EXECUTIVE SUMMARY

ES.1 PROJECT LOCATION AND SETTING

The California Department of Parks and Recreation (State Parks) is proposing a project to restore the reach of the Upper Truckee River within Lake Valley State Recreation Area (SRA) and Washoe Meadows State Park (SP) to address its contributions of fine sediment to the river and Lake Tahoe. The Upper Truckee River is the largest tributary to Lake Tahoe, with a watershed spanning more than 50 square miles. The river's headwaters are located in wilderness 10 miles south of Lake Tahoe along the Sierra Nevada crest at Red Lake Peak. From there, the river flows north into a flat glacial valley eventually draining into Lake Tahoe.

The 520-acre study area is at the upstream end of the flat glacial valley of the river just north of Meyers and south of the City of South Lake Tahoe, within El Dorado County, California. It includes the southern portion of Washoe Meadows SP, Lake Valley SRA, and small portions of US Forest Service (USFS) and California Tahoe Conservancy (Conservancy) lands, as well as a 1.5 mile reach of the Upper Truckee River.

The primary purpose of the proposed project is to restore natural geomorphic and ecological processes along this reach of river and to reduce the river's suspended sediment discharge to Lake Tahoe. Four alternatives 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 continuing existing golf course use, removal of the entire Lake Tahoe Golf Course, or reconfiguration of the golf course to allow for restoration of the river, to reduce the area of Stream Environment Zone (SEZ) occupied by the golf course, and to allow for establishment of a buffer area between the golf course and the river.

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

This joint document is an environmental impact report (EIR) prepared on behalf of State Parks 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 5 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 the Council of Environmental Quality (CEQ)Regulations implementing NEPA.

ES.2.1 CALIFORNIA DEPARTMENT OF PARKS AND RECREATION

State Parks is a lead agency for this project, pursuant to CEQA. As part of its environmental review process, State Parks, 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 circulated from August 28, 2006, though October 20, 2006. A copy is included in Appendix A of this draft EIR/EIS/EIS. This draft EIR/EIS/EIS addresses comments received during the NOP scoping period.

Section 21091(a) of the California Public Resources Code requires lead agencies to circulate Draft EIRs for a minimum of 45 days. However, because this document is also an EIS, pursuant to TRPA code and NEPA, it is being circulated for at least 60 days. During this time, State Parks is holding a public hearing to present the conclusions of the draft EIR/EIS/EIS 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 draft EIR/EIS/EIS; written responses to comments that raise environmental issues; a list of all persons, organizations, and agencies commenting on the draft EIR/EIS/EIS; a copy of the draft EIR/EIS/EIS, including any necessary revisions; 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 draft EIR/EIS/EIS.

Pursuant to Reclamation procedures, this draft EIR/EIS/EIS 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 State Parks also served as the NOP under the Tahoe Regional Planning code. A copy is included in Appendix A of this draft EIR/EIS/EIS.

Pursuant to TRPA Code Section 5.8.A(4), this draft EIR/EIS/EIS 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.3 SUMMARY DESCRIPTION OF THE PROJECT ALTERNATIVES

ES.3.1 PURPOSE AND NEED AND PROJECT OBJECTIVES

The fundamental need for restoration of the study area's reach of the Upper Truckee River stems from its contribution of fine sediment to the river and Lake Tahoe through accelerated bank and bed erosion, the impaired natural geomorphic processes and ecological functions, and the diminished quality of the habitat in the riparian corridor caused by prior human alterations, as described above. The purpose of the project is, therefore, to improve geomorphic processes, ecological functions, and habitat values of the Upper Truckee River within the study area, helping to reduce the river's discharge of nutrients and sediment that diminish Lake Tahoe's clarity while providing access to public recreation opportunities in the State Park and SRA. Its implementation is an important component of the integrated objectives of State Parks, Reclamation, and TRPA to improve environmental quality in the Basin.

Consistent with the purpose and need, the following basic objectives of the project were developed during the early planning and public scoping phases of the project.

- Restore, to the extent feasible, natural geomorphic processes that sustain channel and floodplain morphology.
- Restore, to the extent feasible, ecosystem function in terms of ecological processes and aquatic and riparian habitat quality.
- Create a more continuous riparian habitat corridor.
- Reduce erosion and improve water quality including reduction of the reach's contribution of suspended sediment and nutrient loading in the Upper Truckee River and Lake Tahoe.
- Minimize and mitigate short-term water quality and other environmental impacts during construction.

- Reduce the environmental impact of the golf course on the river's water quality and riparian habitat by integrating environmentally sensitive design concepts.
- In the SEZ, reduce the area occupied by golf course and improve the quality and increase the extent of riparian and meadow habitat.
- Maintain golf recreation opportunity and quality of play sufficient to feasibly support a course.
- Maintain adequate revenue generation from the Lake Valley SRA and Washoe Meadows SP.
- Avoid any increase in flood hazard to private property.
- Avoid any increase in safety hazards to golf course and other recreation users.
- Provide additional opportunities for non-motor vehicle recreation.
- Design with sensitivity to the site's history and cultural heritage.

Five alternatives are being considered and are analyzed at a comparable level of detail in the environmental document. A preferred or proposed alternative has not yet been defined. Following receipt and evaluation of public comments on the draft EIR/EIS/EIS, 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 NO-PROJECT/NO-ACTION: EXISTING RIVER AND 18-HOLE REGULATION GOLF COURSE

For the No Project/No Action Alternative, Alternative 1, river restoration and changes to the golf course would not be implemented. This alternative represents a projection of reasonably foreseeable future conditions that could occur if no project actions were implemented. Under Alternative 1, existing conditions in the study area would continue into the future. The reach of the Upper Truckee River within the study area would not be restored and would continue to erode and transport sediment to Lake Tahoe, with repairs to the river and golf course infrastructure performed only on an emergency or as-needed basis. The 18-hole regulation golf course would remain as it currently exists, with an overall footprint of 133 acres, 56 acres in the 100-year floodplain and 123 acres in the SEZ. Five bridges across the Upper Truckee River and four across Angora Creek would remain. Use of the area occupied by the golf course, including cart paths and bridges, would continue without change. There would be no changes to recreational use (trails) in Washoe Meadows SP as a result of Alternative 1.

Alternative 1 does not involve altering the existing boundaries in the Lake Valley SRA or in the Washoe Meadows SP. Although the Lake Valley SRA General Plan calls for river restoration and Alternative 1 would not implement this provision, it does not preclude consideration of restoration in future. An amendment to the General Plan text would not be required for this alternative, because existing river management approaches and land uses, including golf use would not change.

ES.3.3 ALTERNATIVE 2 RIVER ECOSYSTEM RESTORATION WITH RECONFIGURED 18-HOLE REGULATION GOLF COURSE

Alternative 2 involves full geomorphic and ecosystem restoration of the river with a reconfigured 18-hole regulation golf course. A 13,430 foot long reach of the Upper Truckee River and adjoining floodplain would be

restored. Portions of the existing golf course would be removed from the historic meander belt. This would require several golf course holes to be relocated to an area to the west side of the river. Removing golf course uses adjacent to the river would also reduce the amount of SEZ occupied by the golf course and allow for an increase in the active floodplain. All five existing bridges would be removed from the Upper Truckee River and one new, longer bridge would be constructed. Four bridges would also be removed from Angora Creek. New trails would be constructed on both sides of the river. This alternative includes a restroom on the west side of the river, near hole 9 and paving and lighting the unpaved parking area.

Alternative 2 would involve revising the park unit boundaries, essentially "trading" land between Washoe Meadows SP and Lake Valley SRA, and realigning the boundaries between the two park units. The boundaries of Lake Valley SRA would be adjusted to encompass the reconfigured golf course and to generally place the restored riparian areas along the river in Washoe Meadows SP. Revising the park unit boundaries would involve amendment of the Lake Valley SRA General Plan, including appropriate text changes, such as revised management policies for the Lake Valley SRA. The General Plan amendment would modify, where necessary, the application of Lake Valley SRA river protection goals and policies to the reconfigured golf course.

To manage the reconfigured Washoe Meadows SP in a manner consistent with its purpose and to address existing resources, public access, and use issues of this unit, State Parks would prepare and implement an interim management plan. The plan would address resource protection and management, public access, and trails management to protect the quality of important natural and cultural resources and enhance access to the park unit by the public. Because the reconfigured Washoe Meadows SP would have limited areas of high capability land, it is not anticipated that future development other than trails, trailheads and signage would be implemented.

ES.3.4 ALTERNATIVE 3 RIVER ECOSYSTEM RESTORATION WITH REDUCED-PLAY GOLF COURSE

Alternative 3 would involve full geomorphic and ecosystem restoration of the Upper Truckee River and provision of a reduced-play golf course. A 13,430-foot reach of the Upper Truckee River and adjoining floodplain would be restored. The golf course would be reduced in size to remove golf course from much of the historic meander belt, allowing space for the river restoration. Only a reduced-play golf course, such as an 18-hole executive or 9-hole regulation course, would be feasible within the remaining area outside the river restoration. A portion of the existing golf course would be reconfigured on the southeast side of the river, to allow for a buffer between the river and the golf course. No golf holes would be located on the west side of the river. All five bridges would be removed from the Upper Truckee River and four bridges would be removed from Angora Creek. A new trail would be constructed on the southeast side of the river. No construction would occur on the west side of the river in Washoe Meadows SP under Alternative 3 except river restoration within areas of the historic meander belt.

Alternative 3 would reduce the size of the golf course footprint and increase the area of restored riparian area; therefore, changes in the boundaries between Washoe Meadows SP and Lake Valley SRA would be necessary to adjust the SRA boundary to fit the smaller golf course. In keeping with the respective purposes of Washoe Meadows SP and Lake Valley SRA, the boundary of Washoe Meadows SP would be adjusted (in this case, expanded) to encompass all of the restored river and riparian corridor. The current Lake Valley SRA General Plan calls for an 18-hole regulation golf course. The text of the General Plan would need to be amended to allow for development and management of the reduced-play golf course. An Interim Management Plan would be prepared to address resource protection, public access, and use issues in Washoe Meadows SP, and a future planning effort may be undertaken to allow for recreational development of Washoe Meadows SP.

ES.3.5 ALTERNATIVE 4 RIVER STABILIZATION WITH EXISTING 18-HOLE REGULATION GOLF COURSE

Alternative 4 would use a combination of hard and soft stabilization to keep the river in its present configuration and includes only minor changes to the existing golf course, including the addition of a restroom near hole 5 and paving and lighting of the unpaved parking area. It would involve the systematic and extensive installation of bank protection and grade controls within the present river alignment at the existing elevations. While the streambed and streambank protections would be relatively rigid, biotechnical treatments with native riparian vegetation would be incorporated to the maximum extent possible while still ensuring stabilization of the river to minimize erosion. Use of biotechnical treatments would restore some habitat value to the riparian corridor, but would not improve the floodplain function or restore natural geomorphic processes of the river. Because the river would be stabilized in place, the existing 18-hole regulation golf course would remain largely unchanged. Three of the existing Upper Truckee River bridges would remain in place while the two upstream bridges would be replaced by one longer bridge. No changes to Angora Creek or the unnamed creek bridge or to recreational trails would be implemented.

Alternative 4 would not involve changing the configuration of the existing golf course nor modify its footprint; therefore, no changes in the boundaries between Washoe Meadows SP and Lake Valley SRA would be necessary. The existing Lake Valley SRA General Plan statement of purpose calls for "restoring the natural character and ecological values" of the Upper Truckee River. The General Plan's resource policy states that a river management plan shall be implemented that restores a "more natural channel configuration" and "riparian habitat", among other things, and that gives foremost consideration to minimizing "hard engineering." The approach in Alternative 4 with the river largely stabilized in place would be different than the directives of the General Plan for restoring a more natural channel. The use of biotechnical stabilization techniques would improve some riparian habitat values, but they do not minimize hard engineering nor constitute restoration of a natural channel, as contemplated in the General Plan. As a result, the text of the General Plan would need to be revised under this alternative. An Interim Management Plan would be prepared to address resource protection, public access, and use issues in Washoe Meadows SP, and a future planning effort may be undertaken to allow for recreational development of Washoe Meadows SP.

ES.3.6 ALTERNATIVE 5 RIVER ECOSYSTEM RESTORATION WITH DECOMMISSIONED GOLF COURSE

Alternative 5 involves decommissioning and removing the 18-hole regulation golf course to restore all or a portion of the golf course footprint to meadow and riparian habitat. A 13,430-foot reach of the Upper Truckee River and adjoining floodplain would be restored. All five Upper Truckee bridges and four Angora Creek bridges would be removed. Golf holes would be removed from sensitive lands adjacent to the river and the area further away from the river and all or a portion of the footprint would be restored as native meadow and riparian habitat. The clubhouse facility, parking area, and maintenance yard would remain with the clubhouse available for public use to be determined at a later date.

Alternative 5 would eliminate golf recreation on Lake Valley SRA, which is a primary purpose for the SRA. In light of the decommissioning and removal of golf course facilities, the primary purpose of the SRA would be eliminated. Consequently, State Parks would revoke the existing Lake Valley SRA General Plan and reclassify the former SRA to become part of a single unit with Washoe Meadows SP. All land of the former SRA would be classified as state park. Maintaining the unit in perpetuity as an ecosystem restoration area with no public access or outdoor recreation use would not be feasible, recognizing the unmet demand for outdoor recreation in the state and the mission of State Parks. In time, some form of planning for and implementation of public access and/or development of outdoor recreation facilities would need to occur in keeping with the mission of the department.

If economically feasible, a 9-hole golf course may remain temporarily in use while State Parks evaluates whether to initiate planning for alternative State Park uses. If a reduced-play course remains temporarily, it would be physically configured similar to Alternative 3.

ES.3.7 ALTERNATIVES CONSIDERED AND ELIMINATED FROM DETAILED EVALUATION

Alternatives for river treatment were considered during conceptual planning and preliminary assessment of the project prior to initiating the preparation of this draft EIR/EIS/EIS (SH+G 2004a; SH+G 2004b). Also, alternative locations for the golf course have been evaluated in response to public comments. In both cases, some of the considered alternatives were assessed and found to be infeasible in meeting most of the basic project objectives or in reducing a significant impact of the other alternatives. Therefore, they were eliminated from detailed evaluation.

RIVER ALTERNATIVES

As originally described in source documents (SH+G 2004a; SH+G 2004b), some of the river alternatives considered for restoration would extend further upstream and downstream than the alternatives under detailed evaluation. The river alternatives listed below were screened from further consideration and are somewhat, but not entirely, independent of the golf course alternatives that were considered and eliminated from detailed evaluation.

- The Inset Floodplain and Channel Alternative is characterized as an active approach to improve floodplain processes in the study area.
- The High-Sinuosity Restored Channel River Alternative would implement an active approach to restore and improve river channel and floodplain processes in the study area.
- The Selective Bank Stabilization River Alternative would implement streambank stabilization emphasizing biotechnical measures to selected areas and would focus on measures that could be accomplished without extensive in-channel work or the need for extensive heavy equipment use.
- The Focused Channel Stabilization River Alternative would treat only a short reach of the river that is experiencing the worst erosion, namely the reach centered on golf course holes 6 and 7.
- The Passive Restoration River Alternative would apply a passive approach to ecosystem enhancement along the Upper Truckee River channel in the study area.

ALTERNATIVE LOCATIONS FOR THE GOLF COURSE

A process of map review and agency consultation was conducted to identify potentially feasible alternative locations for the Lake Tahoe Golf Course. The search area for the potential golf course sites was the south shore of Lake Tahoe in California, including the City of South Lake Tahoe and surrounding areas within El Dorado County. Land in the State of Nevada was not included in the search because State Parks only has authority within the State of California.

All potential site locations identified through the map review and consultation process were evaluated to determine each site's ability to meet the project's purpose and need and the siting criteria. To qualify as a feasible alternative location for the golf course in the draft EIR/EIS/EIS, an alternative site must meet the project's purpose and need and most of its basic objectives, and be feasible in light of the siting criteria. The alternative site locations evaluated are listed below.

- Sunset Ranch
- Upper Truckee River Marsh
- Across U.S. 50
- Old Meyers Landfill Area
- Across Sawmill Road
- South of Sawmill Road
- Lake Tahoe Community College
- National Forest Lands North
- National Forest Lands South
- Paradise Park
- Tahoe Paradise Golf Course Area

The comprehensive evaluation of potentially feasible alternative locations for the golf course determined that no feasible alternative location is available. As a result and as directed by the State CEQA Guidelines, more detailed analysis of an alternative location beyond that presented in Chapter 2, "Project Alternatives"is not presented in the draft EIR/EIS/EIS.

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

This draft EIR/EIS/EIS 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 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:

- Removal of habitat, including tree removal, within Washoe Meadows SP (Alternative 2)
- Placement of golf facilities in Washoe Meadows SP (Alternative 2)
- Reduction or loss of golf recreation opportunities (Alternatives 3 and 5)
- Short-term risks of erosion, turbidity, and water quality impacts from construction associated with river restoration and maturation period following construction (Alternatives 2, 3, and 5)
- Changes is public access for dispersed recreation in Washoe Meadows SP (Alternatives 2, 3, 4, and 5)
- Potential for noise and scenic impacts to nearby residences from golf facilities relocated to the west side of the river (Alternative 2)

A summary of environmental impacts and mitigation measures for the alternatives addressed in the draft EIR/EIS/EIS is presented in the following table.

Table ES-1
Summary of Impacts and Mitigation Measures

Resource Topic/Impact	Alt[1]	Impact Duration[2]	Quantification/Relative Magnitude of Impact[3]	LOS before Mitigation[4]	Mitigation Measure	LOS after Mitigation[5]
Land Use						
3.2-1 Potential to Physically Divide an Established Community.	1	ST & LT	NA	NI	No Mitigation Required	NI
	2 - 5	LT	Similar to Alt. 1 but greater	LTS	No Mitigation Required	LTS
3.2-2 Potential Conflict with Land Use Plans, Policies, or Regulations Intended to Protect the Environment.	1 - 5	LT	Qualitative analysis	LTS	No Mitigation Required	LTS
3.2-3 Potential Conflict with State Parks Plans, Policies, and Regulations.	1 - 5	LT	Qualitative analysis	LTS	No Mitigation Required	LTS
Hydrology and Flooding						
3.3-1 Long-Term Increase in Stormwater Runoff Volumes.	1	LT	NA	NI	No Mitigation Required	NI
	2 & 4	LT	Qualitative analysis, greater than Alt. 1	PS	Provide On-Site Storm Drainage Facilities and Accompanying Stormwater Drainage Plan to Prevent Damage from Increased Runoff Discharged to Creek or River Channels.	LTS
	3 & 5	LT	Qualitative analysis, less than Alt. 1 and Alt. 2	B	No Mitigation Required	B
3.3-2 Long-Term Increase in Peak Flows Generated or Released Downstream.	1 & 4	LT	Little to no change in peak flows	LTS	No Mitigation Required	LTS
	2, 3, & 5	LT	Reduction in peak flows released to downstream Upper Truckee River reaches	B	No Mitigation Required	B

Notes: 1 – Alt = Alternative
2 – NA = not applicable, ST (short-term) = construction-related or otherwise persisting from one to several years, LT (long-term) = persisting for years to decades
3 – LOS = level of significance, NI = No Impact, LTS = Less than significant, PS = Potentially Significant, S = Significant, B= Beneficial, TSMSC = Too Speculative for a Meaningful Significance Conclusion
4 – SU = Significant Unavoidable

Table ES-1
Summary of Impacts and Mitigation Measures

Resource Topic/Impact	Alt[1]	Impact Duration[2]	Quantification/Relative Magnitude of Impact[3]	LOS before Mitigation[4]	Mitigation Measure	LOS after Mitigation[5]
3.3-3 Long-Term Increase in Overbanking during Small to Moderate Flood Events.	1 & 4	LT	Little to no change in overbanking	LTS	No Mitigation Required	LTS
	2, 3, & 5	LT	Increase in frequency of overbanking	B	No Mitigation Required	B
3.3-4 Long-Term Increase in the 100-Year Flood Hazard Area or Elevation.	1 & 4	LT	Little to no change in streambed elevation	LTS	No Mitigation Required	LTS
	2, 3, & 5	LT	Streambed would be elevated by 2–4 feet in many locations	PS	Prevent Detrimental Increases in the Future Water Surface Elevation or Area of the 100-Year Flood.	LTS
3.3-5 Long-Term Modification of Groundwater Levels and Flow Patterns.	1 & 4	LT	Little to no change in groundwater levels or flow patterns	LTS	No Mitigation Required	LTS
	2, 3, & 5	LT	Raise in groundwater elevations expected	B	No Mitigation Required	B
3.3-6 Long-Term Reduction of Irrigation-Water Demand.	1, 2, & 4	LT	Little to no change in irrigation-water demand	LTS	No Mitigation Required	LTS
	3 & 5	LT	Reduced irrigation-water demand	B	No Mitigation Required	B
Geomorphology and Water Quality						
3.4-1 Stream Channel Erosion within the Study Area.	1	ST & LT	Total fine sediment load 4,320 cubic yards	LTS	No Mitigation Required	LTS

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	2, 3, & 5	ST & LT	Total fine sediment load 3,885 cubic yards	PS	A. Provide Bed and Bank Stabilization Measures at and Immediately Upstream and Downstream of Bridge Removal Sites. B. Ensure Bed and Bank Stability Downstream of the Treated Reaches. C. Ensure Bed and Bank Stability in the Lower Reaches of the Two Tributary Creeks.	LTS
	4	ST & LT	Total fine sediment load 3,638	PS	Provide Bed and Bank Stabilization Measures at and Immediately Upstream and Downstream of Bridge Removal Sites.	LTS
3.4-2 Risk of Channel Erosion Damage to Sewer Pipelines.	1 & 4	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
	2, 3, & 5	ST & LT	Qualitative analysis	PS	A. Protect Vulnerable Portions of the Sewer Pipeline up to the 100-Year Flood Event. B. Verify Utility Locations, Coordinate with Utility Providers, Prepare and Implement a Response Plan, and Conduct Worker Training with Respect to Accidental Utility Damage. C. Ensure Bed and Bank Stability in the Lower Reaches of the Two Tributary Creeks.	LTS
3.4-3 Long-Term Increased Surface/Soil Erosion within the Study Area.	1, 3, 4, & 5	LT	Qualitative analysis	LTS	No Mitigation Required	LTS
	2	LT	Qualitative analysis	B	No Mitigation Required	B
3.4-4 Fine Sediment and Nutrient Retention within the Study Area.	1 & 4	ST & LT	36-acre active floodplain	LTS	No Mitigation Required	LTS
	2, 3, & 5	ST & LT	57-acre active floodplain	B	No Mitigation Required	B

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3.4-5 Modifications in Upper Truckee River Coarse Sediment Transport and Delivery Downstream.	1	ST & LT	Qualitative analysis	TSMSC	No Mitigation Required	TSMSC
	2, 3, & 5	ST & LT	Raise streambed profile by up to 1 to 3 feet	PS	Monitor and Supplement Coarse Sediment Delivery Downstream.	LTS
	4	ST & LT	Raise portions streambed profile up to 1.3 feet	LTS	No Mitigation Required	LTS
3.4-6 Short-Term Risk of Surface Water or Groundwater Degradation during Construction.	1	ST	Qualitative analysis	LTS	No Mitigation Required	LTS
	2, 3, 4, & 5	ST	Qualitative analysis	PS	Prepare and Implement Effective Site Management Plans.	SU
3.4-7 Short-Term Risk of Surface Water or Groundwater Degradation Following Construction.	1	ST	Qualitative analysis	LTS	No Mitigation Required	LTS
	2, 3, 4, & 5	ST	Qualitative analysis	PS	A. Minimize Fine Sediment and Organic Material Available for Mobilization. B. Adaptively Manage Potential Flood Damage in the Interim Period after Construction.	SU
3.4-8 Risks of Surface Water and Groundwater Contamination from Golf Course Operations.	1, 3, 4, & 5	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
	2	ST & LT	Qualitative analysis	PS	Prevent Water Quality Degradation from Golf Course Operations.	LTS

Notes: 1 – Alt = Alternative
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Biological Resources						
3.5-1 Short-Term Degradation of Fish and Aquatic Habitat Resulting from Construction and Initial Channel Response.	1	ST	Qualitative analysis	LTS	No Mitigation Required	LTS
	2, 3, 4, & 5	ST	Qualitative analysis, greater than Alt. 1	S	A. Prepare and Implement Effective Site Management Plans. B. Implement Preconstruction Surveys for Western Pearlshell Mussels. C. Develop and Implement Native-Fish and Mussel Capture and Translocation Plan. D. Limit Potential Localized Channel Erosion in the Upper Truckee River and Tributary Creeks. E. Provide Bed and Bank Stabilization Measures at Bridge Removal Sites. F. Ensure Bed and Bank Stability Downstream of the Treated Reaches. G. Ensure Bed and Bank Stability in the Lower Reaches of the Two Tributary Creeks. H. Monitor and Supplement Coarse-Sediment Delivery Downstream and Monitor Instream Habitat Conditions.	LTS
3.5-2 Long-Term Changes to Fish and Aquatic Habitat.	1	LT	0 acres of floodplain and meadow restored	LTS	No Mitigation Required	LTS
	2, 3, 4, & 5	LT	Alt. 2 - restore approx. 97 acres of floodplain; Alt. 3 – restore 112 acres of floodplain; Alt. 4 – restore 0.4 acre of floodplain; Alt. 5 – restore 131.5 acres of floodplain meadow vegetation	B	No Mitigation Required	B

Notes: 1 – Alt = Alternative
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Summary of Impacts and Mitigation Measures

Resource Topic/Impact	Alt[1]	Impact Duration[2]	Quantification/Relative Magnitude of Impact[3]	LOS before Mitigation[4]	Mitigation Measure	LOS after Mitigation[5]
3.5-3 Short-Term, Construction-Related Disturbance or Loss of Sensitive Habitats (Jurisdictional Wetlands, Riparian Vegetation, Fens, and SEZ).	1	ST	Qualitative analysis	LTS	No Mitigation Required	LTS
	2, 3, 4, & 5	ST	Filling approx. 2,600 ft of existing channel	S	A. Conduct Delineation of Waters of the United States and Obtain Authorization for Fill and Required Permits. B. Implement Vegetation Protection Measures and Revegetate Disturbed Areas. C. Avoid Effects on the Spring Complexes (Including Fens) through Final Project Design and Implement Protection Measures During Project Construction.	LTS
3.5-4 Short-Term, Construction-Related Disturbance or Removal of Special-Status Plants.	1	ST	Qualitative analysis	LTS	No Mitigation Required	LTS
	2, 3, 4, & 5	ST	Qualitative analysis	PS	Conduct Follow-up, Pre-construction, Protocol-Level Surveys and Avoid, Minimize, or Compensate for Impacts on Special-Status Plants.	LTS
3.5-5 Long-Term Effects on Sensitive Habitats (Jurisdictional Wetlands, Riparian Vegetation, Fens and SEZ) and Special-Status Plant Species.	1	LT	123 acres of SEZ would continue to be occupied by golf course	LTS	No Mitigation Required	LTS
	2, 3, 4, & 5	LT	Alt. 2 - restore approx. 97 acres of floodplain, 37 acres SEZ & 0.5-acre wetlands; Alt. 3 – restore 112 acres of floodplain, 43 acres SEZ, & 0.75-acre wetland; Alt. 4 – restore 0.4 acre of floodplain; Alt. 5 – restore 131.5 acres of floodplain meadow vegetation & 123 acres SEZ	B	No Mitigation Required	B

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3.5-6 Tree Removal and Forest Land Conversion.	1	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
	2, 3, 4, & 5	ST & LT	Alt. 2 – removal of 1,640 native trees over 10 in. dbh; Alt. 3 – removal of 253 trees over 10 in. dbh; Alt. 4 – removal of 555 trees over 10 in. dbh; Alt. 5 – removal of 245 trees over 10 in. dbh	S	Minimize Tree Removal and Develop a Tree Removal and Management Plan.	LTS
3.5-7 Introduction and Spread of Weeds and Aquatic Invasive Species.	1	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
	2, 3, 4, & 5	ST & LT	Qualitative analysis	PS	A. Implement Weed Management Practices during Project Construction. B. Implement Aquatic Invasive Species Management Practices during Project Construction.	LTS
3.5-8 Short-Term, Construction-Related Disturbance or Loss of Special-Status Wildlife Species and Habitats.	1	ST	Golf Course would continue to occupy 123 acres of SEZ	LTS	No Mitigation Required	LTS
	2, 3, 4, & 5	ST	Qualitative analysis	S	A. Conduct Preconstruction Surveys for Nesting Special-Status Birds (Yellow Warbler, Willow Flycatcher, Olive-Sided Flycatcher, Waterfowl, and Long-Eared Owl), and Implement a Limited Operating Period If Necessary. B. Conduct Preconstruction Surveys for Special-Status Bats, Avoid Removal of Important Roosts, and Implement a Limited Operating Period If Necessary.	LTS

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3.5-9 Long-Term Effects on Special-Status and Common Wildlife Species and Habitats.	1	LT	Qualitative analysis	LTS	No Mitigation Required	LTS
	2	LT	97 acres of floodplain & meadow & 37 acres SEZ restored; approx. 60 acres of lodgepole pine forest, Jeffrey pine forest, dry meadow, sagebrush dry meadow, and other vegetation types would be removed	LTS	No Mitigation Required	LTS
	3, 4, & 5	LT	Alt. 3 – 119 acres of floodplain & meadow & 43 acres SEZ restored, 0 acres of habitat removed; Alt. 4 – 0.4-acre floodplain created, 0 acres of habitat removed; Alt. 5 - 123 acres of SEZ, 56 acres floodplain & 133 acres of floodplain/meadow restored, 0 acres of habitat removed	B	No Mitigation Required	B
3.5-10 Effects on Potential Wildlife Movement Corridors.	1	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
	2	ST & LT	Remove/fragment 60 acres of habitat	B/LTS	No Mitigation Required	B/LTS
	3, 4, & 5	ST & LT	0 acres habitat removed/fragmented	B	No Mitigation Required	B

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Earth Resources						
3.6-1 Soil Erosion, Sedimentation and Loss of Topsoil.	1	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
	2, 3, 4 & 5	ST & LT	Qualitative analysis	PS	A. Prepare and Implement Effective Site Management Plans B. Provide On-Site Storm Drainage Facilities and Accompanying Stormwater Drainage Plan to Prevent Surface Erosion from Discharging to Creek or River Channels.	LTS
3.6-2 Risks to People and Structures Caused by Strong Seismic Ground Shaking**.**	1, 3, & 5	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
	2 & 4	ST & LT	Qualitative analysis	PS	Prepare a Final Geotechnical Engineering Report, and Implement All Applicable Recommendations.	LTS
3.6-3 Land Coverage Changes.	1	LT	416,353 sf of coverage in LCD 1b, 141,582 sf of coverage within LCD 1c, 56,365 sf of coverage in LCD 3, 122,430 sf of coverage in LCD 5, 0 sf of coverage in LCD 1a, 6, & 7	LTS	No Mitigation Required	LTS
	2	LT	353,250 sf of coverage in LCD 1b, 59,282 sf of coverage in LCD 1c, 56,365 sf of coverage in LCD 3, 142,208 sf of coverage in LCD 5, 0 acres of coverage in LCD 1a, 6, & 7	B	No Mitigation Required	B

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	3	LT	351,094 sf of coverage in LCD 1b, 141,582 sf of coverage in LCD 1c, 56,365 sf in LCD 3, 21,231 sf of coverage in LCD 5, 0 sf of coverage in LCD 1a, 6, & 7	B	No Mitigation Required	B
	4	LT	443,936 sf of coverage in LCD 1b, 180,870 sf of coverage in LCD 1c, 55,810 sf of coverage in LCD 3, 189,574 sf of coverage in LCD 5, 0 sf of coverage in LCD 1a, 6, & 7	LTS	No Mitigation Required	LTS
	5	LT	241,354 sf of coverage in LCD 1b, 141,582 sf of coverage in LCD 1c, 56,365 sf of coverage in LCD 3, 121,431 sf of coverage in LCD 5, 0 sf of coverage in LCD 1a, 6 & 7	B	No Mitigation Required	B
3.6-4 Result in Loss of Availability of Known Mineral Resources.	1 & 2	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
	3, 4, & 5	ST & LT	NA	NI	No Mitigation Required	NI
Scenic Resources						
3.7-1 Potential for Short-Term Degradation of the Existing Visual Character, Existing Visual Quality, or Scenic Quality of Roadway Travel Unit 36B.	1 - 5	ST	Continued river erosion and repairs	LTS	No Mitigation Required	LTS

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3.7-2 Potential for Long-Term Degradation of the Existing Visual Character, Existing Visual Quality, or Scenic Quality of Roadway Travel Unit 36B.	1, 3, 4, & 5	P	Continued river erosion and repairs	LTS	No Mitigation Required	LTS
	2	P	Degraded visual character and quality of the study area	S	Prepare and Implement a Landscaping and Forest Management Plan.	LTS
3.7-3 Potential for Increases in Light or Glare.	1, 3, & 5	ST & LT	NA	NI	No Mitigation Required	NI
	2 & 4	LT	Similar to Alt. 1 but greater	LTS	No Mitigation Required	LTS
Recreation						
3.8-1 Reduction in Recreation Opportunities, Uses, and Experiences Related to Golf.	1, 2, & 4	ST & LT	Beneficial or no change in golf opportunities	LTS	No Mitigation Required	LTS
	3 & 5	ST & LT	Partial or complete elimination of golf course	S	No Mitigation Required	SU
3.8-2 Reduction in Recreation Opportunities, Uses, and Experiences Related to Spring/Summer/Fall Outdoor Recreation.	1 - 5	ST & LT	Alt. 2 - 2.6 miles of volunteer trails removed, 1.4 miles of new designated trail; Alt. 3 - 0.75 miles of volunteer trails removed, 1 mile of new designated trails; Alt. 4 – 0 miles volunteer trails removed, 0 miles of new designated trails; Alt. 5 – 0.75 miles of volunteer trails removed; 0 miles new designated trail	LTS	No Mitigation Required	LTS

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3.8-3 Reduction in Recreation Opportunities, Uses, and Experiences Related to Winter Recreation.	1	ST & LT	NA	NI	No Mitigation Required	NI
	2, 3, 4 & 5	ST & LT	Similar to Alt. 1 but greater with Alternative 5 having the largest reduction by removal of winter snowmobiling on the driving range	LTS	No Mitigation Required	LTS
3.8-4 Increased Use of Recreation Facilities and Demand for Recreation Opportunities in the Study Area.	1, 2, & 4	ST & LT	Recreation opportunities would improve or remain unchanged	LTS	No Mitigation Required	LTS
	3 & 5	ST & LT	Recreation opportunities would be reduced; however, not substantially	LTS	No Mitigation Required	LTS
Cultural Resources						
3.9-1 Damage to or Destruction of Significant Documented Cultural Resources.	1,3,4 & 5	ST	NA	NI	No Mitigation Required	NI
	2	ST	Qualitative analysis, greater than Alt. 1	PS	Avoid Impacts to Documented Significant Cultural Resources (CA-Eld-2158, CA-Eld-2160, and CA-Eld-555) through a Combination of Site Capping, Project Redesign, and Archaeological/Washoe Tribe Monitoring.	LTS
3.9-2 Damage to or Destruction of As-Yet Undiscovered Cultural Resources.	1	ST	NA	NI	No Mitigation Required	NI
	2, 3, 4, & 5	ST	Qualitative analysis, greater than Alt. 1	PS	Stop Work and Implement Measures to Protect Cultural Resources Discovered during Ground-Disturbing Activities.	LTS

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3.9-3 Discovery of Human Remains.	1	ST	NA	NI	No Mitigation Required	NI
	2, 3, 4, & 5	ST	Qualitative analysis, greater than Alt. 1	PS	Stop Work and Comply with Relevant State Laws if Human Remains are Uncovered during Construction.	LTS
Transportation, Parking, and Circulation						
3.10-1 Increased Construction Traffic on the Local and Regional Circulation System.	1	ST	NA	NI	No Mitigation Required	NI
	2 - 5	ST	Alt. 2 - 5,758 total truck trips; Alt. 3 - 4,470 total truck trips; Alt. 4 - 6,868 total truck trips; Alt. 5 - 3,712 total truck trips	LTS	No Mitigation Required	LTS
3.10-2 Contribution to Deterioration of Local Streets.	1	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
	2, 3, 4, & 5	ST & LT	Qualitative analysis	S	Survey Pavement Conditions and Repair Damage.	LTS
3.10-3 Potential for Conflicts between Construction Traffic and Local Traffic, Pedestrians, and Bicycles.	1	ST	Qualitative analysis	LTS	No Mitigation Required	LTS
	2, 3, 4 & 5	ST	Qualitative analysis, greater than Alt. 1	S	Construction Traffic Management Plan.	LTS
3.10-4 Operational Traffic Impacts on the Local and Regional Circulation System.	1, 3, 4 & 5	LT	NA	NI	No Mitigation Required	NI
	2	LT	3-4 additional daily truck trips	LTS	No Mitigation Required	LTS

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Air Quality						
3.11-1 Short-Term Emissions of Criteria Air Pollutants and Precursors during Construction.	1	ST	NA	NI	No Mitigation Required	NI
	2, 3, & 4	ST	Alt. 2 - max of 19 lb/day ROG, 169 lb/day NO_X, and 426 lb/day PM_{10}, Alt. 3 – max of 11 lb/day ROG, 108 lb/day NO_X, and 335 lb/day PM_{10}, Alt. 4 – max of 15 lb/day ROG, 135 lb/day NO_X, and 43 lb/day PM_{10}	S	Reduce the Generation of Construction-Related Emissions of ROG, NO_X, and PM_{10}.	LTS
	5	ST	Max of 10 lb/day ROG, 97 lb/day NO_X, and 417 lb/day PM_{10}	S	Reduce the Generation of Construction-Related Emissions of ROG, NO_X, and PM_{10}.	LTS
3.11-2 Long-Term Operational (Regional) Emissions of Criteria Air Pollutants and Precursors.	1	LT	NA	NI	No Mitigation Required	NI
	2, 3, 4, & 5	LT	Less than 1 lb/day of ROG, NO_X, PM_{10}, and SO_X, 3 lb/day of CO	LTS	No Mitigation Required	LTS
3.11-3 Long-Term Operational (Local) Emissions of Carbon Monoxide by Mobile Sources	1	LT	NA	NI	No Mitigation Required	NI
	2, 3, 4, & 5	LT	Would not reduce the LOS at any intersections	LTS	No Mitigation Required	LTS
3.11-4 Exposure of Sensitive Receptors to Odors	1	ST & LT	NA	NI	No Mitigation Required	NI
	2, 3, 4, & 5	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
3.11-5 Exposure of Sensitive Receptors to Emissions of Hazardous Air Pollutants	1	ST & LT	NA	NI	No Mitigation Required	NI
	2, 3, 4, & 5	ST & LT	12 lb/day of diesel PM exhaust	LTS	No Mitigation Required	LTS

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Noise						
3.12-1 Short-Term Project Construction Noise Levels Exceeding Applicable Standards.	1	ST	NA	NI	No Mitigation Required	NI
	2, 3, 4, & 5	ST	77 to 101 dBA L_{max} at 50 feet without feasible noise controls	LTS	No Mitigation Required	LTS
3.12-2 Long-Term Project-Related Generation of Stationary- and Area-Source Noise.	1	LT	NA	NI	No Mitigation Required	NI
	2, 3, 4, & 5	LT	Maximum increase of approx. 1.3 dBA CNEL above existing noise levels	LTS	No Mitigation Required	LTS
3.12-3 Long-Term Generation of Project-Related Traffic Noise.	1	LT	NA	NI	No Mitigation Required	NI
	2, 3, 4, & 5	LT	Similar to Alt. 1 but slightly greater	LTS	No Mitigation Required	LTS
3.12-4 Land Use Compatibility of Study Area Noise Levels and Surrounding Land Uses.	1	LT	NA	NI	No Mitigation Required	NI
	2, 3, 4, & 5	LT	Similar to Alt. 1	LTS	No Mitigation Required	LTS
3.12-5 Short- and Long-Term Increases in Groundborne Vibration Levels.	1	ST & LT	NA	NI	No Mitigation Required	NI
	2, 3, 4, & 5	ST & LT	Approx. 0.01 in/sec PPV and 70 VdB would occur at 600 feet	LTS	No Mitigation Required	LTS
Public Services and Utilities						
3.13-1 Temporary Disruption of Public Services during Construction.	1	ST	NA	NI	No Mitigation Required	NI
	2, 3, 4, & 5	ST	Qualitative analysis, greater than Alt. 1	PS	Incorporate Public Service and Emergency Access Provisions in the Construction Traffic Management Plan.	LTS

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3.13-2 Temporary Disruption or Damage of Utility Services during Construction and Risk of Damage to Sewer Pipelines.	1	ST	Qualitative analysis	LTS	No Mitigation Required	LTS
	2, 3, 4, & 5	ST	Qualitative analysis, greater than Alt. 1	PS	A. Verify Utility Locations, Coordinate with Utility Providers, Prepare and Implement a Response Plan, and Conduct Worker Training with Respect to Accidental Utility Damage. B. Protect Vulnerable Portions of the Sewer Pipeline from the 100-Year Flood Event.	LTS
3.13-3 Increased Demand for Electrical and Wastewater Service and Water Supply, Treatment, Distribution, and Storage.	1	LT	NA	NI	No Mitigation Required	NI
	2 & 4	LT	Small increase in water & electrical demand	LTS	No Mitigation Required	LTS
	3 & 5	LT	Decrease in water & electrical demand	LTS	No Mitigation Required	LTS
Human Health and Risk of Upset						
3.14-1 Use of Hazardous Materials.	1	ST & LT	NA	NI	No Mitigation Required	NI
	2, 3, 4, & 5	ST & LT	Qualitative analysis, greater than Alt. 1	LTS	No Mitigation Required	LTS
3.14-2 Potential Human Health Hazards from Exposure to Existing On-Site Hazardous Materials.	1	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
	2, 3, 4, & 5	ST & LT	Qualitative analysis, greater than Alt. 1	PS	Implement Measures to Reduce the Risk of Health Hazards Associated with Potential Exposure to Hazardous Substances.	LTS
3.14-3 Potential for Hazardous Emissions or Handling of Hazardous or Acutely Hazardous Materials, Substances, or Waste within One-Quarter Mile of an Existing or Proposed School.	1	ST & LT	In proximity to one school.	LTS	No Mitigation Required	LTS
	2, 3, 4, & 5	ST & LT	In proximity to one school. Greater than Alt. 1	PS	Notify Applicable School District with Jurisdiction over Schools within One-Quarter Mile of Project Construction Activities.	LTS

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3.14-4 Increased Exposure to Wildland Fire Hazard.	1	LT	NA	NI	No Mitigation Required	NI
	2, 3, 4, & 5	LT	Qualitative analysis	LTS	No Mitigation Required	LTS
3.14-5 Potential to Result in More Frequent Collisions between Aircraft and Wildlife at Lake Tahoe Airport.	1 - 5	LT	Qualitative analysis	LTS	No Mitigation Required	LTS
3.14-6 Potential Increase in Public Health Hazards from Mosquitoes Resulting from Increased Floodplain Inundation.	1	LT	NA	NI	No Mitigation Required	NI
	2, 3, & 5	LT	Increasing floodplain by 21 acres	PS	Establish and Implement a Management Agreement with the El Dorado County Vector Control District.	LTS
	4	LT	Increasing floodplain by 0.4 acre	LTS	No Mitigation Required	LTS
Population and Housing, Socioeconomics, and Environmental Justice						
3.15-1 Population, Employment, and Housing.	1	ST & LT	NA	NI	No Mitigation Required	NI
	2 & 4	ST & LT	0 – 4 additional employees	LTS	No Mitigation Required	LTS
	3 & 5	ST & LT	29 – 70 jobs lost	LTS	No Mitigation Required	LTS
3.15-2 Economic Impact on the Community.	1 & 4	ST & LT	NA	NI	No Mitigation Required	NI
	2	ST & LT	Revenue increase by $20,000	B	No Mitigation Required	B
	3 & 5	ST & LT	Revenue reduced between $900,000 and $8.0 million	Adverse	No Mitigation Required	Adverse
3.15-3 Environmental Justice.	1 - 5	ST & LT	NA	NI	No Mitigation Required	NI
3.15-4 Fiscal Impact on State Parks.	1 & 4	ST & LT	NA	NI	No Mitigation Required	NI
	2	ST & LT	Approx. $6,000 increased revenue	No Adverse Effect	No Mitigation Required	No Adverse Effect

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	3 & 5	ST & LT	Decrease in revenue between $23,000 and $881,000	Adverse	No Mitigation Required	Adverse
Cumulative Impacts						
3.16-1 Cumulative Land Use — Potential to Physically Divide an Established Community or Conflict with Land Use Plans, Policies, and Regulations.	1 – 5	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
3.16-2 Cumulative Hydrology and Flooding – Long-Term Increased Stormwater Runoff Volumes and Long-Term Increased Peak Flows Generated or Released Downstream.	1 – 5	LT	Qualitative analysis	LTS	No Mitigation Required	LTS
3.16-3 Cumulative Hydrology and Flooding – Long-Term Increased Overbanking during Small to Moderate Flood Events.	1 – 5	LT	Qualitative analysis	LTS	No Mitigation Required	LTS
3.16-4 Cumulative Hydrology and Flooding – Long-Term Increased 100-Year Flood Hazard Area or Elevation.	1 – 5	LT	Qualitative analysis	LTS	No Mitigation Required	LTS
3.16-5 Cumulative Hydrology and Flooding – Long-Term Modified Groundwater Levels and Flow Patterns.	1 – 5	LT	Qualitative analysis	B	No Mitigation Required	B
3.16-6 Cumulative Geomorphology and Water Quality – Long-Term Stream Channel Erosion.	1 – 5	LT	Qualitative analysis	B	No Mitigation Required	B

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3.16-7 Cumulative Geomorphology and Water Quality – Long-Term Fine Sediment and Nutrient Retention.	1 – 5	LT	Qualitative analysis	B	No Mitigation Required	B
3.16-8 Cumulative Geomorphology and Water Quality – Long-Term Modifications in Upper Truckee River Coarse Sediment Transport and Delivery Downstream.	1 – 5	LT	Qualitative analysis	TSMSC	No Mitigation Required	TSMSC
3.16-9 Cumulative Geomorphology and Water Quality – Short-Term Risk of Surface Water or Groundwater Degradation during Construction.	1 – 5	ST	Qualitative analysis	PS	All feasible mitigation has been incorporated into the individual restoration project plans and construction BMPs for specific projects. Additional feasible cumulative impact mitigation is not available.	SU
3.16-10 Cumulative Geomorphology and Water Quality – Short-Term Risk of Surface Water or Groundwater Degradation Following Construction.	1 – 5	ST	Qualitative analysis	PS	A. Implement Alternative-Specific Measures to Minimize or Correct Temporary Water Quality Effects Following Construction. B. Implement an Interim Adaptive Management Plan on the Upper Truckee River.	SU
3.16-11 Cumulative Biological Resources – Short-Term Effects on Fisheries and Aquatic Resources.	1 - 5	ST	Qualitative analysis	PS	A. Implement Alternative-Specific Measures to Minimize or Correct Temporary Water Quality Effects after Construction. B. Implement an Interim Adaptive Management Plan on the Upper Truckee River.	LTS
3.16-12 Cumulative Biological Resources – Long-Term Effects on Fisheries and Aquatic Resources.	1 – 5	LT	Qualitative analysis	B	No Mitigation Required	B

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4 – SU = Significant Unavoidable

Table ES-1
Summary of Impacts and Mitigation Measures

Resource Topic/Impact	Alt[1]	Impact Duration[2]	Quantification/Relative Magnitude of Impact[3]	LOS before Mitigation[4]	Mitigation Measure	LOS after Mitigation[5]
3.16-13 Cumulative Biological Resources Vegetation and Wildlife – Effects on Introduction and Spread of Invasives.	1 – 5	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
3.16-14 Cumulative Biological Resources – Effects on Special-Status Plants and Sensitive Habitats (Jurisdictional Wetlands, Riparian Vegetation, and SEZ).	1 – 5	ST & LT	Qualitative analysis	B/TSMSC	No Mitigation Required	B/TSMSC
3.16-15 Cumulative Biological Resources – Tree Removal and Forest Land Conversion.	1 - 5	LT	Alt. 2 - remove 45 acres of conifer forest; Alts. 1, 3, 4, & 5 less impact than Alt. 2, acres removed unknown	LTS	No Mitigation Required	LTS
3.16-16 Cumulative Biological Resources – Effects on Common or Special-Status Wildlife Resources.	1 – 5	LT	Qualitative analysis	B	No Mitigation Required	B
3.16-17 Cumulative Earth Resources – Soil Erosion, Sedimentation, and Loss of Topsoil.	1 – 5	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
3.16-18 Cumulative Earth Resources – Land Coverage Changes.	1 – 5	LT	Alts. 2, 3, & 5 - decrease coverage in LCD 1b; Alt. 4 - slight increase in coverage within LCD 1b	LTS	No Mitigation Required	LTS
3.16-19 Cumulative Scenic Resources — Short-Term and Long-Term Impacts on the Existing Visual Character.	1 – 5	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
3.16-20 Cumulative Scenic Resources — Potential for Increase of Light and Glare.	1 – 5	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS

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Summary of Impacts and Mitigation Measures

Resource Topic/Impact	Alt[1]	Impact Duration[2]	Quantification/Relative Magnitude of Impact[3]	LOS before Mitigation[4]	Mitigation Measure	LOS after Mitigation[5]
3.16-21 Cumulative Recreation Resources — Short-Term and Long-Term Reductions in Golf and Spring, Summer, Fall, and Winter Outdoor Recreation Opportunities.	1 – 5	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
3.16-22 Cumulative Cultural Resources – Damage to or Destruction of Significant Documented Cultural Resources, As-Yet Undiscovered Cultural Resources, or Human Remains.	1 – 5	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
3.16-23 Cumulative Transportation, Parking, and Circulation – Construction and Operation Impacts on the Local and Regional Circulation System.	1 - 5	ST	Qualitative analysis	LTS	No Mitigation Required	LTS
3.16-24 Cumulative Air Quality — Generation of Short-Term Construction-Related Emissions of Criteria Air Pollutants and Precursors.	1 - 5	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
3.16-25 Cumulative Air Quality — Generation of Long-Term Operation-Related (Regional and Local) Emissions of Criteria Air Pollutants and Precursors.	1 - 5	ST	Qualitative analysis	LTS	No Mitigation Required	LTS
3.16-26 Cumulative Air Quality — Exposure of Sensitive Receptors to Emissions of Hazardous Air Pollutants.	1 - 5	LT	Alts. 1-5 – less than 1 lb/day of ROG, NO_X, PM_{10}, CO, and SO_X	LTS	No Mitigation Required	LTS

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Resource Topic/Impact	Alt[1]	Impact Duration[2]	Quantification/Relative Magnitude of Impact[3]	LOS before Mitigation[4]	Mitigation Measure	LOS after Mitigation[5]
3.16-27 Cumulative Air Quality — Exposure of Sensitive Receptors to Odors.	1 - 5	LT	Qualitative analysis	LTS	No Mitigation Required	LTS
3.16-28 Cumulative Air Quality — Generation of Greenhouse Gases.	1 - 5	LT	Alt. 2 - 11.8 annual mass CO_2 emissions; Alts. 1, 3, 4, & 5 – less CO_2 emissions than Alt. 2	LTS	Develop and Implement a Carbon Sequestering Plan for Project Related Tree Removal	LTS
3.16-29 Cumulative Noise – Short-Term or Long-Term Noise and Vibration Impacts.	1 - 5	ST & LT	Alt. 2 - 44.6 dBA CNEL; Alts. 1, 3, 4, & 5 – smaller increase in CNEL than Alt. 2	LTS	No Mitigation Required	LTS
3.16-30 Cumulative Public Services and Utilities – Increased Demand for and Interference of Public Services and Utilities.	1 - 5	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
3.16-31 Cumulative Public Health/Risk of Upset – Potential Human Health Hazards from Exposure to Hazardous Materials, Wildland Fire Hazards, Mosquitoes Resulting from Increased Floodplain, and Increased Hazards to Aviation.	1 - 5	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
3.16-32 Cumulative Population, Employment, and Housing – Potential Adverse Effects on Population, Employment, or Housing.	1 - 5	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
3.16-33 Cumulative Socioeconomics – Potential Adverse Effects on Environmental Justice.	1 - 5	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS
	1 – 5	ST & LT	Qualitative analysis	LTS	No Mitigation Required	LTS

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