Front End Loader</td>
<td>40</td>
<td>85.1</td>
<td>81.2</td>
<td>79.1</td>
</tr>
<tr>
<td>Dump Truck</td>
<td>40</td>
<td>82.5</td>
<td>78.5</td>
<td>76.5</td>
</tr>
<tr>
<td>Paving Equipment</td>
<td>50</td>
<td>83.2</td>
<td>80.2</td>
<td>77.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>89.7</strong></td>
<td><strong>88.9</strong></td>
<td><strong>83.7</strong></td>
</tr>
</tbody>
</table>

Source: Federal Highway Administration 2006.

3.10.4.2 Project Impact Analysis

This section discusses potential impacts associated with the Project and provides mitigation measures where necessary and feasible.
Impact NOS-1 The Project would not expose persons to or generate noise levels in excess of standards established in the local general plan, noise ordinance, or applicable standards of other agencies nor would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels.

Impact NOS-1a Proposed Project Analysis

Noise would be generated during construction of the proposed Project. At any given location, construction noise would be generated over a relatively short period and would not create a permanent addition to background noise levels. Noise receptors in the vicinity of the proposed Project alignment may be affected by temporary construction noise. The closest receptors to the proposed Project’s construction activities are receptors distributed along the ditch alignment (See Figure 3.10-1) approximately 15 receptors within 100-feet of the ditch (Table 3.10-8). No receptors were identified within 25- or 50-feet of the ditch where the temporary construction noise would be the most noticeable.

The expected sequence of construction events near a given receptor would include preliminary grading, digging trenches, installation of the pipe, welding, and backfill of the trenches. These activities would occur over a period of about three and a half months during the fall and winter during the ditch outage. The use of heavy equipment would only occur intermittently for a few weeks at most (more likely a few days) at any given location along the ditch as construction progresses in a linear fashion. Trenching, for example, would proceed at a rate of approximately 100-feet per day, so the trenching equipment would only be in close proximity to a given receptor for one day. Similarly, grading, stripping, and backfill would each occur over a one-day period near any one receptor.

The RCNM was run to determine maximum noise levels from construction equipment that would be used during various phases of the proposed Project, results of the model are shown in Table 3.10-11 above. According to Table 3.10-11, instantaneous (Lmax) noise levels from construction equipment could reach 89.7 Lmax dBA and 88.3 Leq dBA at 25-feet (representing a worst-case scenario if a backhoe, excavator, frontend loader and dump truck were to operate simultaneously in the same location, which is unlikely) but would more likely be the value of any one piece of equipment listed within Table 3.10-11 at a time. Under a worst-case scenario, noise levels resulting from construction equipment at 25-feet would be equivalent to a boiler room printing press plant or freight cars at 50-feet. The sound levels would be classified as very loud; however, they would be temporary in nature, with limited periods during heavy construction that could reach peak noise levels. More likely noise levels from construction would be those from use of an excavator at or around 86.7 Lmax dBA at 25-feet and attenuate (decrease) quickly the further away you get due to the varied topography and high density of vegetation. Although the noise levels, as shown in Table 3.10-11 would be higher than ambient conditions, construction noise at each receptor would be temporary, typically occurring in bursts and with peak noise levels only lasting a few minutes at a time over the course of a couple of days.

If construction were to be extended for over a week at a location where receptors are located within 25-feet to 100-feet of construction activities, peak noise levels might amount to those of a pesky annoyance, but they would be intermittent and temporary and would not be of sufficient duration or amplitude to constitute a significant impact.

The County General Plan reflects the County decisionmakers’ judgment as to what constitutes acceptable noise limits within the context of El Dorado County and thus provides a basis for considering significance thresholds of noise volumes. County General Plan policy 6.5.1.111 provides that construction activities that occur between the daytime
Noise
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hours of 7 am and 7 pm, Monday through Friday, and 8 am and 5 pm on weekends and federally recognized holidays are exempt from compliance with County noise standards. Such exemptions for daytime construction noise are common in both urban and rural jurisdictions throughout the State and reflect a broad consensus that temporary noise increases from construction activities are acceptable and would not be considered to result in a significant impact as defined by CEQA (substantial adverse change in the conditions surrounding the project). While, the County’s noise standards do not apply to the District’s operations, and impacts would be less than significant for the reasons discussed above, the District aims to address the concerns of residences affected by construction activities. The District thus has incorporated the County’s limits on hours of construction into the Project and also would implement MM NOS-1, Restriction of Construction Operational Hours and Resident Coordination, to ensure construction activities further reduce noise impacts. Under MM NOS-1 the District would coordinate with residents to minimize the adverse impacts associated with construction noise. If unforeseen circumstances require construction occur outside of the daytime hours of construction, MM NOS-1 provides a mechanism for the District to give advanced notice to the residences within 500 feet of construction activities and would limit construction to areas greater than 100-feet away from residences to ensure typical construction noise is attenuated below a level to cause substantial disruption of speech or sleep. Therefore, implementation of MM NOS-1 would further reduce impacts and cover the most conservative regulations during construction.

Level of Significance: Less than Significant

Mitigation Required: None, but MM NOS-1 would be adopted.

Impact NOS-1b Blair Road Alternative Analysis

The noise associated with construction under the Blair Road Alternative would be similar to that of the proposed Project and the results from the RCNM (Table 3.10-11 above) would apply to the Blair Road Alternative as well. The alternative would incorporate the same limits on construction hours, and would have a similar construction schedule, equipment type, and proximity to nearby receptors (See Figure 3.10-2 above). As shown in Table 3.10-9, a total of 14 receptors would be within 100-feet of the Blair Road Alternative – six- within 25-feet, five- within 26- to 50-feet, and three- within 51- to 100-feet. The Blair Road Alternative would have more receptors in closer proximity to construction activities than the proposed Project; however, construction noise exposure would still be limited and would not be considered significant. The sections of the Blair Road Alternative that travel cross-country terrain would have a lower potential of affecting receptors from noise during construction because there would be fewer land owners, people, and buildings nearby (See Figure 3.10-2). This would be a relatively small portion of the alignment, with the majority of the construction occurring along Blair Road. Additionally, the Blair Road Alternative would occur over one construction season as opposed to the two construction seasons required for the proposed Project, resulting in a shorter total time frame but slightly longer active construction period of approximately 13 months.

For the reasons discussed for the proposed Project, impacts from construction noise under the Blair Road Alternative would be considered less than significant. Implementation of MM NOS-1 would further reduce noise impacts of this alternative.

Level of Significance: Less than Significant

Mitigation Required: None, but MM NOS-1 would be adopted.
Impact NOS-1c Combined Alternative Analysis

The noise associated with construction under the Combined Alternative would be similar to that described for the proposed Project and the Blair Road Alternative, and therefore, the RCNM (Table 3.10-11) would apply to the Combined Alternative. As such, impacts related to construction noise would be similar to those discussed for the proposed Project and the Blair Road Alternative above and would not be considered significant. The receptors along the Combined Alternative are shown on Figure 3.10-3 and in Table 3.10.10 and include a total of six receptors within 25-feet, three receptors within 26- to 50-feet, and four receptors within 51- to 100-feet. Similar to the construction schedule for the Blair Road Alternative, the Combined Alternative would occur over one construction season and would last approximately 13 months. For the reasons discussed for the proposed Project, impacts from construction noise along the Blair Road Alternative would be considered less than significant. Implementation of MM NOS-1 would further reduce noise impacts of this alternative.

For the reasons discussed for the proposed Project, impacts from construction noise impacts under the Combined Alternative would be considered less than significant. Implementation of MM NOS-1 would further reduce noise impacts of this alternative.

**Level of Significance:** Less than Significant

**Mitigation Required:** None, but MM NOS-1 would be adopted.

Impact NOS-1d No Project Alternative Analysis

Under the No Project Alternative, no construction activities would occur, and no construction noise would occur. Therefore, there would be no noise impacts.

**Level of Significance:** No Impact

**Mitigation Required:** None Required

### Impact NOS-2 The Project would not expose persons to or generate excessive groundborne vibration or groundborne noise levels.

Impact NOS-2a Proposed Project Analysis

There are 15 receptors within 100-feet of the proposed Project (Figure 3.10-1, Table 3.10-8). During construction of the proposed Project, equipment such as excavators, loaders, backhoes, and loaded trucks may be used between 25- and 100- feet from the closest receptor. Construction equipment that would be used during Project construction would generate vibration levels between 0.003 PPV, for a small bulldozer, excavator, loader, or backhoe operating at a distance of 25-feet and 0.010 PPV, for loaded trucks, as measured at a distance of 100-feet from private properties. As shown in Table 3.10-12, the groundborne vibration levels for most proposed Project equipment are below the 0.1 PPV vibration threshold\(^1\) at which human annoyance could occur, and none would be high enough to risk damage to residences (Table 3.10-7).

---

\(^1\) Federal Transit Administration (FTA)
Table 3.10-12 Construction Equipment Related to Groundborne Vibration

<table>
<thead>
<tr>
<th>Type of Equipment</th>
<th>Peak Particle Velocity at 25 feet</th>
<th>Peak Particle Velocity at 50 feet</th>
<th>Peak Particle Velocity at 100 feet</th>
<th>Level at Which Human Annoyance Could Occur</th>
<th>Potential for Proposed Project to Cause Human Annoyance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Bulldozer</td>
<td>0.089</td>
<td>0.031</td>
<td>0.011</td>
<td>0.1</td>
<td>None</td>
</tr>
<tr>
<td>Loaded Trucks</td>
<td>0.076</td>
<td>0.027</td>
<td>0.010</td>
<td>0.1</td>
<td>None</td>
</tr>
<tr>
<td>Small Bulldozer</td>
<td>0.003</td>
<td>0.001</td>
<td>0.000</td>
<td>0.1</td>
<td>None</td>
</tr>
<tr>
<td>Jackhammer</td>
<td>0.035</td>
<td>0.012</td>
<td>0.004</td>
<td>0.1</td>
<td>None</td>
</tr>
<tr>
<td>Vibratory Hammer</td>
<td>0.070</td>
<td>0.025</td>
<td>0.009</td>
<td>0.1</td>
<td>None</td>
</tr>
<tr>
<td>Vibratory Compactor/roller</td>
<td>0.210</td>
<td>0.074</td>
<td>0.026</td>
<td>0.1</td>
<td>Slight</td>
</tr>
</tbody>
</table>


The project would utilize a vibratory compactor/roller, but this equipment would only be used for a short temporary duration during final grading and compaction and would be below the threshold of annoyance for those receptors greater than 50-feet away. Because Project construction equipment vibration potential is less than annoyance at 25-feet for most equipment required for construction (with the exception of the vibratory compactor, which would only be used for short temporary duration) the project would not expose persons to excessive groundborne vibration. In addition, construction activities such as tree removal and the ditch re-contouring would occur in phases, thereby reducing potential impacts from vibrations. Consequently, the proposed Project is not anticipated to cause significant or prolonged periods of vibration or subject properties to damage from vibration impacts. Additionally, because groundborne noise occurs when there is a substantial amount of groundborne vibration and there would not be a substantial amount of groundborne vibration caused by the proposed Project, construction activities would not cause groundborne noise in the Project area. Therefore, construction related groundborne vibration and groundborne noise impacts would be less than significant.

Level of Significance: Less than Significant

Mitigation Required: None Required

Impact NOS-2b Blair Road Alternative Analysis

A total of 14 receptors are within 100-feet of the Blair Road Alternative — six- within 25-feet, five- within 25- to 50-feet, and three- within 51- to 100-feet (Table 3.10-9, Figure 3.10-2). As with the proposed Project, groundborne vibration levels resulting from the Blair Road Alternative would be temporary and not anticipated to result in substantial annoyance to human receptors or damage to residences based on the thresholds and modeled construction equipment established in Table 3.10-11; therefore, construction-related groundborne vibration and noise impacts from the Blair Road Alternative would be considered less than significant.

Level of Significance: Less than Significant
Mitigation Required: None Required

Impact NOS-2c Combined Alternative Analysis

Similar to the Blair Road Alternative, the Combined Alternative shares similar construction equipment, schedule and proximity to receptors to those discussed under the proposed Project above. The Combined Alternative has a total of 13 receptors within 100-feet – six within 25-feet, three within 26- to 50-feet, and four within 51- to 100-feet (Table 3.10-10, Figure 3.10-3). As with the proposed Project, groundborne vibration levels resulting from the Combined Alternative would be temporary and not anticipated to result in substantial annoyance to human receptors or damage to residences based on the thresholds and modeled construction equipment established in Table 3.10-11; therefore, construction-related groundborne vibration and noise impacts from the Combined Alternative would be considered less than significant.

Level of Significance: Less than Significant

Mitigation Required: None Required

Impact NOS-2d No Project Alternative Analysis

Under the No Project Alternative, no construction activities would occur and the associated groundborne vibrations would not occur. Therefore, there would be no impact to exposure of persons to or generate excessive groundborne vibration or groundborne noise levels.

Level of Significance: No Impact

Mitigation Required: None Required

3.10.5 Noise Mitigation

3.10.5.1 Mitigation Measure NOS-1 Restriction of Construction Operational Hours and Resident Coordination

Construction activities shall occur only between the daytime hours of 7 am and 7 pm Monday through Friday, and 8 am and 5 pm on weekends and federally recognized holidays. All construction equipment shall be fitted with factory installed muffling devices and all construction equipment shall be maintained in good working order. Construction activities that would occur outside of these hours shall not occur within 100 feet of residences and would require advance notice to residences within 500 feet. Construction outside of the daytime hours shall ensure typical construction noise is attenuated below a level to cause substantial disruption of speech or sleep.

Mitigation Measure NOS-1 Implementation

Responsible Party: The District.

Timing: Throughout construction phase.

Monitoring and Reporting Program: Document timing of construction activities and proper noticing to residents within 500-feet.

Standards for Success: Compliance with noticing and/or construction hour limitations and limitations for construction within 100-feet of residences outside daytime hours.
3.10.6 Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEQA</td>
<td>California Environmental Quality Act</td>
</tr>
<tr>
<td>CNEL</td>
<td>Community Noise Equivalent Level</td>
</tr>
<tr>
<td>County</td>
<td>El Dorado County</td>
</tr>
<tr>
<td>dB</td>
<td>decibel</td>
</tr>
<tr>
<td>dBA</td>
<td>decibel A-weighted</td>
</tr>
<tr>
<td>District</td>
<td>El Dorado Irrigation District</td>
</tr>
<tr>
<td>EIR</td>
<td>Environmental Impact Report</td>
</tr>
<tr>
<td>FHWA</td>
<td>Federal Highway Administration</td>
</tr>
<tr>
<td>FTA</td>
<td>Federal Transit Administration</td>
</tr>
<tr>
<td>Hz</td>
<td>Hertz</td>
</tr>
<tr>
<td>L</td>
<td>sound level</td>
</tr>
<tr>
<td>Ldn</td>
<td>Day/Night Noise Level</td>
</tr>
<tr>
<td>Leq</td>
<td>Equivalent Noise Level</td>
</tr>
<tr>
<td>Lmax</td>
<td>maximum A-weighted</td>
</tr>
<tr>
<td>Lmin</td>
<td>minimum A-weighted</td>
</tr>
<tr>
<td>MM</td>
<td>Mitigation Measure</td>
</tr>
<tr>
<td>NOP/IS</td>
<td>Notice of Preparation/Initial Study</td>
</tr>
<tr>
<td>PPV</td>
<td>peak particle velocity</td>
</tr>
<tr>
<td>RCNM</td>
<td>Roadway Construction Noise Model</td>
</tr>
<tr>
<td>ROW</td>
<td>right-of-way</td>
</tr>
</tbody>
</table>

3.10.7 References


UPPER MAIN DITCH PIPING PROJECT

Noise
June 2018


El Dorado Irrigation District Upper Main Ditch Piping Project
Draft Environmental Impact Report
Chapter 3.11 Public Services

June 2018
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3.11 PUBLIC SERVICES

3.11.1 Basis for Analysis

The California Environmental Quality Act (CEQA) Guidelines’ Appendix G Environmental Checklist was assessed during the Notice of Preparation/Initial Study (NOP/IS) scoping process (included in Appendix A) to identify the Project components that have the potential to cause a significant impact. The following potential impacts were determined to warrant further evaluation within this Environmental Impact Report (EIR):

- 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;
  - Police protection; or
  - Schools.

The following potential impacts were determined to have a less than significant or no impact during the NOP/IS scoping process (included in Appendix A) and are not discussed further in this section:

- 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:
  - Parks; or
  - Other public facilities.

The remainder of this section describes the regulatory and environmental baseline setting to support the evaluation of the potential impacts and describes the potential impacts to the existing public services that may result from implementation of the Project and includes mitigation for potentially significant impacts, where feasible.

3.11.2 Regulatory Framework

This section discusses the federal regulations, state regulations, and local goals, objectives, and policies, that relate to public services and facilities and are relevant to the Project.

3.11.2.1 Federal

There are no specific federal regulations that govern the provision of local public services.
3.11.2.2 State

Fire Protection

California state fire safety regulations apply to State Responsibility Areas (SRAs) during the time of year designated as having hazardous fire conditions. California Department of Forestry and Fire Protection (CAL FIRE) has developed a fire hazard severity scale that considers vegetation, climate, and slope to evaluate the level of wildfire hazard in all SRAs. A State Responsibility Area is defined as the part of the state where CAL FIRE is primarily responsible for providing basic wildland fire protection assistance. Areas under the jurisdiction of other fire protection services are considered to be Local Responsibility Areas or on Federal lands are considered Federal Responsibility Areas.

During the fire hazard season, these regulations include: (a) restrict the use of equipment that may produce a spark, flame, or fire; (b) require the use of spark arrestors on any equipment that has an internal combustion engine; (c) specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and (d) specify fire suppression equipment that must be provided onsite for various types of work in fire-prone areas. CAL FIRE has primary responsibility for fire protection within SRAs.

3.11.2.3 Local

El Dorado County General Plan

The Project is proposed by El Dorado Irrigation District (the District), a special district that supplies water to customers throughout much of El Dorado County (County). Pursuant to Government Code sections 53091(D) and (E), many of the District’s activities are not subject to local zoning or land use requirements, as stated below:

*Building and zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code.*

As a special district with equal authority, the District is exempt from following goals and policies within the County’s General Plan and Zoning Ordinance. However, the District aims to comply to with those goals and policies outlined in the General Plan and uses these goals and policies as a metric for formulating an impact analysis (EDCGP 2015).

**Goal 5.1: Provision of Public Services:** Provide and maintain a system of safe, adequate, and cost-effective public utilities and services; maintain an adequate level of service to existing development while allowing for additional growth in an efficient manner; and, ensure a safe and adequate water supply, wastewater disposal, and appropriate public services for rural areas.

**Objective 5.1.2: Concurrency:** Ensure through consultation with responsible service and utility purveyors that adequate public services and utilities, including water supply, wastewater treatment and disposal, solid waste disposal capacity, storm drainage, fire protection, police protection, and ambulance service are provided concurrent with discretionary development or through other mitigation measures provided, and ensure that adequate school facilities are provided concurrent with discretionary development to the maximum extent permitted by State law. It shall be the policy of the County to cooperate with responsible service and utility purveyors in ensuring the adequate provision of service. Absent evidence beyond a reasonable doubt, the County will rely on the information received
from such purveyors and shall not substitute its judgment for that of the responsible purveyors on questions of capacity or levels of service.

Policy 5.1.2.1: Prior to the approval of any discretionary development, the approving authority shall make a determination of the adequacy of the public services and utilities to be impacted by that development. Where, according to the purveyor responsible for the service or utility as provided in Table 3.11-1, demand is determined to exceed capacity, the approval of the development shall be conditioned to require expansion of the impacted facility or service to be available concurrent with the demand, mitigated, or a finding made that a CIP project is funded and authorized which will increase service capacity.

Policy 5.1.2.2: Provision of public services to new discretionary development shall not result in a reduction of service below minimum established standards to current users, pursuant to Table 3.11-1. The following Levels of Service shall apply to the review of discretionary projects.

Table 3.11-1 Minimum Levels of Service

<table>
<thead>
<tr>
<th>Service</th>
<th>Community Region</th>
<th>Rural Center and Rural Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schools</td>
<td>As determined appropriate by the school districts.</td>
<td>As determined appropriate by the school districts.</td>
</tr>
<tr>
<td>Fire District response</td>
<td>8-minute response to 80% of the population.</td>
<td>15 to 45-minute response.</td>
</tr>
<tr>
<td>Sheriff</td>
<td>8-minute response to 80% of the population.</td>
<td>No standard.</td>
</tr>
<tr>
<td>Ambulance</td>
<td>10-minute response to 80% of the population.</td>
<td>20-minute response in Rural Regions and “as quickly as possible” in wilderness areas.</td>
</tr>
</tbody>
</table>

* In accordance with State standards.

Table has been modified by Stantec.

Source: El Dorado County General Plan Public Services and Utilities Element 2004 Table 5-1

Goal 5.7: Emergency Services: Adequate and comprehensive emergency services, including fire protection, law enforcement, and emergency medical services.

Objective 5.7.1: Fire Protection (Community Regions): Ensure sufficient emergency water supply, storage, and conveyance facilities are available, and that adequate access is provided for, concurrent with development.

Policy 5.7.1.1: Prior to approval of new development, the applicant will be required to demonstrate that adequate emergency water supply, storage, conveyance facilities, and access for fire protection either are or will be provided concurrent with development.

Objective 5.7.3: Law Enforcement: An adequate, comprehensive, coordinated law enforcement system consistent with the needs of the community.

Policy 5.7.3.1: Prior to approval of new development, the Sheriff’s Department shall be requested to review all applications to determine the ability of the department to provide protection services. The ability to provide protection to existing development shall not be reduced below acceptable levels as a consequence of new development.
Recommendations such as the need for additional equipment, facilities, and adequate access may be incorporated as conditions of approval.

**Objective 5.7.4: Medical Emergency Services:** Adequate medical emergency services available to serve existing and new development recognizing that levels of service may differ between Community Regions, and Rural Centers and Regions.

**Policy 5.7.4.1:** Prior to approval of new development, the applicant shall be required to demonstrate that adequate medical emergency services are available, and that adequate emergency vehicle access will be provided concurrent with development.

**Policy 5.7.4.2:** Prior to approval of new development, the Emergency Medical Services Agency shall be requested to review all applications to determine the ability of the department to provide protection services. The ability to provide protection to existing development shall not be reduced below acceptable levels as a consequence of new development. Recommendations such as the need for additional equipment, facilities, and adequate access may be incorporated as conditions of approval.

**Objective 6.2.3: Adequate Fire Protection:** Application of uniform fire protection standards to development projects by fire districts.

**Policy 6.2.3.2:** As a requirement of new development, the applicant must demonstrate that adequate access exists, or can be provided to ensure that emergency vehicles can access the site and private vehicles can evacuate the area.

### 3.11.3 Environmental Setting

The Project is located in El Dorado County, California, within the community of Pollock Pines, on the north side of U.S. Highway 50. The Project area begins at the El Dorado Forebay Reservoir and ends at the Reservoir 1 Water Treatment Plant (WTP).

#### 3.11.3.1 Proposed Project Baseline

**Fire Protection**

According to the Fire Districts in El Dorado County Map, Figure PS-3 of the General Plan, the El Dorado County Fire Protection District provides fire protection services to the community of Pollock Pines (El Dorado County 2004). The Project site would be served by Station 17 of the El Dorado County Protection District (El Dorado County Fire Protection District 2017). Station 17 is located at 6430 Pony Express Trail in the community of Pollock Pines, ranging approximately 0.50 miles to 1.70 miles southeast of the Project site.

Station 17 is staffed 24 hours a day, seven days a week by an Engine Company and a Medic Unit. The engine is staffed with one Captain-Emergency Medical Technician (EMT) or Captain-Paramedic, one Firefighter-EMT or Firefighter-Paramedic, and an Apprentice Firefighter. The medic unit is staffed with a Firefighter-Paramedic and either a second Firefighter-Paramedic or a Firefighter-EMT. Volunteers and off-duty personnel staff other apparatus housed at Station 17 when there is a need for additional response (El Dorado County Fire Protection District 2016).
According to the El Dorado County 2004 General Plan, the El Dorado County Fire Protection District has adopted an eight-minute response to 80 percent of the population for Community Regions, and a 15- to 45- minute response time to Rural Centers and Rural Regions. According to the 2011-2016 El Dorado County Fire Protection District Five Year Plan, the average response time over the last eight years for the El Dorado County Fire District, including Station 17, was approximately nine minutes and 19 seconds. Response times have been reduced by 19 percent since 2002 (El Dorado County Fire Protection District 2011).

Police Protection

Police protection services for the community of Pollock Pines and the Project site is provided by the El Dorado County Sheriff. The El Dorado County Sheriff Office is located at 300 Fair Lane in Placerville, California, which is approximately 14.70 miles to 17.60 miles west of the Project site. Patrols for this office cover a wide range including unincorporated areas of the County from Strawberry to Sacramento County. According to the 2016 El Dorado County Sheriff’s Office Annual Report, there are currently 78 Deputies assigned to patrol who work in staggered 12-hour shifts to ensure the appropriate number of police personnel are available at all times (El Dorado County Sheriff’s Office 2016).

Schools

The Project site is located within the boundaries of the Pollock Pines Elementary School District and the El Dorado Union High School District (El Dorado County General Plan 2004). The Pollock Pines Elementary School District operates one elementary school (kindergarten through fourth grade), and one middle school (fifth through eighth grade). The El Dorado Union High School District operates four high schools. The nearest school to the Project site is the Pinewood Elementary School, located at 6181 Pine Street in Pollock Pines, California. The Pinewood Elementary School is approximately 0.25 miles south of the Project site, and there is also a preschool located near the west end of the Upper Main Ditch near the WTP. Pinewood Elementary School has five buses and five bus routes, which transport over 300 children per school day (Pinewood Elementary School District Transportation 2018).

3.11.3.2 Alternatives

The public services setting for the Project pertains to the Blair Road Alternative and the Combined Alternative as well.

3.11.4 Environmental Impacts

This section analyzes the Project’s potential to result in significant impacts to public services. When the Project’s impact was determined to be significant, feasible mitigation measures were identified to reduce or avoid that impact.

3.11.4.1 Project Impact Analysis

This section discusses potential impacts associated with the Project and identifies mitigation measures for potentially significant impacts, where feasible.
Impact PUB-1  The Project would not 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; Police protection; or Schools.

Impact PUB-1a Proposed Project Analysis

Fire Protection

The proposed Project does not include residential uses and no people would reside on the Project site. During Project construction, approximately 10 construction workers per day would be on the Project site. The slight increase in people within the Project area would incrementally increase the potential need for fire, or medical response services. However, the increased need would be temporary and only occur during Project construction; therefore, no new or physically altered fire protection facilities would be required.

The permanent proposed Project features would be non-flammable and constructed of metal, concrete, and/or plastic material and largely covered with compacted soil fill material. Additionally, as discussed further in Section 3.8, Hazards and Hazardous Materials, although the proposed Project would remove a seasonal and interruptible water source that could be used locally for fire suppression, this would not be considered a significant impact because the purpose of the water in the ditch is not meant to fight fires, water conveyed in the ditch is not conveyed for three months or more out of the year, mandatory evacuations would be put in place in the event of a wildfire, and extracting water for fire suppression purposes would be difficult and inefficient (the surrounding ponds and lakes would provide more suitable support). Therefore, the long-term effect of piping the ditch would not have a significant impact to local fire suppression.

In the event of an emergency, El Dorado County Fire Protection District Station 17 is the nearest fire station and would serve the Project site. Station 17 ranges from approximately 0.50 miles to 1.70 miles from the Project site. As of May 15, 2015, the average daily traffic (ADT) for Blair Road was 1,012 trips (Transportation Division 2015). Blair Road is a two-lane road, located in a rural residential area with acceptable capacity. The average speed limit for residential areas in California is 25 miles per hour (mph), unless otherwise posted (California Department of Motor Vehicles 2016). Based on the assumption that the average speed limit for the area is 25 mph and the distance to the Project site, arrival of emergency response vehicles would range from three to six minutes and within the eight-minute emergency response time threshold identified in the El Dorado County General Plan (El Dorado County General Plan 2004). As such, the Project site would be adequately served by the existing fire station.

Construction of the proposed Project would involve movement of construction equipment along local roadways, particularly trucks entering and existing Blair Road. This construction access, if not properly planned for, could block or restrict emergency access. As such, Mitigation Measure (MM) TRA-1, develop a Traffic Control Plan Prior to Construction, would be implemented throughout Project construction to ensure clear emergency ingress and egress during construction and notification to emergency agencies in case of road closures. Therefore, impacts to fire protection services and emergency response times would be less than significant with MM TRA-1 during construction.
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of the proposed Project. The Project would not change operations and thus would have no impact on fire protection services and emergency response times following construction.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM TRA-1

**Police Protection**

The proposed Project does not include residential uses and no people would reside on the Project site. During Project construction, approximately 10 construction workers per day would be on the Project site. This increase in people could temporarily increase the potential need for police protection services or the number of emergency law enforcement calls; however, because the increased need would very limited and temporary, no new or physically altered police protection facilities would be required beyond the 78 current deputies assigned to patrol the El Dorado County area (El Dorado County Sheriff’s Office 2016). Consequently, the proposed Project would not introduce new needs for police services that would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts.

In the event of an emergency, the El Dorado County Sheriff’s Office would serve the Project site. Responses are handled by the nearest available patrol car located within the patrol area (El Dorado County Sheriff’s Office 2016). The El Dorado County General Plan Draft EIR identifies the level of service standards for sheriff deputies to maintain a minimum of one deputy per 1,000 residents. The proposed Project would not alter the acceptable service ratios, response times or other performance objectives for Police protection since police services would be maintained and the proposed Project would not introduce new residential or commercial uses where people gather that could potentially require additional police services (El Dorado County 2003). Further, based on the traffic impact assessments covered in the Transportation and Traffic Section 3.13, with the conservative assumption that emergency vehicles travel at the average speed limit, the El Dorado County Sheriff would arrive at the Project site within 15 to 20 minutes. Additionally, any potential increased need for police protection services would be temporary and would only occur during Project construction activities. Furthermore, MM TRA-1, develop a Traffic Control Plan Prior to Construction, would be implemented throughout Project construction which would ensure clear emergency ingress and egress during construction.

As such, development of the proposed Project would not require the construction of new or expanded El Dorado County Sheriff’s facilities, nor would it result in delayed response times or increased service ratios. Therefore, potential impacts associated with police protection services would be less than significant with mitigation incorporated during the construction of the proposed Project. The Project would not change operations and thus would have no impact on police protection services following construction.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM TRA-1
Schools

The proposed Project would not include residential uses and no people would reside on the Project site; therefore, the proposed Project would not result in an increase in population that would generate new student enrollment in local schools. As such, the proposed Project would not result in the construction of new or the expansion of existing school facilities. Access to the Pine Brook Elementary School would not be directly affected by the proposed Project; however, school bus routes using Blair Road to pick-up and drop off students could be temporarily affected during construction. Blair Road is a two-lane regional road, located in a rural residential area with acceptable capacity. Throughout Project construction, MM TRA-1 would be implemented to ensure adequate traffic flow through and around the construction. Therefore, impacts associated with school facilities would be less than significant with mitigation during the construction and less than significant during operation of the proposed Project.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM TRA-1

Impact PUB-1b Blair Road Alternative Analysis

Like the proposed Project, the Blair Road Alternative would not cause a substantial impact to emergency or public services that would require the construction of new facilities. However, the Blair Road Alternative occurs directly within Blair Road, which has a greater potential to cause delays to vehicle traffic in and around Blair Road. However, as discussed in the Transportation and Traffic Section, Section 3.13, adequate ingress and egress of traffic through Blair Road would be achieved through MM TRA-1. This mitigation measure includes a traffic control plan that would allow for bus routes to pick up and drop off students in a timely and safe manner and for notification of emergency personnel for in-road work. Therefore, school bus routes and emergency service response times in the area would not be substantially affected. Additionally, the construction would be temporary and would not be concentrated in one location for extended periods of time, further reducing any impacts. Therefore, impacts associated with government facilities would be less than significant with mitigation incorporated.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM TRA-1

Impact PUB-1c Combined Alternative Analysis

The Combined Alternative would not have any new or different impacts related to government facilities beyond what was discussed for the proposed Project and the Blair Road Alternative. MM TRA-1 would still be required for this alternative to allow for adequate traffic flow for bus routes. Therefore, impacts from the Combined Alternative to the alteration of government facilities would be less than significant with mitigation incorporated.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM TRA-1

Impact PUB-1d No Project Alternative Analysis

No changes to the physical environment of the Upper Main Ditch would occur, and no increase in demand for fire or police protection services would be required and no changes to schools or other public services would occur.
Therefore, there would be no impact to the provision of new or physically altered governmental facilities associated with the No Project Alternative.

**Level of Significance:** No Impact

**Mitigation Required:** None Required

### 3.11.5 Public Services Mitigation

#### 3.11.5.1 Mitigation Measure TRA-1 Prepare and Implement a Traffic Control Plan

See MM TRA-1, Section 3.13.
3.11.6 Abbreviations

<table>
<thead>
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<tr>
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<td>California Environmental Quality Act</td>
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<tr>
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3.12 RECREATION

3.12.1 Basis for Analysis

The California Environmental Quality Act (CEQA) Guidelines' Appendix G Environmental Checklist was assessed during the Notice of Preparation/Initial Study (NOP/IS) scoping process (included in Appendix A) to identify the Project components that have the potential to cause a significant impact. The following potential impacts were determined to warrant further evaluation within this Environmental Impact Report (EIR):

- 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.

- Have the potential to affect current or future recreational activities.

The following potential impact was determined to have a less than significant or no impact during the NOP/IS scoping process (included in Appendix A) and is not discussed further in this section:

- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

The remainder of this section describes the regulatory and environmental baseline setting to support the evaluation of the potential impacts and describes the potential impacts to recreation that may result from implementation of the Project and includes mitigation for significant impacts, where feasible.

3.12.2 Regulatory Framework

This section discusses the federal, state regulations and local policies and objectives that relate to recreation and are relevant to the Project.

3.12.2.1 Federal

There are no Federal regulations that apply to the Project pertaining to recreation and recreational facilities.

3.12.2.2 State

California Government Code Section 65560

California Government Code Section 65560(h) defines “open space land” as any parcel or area of land or water that is unimproved and devoted to an open space use. State law requires that the El Dorado County General Plan include a Parks and Recreation element to promote the retention of open space for recreational purposes.

California Recreation Policy (PRC 540)

The 2005 California Recreation Policy, as directed by the State of California to the State Park and recreation Commission under PRC 540, provides a comprehensive set of policies for many types of recreation activities ranging from active to passive, indoors to outdoors, on land and water, in facilities, and in programs and support functions (California State Parks 2005). This policy addresses five separate areas of recreation with the following objectives:
1. **Adequacy of recreation opportunities:** The supply of parklands, water, open space, recreation facilities, and services must be adequate to meet future and current demands, particularly in the state’s most populated areas.

2. **Leadership in recreation management:** Leadership, cooperation, and partnership must be demonstrated at all levels to ensure that quality recreation resources, opportunities, programs, and services are provided.

3. **Recreation’s role in a healthier California:** Meaningful recreation activities, facilities, programs, and increased opportunities for physical activity are vital to improving health and well-being of Californians.

4. **Preservation of natural and cultural resources:** Educating Californians about their state’s invaluable resources is a critical part of ensuring these resources continue to be available for the enjoyment of current and future generations.

5. **Accessibility to all Californians:** All citizens have the right to enjoy California’s park and recreation legacy.

**California Recreational Trails Plan**

**Goal for Private Property Owners:** Work to identify and resolve conflicts between property owners and trail users and advocates.

**Action Guideline:** Encourage and support open and continuing dialogue among private property owners, community organizations, professional land use organizations such as farm and cattlemen associations, adjacent public property government entities, and trail expansion advocates regarding trail systems and needed links.

### 3.12.2.3 Local

**El Dorado County General Plan**

The Project is proposed by El Dorado Irrigation District (the District), a special district that supplies water to customers throughout much of El Dorado County (County). Pursuant to Government Code sections 53091(D) and (E), many of the District’s activities are not subject to local zoning or land use requirements, as stated below:

> Building and zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code.

As a special district with equal authority, the District is exempt from following goals and policies within the County’s General Plan and Zoning Ordinance. However, the District aims to comply to with those goals and policies outlined in the General Plan and uses these goals and policies as a metric for formulating an impact analysis (EDCGP 2015).

**Goal 9.1:** Parks and Recreation Facilities: Provide adequate recreation opportunities and facilities including developed regional and community parks, trails, and resource-based recreation areas for the health and welfare of all residents and visitors of El Dorado County.
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**Policy 9.1.1.7:** Encourage and support efforts of independent recreation districts to provide parks and recreation facilities. The joint efforts of Community Services Districts, independent recreation districts, school districts, cities, and the County to provide parks and recreation facilities shall also be encouraged.

**Policy 9.1.2.8:** Integrate and link, where possible, existing and proposed National, State, regional, County, city and local hiking, bicycle, and equestrian trails for public use.

**Objective 9.1.3:** Incorporation of Parks and Trails: Incorporate parks and non-motorized trails into urban and rural areas to promote the scenic, economic, and social importance of recreation and open space areas.

**Policy 9.1.3.3:** Coordinate with Federal, State, other agencies, and private landholders to provide public access to recreational resources, including rivers, lakes, and public lands.

El Dorado County Parks and Trails Master Plan

The El Dorado County Parks and Trails Master Plan (El Dorado County Parks and Trails Master Plan 2012) goals and policies relative to the proposed Project are as follows:

**Goal 1:** Health and Wellness: El Dorado County residents will have reasonable access to a variety of park and trail facilities to enhance their opportunities for physical, mental, and social health and well-being.

**Objective 1.1:** Park and Trail Locations: Park and trails facilities shall be located taking into consideration the potential to provide recreational opportunities to underserved populations and to expand the diversity of recreational experiences available to County residents.

**Policy 1.1.2:** Some trails should be located to provide connections to neighborhoods or public places such as schools, parks, and civic areas to encourage residents to incorporate walking and cycling as a regular activity.

3.12.3 Environmental Setting

3.12.3.1 Proposed Project Baseline

The community of Pollock Pines is not within a service area of the County’s community park and recreation providers. There are a few recreation facilities near the Project area including Forebay Reservoir and Pollock Pines Recreation Park. The Pony Express Trail National Historic trail runs through the town of Pollock Pines to the south of the Project area. Additionally, the Sly Park Recreation Area and Jenkinson Lake is located approximately 3.4 miles south of Forebay Reservoir.

The Forebay Reservoir and recreation area is located east of the eastern terminus of the Project site. The Forebay Reservoir is owned and operated by the District, which provides fishing opportunities and a picnic area. Boating and body contact (e.g. swimming) are not allowed at this facility pursuant to California State Water Resources Control Board – Division of Drinking Water requirements, because the reservoir supplies public drinking water. The reservoir is stocked with fish by the California Department of Fish and Wildlife (CDFW) and day-use parking is available to the public. There is an additional day-use recreational area owned by the County across the street from the Forebay Reservoir, Pollock Pines Recreation Park, which has a little league field and a multi-purpose community building.
The Upper Main Ditch runs through a rural residential area adjacent to many residences. It crosses approximately 47 private parcels and one public parcel, and the ditch bench is used by some members of the public as an informal walking path. As outlined in the El Dorado County Parks and Trails Master Plan, the ditch bench that runs alongside the existing Upper Main Ditch is not a designated public facility. The District has easement rights for the existing ditch for the limited purposes of water conveyance and ditch maintenance, but access to the ditch and bench by members of the general public is controlled by the landowners who own the property through which the ditch traverses.

As with all District facilities, potential use for public recreation depends on various factors, including whether or not the District has the authority to grant public access, and operational and safety considerations (Parks and Trails Master Plan 2012). In this case the District does not possess the authority to allow public access to the private lands upon which the ditch is located; District access rights are limited to the purposes of maintenance and operation of the facilities. Therefore, the District does not consider the ditch or the ditch bench to be a recreational facility.

### 3.12.3.2 Alternatives

The regional and surrounding recreation setting described for the proposed Project also apply to the Blair Road and the Combined Alternatives. Additionally, Blair Road is a narrow County road with no dedicated recreational uses. The cross-country portions of the Combined Alternative are along private property and no recreational uses occur.

### 3.12.4 Environmental Impacts

This section analyzes the Project’s potential to result in significant impacts to recreation. When the Project’s impact was determined to be significant, feasible mitigation measures were identified to reduce or avoid that impact.

### 3.12.4.1 Project Impact Analysis

This section discusses potential impacts associated with the Project and provides mitigation measures for potentially significant impacts, where feasible.

| Impact REC-1 | The Project would not have the potential to affect current or future recreational activities. |

Impact REC-1a Proposed Project Analysis

The District maintains easements along the ditch for water conveyance operations and maintenance purposes only. The nature of these easements does not authorize the District to grant access for recreation purposes. Upon completion of the Project the District would neither authorize nor preclude the public from using the private property upon which the ditch is located, since it is the landowner who has the authority whether or not to allow such use (so long as it does not interfere with the District’s easement rights).

The El Dorado County Trails Master Plan identifies the Upper Main Ditch alignment as a potential future trail if the proper right-of-way could be obtained from each of the private property owners upon whose land the trail would be constructed (El Dorado County Parks and Trails Master Plan 2012). The County would need to work with the private land owners to acquire appropriate land access rights before the proposed alignment could be considered as a future trail. The proposed Project would not preclude nor promote future recreation access. Discussions and agreements for such a recreational trail, independent of the District, would be necessary between the County and the private land...
 owners, regardless of whether or not the proposed Project occurred (i.e., whether the ditch remained in its current condition or was piped).

Since there are currently no public recreational activities authorized along the Upper Main Ditch, and the proposed Project would not impact recreational uses at Forebay Reservoir, and the proposed Project would not impede future plans for recreational activities, there is no potential for the proposed Project to affect current or future recreational activities. Therefore, no impact to recreation would occur.

**Level of Significance:** No Impact

**Mitigation Required:** None Required

**Impact REC-1b Blair Road Alternative Analysis**

The impacts to future recreational uses discussed under the proposed Project discussion (Impact REC-1a) would be similar to the impacts under the Blair Road Alternative. Like the proposed Project, the Blair Road Alternative would have a limited potential to affect recreational activities since the narrow road along Blair Road does not facilitate or promote future recreational activities. However, the Blair Road Alternative does have the potential to temporarily affect bicycle or pedestrian activities by construction activities along Blair Road. Construction delays and detour impacts discussed in the traffic and transportation analysis (see Section 3.13) would apply to recreational users along Blair Road, which could result in a significant impact if construction substantially affected recreational use along Blair Road. Although it is not anticipated that recreational use of Blair Road would be substantially affected by construction activities, Mitigation Measure (MM) TRA-1 would be implemented, which would include the preparation and implementation of a Traffic Control Plan to allow for adequate ingress and egress of bicycle, pedestrian, and vehicle traffic through the Project area. As required by MM TRA-1 construction access would be maintained, and residents and the public would be notified of temporary closures. Additionally, street access through Pollock Pines provides alternate bicycle routes throughout the community that could temporarily be used to avoid any construction traffic delays, further reducing any impacts related to recreation activities. Therefore, the potential for the Blair Road Alternative to affect current or future recreational activities would be less than significant with mitigation incorporated.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM TRA-1

**Impact REC-1c Combined Alternative Analysis**

Impacts related to recreational activities for the Combined Alternative would be the similar as described under the proposed Project and the Blair Road Alternative respective to their overlapping footprints. MM TRA-1 reduce potential impacts related to bicycle and pedestrian users along the roadway. Additionally, the cross-country portions of the Combined Alternative are located on private property and, like the proposed Project and Blair Road Alternative, do not have any designated or planned recreation facilities. Therefore, the potential for the Combined Alternative to affect current or future recreational activities would be less than significant with mitigation incorporated.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM TRA-1
Impact REC-1d No Project Alternative Analysis

The No Project Alternative would result in no impact to recreational facilities. The District would continue to maintain its easements along the ditch for water conveyance operations and maintenance purposes only. As with the proposed Project, the District would not grant, nor preclude, access to these areas for recreation purposes. Additionally, there would be no change to the recreational activities at the Forebay Day Use Area or Adjacent County Park. Therefore, there would be no impact to recreation.

Level of Significance: No Impact

Mitigation Required: None Required

Impact REC-2 The Project would not 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.

Impact REC-2a Proposed Project Analysis

A potentially significant deterioration to neighborhood parks, regional parks, or recreation facilities can occur by disrupting existing recreational uses, or by limiting or increasing the use of recreational facilities in such a manner that would result in deterioration of the facility. If the proposed Project were to change the use or flow of existing recreational facilities affecting recreational activities or preventing access to existing recreational facilities a substantial physical deterioration of other nearby parks could occur or be accelerated. As described above, any recreational activity along the existing ditch occurs on private property. Hence, the ditch is not considered a neighborhood or regional park or other type of designated recreational facility. Therefore, no potential impact to recreation would occur from piping the ditch.

Forebay Reservoir and the adjacent county park facility across Forebay Road provide park and trail facilities. The proposed Project would not increase or otherwise modify the use of these facilities. Therefore, there is no potential for the proposed Project to increase use and accelerate substantial physical deterioration of recreation facilities, and no impact would occur.

Level of Significance: No Impact

Mitigation Required: None Required

Impact REC-2b Blair Road Alternative Analysis

Like the proposed Project analysis the Blair Road Alternative would not impact recreation facilities. The Blair Road Alternative would not affect Forebay Reservoir or the adjacent county park. Additionally, the cross-country portion of the Blair Road Alternative would be located on private property and, like the proposed Project, does not have any designated recreational facilities that could be subject to deterioration. Therefore, no impact to recreational facilities would occur.

Level of Significance: No Impact
Mitigation Required: None Required

Impact REC-2-c Combined Alternative Analysis

Impacts to recreational facilities under the Combined Alternative would not occur since, as discussed for the proposed Project and the Blair Road Alternative, no recreational facilities would be impacted by the overlapping footprint of the Combined Alternative. Additionally, the cross-country portions of the Combined Alternative are located on private property and, like the proposed Project and Blair Road Alternative, do not have any designated recreation facilities that could be subject to deterioration. Therefore, no impact to recreational facilities would occur.

Level of Significance: No Impact

Mitigation Required: None Required

Impact REC-2d No Project Alternative Analysis

Under the No Project Alternative there would be no change to the current conditions of the ditch and no impact to recreational facilities would occur.

Level of Significance: No Impact

Mitigation Required: None Required

3.12.5 Recreation Mitigation

3.12.5.1 Mitigation Measure TRA-1 Prepare and Implement Traffic Control Plan

See MM TRA-1, Section 3.13.
3.12.6 Abbreviations

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3.13 TRANSPORTATION AND TRAFFIC

3.13.1 Basis for Analysis

The California Environmental Quality Act (CEQA) Guidelines’ Appendix G Environmental Checklist was assessed during the Notice of Preparation/Initial Study (NOP/IS) scoping process (included in Appendix A) to identify the Project components that have the potential to cause a significant environmental impact. The following potential impacts were determined to warrant further evaluation within this Environmental Impact Report (EIR):

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, considering all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;

- Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;

- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);

- Result in inadequate emergency access; or

- Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

The following potential impact was determined to have a less than significant or no impact during the NOP/IS scoping process (included in Appendix A), and is not discussed further in this section:

- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

The remainder of this section describes the regulatory and environmental baseline setting to support the evaluation of the potential impacts and describes the potential impacts to transportation or traffic that may result from implementation of the Project and identifies mitigation for potentially significant impacts, where feasible.

3.13.2 Regulatory Framework

Federal, state, and local plans, policies, laws, and regulations provide a framework for addressing aspects of transportation and traffic that may be affected by the Project. The following is a summary of that information as it relates to the impact analysis provided below.

3.13.2.1 Federal

No federal plans, policies, regulations, or laws related to transportation and traffic apply to the Project.
3.13.2.2 State

California Department of Transportation

The California Department of Transportation (Caltrans) manages interregional transportation, including the management and construction of the California highway system. In addition, Caltrans is responsible for the permitting and regulation of state roadways and requires that permits be obtained for transportation of oversized loads and transportation of certain materials, and for construction-related traffic disturbance.

U.S. Highway 50 is the main traffic artery in the Project vicinity and would serve as the primary regional access route for construction traffic to and from the Project area. This roadway is managed by Caltrans, and Caltrans has completed a transportation or route concept report which identifies long-range improvements for the State Route 50 corridor and establishes the “concept,” or desired, level of service (LOS) for specific corridor segments. The report also identifies long-range improvements needed to bring the existing facility up to expected standards needed to adequately serve 20-year traffic forecasts. Additionally, the report identifies the ultimate design concept for conditions beyond the immediate 20-year design period. (El Dorado 2015)

The State Route 50 Transportation Concept Report (Caltrans 2014) identifies the 20-year concept (through 2018) for segments of State Route 50 from the western El Dorado County (County) line to the State line in South Lake Tahoe.

3.13.2.3 Local

Sacramento Area Council of Governments

The Sacramento Area Council of Governments (SACOG) is a cooperative organization representing the six counties comprising the Greater Sacramento metropolitan region (Sacramento, Yolo, El Dorado, Placer, Sutter, and Yuba counties), that works to provide planning and funding for transportation within the region. This organization has been granted the responsibility of developing the federal and state mandated metropolitan transportation plan every four years. The Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) (SACOG 2016a) is the mandated transportation plan that includes the regional planning for roadway improvements and is crucial for receiving federal transportation funding. The adopted MTP/SCS also utilizes county-wide planning developed by the El Dorado County Transportation Commission (SACOG 2016b).

El Dorado County Regional Transportation Plan

Regional transportation planning (RTP) is conducted by several agencies at all levels of government in the County and the City of Placerville. The plans and programs related to the RTP include: local general plans, the short- and long-range transit plan, non-motorized and bicycle facilities plans, other agencies’ RTPs, the SACOG MTP, the Regional Transportation Improvement Program (RTIP), the State Transportation Improvement Program (STIP), the California Transportation Plan, the California Interregional Strategic Plan, the regional clean air plan, and Caltrans concept reports. The County RTP is designed to be consistent with the adopted plans and programs.
0.13.2.4 El Dorado County Code of Ordinances (2017)

The Project is proposed by El Dorado Irrigation District (the District), a special district that supplies water to customers throughout much of the County. Pursuant to Government Code sections 53091(D) and (E), many of the District's activities are not subject to local zoning or land use requirements, as stated below.

Building and zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code.

As a special district with equal authority, the District is exempt from following goals and policies within the County's General Plan and Zoning Ordinance. However, the District aims to comply with those goals and policies outlined in the General Plan and uses these goals and policies as a metric for formulating an impact analysis and would obtain appropriate County approvals when work occurs within County facilities.

ARTICLE II. - ENCROACHMENT REGULATIONS

Section 12.08.080. - Excavations

A. It is unlawful for any person to make any excavation on any portion of the right-of-way of any County highway without having first obtained an encroachment permit therefor, or in violation of any of the provisions or conditions of the permit or of the chapter. (El Dorado County 2017)

B. A permit shall not be issued for the extraction, taking, conversion or recovery of gold, silver or other natural elements by means of, but not limited to, digging, dredging, sluicing, planning or electronic detection methods, from any portion of a County right-of-way, whether such right-of-way is created by an instrument of record or by prescription. (El Dorado County 2017)

Section 12.08.090. - Obstructions

It is unlawful for any person to place or maintain any obstruction on any portion of the right-of-way of any County highway without having first obtained an encroachment permit therefor, or in violation of any of the provisions or conditions of the permit or of this chapter. (El Dorado County 2017)

Section 12.08.180. – Issuance of Encroachment Permit

After receipt of an application, accompanied by the required documents, payment of the required fees, and posting of the required deposit, the County Director of Transportation may issue an encroachment permit therefor upon standard forms prepared by the County Director of Transportation, provided all of the requirements of this chapter have been met. (El Dorado County 2017)

El Dorado County General Plan Transportation and Circulation Element

The El Dorado Transportation and Circulation Element aids the interagency coordination between the incorporated cities within the county, the El Dorado County Transportation Commission, the Sacramento Area Council of Governments, the Tahoe Regional Planning Agency, and state and federal agencies that fund and manage the county's transportation facilities. The Transportation and Circulation Element includes goals and policies with the
intention of providing a safe and efficient transportation system for general purpose vehicles, public transit, and non-motorized transportation within the County. The standards contained in these goals and policies help guide the County in developing its transportation system (EDCGP 2015).

Roadway Classifications

The following describes the road classifications of roads in the County roadway system based on the definitions from the Transportation and Circulation Element. Roads administered by Caltrans are not classified here because they are not controlled or managed by the County.

Six-Lane Divided Road

The Six-Lane Divided Road typically has a right-of-way width of 130 feet and a roadway width from curb to curb, including a 16-foot median, of 108 feet. Six-Lane Divided Roads carry large volumes of regional through traffic not handled by the freeway system. Six-Lane Divided Roads have fully controlled access with restricted private property access and public road approaches.

Four-Lane Divided Road

A Four-Lane Divided Road typically has a right-of-way width of 100 feet and a roadway width from curb to curb, including a 16-foot median, of 84 feet. The function of a Four-Lane Divided Road is similar to that of a Six-Lane Divided Road, with the principal difference being capacity. Four-Lane Divided Roads have fully controlled access with limited private property access and public road approaches.

Four-Lane Undivided Road – Community Regions

A Four-Lane Undivided Road in the Community Regions is a four-lane roadway with a typical right-of-way width of 80 feet and a roadway width from curb to curb of 64 feet. If needed for capacity or safety, it may include additional right-of-way and roadway width for raised medians, painted medians, or two-way, left-turn medians. A Four-Lane Undivided Road functions similarly to a Four-Lane Divided Road, with the principal difference being capacity. Community Region Four-Lane Undivided Roads have fully controlled access with limited private property access and public road approaches.

Four-Lane Undivided Road – Rural Centers and Rural Regions

A Four-Lane Undivided Road located outside the Community Regions (i.e., in Rural Centers and Rural Regions) typically has a right-of-way width of 80 feet and a roadway width of 64 feet. If needed for capacity or safety, it may include additional right-of-way and roadway width for raised medians, painted medians, or two-way, left-turn medians. Four-Lane Undivided Roads outside the Community Regions have fully controlled access, but may have private access points for single and multifamily residential, commercial, office, and industrial developments, in addition to public road approaches.

Major Two-Lane Road – Community Regions

A Major Two-Lane Road in the Community Regions is typically undivided and has a right-of-way width of 60 feet and a roadway width from curb to curb of 40 feet. If needed for capacity or safety, it may include additional right-of-way...
and roadway width for raised medians, painted medians, or two-way, left-turn medians. Community Region Major Two-Lane Roads have fully controlled access with limited private property access and public road approaches.

**Major Two-Lane Road – Rural Centers and Rural Regions**

A Major Two-Lane Road outside the Community Regions is typically undivided and has a right-of-way width of 60 feet and a roadway width of 40 feet. If needed for capacity or safety, they may include additional right-of-way and roadway width for raised medians, painted medians, or two-way, left-turn medians.

**Local Roads**

Local roads primarily provide service to adjacent land uses. The access requirements for local roads must provide for the safety of the public by proper location of access points. Access points must be developed in accordance with the County Department of Transportation's encroachment permit policies and regulations.

**Roadway Capacity and Level of Service**

LOS is a general measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. The LOS grades are generally defined as follows:

- **LOS A** represents free-flow travel with an excellent level of comfort and convenience and the freedom to maneuver.
- **LOS B** has stable operating conditions, but the presence of other road users causes a noticeable, though slight, reduction in comfort, convenience, and maneuvering freedom.
- **LOS C** has stable operating conditions, but the operation of individual users is significantly affected by the interaction with others in the traffic stream.
- **LOS D** represents high-density, but stable flow. Users experience severe restriction in speed and freedom to maneuver, with poor levels of comfort and convenience.
- **LOS E** represents operating conditions at or near capacity. Speeds are reduced to a low but relatively uniform value. Freedom to maneuver is difficult with users experiencing frustration and poor comfort and convenience. Unstable operation is frequent, and minor disturbances in traffic flow can cause breakdown conditions.
- **LOS F** is used to define forced or breakdown conditions. This condition exists wherever the volume of traffic exceeds the capacity of the roadway. Long queues can form behind these bottleneck points with queued traffic traveling in a stop-and-go fashion.

These definitions are contained in the *Highway Capacity Manual* (HCM) (Transportation Research Board 2000). The HCM methodology is the prevailing measurement standard used throughout the United States.

**Policy TC-Xd:** LOS for County-maintained roads and state highways within the unincorporated areas of the county shall not be worse than LOS E in the Community Regions or LOS D in the Rural Centers and Rural Regions except
as specified in Table TC-2. The volume to capacity ratio of the roadway segments listed in Table TC-2 shall not exceed the ratio specified in that table. Level of Service would be as defined in the latest edition of the Highway Capacity Manual (Transportation Research Board, National Research Council) and calculated using the methodologies contained in that manual. Analysis periods shall be based on the professional judgment of the Department of Transportation which shall consider periods including, but not limited to, Weekday Average Daily Traffic (ADT), AM Peak Hour, and PM Peak hour traffic volumes.

3.13.3 Environmental Setting

3.13.3.1 Proposed Project Baseline

Roadways

The County’s transportation system is primarily focused around the roadway network. Most in-county travel is in automobiles because low-density development patterns have limited the viability of facilities or services related to transit, bicycles, and pedestrians. According to the 2000 Census, almost 90 percent of all trips from home to work by county residents were made by automobile.

U.S. Highway 50 is the primary transportation corridor extending through the County from west to east connecting Sacramento County and the State of Nevada and serves all of the County’s major population centers, including El Dorado Hills, Cameron Park, Diamond Springs, Placerville, Camino, Pollock Pines, and South Lake Tahoe. U.S. Highway 50 is also the major commute route to employment locations in the greater Sacramento area and the major shipping route for goods movement by truck. U.S. Highway 50 is a conventional four-lane highway through the City of Placerville with traffic signals at three major intersections. East of the City and extending into the Lake Tahoe Basin, U.S. Highway 50 is an expressway with unsignalized intersections east to Ice House Road near Riverton, where the highway narrows to two lanes with passing opportunities limited mostly to locations with passing lanes and turnouts. The closest segment of U.S. Highway 50 to the Project site is segment 16 as identified by the Transportation Corridor Concept Report. Segment 16 runs from the Cedar Grove Exit to 0.67 miles east of Sly Park Road. Currently, the LOS for this segment is LOS B, which indicates free-flowing conditions with average speeds comparable to LOS A, but drivers have slightly less freedom to maneuver.

Other state highways, county arterials, and a network of local public and private roads constitute the remainder of the roadway system. Access to the proposed Project is either directly from a fronting arterial road or from public or private local roads, many of which are narrow and unpaved.

Access to the Project site would primarily be accomplished using established roads including, but not limited to, U.S. Highway 50, Sly Park Road, Pony Express Trail, Forebay Road, Blair Road, Gilmore Road, Patrick Lane, Pony Express Court, and Pinewood Lane (See Figure 2.6-5 in Section 2.0, Project Description). Sly Park Road and Pony Express Trail meet the classification of a Major Two-Lane Road as defined by the El Dorado County General Plan Transportation and Circulation Element. Typically, these roads operate at LOS D and C respectively. Forebay Road, Blair Road, Gilmore Road, Patrick Lane, Pony Express Court, and Pinewood Lane are Local Roads. Local Roads are described in the El Dorado County General Plan Transportation and Circulation Element as providing service to adjacent land uses (EDCGP 2015).
Bicycles

Bikeways are classified as Class 1, Class 2, and Class 3 (bike paths, bike lanes, and bike routes respectively). The El Dorado County Bicycle Transportation Plan, under the proposed improvements section, lists proposed bikeways that would occur in the vicinity to the Project area along Sly Park Road, Pony Express Trail, Ridgeway Drive, and Carson Road.

Public Transit

The County public transit services are provided by the El Dorado County Transit Authority (EDCTA). El Dorado Transit Route 60 services the Pollock Pines area, which is in close proximity to the proposed Project area (El Dorado Transit 2016). In particular, the Safeway Plaza on Pony Express Trail and the Pollock Pines Post Office on Sanders Drive are transit stops in close proximity to the Project site. Additionally, student bussing services throughout the Project area are provided by the Pollock Pines Elementary School District, El Dorado Union High School District, and El Dorado County Office of Education.

3.13.3.2 Alternatives

The transportation and traffic setting for the Blair Road Alternative and the Combined Alternative would be similar to the setting described for the proposed Project due to the overlapping nature of the footprints.

3.13.4 Environmental Impacts

This section analyzes the Project's potential to result in significant impacts to transportation and traffic. When the Project's impact was determined to be significant, feasible mitigation measures were identified to reduce or avoid that impact.

3.13.4.1 Project Impact Analysis

This section discusses potential impacts associated with the Project and provides mitigation measures where necessary and feasible.

| Impact TRA-1 | The Project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, considering all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. |

Impact TRA-1a Proposed Project Analysis

Plans that are applicable to the proposed Project include the El Dorado County General Plan Transportation and Circulation Element and the El Dorado County Regional Transportation Plan, as previously described in the Regulatory Framework section. These plans designate LOS standards and requirements relating to transportation operation and safety. During construction, the proposed Project is expected to generate a light amount of construction traffic, including worker and material hauling trips. It is estimated that the proposed Project would

3.13.7
generate an average of 10 worker commute trips per day and a total of 660 materials and equipment hauling trips over the entire construction period (over 12-months of construction in a two-year period). These materials and equipment hauling trips would be intermittent, with trips mainly focused around construction start-up and shut-down and would not conflict with any local or regional transportation plan, ordinance, or policy. Although traffic levels would slightly increase during the construction of the proposed Project, the additional construction traffic would not significantly alter the existing traffic flows or LOS of the access roads. Construction of the proposed Project would remain within the District’s easement and secured temporary construction easements and would not involve permanent changes to nearby roadways. Construction traffic entering and exiting local roadways along with the crossing of Blair Road would likely require a County encroachment permit which would be obtained as necessary by the District or its contractor.

Additionally, the proposed Project is not expected to interfere with current or planned bicycle paths or sidewalks for pedestrians. Construction activity could temporarily disrupt pedestrian travel along the existing ditch alignment. However, as described in this EIR, the Upper Main Ditch is located on private property and the District does not control public access along the ditch. Public access across these parcels is not authorized in the District’s federal patent easements and it is not part of the formal circulation system considered by the County. Therefore, construction along the current ditch alignment would be consistent with the El Dorado County General Plan and Regional Transportation Plan.

Finally, operation of the proposed Project would not impact the circulation system or the plans, policies, and ordinances facilitating future planning of the circulation system. The proposed Project would not generate additional trips during operations of the proposed Project. It is assumed that maintenance vehicles would access the pipeline periodically, likely less often than current ditch maintenance activities.

For the reasons discussed, the proposed Project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system and this impact would be less than significant.

Level of Significance: Less than Significant

Mitigation Required: None Required

Impact TRA-1b Blair Road Alternative Analysis

Similar to the proposed Project, the Blair Road Alternative would be consistent with the El Dorado County General Plan Transportation and Circulation Element and the El Dorado County Regional Transportation Plan. Like the proposed Project, the Blair Road Alternative would not result in permanent obstructions to traffic or transportation.

The Blair Road Alternative would require similar worker and material hauling trips to the proposed Project. However, because construction of this alternative would occur mostly within the Blair Road right-of-way, traffic would be temporarily restricted for the duration of construction, requiring coordination with the County through the County Encroachment Permit process. Partial or short-term full road closures would be required for installation of the pipeline in Blair Road which could temporarily worsen traffic conditions by creating traffic control delays consistent with the conditions of the County Encroachment Permit. The linear nature of construction activities would ensure no one point along Blair Road would be impacted for extended periods of time, and lane closures would be limited to the specific
area where construction is occurring. MM TRA-1 would be implemented to ensure proper traffic controls are implemented and followed to maintain resident access and avoid queued construction traffic delays by restricting the length of delay times. The cross-country portions of this alternative would not further impact the traffic flows, bicycle, or pedestrian sidewalks beyond what was discussed for the proposed Project. With the implementation of MM TRA-1, the Blair Road Alternative would not conflict with applicable plans, ordinances, or policies for motorized, bicycle, or pedestrian travel and the impact is less than significant with mitigation.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM TRA-1

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**Impact TRA-1c Combined Alternative Analysis**

Similar to the proposed Project, the Combined Alternative would be consistent with the El Dorado County General Plan Transportation and Circulation Element and the El Dorado County Regional Transportation Plan. The additional cross-country portions of this alternative that differ from the Blair Road Alternative would not further impact the traffic flows, bicycle, or pedestrian sidewalks beyond what was discussed for the proposed Project. Like the Blair Road Alternative, the Combined Alternative would require construction within Blair Road and would have the potential to minimally impact traffic conditions. With the implementation of MM TRA-1, the Combined Alternative would not conflict with applicable plans, ordinances, or policies for motorized, bicycle, or pedestrian travel and the impact is less than significant with mitigation.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM TRA-1

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**Impact TRA-1d No Project Alternative Analysis**

Under the No Project Alternative, current conditions in the Project area would not be changed, and no construction impacts would occur. Therefore, there would be no impacts related to transportation or traffic under the No Project Alternative.

**Level of Significance:** No Impact

**Mitigation Required:** None Required

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**Impact TRA-2**

The Project would not conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways.

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**Impact TRA-2a Proposed Project Analysis**

As discussed in Impact TRA-1a, the proposed Project is expected to generate approximately 10 daily worker trips and a total of 660 material hauling trips throughout the intermittent two-year duration of construction. These trips could slightly increase traffic by placing new vehicles on roadways that provide access to the Project site, with the
highest levels of construction-related traffic being expected to arrive before the 7 am normal peak hours and to leave before the 7 pm normal peak hours. However, the addition of the 10 daily worker trips would be temporary in nature (generating varying levels of up to 10 worker trips a day over a period of 12-months split over two years) and would typically occur during non-peak hours. Further the materials hauling trips would likely occur during daytime hours outside of peak hours, spread over many months. These minimal and temporary Project-related vehicle trips are not anticipated to affect the LOS standards on these roadways or significantly increasing local traffic congestion. Operation of the proposed Project would not generate vehicle trips or traffic. For these reasons, the proposed Project would not conflict with any applicable congestion management program or other applicable road standards and the impact would be less than significant.

Level of Significance: Less than Significant

Mitigation Required: None Required

Impact TRA-2b Blair Road Alternative Analysis

Daily worker and material hauling trips generated by construction of the Blair Road Alternative would be similar in number and timing to the proposed Project. Unlike the proposed Project, construction of the Blair Road Alternative within Blair Road could cause localized traffic impacts and delays due to partial or full temporary road closures as discussed in Impact TRA-1. The impact of road closures and congestion would be substantially reduced through the implementation of MM TRA-1, which includes the preparation and implementation of a Traffic Control Plan. This Traffic Control Plan would provide standards such as maintaining all local access and providing notice to ensure that localized traffic impacts and delays are kept to a minimum. With mitigation, the Blair Road Alternative would not conflict with any applicable congestion management program or other applicable road standards and the impact would be less than significant.

Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM TRA-1

Impact TRA-2-c Combined Alternative Analysis

Daily worker and material hauling trips generated by construction of the Combined Alternative would be similar in number and timing to the proposed Project. Like the Blair Road Alternative, construction of the Combined Alternative could cause localized traffic impacts and delays due to partial or full temporary road closures as discussed in Impact TRA-1. The impact of road closures and congestion would be substantially reduced through the implementation of MM TRA-1, which includes the preparation and implementation of a Traffic Control Plan. This Traffic Control Plan would provide standards such as maintaining all local access and providing notice to ensure that localized traffic impacts and delays are kept to a minimum. With mitigation, the Combined Alternative would not conflict with any applicable congestion management program or other applicable road standards and the impact would be less than significant.

Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM TRA-1
Impact TRA-2d No Project Alternative Analysis

Under the No Project Alternative, current conditions in the Project area would not be changed, and no construction impacts would occur. Therefore, there would be no impacts to local traffic congestion management plans under the No Project Alternative.

Level of Significance: No Impact

Mitigation Required: None Required

Impact TRA-3 The Project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Impact TRA-3a Proposed Project Analysis

Construction access and staging would not be located within Blair Road and Project access would require the use of existing access, public roadways, private driveways, and private roadways. The movement of construction vehicles, equipment, and materials to and from the Project site has the potential to temporarily increase the risk of slow moving vehicles or traffic hazards on the roads with access to the Project site. Risk would be the highest when construction vehicles and equipment have to interact with general purpose vehicles, such as when entering public-right-of-way while exiting the Project site. MM TRA-1 would minimize any potential hazards by requiring that a site-specific traffic control plan be prepared by the District and/or their contractor, approved by the El Dorado County Department of Transportation and implemented for the proposed Project for work and activities affecting local streets such as Blair Road. MM TRA-1 requires measures to minimize the risk from incompatible uses. The traffic control plan would ensure clear emergency ingress and egress is feasible during construction and it would also specify allowances for driveway access. Additionally, the Project would not permanently alter public road conditions. Finally, the Project would not cause transportation hazards during normal operation. For these reasons, the proposed Project would not substantially increase hazards or incompatible uses, and the impact would be less than significant with mitigation.

Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM TRA-1

Impact TRA-3b Blair Road Alternative Analysis

The Blair Road Alternative would have similar impacts related to hazards during construction and operations as discussed under the proposed Project. However, lane closures along Blair Road would likely be required throughout construction in Blair Road and this would increase the risk of interaction between construction equipment and general-purpose vehicles on Blair Road. Similar to the proposed Project, MM TRA-1 would be required to minimize the potential conflicts by requiring a site-specific traffic control plan to be implemented. This would ensure any risks associated with construction along Blair Road are minimized and proper access, safety measures, and BMPs would be implemented in order to offset the potential for hazards from construction activities. Construction activities along the cross-country portions of this alternative would not add any additional hazards or incompatible uses beyond what has been previously discussed and would be similar to those of the proposed Project.
During operation, the Blair Road Alternative would also require occasional access along Blair Road for maintenance purposes of the pipeline. This would require maintenance vehicles be periodically parked along Blair Road, which could increase the potential for a hazard due to the narrow characteristics and winding nature of Blair Road. EID and its contractor would follow appropriate safety precautions and procedures (e.g. wearing safety vests, flag controls) when work would be required along the Blair Road Alternative. Additionally, maintenance activities would be periodic and would not consistently cause a hazard along Blair Road, therefore the operational impact would be less than significant. For these reasons, the Blair Road Alternative would not substantially increase hazards or incompatible uses, and the impact would be less than significant with mitigation.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM TRA-1

**Impact TRA-3c Combined Alternative Analysis**

The Combined Alternative would have similar impacts related to hazards during construction and operations as discussed under the proposed Project and the Blair Road Alternative respective to their overlapping footprints. Construction activities along the additional cross-country portions of this alternative that differ from the Blair Road Alternative would not add any hazards or incompatible uses beyond what has been previously discussed and would be similar to those of the proposed Project. As with the proposed Project and the Blair Road Alternative, MM TRA-1 would be required and would include a traffic control plan to further reduce potential impacts related to construction hazards. For these reasons, the Combined Alternative would not substantially increase hazards or incompatible uses, and the impact would be less than significant with mitigation.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM TRA-1

**Impact TRA-3d No Project Analysis**

Under the No Project Alternative, current conditions in the Project area would not be changed, and no construction impacts would occur. Therefore, there would be no impacts to substantially increasing hazards due to a design feature or incompatible uses under the No Project Alternative.

**Level of Significance:** No Impact

**Mitigation Required:** None Required

**Impact TRA-4 The Project would not result in inadequate emergency access.**

**Impact TRA-4a Proposed Project Analysis**

Emergency access could be hindered by a significant increase in traffic congestion or temporary road closure. While construction traffic is expected, normal traffic flow is not expected to be significantly impacted because the Project-created daily worker trips and hauling trips are not anticipated to create significant levels of traffic or adversely affect the LOS on these roadways. Additionally, MM TRA-1 would ensure notification to emergency responders so that
route adjustments and other planning changes could reasonably be implemented if necessary during the construction phase of the Project. Therefore, the proposed Project would have a less than significant impact to emergency access and emergency responders along roadways during construction with MM TRA-1 incorporated.

As described in Impact TRA-3a above, access to the Project site during construction is expected to require the use of private driveways and private roadways. This could affect the ability of emergency responders to access homes or structures serviced by these driveways and roads. However, construction equipment would be staged within the Project site, so the duration of heavy equipment and vehicles on the private driveways and roadways would be limited and temporary. Additionally, construction equipment would be stored in staging areas or other off-road locations when not in use and at the end of each day, thus allowing for normal ingress and egress access afterhours. Therefore, the impact on private driveways and private roadways would be less than significant.

There would be no change in existing traffic associated with maintenance of the proposed Project following the completion of construction, so the Project would not contribute to traffic congestion during normal operation. Thus, the Project’s impact on emergency access would only be temporary. Therefore, the Project’s long-term impact on emergency access would be less than significant.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM TRA-1

Impact TRA-4b Blair Road Alternative Analysis

Impacts related to emergency access under the Blair Road Alternative would be similar to those discussed under the proposed Project in regard to construction-related traffic generated along the roadways and the staging areas that would be used during construction. The Blair Road Alternative would have greater potential to impact the emergency responder access than the proposed Project because of the amount of work directly within the Blair Road right-of-way. Lane closures could cause delays during construction which could have the potential to limit access for emergency responders along short sections of Blair Road. However, as with the proposed Project, MM TRA-1 would be implemented and would reduce the impacts related to emergency access by including coordination with emergency response agencies to ensure adequate access through the construction area is maintained at all times. Additionally, construction along the cross-country portions of this alternative would not impact or impede emergency access. Therefore, the Blair Road Alternative’s impact on emergency access would be less than significant with mitigation incorporated.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM TRA-1

Impact TRA-4c Combined Alternative Analysis

Impacts related to emergency access for the Combined Alternative would be similar to the proposed Project and the Blair Road Alternative respective to their overlapping footprints. However, construction along Blair Road directly would occur for a shorter duration than the Blair Road Alternative. Emergency access could still be impacted, and MM TRA-1 would be required to allow for adequate coordination and access for emergency vehicles through the Combined Alternative construction area. The additional cross-country portions of this alternative that differ from the
Blair Road Alternative would not impact or impede emergency access. Therefore, the Combined Alternative’s impact on emergency access would be less than significant with mitigation incorporated.

**Level of Significance:** Less than Significant with Mitigation

**Mitigation Required:** MM TRA-1

**Impact TRA-4d No Project Alternative Analysis**

Under the No Project Alternative, current conditions in the Project area would remain the same, and no construction impacts would occur. Therefore, there would be no impacts to emergency access under the No Project Alternative.

**Level of Significance:** No Impact

**Mitigation Required:** None Required

**Impact TRA-5 Proposed Project Analysis**

The proposed Project would not conflict with any adopted policies, plans or programs for public transportation. There are no public transit stops within the proposed Project vicinity and no bicycle lanes or pedestrian walkways along Blair Road, therefore the proposed Project would not affect these forms of public transit. There is a potential for school buses to be routed along Blair Road but increases to area traffic from construction would be insignificant and are not expected to substantially increase transit times for students who use the local student bus services. Therefore, the proposed Project’s would not conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities, and the impact would be less than significant.

**Level of Significance:** Less than Significant

**Mitigation Required:** None Required

**Impact TRA-5b Blair Road Alternative Analysis**

Impacts under the Blair Road Alternative would be similar to the proposed Project, but there would be a greater potential to result in delays to school buses in the area from temporary partial or full road closures. The implementation of MM TRA-1 would require the District to coordinate with local bus services to minimize potential delays beyond an unreasonable level by either providing detours or informing bus service providers of construction times and locations. Additionally, the cross-country portions of this alternative would not further impact public transit due to the secluded nature of these portions of this alternative. For these reasons Blair Road Alternative would not conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities, and the impact would be less than significant with mitigation incorporated.
Level of Significance: Less than Significant with Mitigation

Mitigation Required: MM TRA-1

Impact TRA-5c Combined Alternative Analysis

Impacts to public transit, bicycle, and pedestrian facilities under the Combined Alternative would be the same as described under the proposed Project and the Blair Road Alternative for the respective overlap of the alignments. The additional cross-country portion of this alternative that differ from the Blair Road Alternative would not further impact public transit due to the secluded nature of these portions of this alternative. For these reasons Combined Alternative would not conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities, and the impact would be less than significant with mitigation incorporated.

Level of Significance: Less than Significant with Mitigation

Mitigation Required: TRA-1

Impact TRA-5d No Project Alternative Analysis

Under the No Project Alternative, current conditions in the Project area would remain the same, and no construction impacts would occur. Therefore, there would be no impacts to public transit, bicycle or pedestrian facilities under the No Project Alternative.

Level of Significance: No Impact

Mitigation Required: None Required

3.13.5 Transportation and Traffic Mitigation

3.13.5.1 Mitigation Measure TRA-1 Prepare and Implement Traffic Control Plan

The construction contractor and/or the District shall prepare and implement a traffic control plan. The traffic control plan shall contain detailed measures approved by the County in order to ensure acceptable levels of traffic flow, emergency response notification and response times, and public and school bus transit coordination and detours. The Plan shall include at a minimum: discussion of expected construction schedule and locations, traffic control measures, and coordination with and notification of residents, emergency response agencies, and school districts affected by lane and road closures to ensure delays are minimized, detours are noticed, and that emergency access remains possible at all times.

**Mitigation Measure TRA-1 Implementation**

**Responsible Party:** The District shall ensure the selected contractor appropriately prepares and implements the traffic control plan in accordance with all applicable guidelines and the requirements of this mitigation measure through approval by County Department of Transportation.

**Timing:** Prior to and during construction.
UPPER MAIN DITCH PIPING PROJECT

Transportation and Traffic
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Monitoring and Reporting Program: The District shall monitor and coordinate with the contractor during weekly construction meetings to ensure that the traffic control plan is implemented successfully as documented in inspection logs, and the traffic control plan shall remain on file at the District.

Standards for Success: Traffic flow remains at acceptable levels, emergency access remains reasonably possible at all times, school bus routes in the area and residents along Blair Road are appropriately apprised of road closures, delays, and lane restrictions, and the Project area remains in compliance with all applicable transportation goals, policies, and requirements.
3.13.6 Abbreviations

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<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>ADT</td>
<td>Average Daily Traffic</td>
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<td>BMPs</td>
<td>Best Management Practices</td>
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3.13.7 References


El Dorado Irrigation District Upper Main Ditch Piping Project
Draft Environmental Impact Report
Chapter 3.14 Utilities and Service Systems

June 2018
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3.14 UTILITIES AND SERVICE SYSTEMS

3.14.1 Basis for Analysis

The California Environmental Quality Act (CEQA) Guidelines’ Appendix G Environmental Checklist was assessed during the Notice of Preparation/Initial Study (NOP/IS) scoping process (included in Appendix A) to identify the Project components that have the potential to cause a significant environmental impact. The following potential impacts were determined to warrant further evaluation within this Environmental Impact Report (EIR):

- Require or result in the construction of new water, wastewater treatment, or new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Have sufficient water supplies available to serve the Project from existing entitlements and resources or identify if new or expanded entitlements would be needed.

The following potential impacts were determined to have a less than significant or no impact during the NOP/IS scoping process (included in Appendix A), and are not discussed further in this section:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- 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;
- Be served by a landfill with sufficient permitted capacity to accommodate the Project’s solid waste disposal needs; or
- Comply with federal, state, and local statutes and regulations related to solid waste.

The remainder of this section describes the regulatory and environmental baseline setting to support the evaluation of the potential impacts and describes the potential impacts to the existing utilities and services systems that may result from implementation of the Project and identifies mitigation for significant impacts, where feasible.

3.14.2 Regulatory Framework

This section discusses the federal, state regulations and local policies and objectives, particularly those in the El Dorado County (County) General Plan that govern utilities and service systems applicable to the Project.

3.14.2.1 Federal

Safe Drinking Water Act (1974)

The Safe Drinking Water Act (SDWA) was established to protect the quality of drinking water in the United States. This law focuses on all waters actually or potentially designed for drinking use, whether from above ground or underground sources.
3.14.2.2 State

California Constitution, Article X

Article X (10), Section 2, of the California Constitution recognizes the need to put the State’s water resources to maximum beneficial use:

*It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.*

Senate Bill 7X-7, Water Conservation Act of 2009

Senate Bill (SB) 7X-7, the Water Conservation Act of 2009, included a mandate to reduce per capita urban water usage by 20 percent by the year 2020. This is also known as the “20 x 2020” mandate. As an urban retail water supplier, the District must comply with this legislation.

Urban Water Management Planning Act (California Water Code Division 6, Part 2.6, Sections 10610 through 10657)

One of the purposes of this Urban Water Management Planning Act (UWMP Act), enacted in the California Water Code (Water Code) as Division 6, Part 2.6, Sections 10610 through 10657, is to ensure the efficient use of available water supplies. The UWMP Act became part of the Water Code with the passage of Assembly Bill 797 during the 1983–1984 regular session of the California legislature. Subsequently, assembly bills between 1990 and 2003 amended the UWMP Act. The UWMP Act was amended in November 2009 with the adoption of SB 7X-7. The most significant revision is the requirement for establishing per capita water use targets and an option to delay Urban Water Management Plan (UWM Plan) adoption to July 1, 2011. The California Department of Water Resources (DWR) most recently issued revised guidelines for the preparation of the 2015 UWMP updates in the March 2016, “Guidebook for Urban Water Suppliers”. These guidelines reflected changes in the regulations that had been adopted as a result of the historic drought that extended from 2011 to 2016, including amendments to the Water Code.

The UWMP Act requires every urban water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually to adopt and submit a Plan every five years to the California DWR. According to California DWR, the UWMP Act states that these urban water suppliers should make every effort to assure the appropriate level of reliability in its water service is sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The UWMP Act describes the contents of the UWMP as well as how urban water suppliers should adopt and implement the UWM Plan.
3.14.2.3 Local

District Board Policies and Administrative Regulations

The El Dorado Irrigation District’s (the District) guidance with regards to “Water Supply” is found under Section BP 5000 of the adopted EID Board Policies (BP) and Administrative Regulations (AR):

BP 5030: Water Conservation: It is Board policy to take reasonable and prudent measures to conserve all water and to adopt and implement water-use efficiency programs that will benefit its customers.

El Dorado County General Plan

The Project is proposed by the District (the owner), a special district that supplies water to customers in the County. The Project would be a modification to the District’s Upper Main Ditch. Pursuant to Government Code Section 53091(E), many of the District’s activities are not subject to local zoning or land use requirements, as stated below.

Zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code.

As a special district with equal authority, the District is exempt from following goals and policies within the County General Plan. However, the District aims to comply to with those goals and policies outlined in the General Plan. As such, the following objectives relating to utilities and services systems are assessed relevant to the Project (EDCGP 2015):

Goal 5.1: Provision of Public Services: Provide and maintain a system of safe, adequate, and cost-effective public utilities and services; maintain an adequate level of service to existing development while allowing for additional growth in an efficient manner; and, ensure a safe and adequate water supply, wastewater disposal, and appropriate public services for rural areas.

Goal 5.2: Water Supply: The development or acquisition of an adequate water supply consistent with the geographical distribution or location of future land uses and planned developments.

Policy 5.2.1.10: The County shall support water conservation and recycling programs and projects that can reduce future water demand consistent with the policies of this General Plan. The County will develop and implement a water use efficiency program for existing and new residential, commercial/industrial, and agricultural uses. The County will also work with each of the County’s water purveyors to develop a list of the type of uses that must utilize reclaimed water if feasible. The feasibility of using reclaimed water will be defined with specific criteria developed with public input and with the assistance of the District and will be coordinated with their ongoing reclaimed water (also referred to as recycled water) planning and implementation process. The County shall encourage all water purveyors to implement the water conservation-related Best Management Practices (BMPs) already implemented by the District and in compliance with the related criteria established by U.S. Bureau of Reclamation.

Policy 5.2.1.13: The County shall encourage water purveyors to design water supply and infrastructure projects in a manner that avoids or reduces significant environmental effects to the maximum extent feasible in light of the water supply objectives of a given project.
Objective 5.2.3: Groundwater Systems: Demonstrate that water supply is available for proposed groundwater dependent development and protect against degradation of well water supplies for existing residents.

Policy 5.2.3.4: All applications for divisions of land and other discretionary or ministerial land uses which rely on groundwater for domestic use, or any other type of use, shall demonstrate that groundwater is adequate as part of the review and approval process. The County shall not approve any discretionary or ministerial projects unless the County finds, based on evidence provided by the applicant, or other evidence that may be provided, that the groundwater supply for the project in question is adequate to meet the highest demand associated with the approval in question.

3.14.3 Environmental Setting

Spanning a service area of over 220 miles in El Dorado and Sacramento Counties, the District provides wide-ranging services for water, wastewater, and recycled water systems, as well as hydropower and parks and recreation for nearly 110,000 residents. The District is the drinking water service provider for the majority of the Pollock Pines community, with the balance served by individual wells. The existing consumptive water rights for the District include entitlements for storage and direct diversion and include pre-1914 and post-1914 rights as well as contract rights. The District owns the water rights to all water in the ditch through the Project area and provides raw water irrigation connections along the ditch to four customers (EID 2015). The District’s current water supply includes four water supply sources, which include natural runoff, carryover storage, contract water, and recycled water (EID 2016). Currently, the Upper Main Ditch conveys raw water supplies from the Forebay Reservoir to the Reservoir 1 Water Treatment Plant (WTP) where it is then treated and distributed throughout the District’s public drinking water system. In addition to District system connections, there are five confirmed privately owned and operated domestic water supply wells adjacent to the Project (El Dorado County 2016). Most residences and businesses in the Project area are served by individual and privately-owned wastewater treatment systems (e.g. septic systems).

Based on the District Consumption Report for 2016 for potable water, raw water, recycled water, and ditch systems, the residential water use in the Pollock Pines service area totaled at approximately 462 acre-feet (approximately 150 million gallons [MG]) per year (EID 2016). Domestic groundwater use in this community accounts for 0.66 to 1.6 MG per year, or equivalent to 2.0 to 4.9 acre-feet per year in total.

Seepage from the existing ditch may currently result in some passive recharge of the local groundwater supplies. However, studies conducted for this analysis (described below) indicate that the groundwater recharge from precipitation is significantly greater than the maximum existing and planned domestic use (Youngdahl Consulting Group 2017). According to this study, the potential contribution of ditch seepage to recharge a well would be expected to be minimal and decline as distance from the ditch increased, provided all other influencing factors remained uniform (geology/soils/climate, etc.). Percolation from groundwater seepage is expected to travel vertically through fractures in the bedrock, and the potential for recharge is limited in geographic scope and relatively small compared with natural recharge from precipitation and snowmelt.

Tully and Young (2017) evaluated the seepage information and modeling from previous studies and analyzed additional data available in a water loss technical memorandum prepared for the District in analysis of the Upper Main Ditch water losses. The memorandum concluded that total water loss from the ditch can range from 31- to 33-percent loss under low flow conditions (5 to 10-cubic feet per second [cfs] based on seasonal variations) and 11-12 percent loss under high flow conditions of (35.1-to 40-cfs). Conclusions of the study indicated that based on 2009 to
2015 data, minimum savings of approximately 1,350 acre-feet per year and an average of nearly 1,800 acre-feet can be expected to result from piping the ditch (Tully and Young 2017).

In the foothills, the infiltration of groundwater to wells depends upon fractures in rocks and the local subsurface geology. Fractured bedrock typically produces varying rates of production in wells, as one well may produce less than five-gallons per minute (gpm), while another well in the near vicinity may produce more than 50-gpm. These foothill wells do not exhibit the same characteristics as wells found in typical groundwater basins (aquifers), such as those found in the valley floor. Contiguous clay layers act as barriers to vertical water migration and may indicate minimal or no seepage from the ditch to the wells adjacent to the Project when such layers are present in the well areas.

3.14.3.1 Alternatives

The utilities and service systems described for the proposed Project also apply for the Blair Road Alternative and the Combined Alternative.

3.14.4 Environmental Impacts

This section analyzes the Project’s potential to result in significant impacts to utility and service systems. When the Project's impact was determined to be significant, feasible mitigation measures were identified to reduce or avoid that impact.

3.14.4.1 Project Impact Analysis

This section discusses potential impacts associated with the Project and provides mitigation measures where necessary and feasible.

| Impact UTL-1 | The Project would not require or result in the construction of new water, wastewater treatment, or new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. |

Impact UTL-1a Proposed Project Analysis

The proposed Project would involve relocation of existing utilities and reconnection of existing affected District customers, but it would not alter current district operations for the treatment or conveyance of raw, treated, or wastewater. The Upper Main Ditch currently conveys raw water from Forebay Reservoir and passively receives stormwater flows along the length of the ditch between Forebay Reservoir and the Reservoir 1 WTP. Post-construction, the existing ditch would retain a channel that would continue to accommodate stormflows at the same level as under current conditions. Flows in excess of those currently conveyed, which generally exceed a 10-year storm continue to have the potential to overtop the regraded ditch at certain locations as they currently do following the natural downslope drainage and would not require the construction of new or expanded stormwater facilities. Therefore, the proposed Project would have no impact on water, wastewater, or stormwater facilities.

Level of Significance: No Impact

Mitigation Required: None Required
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Impact UTL-1b Blair Road Alternative Analysis

Like the proposed Project, construction and operation of the Blair Road Alternative would not require construction of new water, wastewater treatment, or stormwater drainage facilities or expansion of existing facilities beyond what is incorporated into the alternative. Stormwater flows would continue to be passively received along the existing ditch alignment. Under this alternative, changes to the ditch would be limited to the area where the pipeline transitions into and from the existing ditch where design would be similar to the proposed Project and would not impede storm flows. Therefore, the Blair Road Alternative would not alter existing storm flows and would have no impact to water, wastewater, or stormwater facilities.

Level of Significance: No Impact

Mitigation Required: None Required

Impact UTL-1c Combined Alternative Analysis

Like the proposed Project, construction and operation of the Combined Alternative would not require construction of new water, wastewater treatment, or stormwater drainage facilities or expansion of existing facilities beyond what is incorporated into the alternative. Stormwater flows would continue to be passively received along the existing ditch. Under this alternative, changes in the pipeline transitions where the pipeline enters and exists the ditch would be designed the same as the proposed Project and would maintain stormwater flows similar to existing conditions. Therefore, the Combined Alternative would not alter existing storm flows and would have no impact to water, wastewater, or stormwater facilities.

Level of Significance: No Impact

Mitigation Required: None Required

Impact UTL-1d No Project Alternative Analysis

The No Project Alternative would result in no construction or stormwater-related impacts to the Project area. The existing ditch would continue to convey raw water and passively receive stormwater as under current conditions. Therefore, no impact would occur.

Level of Significance: No Impact

Mitigation Required: None Required
Impact UTL-2 Proposed Project Analysis

The proposed Project would maintain existing operations of District consumptive water deliveries within its existing water right entitlements and continue to serve existing raw water customers in the Project area. The proposed Project would not generate a need for additional water supplies and no new or expanded entitlements would be needed. The District’s existing water supplies and associated water rights are sufficient for the existing needs of the District’s customers and would not be changed under the proposed Project. Additionally, the four raw water customers currently served directly by the ditch would continue to receive raw water and would not be impacted by the proposed Project.

There is a potential that the reduction of seepage associated with releases from Forebay Reservoir may passively or indirectly impact local groundwater recharge from water losses from the ditch. Some property owners near the ditch rely on private wells for domestic water supplies. However, these wells are generally drilled into much deeper strata than surface recharge directly reaches (Water Board 2015). Figure 3.14-1 illustrates typical well construction recommendations from the State Water Resources Control Board (Water Board), which suggest private domestic water wells be constructed deep enough to avoid groundwater with influence from surface water (such as areas where raw water seepage from the ditch could reach) (Water Board 2015). Unlike Figure 3.14-1, wells in the Sierra Nevada region are typically installed in fractured bedrock where water is captured from subterranean flows through fractured media; however, the well construction details shown are representative of general well construction methodology that would likely have been used for wells in the Project area. Water Board advises against consumption of untreated raw water, making potable water wells with raw water exposure unusable for potable consumption without treatment (Water Board 2015). For this reason, potable wells are drilled to greater depths than raw water seepage from the ditch would reach (illustrated by the depth of the well opening in Figure 3.14-1), indicating the elimination of ditch seepage would have little or no effect on well production. California DWR does not have data on the location or quantity of groundwater in the proposed Project area. Percolation from groundwater seepage is expected to travel vertically through fractures in the bedrock, rather than horizontally to nearby wells. Site-specific soil conditions also may act as barriers to vertical water migration, allowing minimal or no seepage from the ditch to the wells adjacent to the Project, further reducing the possibility that the reduction of seepage from the ditch would adversely affect the availability of water for existing potable wells. Finally, as discussed above, a 2017 study found that the potential for recharge is limited in geographic scope and relatively small compared with natural recharge from...
precipitation and snowmelt (Youngdahl Consulting Group 2017). Because the total recharge from rain and stormwater is much higher than expected domestic use for wells in the area, reduction in seepage from the ditch would not have a substantial adverse effect on wells adjacent to the Project. For all these reasons, it is anticipated that the proposed Project would have little or no effect on local groundwater resources.

Further, the proposed Project benefits water supplies since the Project’s water loss savings are projected to average approximately 1,800 acre-feet per year (Tully and Young 2017). The proposed Project will help conserve water and improve system efficiency. This water conservation is consistent with the objectives of the District and state policy with regards to the conservation of the state’s water supplies. Therefore, potential Project impacts to water supply would be considered less than significant.

**Level of Significance:** Less than Significant

**Mitigation Required:** None Required

**Impact UTL-2b Blair Road Alternative Analysis**

Impacts related to water supplies for the Blair Road Alternative would be similar as described under the proposed Project because the Blair Road Alternative would also involve piping the water supply that is currently conveyed by the existing unlined ditch, in order to conserve water and reduce seepage associated with releases of water from Forebay Reservoir. Impacts to the existing groundwater wells and raw water connections in the Project area would be similar to current conditions and water loss from seepage and evaporation would be reduced. Therefore, the potential Blair Road impacts to water supply would be considered less than significant.

**Level of Significance:** Less than Significant

**Mitigation Required:** None Required

**Impact UTL-2c Combined Alternative Analysis**

Impacts related to water supplies for the Combined Alternative would be similar as described under the proposed Project because the Combined Alternative would also involve piping the water supply currently conveyed by the existing unlined ditch, in order to conserve water and eliminate seepage. Impacts to the existing groundwater wells and raw water connections in the Project area would be similar to current conditions and water loss from seepage and evaporation would be reduced. Therefore, the potential Combined Alternative impacts to water supply would be considered less than significant.

**Level of Significance:** Less than Significant

**Mitigation Required:** None Required

**Impact UTL-2d No Project Alternative Analysis**

Under the No Project Alternative, the existing ditch would remain operating under current conditions and result in continued water supply loss due to seepage and evaporation. Water supplies would continue to operate under current conditions and therefore, there would be no impact to water supplies, but there also would be no benefit from the additional conserved water.
Level of Significance: No Impact

Mitigation Required: None Required

3.14.5 Utilities and Service Mitigation

No mitigation measures are required.
3.14.6 Abbreviations

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<td>California Environmental Quality Act</td>
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<td>Cfs</td>
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3.14.7 References


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4.0 OTHER CEQA CONSIDERATIONS

This section evaluates the California Environmental Quality Act (CEQA) required topics of growth inducing impacts, significant and unavoidable impacts, significant irreversible environmental changes, and mandatory findings of significance relative to the Upper Main Ditch Piping Project (Upper Main Ditch Piping Project or Project). It also provides a discussion of the Project’s potential to result in significant energy impacts due to wasteful, inefficient or unnecessary consumption of energy. Further, the section evaluates the potential for the Project to contribute considerably to cumulative impacts in conjunction with recent past, current, and reasonably foreseeable future projects. Finally, this section also discusses the identified environmentally superior alternative.

4.1 GROWTH INDUCING IMPACTS

The CEQA Guidelines require that an Environmental Impact Report (EIR) include an evaluation of the potential growth inducing impact of a proposed action. Section 15126.2(d) requires that an EIR discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth, would tax community service facilities, or encourage or facilitate other activities that could significantly affect the environment, either individually or cumulatively. The Guidelines specify that it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

A project can have the potential for direct and/or indirect growth inducement. Direct growth inducement would result if a project involved construction of new housing or otherwise directly fostered economic or population growth. Indirect growth inducement could result if a project would establish substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises), or if it would involve a substantial construction effort with substantial long-term employment opportunities that would indirectly stimulate the need for additional housing and services to support the new employment demand.

Similarly, a project could indirectly induce growth if it would remove a physical obstacle to additional growth and development, such as removing a constraint or adding a required public service. Other examples of removing a physical obstacle could include construction of a new roadway into an undeveloped area or construction of a wastewater treatment plant with excess capacity to serve additional new development. Construction of these types of infrastructure projects cannot be considered isolated from the immediate development that they facilitate and serve. Projects that physically remove obstacles to growth, or projects that indirectly induce growth, are those that may provide a catalyst for future unrelated development in the area. The growth inducing potential of a project could also be considered significant if it fosters growth in excess of what is assumed in the local master plans and land use plans, or in projections made by regional planning agencies.

Generally, environmental impacts from community population growth and community development are addressed through local and community planning/management documents that allow for strategic planning and smart growth. Current planning documents applicable to the Project include the District’s 2015 Urban Water Management Plan (UWMP), the District’s 2013 Integrated Water Resources Master Plan (IWRMP), and the 2015 amended El Dorado County General Plan. Any future growth that would be supplied water by the Project would be required to comply and
develop in a manner consistent with these plans, and the impacts of such development have been evaluated in connection with the adoption of those plans.

The Upper Main Ditch Piping Project would replace a 3-mile section of a water supply ditch with a buried pipeline that would convey raw water while reducing water leakage and losses and improving the quality of water entering the Reservoir 1 Water Treatment Plant (WTP). The Project does not include new housing or other development.

Construction of the Project would require construction crews working on the Project for a 12- month to 13- month duration over one or two years depending on the alternative selected. However, these workers would not contribute to a significant population increase; based on the available workforce within commuting distance of the Project area, it is assumed that Project construction workers would either already live in the Project area or commute daily from outside the Project area and would not permanently relocate to the area nor reside in the area during any breaks in construction. Even if some construction workers were to relocate to the Project area to work on the Project, the small size of the construction crew would not constitute a significant increase in population. The Project would not require an increase in permanent employees during normal operation. Therefore, the Project would not directly foster significant population growth or housing demands in the area through direct employment demand.

The Project is expected to reduce the loss of water from seepage and evapotranspiration during transport in the unlined ditch. These losses occur between the point of measurement for this existing water supply, as identified in the District’s Urban Water Management Plan, and Reservoir 1 WTP. Therefore, there is currently a functionally lower volume of water available for treatment and distribution to District customers than what is diverted and as such, the reduction of losses would serve to increase efficiency of available supplies, rather than provide new supplies. As a result, the Project would not provide water for new growth nor remove an existing obstacle to growth.

Additionally, the Project would not provide individual treated water connections, treatment capacity, or sewer service, nor would it result in improved roads or access to the area. Potable water supplies are already provided to the area, and the Project would allow the District to continue to serve the demand within its authorized service area while increasing the District’s water conservation. Lands directly adjacent to the Project area are generally rural. No aspect of the Project would either directly or indirectly add to the development of this area. Therefore, the Project would not remove key obstacles to population growth in the area.

### 4.2 ENERGY IMPACTS

The CEQA Guidelines (Appendix F) require that an EIR consider whether a project would result in inefficient, wasteful, or unnecessary consumption of fuels or other energy resources, especially fossil fuels such as coal, natural gas, and oil. The Guidelines’ emphasis on conserving energy suggests the wise and efficient use of energy, including (1) decreasing overall per capita energy consumption, (2) decreasing reliance on natural gas and oil, and (3) increasing reliance on renewable energy sources. The Project itself would not significantly contribute to overall use of nonrenewable resources currently used to generate electricity since it facilitates the use of hydroelectric power generation in the short term at Forebay Reservoir and requires only the temporary use of limited amounts of diesel fuel for construction equipment.
4.2.1 Construction Phase

4.2.1.1 Transportation Energy Demand

The United States Environmental Protection Agency (USEPA) regulates non-road diesel engines (USEPA 2018). The USEPA has no formal fuel economy standards for non-road (e.g., construction) diesel engines but does regulate diesel emissions, which indirectly affects fuel economy. In 1994, USEPA adopted the first set of emissions standards (Tier 1) for all new non-road diesel engines greater than 37-kilowatts (50-horsepower (hp)). The Tier 1 standards were phased in for different engine sizes between 1996 and 2000, reducing nitrogen oxide (NO\textsubscript{x}) emissions from these engines by 30 percent.

The USEPA has since adopted more stringent emission standards for NO\textsubscript{x}, hydrocarbons, and particulate matter (PM) from new non-road diesel engines kilowatts. This program includes the first set of standards for non-road diesel engines less than 37 kilowatts. It also phases in more stringent Tier 2 emission standards from 2001 to 2006 for all engine sizes and adds yet more stringent Tier 3 standards for engines between 37 and 560 kilowatts (50 and 750 hp) from 2006 to 2008. These standards would further reduce non-road diesel engine emissions by 60 percent for NO\textsubscript{x} and 40 percent for PM from Tier 1 emission levels. In 2004, the USEPA issued the Clean Air Non-Road Diesel Rule. This rule, which took effect in 2008 and was fully phased in by 2014, cut emissions from non-road diesel engines by more than 90 percent. These emission standards are intended to promote advanced clean technologies for non-road diesel engines that improve fuel combustion, but they also result in slight decreases in fuel economy.

Construction activities associated with the various elements of the Project would result in the consumption of petroleum-based fuels. There are no unusual Project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in other parts of the State. Project contractors have an economic incentive to minimize fuel consumption and associated costs. Therefore, it is expected that construction fuel consumption associated with the Project would not be inefficient, wasteful, or unnecessary.

4.2.2 Operations Phase

4.2.2.1 Transportation Energy Demand

Vehicle fuel efficiency is regulated at the federal level. Pursuant to the Federal Energy Policy and Conservation Act of 1975, the National Highway Traffic and Safety Administration is responsible for establishing additional vehicle standards and for revising existing standards (NHTSA 2018). The fuel economy standard for new passenger cars has been 27.5 miles per gallon since 1990. The fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 miles per gallon since 1996. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is not determined for each individual vehicle model; rather, compliance is determined on the basis of each manufacturer’s average fuel economy for the portion of its vehicles produced for sale in the United States.

Under normal operation, the Project would not create travel requirements that would require the consumption of energy resources. However, vehicular travel may occur as necessary for maintenance of the pipeline similar to, although to a lesser extent, the current ditch. As such, it would be expected that the Project would not result in
greater vehicular fuel consumption than under existing conditions and the Project would not result in an inefficient, wasteful, or unnecessary use of energy.

4.3 **CUMULATIVE IMPACTS**

An EIR must discuss the cumulative impacts of a project when the project’s incremental effect is “cumulatively considerable,” meaning that the project’s incremental effects are considerable when viewed in connection with the effects of past, current, and probable future projects (CEQA Guidelines Section 15130(a)). CEQA Guidelines section 15130(b) requires that the discussion of cumulative impacts reflect the severity of the impacts and their likelihood of occurrence. The CEQA Guidelines note that the cumulative impacts discussion does not need to provide as much detail as is provided in the analysis of project-only impacts and should be guided by the standards of practicality and reasonableness.

In addition, section 15130(b) of the CEQA Guidelines the cumulative analysis must include:

- **Either:** (A) a list of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those projects outside the control of the Lead Agency (i.e., the list approach); or (B) a summary of projections contained in an adopted general plan or related planning document designed to evaluate regional or area-wide conditions (i.e., the plan approach). Any such planning document shall be referenced and made available to the public at a location specified by the Lead Agency.

- **A reasonable analysis of the cumulative impacts of the relevant projects.** An EIR shall examine reasonable options for mitigating or avoiding any significant cumulative effects of a proposed Project. The State CEQA Guidelines define a cumulative impact as two or more individual impacts that, when considered together, are significant or that compound or increase other significant environmental impacts. Cumulative impacts can result from individually minor, but collectively significant projects taking place over a period of time (State CEQA Guidelines section 15355). The incremental impact of a project, although less than significant on its own, may be considerable when viewed in the cumulative context of other closely related past, present, and reasonably foreseeable probable future projects. A considerable contribution is considered to be significant from the point of view of cumulative impact analysis.

The above-mentioned CEQA Guidelines provide that cumulative context may be described through either the list approach or the plan/projections approach. The list approach involves identifying and listing the past, present, and reasonably foreseeable probable future projects that contribute to a given significant cumulative impact. The plan/projections approach relies on an adopted plan or reliable projection that describes the significant cumulative impact. Section 4.5.1 discusses cumulative impacts to resources in relation to their geographic scope and Table 4.5-1 identifies which method of evaluation is appropriate for each resource. This cumulative impact analysis incorporates the adopted El Dorado County (County) General Plan as identified in the Chapter 3.0 resource sections by reference.

4.3.1 **Geographic Scope**

The geographic area that is analyzed for cumulative impacts depends on the resource being analyzed. The geographic area associated with a proposed project’s different environmental impacts defines the boundaries of the area used for compiling the list of past, present, and probable future projects considered in the cumulative impact analysis. The geographic area that could be affected by implementation of the Upper Main Ditch Project in
combination with other projects varies depending on the type of environmental resource being considered. The general geographic area associated with different types of environmental effects of the Project defines the scope of the area considered in the cumulative impact analysis (see Table 4.5-1). Also listed is the method of evaluation used to analyze cumulative impacts for each environmental resource.

Table 4.3-1 Geographic Scope of Cumulative Impact and Method of Evaluation

<table>
<thead>
<tr>
<th>Resource Topic</th>
<th>Geographic Area</th>
<th>Method of Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aesthetics</td>
<td>Immediate Project Vicinity</td>
<td>Projects</td>
</tr>
<tr>
<td>Air Quality</td>
<td>Local (Toxic Air Contaminants)</td>
<td>Projects and Projections</td>
</tr>
<tr>
<td></td>
<td>Air Basin (Construction Related and Mobile Sources)</td>
<td></td>
</tr>
<tr>
<td>Biological Resources</td>
<td>Immediate Project Vicinity Region</td>
<td>Projects</td>
</tr>
<tr>
<td>Cultural Resources</td>
<td>Immediate Project Vicinity</td>
<td>Projects</td>
</tr>
<tr>
<td>Geology and Soils</td>
<td>Immediate Project Vicinity</td>
<td>Project</td>
</tr>
<tr>
<td>Hazards and Hazardous Materials</td>
<td>Immediate Project Vicinity</td>
<td>Projects</td>
</tr>
<tr>
<td>Hydrology and Water Quality</td>
<td>Immediate Project Vicinity Watershed</td>
<td>Projects and Projections</td>
</tr>
<tr>
<td>Noise</td>
<td>Immediate Project Vicinity</td>
<td>Projects</td>
</tr>
<tr>
<td>Public Services</td>
<td>Immediate Project Vicinity</td>
<td>Projects and Projections</td>
</tr>
<tr>
<td>Recreation</td>
<td>Immediate Project Vicinity</td>
<td>Projects</td>
</tr>
<tr>
<td>Transportation and Traffic</td>
<td>Immediate Project Vicinity Regional roadway network</td>
<td>Projects and Projections</td>
</tr>
</tbody>
</table>

Notes: Projects = the use of a list of past, present, and reasonable foreseeable projects  Projects = the use of projections contained in relevant planning documents

For those environmental resources that were evaluated based on the projections approach, the projections take into consideration future projects that are not included in the below list of related plans and projects.

4.3.2 List of Related Plans and Projects

A list of past, current, and reasonably foreseeable future projects was compiled using information from El Dorado County Community Development Agency (CDA), El Dorado County Water Agency (ECWA), the County, and the District. The past, present and reasonably foreseeable future projects proposed by these agencies within or directly adjacent to the Project Area or in the vicinity of the El Dorado Forebay Reservoir, Blair Road and the community of Pollock Pines, consist of water utility projects and a transportation project. All agencies and development projects that could result in a cumulative impact were searched; however, transportation and water are the only two resource areas that are relevant to the cumulative impacts discussion. For the purposes of this discussion, these projects that may have a cumulative effect on the resources of the Upper Main Ditch Piping Project area are often referred to as the “collective projects.” These projects are described in Table 4.5-2.
## Upper Main Ditch Piping Project

### Other CEQA Considerations

#### June 2018

**Table 4.3-2  List of Collective Past, Present, and Reasonably Anticipated Future Projects in the Region**

<table>
<thead>
<tr>
<th>Lead Agency</th>
<th>Project Name</th>
<th>Date of Construction</th>
<th>Project Description</th>
<th>Potential Cumulative Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>El Dorado Irrigation District</td>
<td>District Forebay Dam Modification Project</td>
<td>Fall 2017-Fall 2019 - Under Construction</td>
<td>Present Project The Forebay Reservoir, constructed in 1922, receives water from the 22-mile-long El Dorado Canal, which originates at the South Fork of the American River at Kyburz. The District is currently planning to make several modifications to the dam and reservoir. The dam modification project would strengthen and raise the earthen dam 10-feet to satisfy regulatory requirements and increase its water storage capacity. The District has provided construction documents of the dam modifications prepared by GEI Consultants. The dam modification project will construct a new valve house at the inlet to the ditch below the Forebay. The valve house would be the terminus of a 36-inch steel pipe that conveys water from the trash rack covered inlet structure in the reservoir, to the ditch. An 18-inch diameter orifice plate would be installed in the 36-inch steel pipe that would restrict the discharge opening and reduce the head of the Main Ditch. The orifice plate would be removed when the ditch is piped. These future modifications would be considered during the design of the piping system for the Upper Main Ditch. (EID 2014)</td>
<td>Facilitate cumulative construction and noise impact if construction were to occur concurrently with the proposed Project.</td>
</tr>
<tr>
<td>El Dorado County Department of Transportation</td>
<td>Blair Road Bridge Replacement Project</td>
<td>Spring 2016 - Fall 2017 - Complete</td>
<td>Past Project El Dorado County Department of Transportation is currently planning to replace the Blair Road Bridge crossing of the Main Ditch. The bridge was built in 1935 and is 75 years old. It is a 15-feet wide, 35-feet long, one-lane crossing, made of reinforced concrete slab with concrete barrier rail. The bridge would be closed for approximately 60 days during construction. The project includes removal of the Blair Road drainage culvert and associated flows otherwise flowing into the Main Ditch. Based on the El Dorado County website, the expected Blair Road detour route is three miles north on Blair Road to Forebay Road to Pony Express Trail, representing a six-minute travel time. Coordination between the Blair Road Bridge replacement design and the Upper Main Ditch pipeline design would be necessary to ensure that improvements would be compatible.</td>
<td>Facilitate cumulative construction and noise impact if construction were to occur concurrently with the proposed Project.</td>
</tr>
<tr>
<td>El Dorado Irrigation District</td>
<td>Reservoir 1 Water Treatment Plant Improvement Program</td>
<td>2016-2022</td>
<td>Future Project This Program consists of targeted process, control and facility improvements at the Reservoir 1 Water Treatment Plant. This also includes any improvements to the Strawberry Water Treatment Plant facility as determined by life cycled assets or regulatory requirements. Several improvements have been identified to ensure regulatory compliance, increased service reliability, reduced maintenance expenditures and extended facility life. Individual improvements may change and/or be replaced with other more critical improvements as priorities are set and projects developed. Cost estimates are at the conceptual level of confidence. As projects are better defined, individual project numbers will be established. This also includes facility improvement funding available for any unplanned assets that have failed or been found to have reached their service life and need to be replaced throughout the distribution system or treatment plant</td>
<td>Facilitate cumulative construction and noise impact if construction were to occur concurrently with the proposed Project.</td>
</tr>
</tbody>
</table>

Source: Data compiled from the El Dorado Irrigation District and El Dorado County Transportation Commission, 2016

4.6
4.3.3 Methods

The analysis below examines the cumulative impacts of the Upper Main Ditch Piping Project for the relevant topics that are analyzed in Chapter 3.0 of this EIR. The resource sections that do not include mitigation measures (MM) and that do not pose an otherwise significant cumulative impact, are not included in the analysis below. These resource areas that are not addressed in this cumulative impact analysis include: agriculture and forestry resources and utilities and service systems. Greenhouse gas impacts are necessarily cumulative impacts and are addressed in the individual impact analysis in section 3. The remaining impacts are assessed by short term (construction) and long term (operational) impacts of the Upper Main Ditch Piping Project combined with the impacts of the past and planned projects listed in Table 4.5-2 (referred to as the collective projects).

Specifically, for each resource evaluated in this section, the analysis considers:

1) Whether the combined impacts of the Project and the projects in Table 4.5-2 are significant. If so,
   1. Whether the Project’s incremental contribution to that significant impact is cumulatively considerable. If so,
   2. Whether mitigation is feasible.

Note: it is possible that even when the cumulative impact of multiple projects is significant, the incremental contribution of the impact for the Upper Main Ditch Piping Project may itself not be cumulatively considerable (CEQA Guidelines Section 15064(h(4)). In this case, the Upper Main Ditch Piping Project's impact would not be cumulatively considerable.

Furthermore, a project's contribution is less than cumulatively considerable if the project implements mitigation measures designed to alleviate the cumulative impact. (CEQA Guidelines Section 15130 (a)(3)).

4.3.4 Resource-Specific Cumulative Analysis

4.3.4.1 Aesthetics and Visual Resources

The Upper Main Ditch Piping Project would have a less than significant impact on aesthetic and visual resources due to the linear nature and temporary and limited duration of construction activities, linear dispersion of tree removal, surrounding forest density, and the existing intermittent flows of the ditch, and minimal effect on public views. Simultaneous construction of other projects in the vicinity could potentially result in significant impacts on aesthetic and visual resources. However, since the collective projects are temporary construction projects of limited duration, and the visual receptors viewing the collective projects are not likely to have much if any overlap, the Upper Main Ditch Piping Project would not cause or contribute considerably to a significant cumulative impact and no mitigation is necessary.

4.3.4.2 Air Quality

The analysis of air quality in Section 3.2 is based on the regional impacts of criteria pollutants within the Mountain Counties Air Basin. The County is classified nonattainment for State Ozone, national Ozone, and PM10, and thus the
Upper Main Ditch Piping Project’s construction emissions for these pollutants would contribute to a significant cumulative air quality impact. The Upper Main Ditch Piping Project would be below the thresholds of significance defined by the El Dorado Air Quality Management District (AQMD) for criteria air pollutants (ROG, NO\textsubscript{x}, CO, PM\textsubscript{10}, and PM\textsubscript{2.5}). MM AIR-1, Dust and Emissions Control Plan would be incorporated to the Upper Main Ditch Project, to further reduce any potential construction related emissions. The El Dorado AQMD has not established cumulative significance thresholds for criteria pollutant emissions. The Upper Main Ditch Piping Project is consistent with the El Dorado County General Plan goals and policies relating to air quality, as well as the thresholds set by the El Dorado AQMD. As such, the Upper Main Ditch Piping Project’s contribution to cumulative air quality impacts would not be cumulatively considerable. Therefore, no mitigation would be required.

4.3.4.3 Biological Resources

The geographic scope of the potential cumulative impacts with respect to biological resources is usually limited to areas within the physical footprint of a project area. In the case of the Upper Main Ditch Piping Project, the Upper Main Ditch is connected to the Forebay Dam and crosses the Blair Road Bridge. Similar to the Upper Main Ditch Piping Project, the District Forebay Dam Modification Project and the other future and past projects listed in Table 4.5-2 are not expected to have potentially significant impacts to biological resources with the incorporation of mitigation. The following mitigation measures would be implemented for the Upper Main Ditch Piping Project:

- MM BIO-1, Pre-Construction Botanical Surveys
- MM BIO-2, Pre-Construction Environmental Awareness Training
- MM BIO-3, Reduce the Spread and Introduction of Invasive Noxious Weeds
- MM BIO-4, Avoid Disturbance to Nesting Raptors and Other Nesting Migratory Birds
- MM BIO-5, Avoid Disturbance to Roosting Bat Species
- MM BIO-6, Avoid and Minimize Impacts to Oak Trees and Oak Woodlands
- MM BIO-7, Exclusionary Fencing for Sensitive Resources

With the implementation of the mitigation measures described above, the Upper Main Ditch Piping Project would have a less than significant impact to biological resources. The projects listed in Table 4.5-2 would likely be required to implement similar mitigation measures or BMPs if similar impacts to biological resources would occur. Therefore, the Upper Main Ditch Piping Project in combination with other present and future projects would have a less than significant cumulative impacts on biological resources. Therefore, compliance with CEQA, including identified mitigation measures, would result in a less than significant impact on biological resources and avoidance of adverse cumulative effects.

When the Upper Main Ditch Piping Project is analyzed in conjunction with other recent, current, and reasonably foreseeable projects, the potential contribution to the cumulative biological resource impact to special status species, wetlands, migratory corridors, and trees, is not considered cumulatively considerable, because the Upper Main Ditch Piping Project was designed and adjusted to avoid and minimize impacts to biological resources. Additionally, the
Upper Main Ditch Piping Project would avoid potential biological resources impacts through protective measures such as avoiding disturbance to nesting raptors and bat species.

The Upper Main Ditch Piping Project would not have a cumulatively considerable impact to special status plant or animal species when reviewed in conjunction with other local projects. This is because the Upper Main Ditch Piping Project would be designed to protect plant and wildlife species through implementation of pre-construction biological surveys and monitoring, as needed, to protect and avoid these biological resources.

As disclosed in the Biological Resources Section (Section 3.4), the Project would not conflict with local policies or ordinances protecting biological resources, or habitat conservation plans with mitigation incorporated (as listed above). Therefore, it does not contribute to a cumulatively considerable impact to such plans and policies when analyzed in conjunction with other proposed projects in the region (Table 4.5-2).

The combined impacts of planned projects would not result in a significant impact to biological resources. The Upper Main Ditch Piping Project does not add a cumulatively considerable impact to the combined Upper Main Ditch Piping Project baseline. Therefore, the Upper Main Ditch Piping Project would not create or contribute considerably to a cumulative impact to biological resources.

Therefore, no additional mitigation would be necessary for cumulative impacts.

### 4.3.4.4 Cultural Resources

The geographic scope of potential cumulative effects with respect to cultural resources includes the entire El Dorado County area because development within El Dorado County, including growth projected in the El Dorado County General Plan, may result in the discovery and removal of cultural resources. As discussed in Section 3.5, Cultural Resources, the El Dorado Irrigation District Main Canal (P-09-3718/P-09-4147) is the only known cultural resource directly within the Upper Main Ditch Piping Project area; however, it was determined not to be eligible for the National or California Registers. With the implementation of the mitigation measures described in Section 3.5, Cultural Resources, (MM CUL-1: Unanticipated Discovery of Cultural Resources, MM CUL-2: Unanticipated Discovery of Human Remains) the Upper Main Ditch Piping Project would have a less than significant impact on historic resources, archaeological resources, and human remains.

Simultaneous construction of projects in the Upper Main Ditch Piping Project area could potentially result in significant impacts on historical resources, archaeological resources, and human remains, should they be present within the Project site or the vicinity of the Upper Main Ditch Piping Project site. The Forebay Dam Modification Project has the potential to overlap with the Upper Main Ditch Piping Project. The Forebay Dam Modification Project completed CEQA and NEPA environmental assessments, by law, which include a cultural resource study within the study area including any areas overlapping the Upper Main Ditch Piping Project area. These cultural resource studies ensure proper documentation, protection, and/or mitigation of important cultural resources. Because of the CEQA requirements to assess and mitigate impacts to cultural resources, there is no combined significant impact to cultural resources from these projects. Therefore, the Upper Main Ditch Piping Project would not create or contribute considerably to a cumulative impact to cultural resources.
4.3.4.5 Geology and Soils

The Upper Main Ditch Piping Project and the projects listed in Table 4.5-2 must be constructed in compliance with seismic regulations and include soil and erosion control best management Practices (BMPs). The projects are not overlapping in location or adjacent in manner that would exacerbate soil disturbances. The Upper Main Ditch Piping Project would implement MM GEO-1, Prepare and Implement a Stormwater Pollution and Prevention Plan, which would reduce the risk of substantial soil erosion and loss of top soil and require that construction sites be fully stabilized post construction to ensure there is no significant loss of soil from the sites. The projects listed in Table 4.5-2 would require similar erosion control measures and site stabilization. Therefore, the potential impact to soils erosion is localized and mitigated, and the Upper Main Ditch Piping Project would not create, or contribute considerably to, a cumulative impact to geology and soils.

4.3.4.6 Hazards and Hazardous Materials

The Upper Main Ditch Piping Project has the potential to contribute to cumulative impacts from use of hazardous materials as well as increase risk of wildfire.

For construction projects, the geographic scope of the potential cumulative impacts with respect to hazardous materials is usually limited to areas within the physical footprint of a project area or in the case when a school is within a quarter mile of the Upper Main Ditch Piping Project, the geographic scope is limited to that quarter mile area surrounding the Upper Main Ditch Piping Project. Hazardous materials to be used during construction are of low toxicity, and would consist of fuels, oils, and lubricants. These materials would be required for operation of construction vehicles and equipment. MM HYD-1, Avoid/Minimize Potential Impacts from Construction Material Release and MM HAZ-1, Prepare and Implement a Hazardous Materials Release Prevention Plan, would reduce the potential for exposure to accidental spills or other methods of release involving the use of hazardous materials. Additionally, MM TRA-1, Prepare and Implement a Traffic Control Plan, would be incorporated into the Upper Main Ditch Piping Project in order to allow adequate ingress and egress of emergency vehicles in the event of a hazardous materials incident in or around the Upper Main Ditch Piping Project area. While the future Forebay Dam Modification Project may have the potential to cause similar impacts it is assumed these impacts would be mitigated through similar mitigation measures and/or best management practices (BMPs). Although the present and future projects listed in Table 4.5-2 and the Upper Main Ditch Piping Project have the possibility of overlapping construction schedules, these projects only have the potential to occur in the immediate vicinity of each other for a short period of time. For example, the Forebay Dam Modification Project would occur in one localized portion along the Upper Main Ditch while the construction of the Upper Main Ditch Piping Project would occur away from forebay reservoir construction.

The Upper Main Ditch Piping Project and Forebay Dam Modification Project are located in an area with a high risk for wildfire hazards, and each has the potential to contribute to a significant risk of fire from construction. As described in Section 3.8, Hazards and Hazardous Materials, compliance with all applicable local, state, and federal requirements, including the California Fire Code and the El Dorado County Ordinance 8.08-Fire Prevention (California 2016 and El Dorado County 2016b) would be required. Additionally, the Upper Main Ditch Piping Project would implement mitigation measures for traffic control (MM TRA-1), which would ensure emergency access remains possible at all times. These measures and requirements reduce fire risks associated with the Upper Main Ditch Piping Project and similar requirements would apply practices would apply to the Forebay Dam project and any other large construction projects in the area.
For these reasons, the Upper Main Ditch Piping Project would not contribute considerably to an increased risk of loss, injury, or death involving wildland fires and no additional mitigation is required.

4.3.4.7 Hydrology and Water Quality

The geographic scope of the potential cumulative impacts with respect to hydrology and water quality is usually on a regional level because hydrology and water quality impacts are regional in nature, although localized impacts also can occur. The geographic scope of the cumulative hydrology and water quality analysis the Upper Main Ditch Piping Project is the vicinity of the Project site and the South Fork American River watershed. The Upper Main Ditch Piping Project and the projects listed in Table 4.5-2 could result in a cumulatively significant impact to hydrology or water quality if the existing drainage of the area were substantially altered, causing erosion, siltation, or flooding. The Upper Main Ditch Piping Project would not alter stormwater flows since each of these alignments would be designed to accommodate the existing flows of up to a 10-year storm event. During construction, MM GEO-1, Prepare and Implement a Stormwater Pollution Prevention Plan (SWPPP), would be required to reduce temporary erosion impacts, thus reducing any potential temporary impacts to a less than significant level. With the implementation of the mitigation measures described in Section 3.6, Geology and Soils (MM GEO-1, Prepare and Implement a Stormwater Pollution and Prevention Plan) and Section 3.9, Hydrology and Water Quality (MM HYD-1, Avoid/Minimize Potential Impacts from Construction Material Release), the Upper Main Ditch Piping Project would have a less than significant impact on hydrology and water quality. Simultaneous construction of other projects in the vicinity could potentially result in significant impacts to hydrology and water quality. However, the projects in Table 4.5-2 would be expected to be designed to accommodate existing flows, to mitigate any increase in flows to a less than significant level or would not have an impact on the existing drainages in the area. Compliance with CEQA and other State and Federal laws, including the Clean Water Act and identified mitigation measures, would avoid adverse cumulative effects.

Upper Main Ditch Piping Project effects on groundwater resources, including domestic wells in the area of the Main Ditch, would be minimal for the reasons discussed in Section 3.9, and the projects listed in Table 4.5-2 do not have the potential to adversely affect groundwater resources. For these reasons the Upper Main Ditch Piping Project would not have the potential to create, or contribute considerably to, a cumulative impact to hydrology or water quality, including local groundwater resources or domestic wells.

4.3.4.8 Noise

The geographic scope of the cumulative noise analysis is the project vicinity, including surrounding sensitive receptors. Noise impacts tend to be localized because ambient noise generally tends to dissipate within 0.25 mile, and existing noise from roadways tends to have a canceling effect on noise emanating from a project site; that is, the logarithmic properties of noise and distance usually mean there are no additive effects. Groundborne vibrations also tend to be localized and are perceptible only within a few hundred feet of construction activities. Therefore, the area near the Upper Main Ditch Piping Project site (generally 0.25 mile) would be the area most affected by Upper Main Ditch Piping Project activities.

Noise impacts from the Upper Main Ditch Piping Project construction would be temporary and would occur in scattered intervals over the course of the Upper Main Ditch Piping Project. Even if the construction of the projects listed in Table 4.5-2 were to occur simultaneously with the Upper Main Ditch Piping Project, there would be very low potential for a cumulative noise or vibration impact because of the minimal overlap in locations and construction schedules for the Upper Main Ditch Piping Project and any present or future projects in the area. Additionally,
construction activities would be restricted to daytime hours of operation under MM NOS-1, Restriction of Construction Operational Hours and Resident Coordination, which would further minimize potential construction noise and prolonged exposure. Also, noise generation outside construction hours would be required to implement additional procedures and protective measures. Any present or future projects would likely implement similar mitigation and/or BMPs to reduce construction noise and vibrations and would be limited to compliance with daytime work restrictions or noise permitting in compliance with local regulations regarding construction noise. Thus, it is not reasonably foreseeable that noise and vibration from the Upper Main Ditch Piping Project and other reasonably foreseeable projects would compound to exceed a threshold or excessively vibrate the ground or expose persons to a substantial temporary increase in noise above existing levels. Further, there is no potential for the Upper Main Ditch Piping Project to cause or contribute to a substantial permanent increase in ambient noise. For these reasons the Upper Main Ditch Piping Project would not have the potential to create, or contribute considerably to, a cumulative impact from noise or vibration.

4.3.4.9 Public Services

The geographic scope of the cumulative fire protection, police protection emergency medical services, and school services analysis is generally the County service area. The potential for the projects identified in Table 4.5-2 combined with the Upper Main Ditch Piping Project to result in a cumulative impact on public services is considered less than significant because none of entails high crime risk, added demand for schools, or require the addition of large numbers of workers to move to the area. In addition, the Upper Main Ditch Piping Project-level analysis concluded that impacts to fire protection services were less than significant and curbed through the application of standard fire prevention control. Related projects would exhibit similarly low demand for fire protection services. The Upper Main Ditch Piping Project and related projects would not include residential uses, therefore, the Upper Main Ditch Piping Project and related projects would not result in increased population growth or additional permanent demand on fire protection, police protection, emergency medical services, or school services. The combined projects therefore would not trigger the need for new governmental facilities for which impacts have not been contemplated. Thus, the Upper Main Ditch Piping Project would not have the potential to create, or contribute considerably to, a cumulative impact to public services.

4.3.4.10 Recreation

The Upper Main Ditch Piping Project and projects in the region (Table 4.5-2) are short-term construction projects that will not increase the use and accelerate the deterioration of existing neighborhood and regional parks and other recreational facilities or trigger new or expanded recreational facilities that could have an adverse environmental impact. Any potential impacts to recreational uses along Blair Road from the Upper Main Ditch Piping Project would be effectively mitigated through MM TRA-1, Prepare and Implement a Traffic Control Plan, which would allow for adequate ingress and egress throughout Blair Road during construction. Thus, the Upper Main Ditch Piping Project, would not have the potential to create, or contribute considerably to, a cumulative impact to recreation.

4.3.4.11 Transportation and Traffic

The Upper Main Ditch Piping Project combined with the projects in the Region (Table 4.5-2), are not likely to result in a cumulatively significant impact to transportation or traffic resources because the Upper Main Ditch Piping Project impact and traffic impacts associated with the projects listed in Table 4.5-2 would be temporary (occurring only during construction). Although the Upper Main Ditch Piping Project and the projects listed in Table 4.5-2 would likely have
some overlap in usage of local roadways during construction (specifically the use of Blair Road, Forebay Road, and Pony Express Trail), the total amount of Upper Main Ditch Piping Project traffic is very small and would not create or contribute to substantial congestion on affected roads, which experience low traffic volumes relative to their capacity. Upper Main Ditch piping Project traffic impacts would be mitigated through MM TRA-1. Prepare and Implement a Traffic Control Plan, which would ensure adequate levels of traffic flow throughout the Upper Main Ditch Piping Project area. In addition, the Upper Main Ditch Piping Project and the projects listed in Table 4.5-2 do not have significant overlapping access footprints. For example, the Forebay Dam Modification Project has a stationary footprint and the Upper Main Ditch Piping Project consists of a moving footprint, further reducing any potential for a significant cumulative traffic impact. Therefore, the potential cumulative impact to transportation and traffic from past, current, and reasonably foreseeable future projects in the region is considered less than significant, and the Upper Main Ditch Piping Project would not have the potential to contribute considerably to cumulative transportation or traffic impacts.

4.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

California Environmental Quality Act (CEQA) Guidelines Section 15126.6(e)(2) requires an Environmental Impact Report (EIR) to identify an “environmentally superior alternative.” The environmental effects of each alternative in relation to the proposed Project are summarized in Table 4.6-1 and were compared to identify an environmentally superior alternative.

### Table 4.4-1  Project Alternative Impacts Comparison

<table>
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<th>Environmental Resource Area</th>
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<th>Blair Road Alternative</th>
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<td>LTS</td>
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Notes:  
NI = No Impact  
LTS = Less than Significant Impact  
LTS/M = Less than Significant Impact with Mitigation

Additionally, Table 4.6-2 provides a comparison of the alternatives in light of their ability to fulfill the Project goals and objectives.

### Table 4.4-2  Project Alternatives Comparison to Project Objectives

<table>
<thead>
<tr>
<th>Project Objectives</th>
<th>Proposed Project</th>
<th>Blair Road Alternative</th>
<th>Combined Alternative</th>
<th>No Project</th>
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</thead>
<tbody>
<tr>
<td>Reduce water loss resulting from seepage and evapotranspiration and contribute to the District’s overall water conservation efforts and supply reliability and sustainability</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
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<tr>
<td>Protect drinking water quality by eliminating the potential for intentional or unintentional contamination of the open ditch, and improve District water security</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
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<td>Reduce operations and maintenance costs that result from increased treatment and pumping costs associated with the additional flows entering the ditch through uncontrolled storm water runoff from the adjacent watershed</td>
<td>Y</td>
<td></td>
<td>Y</td>
<td>N</td>
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<tr>
<td>Improve water supply reliability during critically dry years and periods of drought</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td>N</td>
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<tr>
<td>Reduce reliance on Central Valley Project (CVP) supplies at Folsom Reservoir</td>
<td>Y</td>
<td></td>
<td>Y</td>
<td>N</td>
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<td>Aid in compliance with California’s 20% water conservation by 2020 mandate and additional conservation requirements mandated by the State of California and Executive Order B-37-16 (Making Water Conservation a California Way of Life)</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
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<tr>
<td>Improve sustainability in terms of maintaining existing water supplies for future needs</td>
<td>Y</td>
<td></td>
<td>Y</td>
<td>N</td>
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<tr>
<td>Provide water for renewable hydroelectric power generation (interim)</td>
<td>Y</td>
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<td>Y</td>
<td>N</td>
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</table>

Based on a comparison of the Project and alternatives, environmental impacts associated with most resource categories would be fewer under the No Project Alternative. However, all of the impacts that would be greater than the No Project Alternative are short-term construction-related impacts that can be avoided or reduced to a less than
significant level with identified mitigation. By contrast, the No Project Alternative would result in ongoing adverse impacts associated with continued water loss and degradation of water quality. Although this would not represent a change from the existing conditions, the long-term improvement in water quality conditions and water supply benefits of the Project, and each of the alternatives, make the Project and each of the alternatives environmentally superior to the No Project Alternative.

As shown in Table 4.6-1 above, when comparing the impacts associated with the proposed Project to the Blair Road and Combined Alternatives, the overall impacts would be similar. Air quality, biological resources, cultural, geology and soils, hazards and hazardous wastes, hydrology and water quality, noise, public services, recreation, and transportation and traffic related impacts all include mitigation to ensure potential impacts are reduced to a less than significant level. However, small differences such as amount of tree removal and magnitude of traffic impacts would differ slightly among the proposed Project, the Blair Road Alternative, and the Combined Alternative. The Blair Road Alternative would require the least amount of tree removal while the proposed Project would require the most. Construction-related traffic impacts would be the greatest under the Blair Road Alternative and would be the least under the proposed Project. Recreation-related impacts would be the least under the proposed Project due to the location, while the Blair Road and Combined Alternatives would require mitigation because of their presence in the Blair Road right-of-way. The proposed Project, the Blair Road Alternative, and the Combined Alternative would have relatively equal impacts when compared overall. For these reasons, there is no environmentally superior alternative among the alternatives.
4.5 ABBREVIATIONS

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<th>AB</th>
<th>Assembly Bill</th>
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<td>BMPs</td>
<td>Best Management Practices</td>
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<td>Community Development Agency</td>
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<td>California Energy Commission</td>
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<td>Central Valley Project</td>
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<td>Greenhouse Gases</td>
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<td>hp</td>
<td>Horsepower</td>
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<td>IWRMP</td>
<td>Integrated Water Resources Master Plan</td>
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<tr>
<td>LOS</td>
<td>Level of Service</td>
</tr>
<tr>
<td>LTS</td>
<td>Less than Significant</td>
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<tr>
<td>LTS/M</td>
<td>Less than Significant Impact with Mitigation</td>
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<tr>
<td>MM</td>
<td>Mitigation Measure</td>
</tr>
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<td>NI</td>
<td>No Impact</td>
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<tr>
<td>NOP</td>
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<td>Nitrogen Oxide</td>
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<td>PG&amp;E</td>
<td>Pacific Gas and Electric</td>
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<td>PM</td>
<td>Particulate Matter</td>
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<td>SMAQMD</td>
<td>Sacramento Metropolitan Air Quality Management District</td>
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<td>Stormwater Pollution Prevention Plan</td>
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<td>USEPA</td>
<td>United States Environmental Protection Agency</td>
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<td>UWMP</td>
<td>Urban Water Management Plan</td>
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<td>WTP</td>
<td>Water Treatment Plant</td>
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4.6 REFERENCES


5.0 GLOSSARY OF TERMINOLOGY

To assist reviewers in understanding this Draft EIR, the following terms are defined based on specific details associated with the undertaking described in the EIR and CEQA Guidelines Article 20, Sections 15350 through 15387:

Upper Main Ditch Piping Project or Project: The whole of an action that has the potential for resulting in a physical change in the environment, directly or indirectly resulting from piping the Upper Main Ditch. The “Upper Main Ditch Piping Project” or “Project” refers to the action that the District Board decides to take to either go forward with the proposed Project or any of the alternatives listed in this document.

Proposed Project: Involving the conversion of the existing Upper Main Ditch from its current status as an open conveyance ditch to a secure 42-inch diameter raw water transmission pipeline.

Blair Road Alternative: This alternative refers to the pipeline being placed within the existing Blair Road for a majority of its length, a cross-country portion as well as leaving the portion of the Upper Main Ditch that would not be piped as is.

Combined Alternative: This alternative refers to the combination of the proposed Project, the Blair Road Alternative, and cross-county portions of piping. The majority of the combined alternative would be piped within the existing Upper Main Ditch with smaller portions through Blair Road and cross-county terrain.

Environment: The physical conditions that exist in the area and that would be affected by a Project, including: land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. The area involved is where significant direct or indirect impacts would occur as a result of the Project. The environment includes both natural and man-made conditions.

Impacts: Impacts analyzed under CEQA must be related to a physical change. Impacts are:

- Direct or primary impacts that would be caused by the Project and would occur at the same time and place; or

- Indirect or secondary impacts that would be caused by the Project and would be later in time or farther removed in distance but would still be reasonably foreseeable. Indirect or secondary impacts may include growth-inducing impacts and other effects related to: induced changes in the pattern of land use; population density or growth rate; and related effects on air and water and other natural systems, including ecosystems.

Significant Impact: A substantial, or potentially substantial, adverse change on the environment in any of the physical conditions in the area affected by the Project, including: land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. An economic or social change by itself is not considered a significant impact on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.
Mitigation: Measures that are reasonably implemented to avoid or substantially reduce the Project’s significant environmental impacts by:

- Avoiding the impact altogether by not taking a certain action or parts of an action;
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or
- Compensating for the impact by replacing or providing substitute resources or environments.

Cumulative Impacts: Two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. The following statements also apply when considering cumulative impacts:

- The individual impacts may be changes resulting from a single project or separate projects; and
- The cumulative impact from several projects is the change in the environment that results from the incremental impact of the Project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over time.

The Draft EIR uses a variety of terms to describe the level of significance of adverse impacts. These terms are defined as follows:

Less than Significant: An impact that is adverse but that does not exceed the defined thresholds of significance. Less than significant impacts do not require mitigation.

Less than Significant with Mitigation: An impact that exceeds the defined thresholds of significance and would or could cause a substantial adverse change in the environment, but through implementation of the appropriate required mitigation measures would result in an impact that would be Less than Significant with Mitigation.
6.0 REPORT PREPARERS

As required by the California Environmental Quality Act (CEQA), this chapter identifies the preparers of this Environmental Impact Report (EIR).

6.1 DRAFT EIR PREPARERS AND REVIEWERS

6.1.1 District Staff

<table>
<thead>
<tr>
<th>EID Staff Name</th>
<th>Expertise and Education</th>
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<tbody>
<tr>
<td>Bret Sampson</td>
<td>Environmental Review Analyst</td>
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<td></td>
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<td>Dan Corcoran</td>
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<td>Tracey Eden-Bishop P.E.</td>
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<tr>
<td>Brian Mueller, P.E.</td>
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6.1.2 Consultant Staff

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### 6.2 PREPARER’S QUALIFICATIONS

The following includes the title and qualifications of each preparer and/or reviewer:

<table>
<thead>
<tr>
<th>Name</th>
<th>Expertise and Education</th>
</tr>
</thead>
</table>
| Kim Clyma             | Project Manager; Senior Environmental Scientist  
JD, Law; BA, Environmental Studies; GIS Certificate                                    |
| John Moynier          | Principal in Charge  
Certified Environmental Professional; Certified Floodplain Manager  
MA, Computer Assisted Cartography (GIS); BA, Conservation and Analysis of Ecosystems; Land Use and Environmental Planning Certificate |
| Meredith Parkin       | Senior Principal Environmental Scientist  
JD, Law; BS Food Science                                                              |
| Earl Nelson           | Senior Environmental Scientist  
Master’s degree in Planning and Development Studies with emphasis in Environmental Science; BA, Communication Policy |
| Bernadette Bezy       | Environmental Compliance Manager; Senior Aquatic Biologist  
MS, Biology; BS, Aquatic Biology; BS Environmental Science                           |
| Yasmine Akky          | Senior Biologist  
MS, Biological Sciences; BS, Biological Sciences                                       |
| Kathrine Gross Gray   | Environmental Scientist  
MS, Environmental Science and Policy; BS, Environmental Studies with focus on Sustainable Development |
| Elena Nuno            | Air Quality Scientist  
BS, Environmental Studies                                                            |
| Emily Eppinger        | Wildlife Biologist  
BS Wildlife Management; GIS Certificate                                                |
| Morgan Kennedy        | Vegetation Ecologist  
BA Geography with a Biophysical Environment emphasis and minor in Geology; Wetland Delineator Certification |
| Meghan Oats           | Biologist/Staff Scientist  
BS Biology and Environmental Science                                                   |
| Thomas Butler         | Senior Hydrogeologist/Geochemist  
MS, Geology; BA, Environmental Science                                                 |
| Michelle Cross        | Senior Archaeologist  
MA, Anthropology with a Specialization in Historical Archaeology; BA, Anthropology   |
| Ashley Hallock        | Archaeologist  
MA, Anthropology; BA, Anthropology                                                    |
| Meagan Kersten        | Archaeologist  
MA, Anthropology; BA, Anthropology                                                    |
| Kaela Johnson         | Environmental Scientist  
BA Environmental Studies                                                                |
## UPPER MAIN DITCH PIPING PROJECT

Report Preparers
June 2018

<table>
<thead>
<tr>
<th>Name</th>
<th>Expertise and Education</th>
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<tbody>
<tr>
<td>Kevin Tahara</td>
<td>Environmental Planner</td>
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<td>Lisa McCandless</td>
<td>Environmental Planner</td>
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<td>Zory Pope</td>
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<tr>
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<td>BS Environmental Protection and Management</td>
</tr>
<tr>
<td>Mike Maddux</td>
<td>CAD/Graphics Specialist</td>
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<td>Jason Trook</td>
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<td>Ann Tolman</td>
<td>Project Manager Assistant</td>
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</table>
7.0 REFERENCES

1.0 INTRODUCTION

AECOM. 2013. California Red-Legged Frog Site Assessment for Main Ditch Project, El Dorado County by AECOM, Sacramento, California.


AECOM. 2015b. Results of Special-Status Plant Surveys for the Upper Main Ditch Piping Project, El Dorado County, California. Prepared for El Dorado Irrigation District by AECOM, Sacramento, California.


UPPER MAIN DITCH PIPING PROJECT

References
June 2018


2.0 PROJECT DESCRIPTION


3.1 AESTHETICS


AECOM. 2013. California Red-Legged Frog Site Assessment for Main Ditch Project, El Dorado County by AECOM, Sacramento, California.

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