

DRAFT
Environmental Impact Report/
Environmental Impact Statement/
Environmental Impact Statement

Upper Truckee River and Marsh Restoration Project



Volume 1
SCH# 2007032099

Lead Agencies:



California
Department of
General Services



California
Tahoe Conservancy



Tahoe Regional
Planning Agency
Lake Tahoe
Environmental
Improvement Program



U.S. Department of
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Upper Truckee River and Marsh Restoration Project



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Volume 3

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EXECUTIVE SUMMARY

ES.1 PROJECT LOCATION AND SETTING

The California Tahoe Conservancy (Conservancy), U.S. Bureau of Reclamation (Reclamation), and Tahoe Regional Planning Agency (TRPA) are pursuing a restoration project along the most downstream reach of the Upper Truckee River, at the mouth of Lake Tahoe. The Upper Truckee River and Marsh Restoration Project is identified in TRPA's Environmental Improvement Program (EIP) as a project that is necessary to restore and maintain environmental thresholds for the Lake Tahoe Basin (EIP Project #s 560, 650, 981, and 1002). EIP projects are designed to achieve and maintain environmental thresholds that protect Tahoe's unique and valued resources.

The 592-acre study area is located in South Lake Tahoe, California, bounded by U.S. Highway 50 (U.S. 50) and the Highland Woods neighborhood to the south, the Al Tahoe neighborhood to the east, Tahoe Islands/Sky Meadows and Tahoe Keys neighborhoods to the west, and Lake Tahoe to the north. It consists of parcels owned by the Conservancy, the City of South Lake Tahoe (CSLT), the California Department of Transportation (Caltrans), and private landowners. It includes the downstream reaches of Trout Creek and the Upper Truckee River, adjacent wetland (Upper Truckee Marsh) and upland habitats, and the Lower West Side Wetlands Restoration Project site (located in the northwest portion of the study area, just east of the Tahoe Keys Marina).

The primary purpose of the Upper Truckee River and Marsh Restoration Project is to restore natural geomorphic processes and ecological functions along this reach of river while providing recreation access. Four alternative approaches to implementing the proposed project are being considered, along with the No-Project/No-Action Alternative. Depending on which alternative is selected, the proposed restoration project may include a minimum, moderate, or maximum recreation component (described below).

ES.2 OVERVIEW OF THE EIR/EIS/EIS PROCESS

This joint document is an environmental impact report (EIR) prepared on behalf of the Conservancy pursuant to the California Environmental Quality Act (CEQA); an environmental impact statement (EIS) prepared on behalf of the Tahoe Regional Planning Agency (TRPA) pursuant to Article VII of the Tahoe Regional Planning Compact and Chapter 3 of the TRPA Code of Ordinances; and an EIS prepared on behalf of the U.S. Bureau of Reclamation (Reclamation) pursuant to the National Environmental Policy Act (NEPA) and Council of Environmental Quality (CEQ) regulations implementing NEPA.

ES.2.1 CALIFORNIA TAHOE CONSERVANCY

The Conservancy is a lead agency for this project, pursuant to CEQA. As part of its environmental review process, the Conservancy, jointly with TRPA, prepared and circulated a Notice of Preparation (NOP) informing responsible agencies and the public that the project could have a significant effect on the environment, and soliciting their comments. The NOP was filed with the California and Nevada State Clearinghouses and released publicly on October 4, 2006. The NOP identified November 2, 2006 as the closing date for submitting scoping comments. A continuation was filed on March 13, 2007, to extend the closing date for scoping comments to April 30, 2007. A copy is included in Appendix A of this Draft EIR/Draft EIS/Draft EIS (DEIR/DEIS/DEIS). This DEIR/DEIS/DEIS addresses comments received during the NOP scoping period.

Section 21091(a) of the California Public Resources Code requires lead agencies to circulate DEIRs for a minimum of 45 days. However, because this document is also an EIS, pursuant to the TRPA Code of Ordinances and NEPA, it is being circulated for at least 60 days. During this time, the Conservancy is holding a public hearing to present the conclusions of the DEIR/DEIS/DEIS and receive oral comments from the public and responsible agencies. After the 60-day comment period, a Final EIR/EIS/EIS will be prepared that includes

comments received on the DEIR/DEIS/DEIS; written responses to comments that raise environmental issues; a list of all persons, organizations, and agencies commenting on the DEIR/DEIS/DEIS; any necessary revisions to the DEIR/DEIS/DEIS; recommendations on selection of a preferred alternative, and a mitigation monitoring and reporting plan.

ES.2.2 U.S. BUREAU OF RECLAMATION

Reclamation is a lead agency for the project, pursuant to NEPA. The project has received federal funding through Reclamation for the planning phase and may receive funding for implementation. As part of its environmental review process, a Notice of Intent (NOI) was published in the Federal Register on September 5, 2006, informing federal agencies and the public that the project could have a significant effect on the environment, and soliciting their comments. A copy of the NOI is included in Appendix A of this DEIR/DEIS/DEIS.

Pursuant to Reclamation procedures, this DEIR/DEIS/DEIS is being circulated for public comment for at least 60 days. After the 60-day comment period, a Final EIR/EIS/EIS will be prepared as described above under Section ES.2.1.

ES.2.3 TAHOE REGIONAL PLANNING AGENCY

TRPA is a lead environmental review agency for the project, pursuant to Article VII of the Tahoe Regional Planning Compact and the TRPA Code of Ordinances. The NOP prepared by the Conservancy also served as the NOP under the Tahoe Regional Planning code. A copy is included in Appendix A of this DEIR/DEIS/DEIS.

Pursuant to Section 3.7.1 of the TRPA Code of Ordinances, this DEIR/DEIS/DEIS is being circulated for public comment for at least 60 days and a public hearing will be held in front of the Governing Board. After the 60-day comment period, a Final EIR/EIS/EIS will be prepared as described above under Section ES.2.1.

ES.3 SUMMARY DESCRIPTION OF THE PROJECT ALTERNATIVES

ES.3.1 PURPOSE AND NEED AND PROJECT OBJECTIVES

The need for the project originates from the environmental degradation that the Upper Truckee River has historically experienced as a result of human alterations to the river and watershed. The purpose of the proposed action is to restore natural geomorphic processes and ecological functions in this lowest reach of the Upper Truckee River and the surrounding marsh to improve ecological values of the restoration area and help reduce the river's discharge of nutrients and sediment that diminish Lake Tahoe's clarity.

The following basic objectives of the project were developed for the proposed action to meet the purpose and need:

- ▶ Objective 1: Restore natural and self-sustaining river and floodplain processes and functions.
- ▶ Objective 2: Protect, enhance, and restore naturally functioning habitats.
- ▶ Objective 3: Restore and enhance fish and wildlife habitat quality.
- ▶ Objective 4: Improve water quality through enhancement of natural physical and biological processes.
- ▶ Objective 5: Protect and, where feasible, expand Tahoe yellow cress populations.
- ▶ Objective 6: Provide public access, access to vistas, and environmental education at the Lower West Side and Cove East Beach consistent with other objectives.

- ▶ Objective 7: Avoid increasing flood hazards on adjacent private property.
- ▶ Objective 8: Design with sensitivity to the site’s historical and cultural heritage.
- ▶ Objective 9: Design the wetland/urban interface to help provide habitat value and water quality benefits.
- ▶ Objective 10: Implement a public health and safety program, including mosquito monitoring and control.

Five alternatives are being considered and are analyzed at a comparable level of detail in this environmental document. A preferred or proposed alternative has not yet been defined. Following receipt and evaluation of public comments on the DEIR/DEIS/DEIS, the lead agencies will determine which alternative or combinations of features from multiple alternatives will become the preferred alternative. A discussion of the decision will be included in the Final EIR/EIS/EIS.

A summary description of the alternatives is presented below. The detailed description of each alternative is presented in Chapter 2.

ES.3.2 ALTERNATIVE 1. CHANNEL AGGRADATION AND NARROWING (MAXIMUM RECREATION INFRASTRUCTURE)

To restore the river channel and its connection to the floodplain, Alternative 1 would increase channel length and decrease channel capacity. A key element of this restoration would be the use of engineering elements (primarily structures in the channel) to cause sediment deposition that raises the channel bed and decreases channel capacity, and would slightly reduce the capacity of the channel mouth at Lake Tahoe. Alternative 1 would also restore a natural-functioning lagoon in the vicinity of the existing Sailing Lagoon, lagoon and wet meadow conditions at the Trout Creek Lagoon, floodplain functions at the TKPOA Corporation Yard (contingent on TKPOA consent), and sand ridges (“dunes”) at Cove East Beach. In addition, Alternative 1 would remove user-created trails within the “core habitat” area that contains sensitive marsh habitats within the center of the study area.

Under Alternatives 1–4, public access and recreation infrastructure is proposed near the perimeter of the study area. Alternative 1 provides a potential “maximum” level of public access and recreation infrastructure that includes parking, two kiosks, stabilization of an existing river access for boat take-out, observation areas, boardwalks, and a connected system of bicycle paths. Bicycle paths would be Class I/Shared-Use Paths (as described in TRPA and TMPO 2010). Bridges over Trout Creek and the Upper Truckee River (and a boardwalk) would connect the proposed bicycle paths. Bicycle paths would connect to existing regional trails near the study area.

ES.3.3 ALTERNATIVE 2. NEW CHANNEL – WEST MEADOW (MINIMUM RECREATION INFRASTRUCTURE)

To restore the river channel and its connection to the floodplain, Alternative 2 would directly raise the streambed elevation, increase the channel length, and decrease channel capacity. A key element of this restoration would be the excavation of a new river channel that has less capacity than the existing channel. The existing river mouth would be replaced with a new smaller river mouth, similar in size to the historical river mouth prior to dredging. Unlike Alternative 1, the river channel and floodplain restoration elements of Alternative 2 would require two existing stormwater discharge locations to be modified and/or relocated. Alternative 2 also includes all of the other restoration and enhancement elements of Alternative 1.

Alternative 2 would provide a “minimum” level of public access and recreation infrastructure that includes signage, a modified pedestrian trail to Cove East Beach (which would be Americans with Disabilities Act (ADA) accessible), five viewpoints, a boat take-out, and a fishing platform. Except for four viewpoints along the eastern

perimeter of the study area, adjacent to the Al Tahoe neighborhood and the boat take-out near U.S. 50, this infrastructure is located from Venice Drive to Cove East Beach.

ES.3.4 ALTERNATIVE 3. MIDDLE MARSH CORRIDOR (MODERATE RECREATION INFRASTRUCTURE)

To restore the river channel and its connection to the floodplain, Alternative 3 would promote the development, through natural processes, of a new main channel and/or distributary channels in the central portion of the study area. A “pilot” channel, similar to the channel segments constructed under Alternatives 1 and 2, would be constructed from the existing river channel in the southern portion of the study area and connected to historical channels in the center of the study area. No construction would occur in the central or northern portions of the study area, rather, natural processes would be allowed to dictate the flow path(s), bed and bank elevations, and capacities of the channel(s) through the central and northern portions of the study area. The existing river mouth would be retained, but its capacity would be reduced. In addition, by boring two culverts under U.S. 50, an area of isolated floodplain would be reactivated. The river channel and floodplain restoration elements of Alternative 3 would require two existing stormwater discharge locations to be modified and/or relocated. Also, like Alternatives 1 and 2, Alternative 3 would restore a natural-functioning lagoon in the vicinity of the Sailing Lagoon and floodplain functions at the TKPOA Corporation Yard and would enhance areas of “core habitat” and forest. However, Alternative 3 would not restore lagoon and wet meadow conditions at the Trout Creek Lagoon (by removal of existing fill) or dunes at Cove East Beach.

Alternative 3 would provide a “moderate” level of public access and recreation infrastructure that includes three pedestrian trails, a bicycle path, a kiosk, one observation area, six viewpoints, a fishing platform, a boat take-out area, and signage at multiple locations. Similar to Alternative 2, the modified pedestrian trail to Cove East Beach would be ADA accessible, a fishing platform would be installed at the restored lagoon, and stabilization of an existing boat take-out area near U.S. 50. Alternative 3 would include a bicycle path and a pedestrian trail near the Highland Woods neighborhood (and connected to Macinaw Road), and a pedestrian trail adjacent to the Al Tahoe neighborhood, from Capistrano Avenue to East Barton Beach (two segments of which would be boardwalks).

ES.3.5 ALTERNATIVE 4. INSET FLOODPLAIN (MODERATE RECREATION INFRASTRUCTURE)

To restore the river channel and its connection to the floodplain, Alternative 4 would lower bank heights by excavating an inset floodplain along much of the river channel and by localized cut and fill to create meanders in the existing straightened reach. The existing river mouth would be retained and its capacity would not be reduced. Although Alternative 4 would include the enhancement of core and forest habitats, it would not include the restoration of floodplain functions at the TKPOA Corporation Yard, a natural-functioning lagoon in the vicinity of the existing Sailing Lagoon, or dunes at Cove East Beach.

Similar to Alternative 3, Alternative 4 would provide a “moderate” level of public access and recreation infrastructure that includes a bicycle path, two pedestrian trails, a kiosk, stabilization of an existing river access for boat take-out, two observation areas, five viewpoints, and signage at multiple locations. The bicycle path would be adjacent to the Highland Woods neighborhood (and connected to Macinaw Road), and the pedestrian trails would be near the Tahoe Keys, from Venice Drive to Cove East Beach (in part replacing the existing pedestrian trail), and adjacent to the Al Tahoe neighborhood, from Capistrano Avenue to San Francisco Avenue (one segment of which would be a boardwalk).

ES.3.6 ALTERNATIVE 5. NO PROJECT/NO ACTION

Alternative 5 would not provide any actions to restore the river channel and its connection to the floodplain in the study area. This alternative would allow but not facilitate the long-term, passive recovery of the river system via natural processes. The existing river mouth location, size, and bed elevation would continue to adjust to lake levels, streamflows, and sediment loads. The previously eliminated Upper Truckee River–lagoon connection would not be restored, leaving the direct open-water connection between the Tahoe Keys Marina channel, the

Sailing Lagoon, and Lake Tahoe unchanged. The previously leveled area between Cove East Beach and the Sailing Lagoon would not be modified. Alternative 5 would not protect an extensive area of core habitat. However, the Conservancy has been decommissioning some user-created trails, and similar actions would likely continue to be implemented.

Alternative 5 would not take any direct steps to construct additional, extensive public access and recreation infrastructure. However, this alternative would likely maintain existing infrastructure and might result in the construction of some additional, smaller elements (i.e., signage).

ES.3.7 ALTERNATIVES AND ALTERNATIVE ELEMENTS CONSIDERED BUT ELIMINATED FROM FURTHER EVALUATION

Off-site alternatives were eliminated from further evaluation because off-site alternatives would not fulfill the purpose and primary objectives of the project. An important part of the project's purpose and objectives is to restore natural geomorphic processes and ecological functions to improve ecological values of the study area and help reduce the river's discharge of nutrients and sediment that diminish Lake Tahoe's clarity, while still providing access to vistas and environmental education to the public. Off-site actions upstream along the Upper Truckee River or elsewhere in the watershed could reduce the river's discharge of nutrients and sediment but would not substantially improve ecological values of the study area.

While the four preliminary conceptual alternatives were being developed and refined, several facilities were removed from the alternatives, in particular a full-service visitor center and restrooms. As described further below, these facilities were determined to be inconsistent with the project objectives and the principles for alternative development given above.

Initial conceptual plans for Alternative 1 included a full-service visitor center located near the end of Venice Drive. This facility was included to ensure that the maximum amount of feasible recreational infrastructure was considered. However, the need for visitor centers on the south shore has been largely met by the Taylor Creek Visitor Center, the Meyers Visitor Center, and the Explore Tahoe Visitor Center. The creation of a full-service visitor center on the project site would be an unnecessary duplication of services provided in multiple nearby locations. A full-service visitor center would require substantial operations and maintenance costs, which would place an ongoing financial burden on the State while providing services that exist elsewhere. The facility was therefore removed from the alternative.

Furthermore, a full-service visitor center was determined to be inconsistent with the scale and type of use of the site and of the study area as a whole. The site is located adjacent to a residential neighborhood, has a small beach area, and is generally used for dispersed recreation. A visitor center would have the potential to attract an increased number of users seeking an interior interpretive experience. The resulting type and amount of use could negatively affect the existing dispersed uses, which are more compatible with the size and setting of the site in the study area. Therefore, a full service-visitor center has been replaced with a kiosk that is compatible with the size and setting of the study area. In addition, the infrastructure required to support a visitor center would be inconsistent with the limitations of the site.

Initial conceptual plans for Alternatives 1, 3, and 4 also included restrooms at the full-service visitor center and at Cove East Beach. However, refinement of the alternatives reduced the need for these facilities, and it was determined that the reduced need would be met by the restrooms at the Tahoe Keys Marina. In part, the restroom facilities were intended to support a full-service visitor center, which has been removed from the alternatives.

ES.4 KEY ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, ISSUES TO BE RESOLVED, AND AREAS OF CONTROVERSY

This DEIR/DEIS/DEIS is a full-scope environmental document that evaluates a broad range of potential environmental impacts at a comparable level of detail for all five alternatives. The analysis identifies and addresses several key environmental issues where significant or potentially significant effects on the environment would occur. Where significant or potentially significant impacts are identified, the document describes feasible mitigation measures. The summary of impacts and mitigation measures for the alternatives addressed in the DEIR/DEIS/DEIS is presented in Table ES-1 below.

Regarding issues to be resolved and areas of controversy (a requirement of CEQA for the summary), several issues have been the subject of public and/or affected agency interest. These are the key issues for which controversy may arise or that will require resolution during the consideration of a preferred alternative. The issues are summarized, as follows:

- ▶ Installation of a bridge over the mouth of the Upper Truckee River and associated scenic and Tahoe yellow cress impacts (Alternative 1).
- ▶ Potential for flooding-related changes in the neighborhood west of the study area (Alternatives 1, 2, 3, and 4).
- ▶ Potential for long-term disruption of fish passage and migration patterns as the channel adjusts (Alternative 3).
- ▶ Short-term risks of erosion, turbidity, and water quality impacts from construction associated with river restoration and the maturation period following construction (Alternatives 1, 2, 3, and 4).
- ▶ Changes in public access for recreation users (Alternatives 1, 2, 3, and 4).
- ▶ Potential for noise and scenic impacts to nearby residences (Alternatives 1, 2, 3, and 4).

| Table ES-1 Summary of Impacts, Environmental Commitments, and Mitigation Measures | | | | | | |
|--|------|------------------------------|---------------------------------------|------------------------------------|----------------------------|-----------------------------------|
| Resource Topic/Impact | Alt. | Impact Duration ¹ | Environmental Commitment ² | LOS before Mitigation ³ | Mitigation Measure | LOS after Mitigation ³ |
| 3.2 Air Quality and Global Climate Change | | | | | | |
| 3.2-1: Short-Term Emissions of Criteria Air Pollutants and Precursors during Construction | 1-4 | Short term | EC 1 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.2-2: Long-Term Operational (Regional) Emissions of Criteria Air Pollutants and Precursors | 1-4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.2-3: Long-Term Operational (Local) Emissions of Carbon Monoxide by Mobile Sources | 1-4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.2-4: Exposure of Sensitive Receptors to Odors | 1-4 | Short term and long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.2-5: Exposure of Sensitive Receptors to Emissions of Hazardous Air Pollutants | 1-4 | Short term and long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.2-6: Short-Term or Long-Term Operational (Regional) Emissions of GHGs | 1-4 | Short term and long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.3 Archaeological and Historical Resources | | | | | | |
| 3.3-1: Damage to or Destruction of Documented Potentially Significant Cultural Resources during Construction | 1-4 | Long term | EC 2 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.3-2: Damage to or Destruction of Undocumented Potentially Significant Cultural Resources during Construction | 1-4 | Long term | EC 2 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.3-3: Damage to or Destruction of Previously Undocumented Human Remains during Construction | 1-4 | Long term | EC 3 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.3-4: Damage to or Destruction of Documented Potentially Significant Cultural Resources Resulting from Public Access Features | 1-4 | Long term | EC 2 | LTS | No mitigation is required. | LTS |
| | 5 | Long term | NA | LTS | No mitigation is required. | LTS |

| Table ES-1 Summary of Impacts, Environmental Commitments, and Mitigation Measures | | | | | | |
|---|-------------|------------------------------|---------------------------------------|------------------------------------|--|-----------------------------------|
| Resource Topic/Impact | Alt. | Impact Duration ¹ | Environmental Commitment ² | LOS before Mitigation ³ | Mitigation Measure | LOS after Mitigation ³ |
| 3.4 Biological Resources: Vegetation and Wildlife | | | | | | |
| 3.4-1: Introduction and Spread of Invasive Plants by Construction Activities | 1-4 | Long term | EC 4 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.4-2: Introduction and Spread of Invasive Plants by Recreational Activities | 1 and 5 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 2 | Long term | NA | B | No mitigation is required. | B |
| | 3 and 4 | Long term | NA | B | No mitigation is required. | B |
| 3.4-3: Damage to or Mortality of Special-Status Plants Resulting from Construction Activities | 1-4 | Short term | NA | PS | Mitigation Measure 3.4-3: Conduct Protocol-Level Preconstruction Surveys and Avoid or Mitigate Impacts on Tahoe Yellow Cress Plants. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.4-4: Altered Extent of Special-Status Plant Habitat | 1, 3, and 4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 2 | Long term | NA | B | No mitigation is required. | B |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.4-5: Damage to or Mortality of Special-Status Plants Resulting from Recreational Activities | 1 | Long term | NA | S | No additional mitigation beyond Mitigation Measure 3.4-3 is feasible. | SU |
| | 2, 3, and 4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.4-6: Short-Term Disturbance of Sensitive Communities (Jurisdictional Wetlands, Riparian Vegetation, and SEZ) Resulting from Construction Activities | 1-4 | Short term | ECs 5 and 6 | S | Beyond ECs 5 and 6, no additional mitigation is feasible. | SU |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.4-7: Enhancement and Creation of Sensitive Communities (Jurisdictional Wetlands, Riparian Vegetation, and SEZ) Resulting from Ecosystem Restoration | 1-4 | Long term | NA | B | No mitigation is required. | B |
| | 5 | NA | NA | NI | No mitigation is required. | NI |

**Table ES-1
Summary of Impacts, Environmental Commitments, and Mitigation Measures**

| Resource Topic/Impact | Alt. | Impact Duration ¹ | Environmental Commitment ² | LOS before Mitigation ³ | Mitigation Measure | LOS after Mitigation ³ |
|---|-------------|------------------------------|---------------------------------------|------------------------------------|--|-----------------------------------|
| 3.4-8: Disruption of Wildlife Habitat Use and Loss of Wildlife Resulting from Construction Activities | 1-4 | Short term | NA | S | Mitigation Measure 3.4-8A: Conduct Preconstruction Surveys for Nesting Special-Status Birds (Yellow Warbler, Willow Flycatcher, Waterfowl, and Long-Eared Owl), and Implement Buffers if Necessary. Mitigation Measure 3.4-8B: Conduct Preconstruction Surveys for Special-Status Bats, Avoid Removal of Important Roosts, and Implement a Limited Operating Period If Necessary. | SU |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.4-9: Altered Extent and Quality of Wildlife Habitats Resulting from River, Floodplain, and Other Restoration and Enhancement Elements | 1-4 | Long term | NA | B | No mitigation is required. | B |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.4-10: Altered Quality of Wildlife Habitats Resulting from Altered Recreational Use | 1 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 2, 3, and 4 | Long term | NA | B | No mitigation is required. | B |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.4-11: Conversion of Forest Land to Nonforest Use | 1-4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.4-12: Interference with Wildlife Use of Established Movement Corridors | 1-4 | Short term | ECs 5 and 6 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.5 Fisheries | | | | | | |
| 3.5-1: Short-Term Aquatic Habitat Degradation | 1-4 | Short term | ECs 5 and 6 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.5-2: Stranding of Aquatic Biota from Dewatering Work Sites and Abandoning the Old Channel | 1-4 | Short term | EC 7 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |

**Table ES-1
Summary of Impacts, Environmental Commitments, and Mitigation Measures**

| Resource Topic/Impact | Alt. | Impact Duration ¹ | Environmental Commitment ² | LOS before Mitigation ³ | Mitigation Measure | LOS after Mitigation ³ |
|---|-------------|------------------------------|---------------------------------------|------------------------------------|---------------------------------------|-----------------------------------|
| 3.5-3: Short-Term Disruption of Fish Passage/Migration | 1-4 | Short term | NA | LTS | No mitigation is required | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.5-4: Long-Term Disruption of Fish Passage/Migration | 1, 2, and 4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 3 | Long term | NA | PS | No mitigation is feasible. | SU |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.5-5: Introduction and Spread of Aquatic Invasive Species by Construction Activities | 1-4 | Short term | EC 4 | LTS | No additional mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.6 Geology and Soils, Mineral Resources, and Land Capability and Coverage | | | | | | |
| 3.6-1: Soil Erosion, Sedimentation, and Loss of Topsoil | 1-4 | Long term | ECs 5, 6, and 8 | LTS | No mitigation is required. | LTS |
| | 5 | Long term | NA | LTS | No mitigation is required. | LTS |
| 3.6-2: Risks to People and Structures Caused by Strong Seismic Ground Shaking | 1-4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.6-3: Reduction and Relocation of Land Coverage | 1 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 2, 3, and 4 | Long term | NA | B | No mitigation is required. | B |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.7 Human Health/Risk of Upset | | | | | | |
| 3.7-1: Potential Hazards to the Public from Use of Hazardous Materials | 1-4 | Short term | ECs 5 and 6 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |

**Table ES-1
Summary of Impacts, Environmental Commitments, and Mitigation Measures**

| Resource Topic/Impact | Alt. | Impact Duration ¹ | Environmental Commitment ² | LOS before Mitigation ³ | Mitigation Measure | LOS after Mitigation ³ |
|--|-------------|------------------------------|---------------------------------------|------------------------------------|---|-----------------------------------|
| 3.7-2: Potential Hazards to Human Health from Exposure to Existing On-Site Hazardous Materials | 1, 2, and 3 | Short term | EC 9 | PS | Mitigation Measure 3.7-2a: Prepare and Implement a Health and Safety Plan and Provide Qualified Oversight of Fill Removal Related to the Corporation Yard. Mitigation Measure 3.7-2b: Notify Appropriate Federal, State, and Local Agencies if Contaminated Soils Are Identified, and Complete Recommended Remediation Activities. | LTS |
| | 4 and 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.7-3: Potential Hazardous Emissions or Handling of Hazardous or Acutely Hazardous Materials, Substances, or Waste within One-Quarter Mile of an Existing or Proposed School | 1-4 | Short term | EC 9 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.7-4: Potential Increase in Public Health Hazards from Mosquitoes Resulting from Increased Floodplain Inundation | 1-4 | Long term | EC 10 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.7-5: Potential for Airspace Safety Hazards Associated with Restoration and Enhancement of Habitat for Hazardous Wildlife | 1-4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.7-6: Potential for Wildland Fire Caused by Construction Equipment | 1-4 | Short term | EC 9 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.8 Hydrology and Flooding | | | | | | |
| 3.8-1: Increased Runoff Volumes and Peak Flows | 1-4 | Long term | EC 11 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.8-2: Effects on Channels from Reconfiguration of Stream Channels and Lagoon Surface Water Features | 1, 2, and 4 | Long term | NA | B | No mitigation is required. | B |
| | 3 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |

**Table ES-1
Summary of Impacts, Environmental Commitments, and Mitigation Measures**

| Resource Topic/Impact | Alt. | Impact Duration ¹ | Environmental Commitment ² | LOS before Mitigation ³ | Mitigation Measure | LOS after Mitigation ³ |
|---|-------------|------------------------------|---------------------------------------|------------------------------------|---|-----------------------------------|
| 3.8-3: Modified 100-Year Flood Flow Directions or Floodplain Boundaries | 1-5 | Long term | NA | LTS | No mitigation is required. | LTS |
| 3.8-4: Increased Overbank Flooding for Small Streamflow Events | 1-4 | Long term | NA | B | No mitigation is required. | B |
| | 5 | Long term | NA | LTS | No mitigation is required. | LTS |
| 3.8-5: Modified Groundwater Levels and Flow Patterns | 1-3 | Long term | NA | B | No mitigation is required. | B |
| | 4 and 5 | Long term | NA | LTS | No mitigation is required. | LTS |
| 3.8-6: Exposure to Seismically Generated Wave Hazards | 1-5 | Long term | NA | LTS | No mitigation is required. | LTS |
| 3.9 Geomorphology and Water Quality | | | | | | |
| 3.9-1: Short-Term Risk of Surface Water and Groundwater Degradation during Construction | 1-4 | Short term | ECs 5 and 6 | S | All feasible measures to avoid, minimize, or mitigate this impact have already been incorporated into the design of these alternatives. | SU |
| | 5 | Short term | NA | NI | No mitigation is required. | NI |
| 3.9-2: Short-Term, Project-Related Risk of Surface Water Degradation Following Construction | 1-4 | Short term | NA | S | Mitigation Measure 3.9-2: Adaptively Manage Potential Flood Disturbance in the Interim Period after Construction. | SU |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.9-3: Upper Truckee River Channel Erosion within the Study Area | 1-4 | Long term | NA | B | No mitigation is required. | B |
| | 5 | Long term | NA | LTS | No mitigation is required. | LTS |
| 3.9-4: Trout Creek Channel Erosion within the Study Area | 1 and 2 | Short term | NA | B | No mitigation is required. | B |
| | 3 and 5 | Short term | NA | LTS | No mitigation is required. | LTS |
| | 4 | NA | NA | NI | No mitigation is required. | NI |
| 3.9-5: Erosion of Backfilled and/or Remnant Channel Segments on the Floodplain | 1, 2, and 3 | Short term | NA | LTS | No mitigation is required. | LTS |
| | 4 and 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.9-6: Retention of Fine Sediment and Nutrients within the Study Area | 1-4 | Long term | NA | B | No mitigation is required. | B |
| | 5 | Long term | NA | LTS | No mitigation is required. | LTS |

**Table ES-1
Summary of Impacts, Environmental Commitments, and Mitigation Measures**

| Resource Topic/Impact | Alt. | Impact Duration ¹ | Environmental Commitment ² | LOS before Mitigation ³ | Mitigation Measure | LOS after Mitigation ³ |
|---|---------|------------------------------|---------------------------------------|------------------------------------|---|-----------------------------------|
| 3.9-7: Decreased Delivery of Coarse Sediment to Cove East and Barton Beaches | 1 and 3 | Short term | NA | PS | Mitigation Measure 3.9-7: Monitor and Adaptively Manage Delivery of Coarse Sediment to Cove East and Barton Beaches. | LTS |
| | 2 | Short term | NA | LTS | No mitigation is required. | LTS |
| | 4 | NA | NA | NI | No mitigation is required. | NI |
| | 5 | Short term | NA | TSMC | No mitigation is required. | TSMC |
| | 1-5 | Long term | NA | TSMC | No mitigation is required. | TSMC |
| 3.9-8: Stormwater Drainage and Treatment | 1-4 | Short term and long term | ECs 5, 6, and 11 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.10 Land Use | | | | | | |
| 3.10-1: Potential to Physically Divide an Established Community | 1-4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.10-2: Potential Conflict with Land-Use Plans, Policies, or Regulations Intended to Protect the Environment. | 1-5 | Long term | NA | LTS | No mitigation is required. | LTS |
| 3.10-3: Potential Conflict with Regional Conservation Strategy for Tahoe Yellow Cress | 1 | Long term | NA | S | All feasible measures to reduce effects on Tahoe yellow cress, and thus reduce the potential conflict with the regional conservation strategy, have been included in the Conservancy's Tahoe yellow cress management plan for the study area, which would be implemented as a component of Alternative 1. | SU |
| | 2-5 | Long term | NA | LTS | No mitigation is required. | LTS |
| 3.11 Noise | | | | | | |
| 3.11-1: Short-Term Project Construction Noise Levels Exceeding Applicable Thresholds | 1-4 | Short term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |

**Table ES-1
Summary of Impacts, Environmental Commitments, and Mitigation Measures**

| Resource Topic/Impact | Alt. | Impact Duration ¹ | Environmental Commitment ² | LOS before Mitigation ³ | Mitigation Measure | LOS after Mitigation ³ |
|---|------|------------------------------|---------------------------------------|------------------------------------|---|-----------------------------------|
| 3.11-2: Long-Term, Project-Related Generation of Stationary- and Area-Source Noise | 1-4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.11-3: Long-Term Generation of Project-Related Traffic Noise | 1-4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.11-4: Land Use Compatibility of Study Area Noise Levels and Surrounding Land Uses | 1-4 | Short term and long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.11-5: Short- and Long-Term Increases in Groundborne Vibration Levels | 1-4 | Short term and long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.12 Public Services | | | | | | |
| 3.12-1: Potential for Longer Emergency-Vehicle Response Times Caused by Roadway Obstruction during Construction | 1-4 | Short term | EC 12 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.12-2: Potential Need for Additional Public Services or Facilities as a Result of Increased Demand for Public Services | 1-4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.13 Recreation | | | | | | |
| 3.13-1: Short-Term Increase in Use of Existing Neighborhood and Regional Parks and Recreation Facilities during Construction | 1-4 | Short term | EC 13 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.13-2: Short-Term Construction Impacts of Recreation Facilities That May Have an Adverse Physical Effect on the Environment | 1-4 | Short term | NA | SU | See Section 3.4, "Biological Resources: Vegetation and Wildlife," Section 3.5, "Fisheries," and Section 3.9, "Geomorphology and Water Quality." | SU |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.13-3: Short-Term Decrease or Loss of Public Access and Recreation Opportunities within Lakes, Waterways, or Public Land during Construction | 1-4 | Short term | ECs 13 and 14 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |

**Table ES-1
Summary of Impacts, Environmental Commitments, and Mitigation Measures**

| Resource Topic/Impact | Alt. | Impact Duration ¹ | Environmental Commitment ² | LOS before Mitigation ³ | Mitigation Measure | LOS after Mitigation ³ |
|--|-------------|------------------------------|---------------------------------------|------------------------------------|--|-----------------------------------|
| 3.13-4: Long-Term Change in Use of Surrounding Neighborhood and Regional Parks and Recreation Facilities | 1-4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.13-5: Long-Term Operation and Expansion of Recreation Facilities That May Have an Adverse Physical Effect on the Environment | 1 | Long term | NA | S | All feasible management measures to reduce effects on Tahoe yellow cress have been included in the Conservancy's Tahoe yellow cress management plan for the study area and would be implemented as a component of Alternative 1. | SU |
| | 2, 3, and 4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | Long term | NA | LTS | No mitigation is required. | LTS |
| 3.13-6: Long-Term Decrease or Loss of Public Access and Recreation Opportunities within Lakes, Waterways, or Public Lands | 1-4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | Long term | NA | NI | No mitigation is required. | NI |
| 3.13-7: Conflicts with Regional PAOT Allocations | 1-4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.14 Scenic Resources | | | | | | |
| 3.14-1: Potential for Short-Term Degradation of the Scenic Quality of Shoreline Travel Unit 33, Roadway Travel Unit 35, or the Visual Character or Quality of the Study Area | 1-4 | Short term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.14-2: Potential for Long-Term Degradation of the Scenic Quality of Shoreline Travel Unit 33 and Mapped Scenic Resources Related to the Boardwalk and Observation Platforms | 1, 3, and 4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 2 and 5 | NA | NA | NI | No mitigation is required. | NI |

**Table ES-1
Summary of Impacts, Environmental Commitments, and Mitigation Measures**

| Resource Topic/Impact | Alt. | Impact Duration ¹ | Environmental Commitment ² | LOS before Mitigation ³ | Mitigation Measure | LOS after Mitigation ³ |
|---|------|------------------------------|---------------------------------------|------------------------------------|--|-----------------------------------|
| 3.14-3: Potential for Long-Term Degradation of the Scenic Quality of Shoreline Travel Unit 33 and Mapped Scenic Resources Related to the Upper Truckee River Bridge and Ramps | 1 | Long term | NA | S | Because the composite score was calculated based on use of optimal colors and vegetative screening for the bridge, ramps, and support columns, no additional mitigation is feasible. | SU |
| | 2-5 | NA | NA | NI | No mitigation is required. | NI |
| 3.14-4: Potential for Long-Term Degradation of a Scenic Highway or the Scenic Quality of Roadway Travel Unit 35 and Mapped Scenic Resources | 1-4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.14-5: Potential for Long-Term Degradation in Existing Visual Character or Quality of the Study Area | 1-4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.14-6: Potential for Increases in Light or Glare | 1-4 | Short term and long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.15 Socioeconomics, Population and Housing, and Environmental Justice | | | | | | |
| 3.15-1: Short-term Increase in Population and Housing Demand Resulting from Construction-Related Activities | 1-4 | Short term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.15-2: Potential Long-Term Effect on Sales or Incomes of Local Businesses Resulting from Additional Visitors to the Study Area | 1-4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.16 Transportation, Parking, and Circulation | | | | | | |
| 3.16-1: Increased Traffic on Regional Circulation System during Construction | 1-4 | Short term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.16-2: Increased Parking Demand | 1-4 | Short term and long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.16-3: Potential for Conflicts between Construction Traffic, Local Traffic, Pedestrians, and Bicycles | 1-4 | Short term | EC 12 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |

**Table ES-1
Summary of Impacts, Environmental Commitments, and Mitigation Measures**

| Resource Topic/Impact | Alt. | Impact Duration ¹ | Environmental Commitment ² | LOS before Mitigation ³ | Mitigation Measure | LOS after Mitigation ³ |
|---|------|------------------------------|---------------------------------------|------------------------------------|----------------------------|-----------------------------------|
| 3.17 Utilities | | | | | | |
| 3.17-1: Increased Waste Disposal Requirements Resulting from Construction and Operations | 1-4 | Short term and long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.17-2: Increased Use of Electrical Power | 1 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 2-5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18 Cumulative Impacts | | | | | | |
| 3.18-C1: Cumulative Air Quality—Short-Term Emissions of Criteria Air Pollutants and Precursors during Construction | 1-4 | Short term | EC 1 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C2: Cumulative Air Quality—Long-Term Operational (Regional) Emissions of Criteria Air Pollutants and Precursors | 1-4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C3: Cumulative Air Quality—Long-Term Operational (Local) Emissions of Carbon Monoxide by Mobile Sources | 1-4 | Short term and long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C4: Cumulative Air Quality—Exposure of Sensitive Receptors to Odors | 1-4 | Short term and long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C5: Cumulative Air Quality—Exposure of Sensitive Receptors to Emissions of Hazardous Air Pollutants | 1-4 | Short term and long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C6: Cumulative Air Quality—Generation of Greenhouse Gases | 1-4 | Short term and long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C7: Cumulative Archaeological and Historical Resources—Damage to or Destruction of Potentially Significant Cultural Resources or Human Remains | 1-4 | Short term | ECs 2 and 3 | LTS | No mitigation is required. | LTS |
| | 5 | Short term | NA | LTS | No mitigation is required. | LTS |
| 3.18-C8: Cumulative Biological Resources: Vegetation and Wildlife—Introduction and Spread of Invasive Plants | 1-4 | Short term and long term | EC 4 | LTS | No mitigation is required. | LTS |
| | 5 | Short term and long term | NA | LTS | No mitigation is required. | LTS |

| Table ES-1 Summary of Impacts, Environmental Commitments, and Mitigation Measures | | | | | | |
|---|--------------------------|------------------------------------|---|--|---------------------------------------|---|
| Resource Topic/Impact | Alt. | Impact Duration¹ | Environmental Commitment² | LOS before Mitigation³ | Mitigation Measure | LOS after Mitigation³ |
| 3.18-C9: Cumulative Biological Resources: Vegetation and Wildlife—Construction-Related Effects on Special-Status Plants and Sensitive Habitats (Jurisdictional Wetlands, Riparian Vegetation, and SEZs) | 1–4 | Short term | ECs 4, 5, and 6 | S | No additional mitigation is feasible. | SU |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C10: Cumulative Biological Resources: Vegetation and Wildlife—Long-Term Effects on Special-Status Plants and Sensitive Habitats (Jurisdictional Wetlands, Riparian Vegetation, and SEZs) | 1 (Tahoe yellow cress) | Long term | NA | S | No mitigation is feasible. | SU |
| | 1 (other plants/habitat) | Long term | NA | B | No mitigation is required. | B |
| | 2 | Long term | NA | B | No mitigation is required. | B |
| | 3 and 4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | Long term | NA | LTS | No mitigation is required. | LTS |
| 3.18-C11: Cumulative Biological Resources: Vegetation and Wildlife—Short-Term Effects on Common or Special-Status Wildlife Resources and Wildlife Movement Corridors | 1–4 | Short term | NA | S | No mitigation is feasible. | SU |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C12: Cumulative Biological Resources: Vegetation and Wildlife—Long-Term Effects on Common or Special-Status Wildlife Resources and Wildlife Movement Corridors | 1–4 | Long term | NA | B | No mitigation is required. | B |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C13: Cumulative Fisheries—Short-Term Disruption of Aquatic Habitat and Movement Corridors for Fish | 1–4 | Short term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C14: Cumulative Fisheries—Short-Term Disruption of Spawning Migration, Rearing, and Holding Activity of Lahontan Cutthroat Trout | 1-4 | Short term | EC 7 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |

**Table ES-1
Summary of Impacts, Environmental Commitments, and Mitigation Measures**

| Resource Topic/Impact | Alt. | Impact Duration ¹ | Environmental Commitment ² | LOS before Mitigation ³ | Mitigation Measure | LOS after Mitigation ³ |
|--|------|------------------------------|---------------------------------------|------------------------------------|---------------------------------------|-----------------------------------|
| 3.18-C15: Cumulative Fisheries—Short-Term Localized Impacts on Fish Abundance and Distribution Related to Rescue and Relocation | 1–4 | Short term | EC 7 | LTS | No additional mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C16: Cumulative Fisheries—Long-Term Increase in Upper Truckee River Habitat Quality | 1–4 | Long term | NA | B | No mitigation is required. | B |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C17: Cumulative Fisheries—Long-Term Population Level Impacts on Western Pearlshell Mussels | 1–4 | Long term | EC 7 | LTS | No additional mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C18: Cumulative Fisheries—Long-Term Impacts of Aquatic Invasive Species to Aquatic Habitat in the Upper Truckee River | 1–4 | Long term | EC 7 | LTS | No additional mitigation is required. | LTS |
| | 5 | Long term | NA | LTS | No mitigation is required. | LTS |
| 3.18-C19: Cumulative Geology and Soils, Mineral Resources, and Land Capability and Coverage—Construction-Related, Short-Term Increases in Soil Erosion, Sedimentation, and Loss of Topsoil | 1–4 | Short term | ECs 5, 6, and 8 | LTS | No additional mitigation is required. | LTS |
| | 5 | Short term | NA | LTS | No mitigation is required. | LTS |
| 3.18-C20: Cumulative Geology and Soils, Mineral Resources, and Land Capability and Coverage—Land Coverage Changes | 1–4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | Long term | NA | NI | No mitigation is required. | NI |
| 3.18-C21: Cumulative Human Health/Risk of Upset—Potential Hazards to the Public from Use of Hazardous Materials or Exposure to Existing On-Site Hazardous Materials | 1–4 | Short term and long term | EC 9 | LTS | No additional mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C22: Cumulative Human Health/Risk of Upset—Potential Increase in Public Health Hazards from Mosquitoes Resulting from Increased Floodplain Inundation | 1–4 | Short term and long term | EC 10 | LTS | No additional mitigation is required. | LTS |
| | 5 | Short term and long term | NA | LTS | No mitigation is required. | LTS |

**Table ES-1
Summary of Impacts, Environmental Commitments, and Mitigation Measures**

| Resource Topic/Impact | Alt. | Impact Duration ¹ | Environmental Commitment ² | LOS before Mitigation ³ | Mitigation Measure | LOS after Mitigation ³ |
|---|------|------------------------------|---------------------------------------|------------------------------------|--|-----------------------------------|
| 3.18-C23: Cumulative Human Health/Risk of Upset—Potential for Airspace Safety Hazards Associated with Restoration and Enhancement of Habitat for Hazardous Wildlife | 1–5 | Short term and long term | NA | LTS | No mitigation is required. | LTS |
| 3.18-C24: Cumulative Hydrology and Flooding—Long-Term Increased Stormwater Runoff Volumes and Long-Term Increased Peak Flows Generated | 1–4 | Long term | EC 11 | LTS | No additional mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C25: Cumulative Hydrology and Flooding—Long-Term Increased 100-Year Flood Hazard Area or Elevation | 1–4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | Long term | NA | LTS | No mitigation is required. | LTS |
| 3.18-C26: Cumulative Hydrology and Flooding—Long-Term Increased Overbanking during Small Flood Events | 1–4 | Long term | NA | B | No mitigation is required. | B |
| | 5 | Long term | NA | LTS | No mitigation is required. | LTS |
| 3.18-C27: Cumulative Hydrology and Flooding—Long-Term Modified Groundwater Levels and Flow Patterns | 1–3 | Long term | NA | B | No mitigation is required. | B |
| | 4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | Long term | NA | LTS | No mitigation is required. | LTS |
| 3.18-C28: Cumulative Geomorphology and Water Quality—Short-Term Risk of Surface Water Degradation during Construction | 1–4 | Short term | ECs 5 and 6 | PS | All feasible mitigation measures would be expected to be incorporated into the individual restoration project plans and construction BMPs for specific projects. No additional mitigation is feasible. | SU |
| | 5 | Short term | NA | NI | No mitigation is required. | NI |
| 3.18-C29: Cumulative Geomorphology and Water Quality—Short-Term Risk of Surface Water Degradation following Construction | 1–4 | Short term | NA | S | Mitigation Measure 3.18-C29: Implement an Interim Coordinated Adaptive Management Plan on the Upper Truckee River. | SU |
| | 5 | Short term | NA | LTS | No mitigation is required. | LTS |
| 3.18-C30: Cumulative Geomorphology and Water Quality—Long-Term Stream Channel Erosion | 1–4 | Long term | NA | B | No mitigation is required. | B |
| | 5 | Long term | NA | LTS | No mitigation is required. | LTS |

**Table ES-1
Summary of Impacts, Environmental Commitments, and Mitigation Measures**

| Resource Topic/Impact | Alt. | Impact Duration ¹ | Environmental Commitment ² | LOS before Mitigation ³ | Mitigation Measure | LOS after Mitigation ³ |
|---|------|------------------------------|---------------------------------------|------------------------------------|---------------------------------------|-----------------------------------|
| 3.18-C31: Cumulative Geomorphology and Water Quality—Long-Term Fine Sediment and Nutrient Retention | 1–4 | Long term | NA | B | No mitigation is required. | B |
| | 5 | Long term | NA | LTS | No mitigation is required. | LTS |
| 3.18-C32: Cumulative Geomorphology and Water Quality—Long-Term Modifications in Upper Truckee River Coarse Sediment Transport and Effects on Beach Processes | 1–5 | Long term | NA | TSMC | No additional mitigation is required. | TSMC |
| 3.18-C33: Cumulative Land Use—Potential to Physically Divide an Established Community or Conflict with Land Use Plans, Policies, or Regulations | 1 | Long term | NA | S | No feasible mitigation is available. | SU |
| | 2–4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | Long term | NA | LTS | No mitigation is required. | LTS |
| 3.18-C34: Cumulative Noise—Short-Term or Long-Term Increased Noise and Vibration | 1–4 | Short term and long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | Short term and long term | NA | NI | No mitigation is required. | NI |
| 3.18-C35: Cumulative Public Services—Increased Demand for and Interference of Public Services | 1–4 | Short term and long term | ECs 9 and 12 | LTS | No additional mitigation is required. | LTS |
| | 5 | Short term and long term | NA | NI | No mitigation is required. | NI |
| 3.18-C36: Cumulative Recreation—Construction-Related Loss of Recreational Opportunities and Public Access, Conflicts among Existing and Proposed Recreational Uses, and Increased Use of Existing Recreational Facilities | 1–4 | Short term | ECs 13 and 14 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C37: Cumulative Recreation—Operation-Related Loss of Recreational Opportunities and Conflicts among Surrounding and Proposed Recreational Uses | 1–4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C38: Cumulative Recreation—Construction or Expansion of Recreational Facilities That May Have an Adverse Physical Effect on the Environment | 1 | Short term and long term | NA | S | No feasible mitigation is available. | SU |
| | 2–4 | Short term and long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |

| Table ES-1 Summary of Impacts, Environmental Commitments, and Mitigation Measures | | | | | | |
|---|-------------|------------------------------------|---|--|--------------------------------------|---|
| Resource Topic/Impact | Alt. | Impact Duration¹ | Environmental Commitment² | LOS before Mitigation³ | Mitigation Measure | LOS after Mitigation³ |
| 3.18-C39: Cumulative Scenic Resources—Short-Term Glare from Construction Activities | 1–4 | Short term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C40: Cumulative Scenic Resources—Short-Term and Long-Term Effects of Construction Activities and Additional Facilities on Existing Visual Character and Quality | 1 | Short term and long term | NA | S | No feasible mitigation is available. | SU |
| | 2–4 | Short term and long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C41: Cumulative Socioeconomics, Population and Housing, and Environmental Justice—Short-Term Increase in Population and Housing Demand Resulting from Construction-Related Activities | 1–4 | Short term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C42: Cumulative Socioeconomics, Population and Housing, and Environmental Justice—Potential Long-Term Increases in Sales or Incomes of Local Businesses Resulting from Additional Visitors to the Study Area | 1–4 | Long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C43: Cumulative Transportation, Parking, and Circulation—Construction and Operation Impacts on the Local and Regional Circulation System | 1–4 | Short term and long term | EC 12 | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |
| 3.18-C44: Cumulative Utilities— Short-Term and Long-Term Impacts on Sanitary Sewer, Potable Water, Natural Gas, Electrical, Storm Drain, and Solid Waste Utilities | 1–4 | Short term and long term | NA | LTS | No mitigation is required. | LTS |
| | 5 | NA | NA | NI | No mitigation is required. | NI |

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 Summary of Impacts, Environmental Commitments, and Mitigation Measures**

| Resource Topic/Impact | Alt. | Impact Duration ¹ | Environmental Commitment ² | LOS before Mitigation ³ | Mitigation Measure | LOS after Mitigation ³ |
|--|------|------------------------------|---------------------------------------|------------------------------------|--------------------|-----------------------------------|
| <p>Notes:</p> <p>Alt. = alternative. NA = not applicable.</p> <p>¹ Long term = persisting for years to decades. Short term = construction-related or otherwise persisting from one to several years.</p> <p>² See Table 2-6 for descriptions of the environmental commitments.</p> <p>³ B = beneficial. LOS = level of significance. LTS = less than significant. NI = no impact. PS = potentially significant. S = significant. TSMC = too speculative for meaningful consideration.</p> | | | | | | |

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