

Mitigation Monitoring and Reporting Program
for the
Upper Truckee River Restoration and
Golf Course Reconfiguration Project



SCH# 2006082150



California State Parks



Lake Tahoe
Environmental
Improvement Program



Bureau of Reclamation

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MITIGATION MONITORING AND REPORTING PROGRAM FOR THE UPPER TRUCKEE RIVER RESTORATION AND GOLF COURSE RECONFIGURATION PROJECT

On August 26, 2010, the California Department of Parks and Recreation (State Parks) as lead agency under the California Environmental Quality Act (CEQA), the U.S. Department of the Interior Bureau of Reclamation (Reclamation) as federal lead agency under the National Environmental Policy Act (NEPA), and the Tahoe Resources Planning Agency (TRPA) as lead agency in accordance with the Compact and Code of Ordinances prepared a joint environmental impact report, environmental impact statement, and environmental impact statement (EIR/EIS/EIS) for the Upper Truckee River Restoration and Golf Course Reconfiguration Project to provide the public and responsible and trustee agencies with information about the potential environmental effects associated with the construction and operation of the proposed project.

The final EIR/EIS/EIS concludes that implementation of the project would generate significant adverse environmental impacts. For most potential impacts, the EIR/EIS/EIS prescribes mitigation capable of reducing these impacts to less-than-significant levels.

Section 15097 of the State CEQA Guidelines requires that a public agency adopt a mitigation monitoring or reporting program upon approval of a mitigated negative declaration or environmental impact report. This requirement is meant to ensure that the lead agency enforces the implementation of the mitigation measures by the applicant or in this case itself when it is implementing its own project. This Mitigation Monitoring and Reporting Program (MMRP) fulfills State Parks obligation as the CEQA lead agency to ensure the timely implementation of the mitigation measures identified in the EIR/EIS/EIS. The MMRP is presented in tabular format.

As the NEPA lead, Reclamation will complete a Record of Decision (ROD) on the project following certification by California State Parks. The ROD will state the Federal action that will be implemented and will discuss all factors leading to the decision, including any monitoring and enforcement program established to ensure that identified mitigation measures are accomplished. For Reclamation purposes, environmental “mitigation measures” presented in this MMRP are considered “environmental commitments.”

TRPA is the primary permitting agency. The project would be required to comply with TRPA’s Regional Plan and Code of Ordinances to receive permits for construction. Under Chapter 6 of the TRPA Code of Ordinances, findings must be made in writing regarding all significant environmental impacts and their associated mitigation measures, with substantial evidence provided in the record of review before final project approval. This MMRP will be used to evaluate if mitigation measures are sufficient for project permitting.

Permits and approvals issued by responsible agencies, including TRPA will be considered after further design development of the project. They will be scheduled according to the procedures of the approving agencies.

CEQA requires the adoption of all feasible mitigation measures to reduce significant effects on the environment. NEPA, and TRPA do not require mitigation measures to be adopted for all impacts; however, feasible mitigation implemented to the fullest extent possible and wherever practicable is encouraged.

The table columns contain the following information:

Resource Topic/Impact and Mitigation Number: Lists the mitigation measures by number for each resource topic, as designated in the EIR/EIS/EIS.

Mitigation Measure: Provides the text of the mitigation measures, each of which has been adopted by State Parks and incorporated into the project.

Timing/Schedule: Lists the time frame in which the mitigation must take place.

Responsibility: Identifies the entity responsible for implementing the mitigation measure.

Completion of Implementation: State Parks is responsible for reporting on implementation of the mitigation measures. The “Action” column is to be used by State Parks to describe the action(s) taken to complete implementation. The “Date Completed” column is to be used by State Parks to indicate when implementation of the mitigation measure has been completed. State Parks, at its discretion, may delegate implementation responsibility or portions thereof to qualified consultants or contractors.

Mitigation Measure	Implementation		Completion of Implementation	
	Timing/Schedule	Responsibility	Action	Date Completed
Hydrology and Flooding				
<p>Mitigation Measure 3.3-1: Provide On-Site Storm Drainage Facilities and Accompanying Stormwater Drainage Plan to Prevent Damage from Increased Runoff Discharged to Creek or River Channels. Stormwater improvements shall be incorporated into the final detailed project design. Before issuance of grading permits, State Parks shall submit a detailed stormwater drainage plan to El Dorado County and TRPA for review and approval. The plan shall identify the locations, sizes, and types of facilities used to retain and treat the runoff volumes and peak flows. The detailed design shall meet the following minimum performance criteria:</p> <ul style="list-style-type: none"> ▶ Stormwater facilities shall be installed in the sub-watershed of each existing natural drainages (e.g., swales, seeps, creeks) that will experience project-related changes to topographic, soil, and/or vegetation cover; ▶ Peak runoff discharge from the stormwater system to each of the existing natural drainage swales, creeks, or the Upper Truckee River shall be equal or less than pre-project conditions up to the 10-year event; ▶ Nuisance perennial discharge of excess irrigation water shall be prevented; and ▶ Where rerouting of drainages or point discharges from the stormwater facilities are necessary, those discharges shall be designed to prevent streambed or streambank erosion in the receiving water body. <p>The stormwater designs and drainage plan shall strive to incorporate BMPs where feasible, including but not limited to:</p> <ul style="list-style-type: none"> ▶ pervious pavement or pavers, ▶ strategically placed bioswales and vegetated swales, ▶ constructed wetlands and detention ponds, ▶ rock- or boulder-lined areas to prevent disruption or erosion, and ▶ training of maintenance personnel on stormwater pollution prevention measures. 	From project design through construction	SP and its primary contractors for engineering design and construction		
<p>Mitigation Measure 3.3-4: Prevent Detrimental Increases in the Future Water Surface Elevation or Area of the 100-Year Flood. During design development, beyond the conceptual planning stage, more precise hydraulic modeling of the proposed channel configuration shall be performed. The hydraulic modeling shall be used iteratively with the detailed design process to identify and incorporate modifications to final design that would achieve the following performance criteria:</p> <ul style="list-style-type: none"> ▶ prevent increases in the future 100-year water surface elevation or inundation area as needed to avoid worsening flood hazards or potential damage to existing structures, residences, or public infrastructure. <p>Examples of design features that could be included in the final design through this iterative modeling/design process include:</p> <ul style="list-style-type: none"> ▶ lowered final streambed elevation within the downstream transition from the treated reach to the existing unmodified channel; ▶ enlarged channel or overbank capacity within and/or downstream of the treated reach. 	From project design through construction	SP and its primary contractors for engineering design and construction		
Geomorphology and Water Quality				
<p>Mitigation Measure 3.4-1A: Provide Bed and Bank Stabilization Measures at and Immediately Upstream and Downstream of Bridge Removal Sites. Final design will include specific streambed stabilization and streambank protection measures at each proposed bridge removal site (and the upstream and downstream directions) that will minimize future erosion under the modified hydraulic conditions, as verified by quantitative modeling that demonstrates stability up to the 20-year peak event. The measures may include grading to modify the channel dimensions (e.g., eliminate existing large scour pool) and the shape of the channel bed and banks, along with installation of rock and/or biologic materials.</p>	From project design through construction	SP and its primary contractors for engineering design and construction		
<p>Mitigation Measure 3.4-1B: Ensure Bed and Bank Stability Downstream of the Treated Reaches. Final plans will include design features or specific streambed stabilization and streambank protection measures in the transition zone downstream of the treated reaches (approximately RS 150 to RS 1400), if detailed hydraulic modeling of the 5-year, 10-year, and 100-year peak flows indicates that shear stress changes would increase streambed mobility/erosion, streambank erosion, or overbank erosion in the floodplain.</p>	From project design through construction	SP and its primary contractors for engineering design and construction		
<p>Mitigation Measure 3.4-1C: Ensure Bed and Bank Stability in the Lower Reaches of the Two Tributary Creeks. Final design will include specific streambed stabilization and streambank protection measures in the lower reaches of Angora Creek and the unnamed creek, based on detailed hydraulic modeling of the proposed reconfiguration of their alignments and slopes, to protect against increased erosion up to the 20-year peak event or to a higher design standard as needed to protect the sewer pipeline crossings.</p>	From project design through construction	SP and its primary contractors for engineering design and construction		

Mitigation Measure	Implementation		Completion of Implementation	
	Timing/Schedule	Responsibility	Action	Date Completed
<p>Mitigation Measure 3.4-2A: Protect Vulnerable Portions of the Sewer Pipeline up to the 100-Year Flood Event.</p> <p>In coordination with STPUD, State Parks will design and install protection measures for the buried sewer pipeline north and west of the proposed reconnected meanders on the Upper Truckee River upstream of existing RS 4100 and downstream of RS 7900 or work with STPUD to relocate the vulnerable section of pipeline. Final design will prevent channel adjustments up to the 100-year peak event in areas potentially at risk of exposing/undermining sewer pipelines. Final design schematics will be reviewed and approved by the Engineering Department of STPUD.</p>	From project design through construction	SP and its primary contractors for engineering design and construction		
<p>Mitigation Measure 3.4-2B: Verify Utility Locations, Coordinate with Utility Providers, Prepare and Implement a Response Plan, and Conduct Worker Training with Respect to Accidental Utility Damage.</p> <p>This mitigation measure is similar to Mitigation Measure 3.13-2A. Before final design schematics are prepared, State Parks or its primary representative will consult with STPUD to determine the exact location of underground facilities in the project area, including the public right-of-way, and design the final grading plans to avoid existing utilities where possible. If these utilities cannot be avoided, State Parks will coordinate with STPUD to determine the best possible course of action to minimize potential disturbance.</p> <p>Before the start of construction, utility locations will be verified through field surveys and the use of the Underground Service Alert services. Any buried utility lines will be clearly marked in the area of construction on the construction specifications in advance of any earthmoving activities. Before construction begins, State Parks will provide advance notification of any needed disturbance to area businesses and residents. STPUD consultation should continue during construction to ensure that facilities are avoided and protected and that service disruptions are minimized as construction proceeds.</p> <p>Before the start of construction, a response plan will be prepared to address potential accidental damage to a utility line. The plan will identify chain-of-command rules for notifying authorities and appropriate actions and responsibilities to ensure the safety of the public and workers. Worker education training in response to such situations will be conducted by the contractor. The response plan will be implemented by State Parks and its contractors during construction activities.</p>	Prior to and through construction	SP and its primary construction contractor		
<p>Mitigation Measure 3.4-2C: Ensure Bed and Bank Stability in the Lower Reaches of the Two Tributary Creeks.</p> <p>This mitigation measure is identical to Mitigation Measure 3.4-1C.</p>	Post Construction	SP and its primary golf concessionaire		
<p>Mitigation Measure 3.4-5: Monitor and Supplement Coarse Sediment Delivery Downstream.</p> <p>During the period of channel adjustments following construction and until the streambed profile attains a relatively continuous slope, where bedload deposition within the study area has adjusted and coarse sediment supply net input approximately equals net output from the study area, State Parks will monitor coarse sediment supply entering the study area, deposition within the treated reaches, and discharge to downstream reaches (i.e., at the U.S. 50 crossing) at least once a year (make observations of net deposition or scour during low water conditions). If substantial areas and volume of coarse sediment deposition is occurring within the study area and/or coarse sediment discharge to downstream reaches is substantially less than sediment input from upstream sources, State Parks will conclude that a project-related effect on coarse sediment delivery may be occurring. Coordinated adaptive management, administered by the Upper Truckee Watershed Advisory Group (UTRWAG) will review and evaluate monitoring data and project conditions and recommend next steps, including continuation or revision of monitoring, corrective actions or interventions, or documentation. If the UTRWAG determines there is a significant worsening coarse sediment impact, State Parks, in coordination with land managers of the downstream river reaches (i.e., Conservancy, USFS, City of South Lake Tahoe), will assess whether any adverse channel erosion and water quality effects might result and will recommend a plan to monitor or take corrective action, which may include introduction of supplemental coarse sediment (e.g., gravel,) using washed, sorted materials and methods that minimize temporary risks to water quality, biologic resources, and recreation uses. The quantity and size classes of any required supplemental coarse sediment introduced downstream would be determined annually in coordination with the land managers downstream along the river.</p>	Post Construction	SP		
<p>Mitigation Measure 3.4-6: Prepare and Implement Effective Site Management Plans.</p> <p>State Parks will be required to develop and implement several construction phase site management plans as part of various permit and approval requirements, including but not limited to, grading and erosion control plan, Storm Water Pollution Prevention Plan (SWPPP), spill prevention plan, dewatering and channel seasoning plan, winterization plan, and monitoring and oversight plan. The following measures will be implemented by State Parks within each of these plans to be developed for specific permits or as independent mitigation measures:</p> <ul style="list-style-type: none"> ▶ Restrict the area and duration of construction disturbance to the absolute minimum necessary to accomplish the work. ▶ Design, install, and maintain temporary BMPs to protect disturbed areas and minimize soil erosion, prevent surface runoff interaction with disturbed surfaces, and limit the potential for release of sediment, nutrients, or otherwise contaminated water into surface water bodies or groundwater recharge areas for storm events up to the 20-year precipitation event. ▶ Design, install, and maintain internally draining construction area(s) on both sides of the Upper Truckee River, Angora Creek, and the unnamed creek within the study area to prevent discharge of untreated stormwater to these surface water bodies. Anticipate runoff from upslope groundwater seeps west of the Upper Truckee River, and reroute it around the construction zone. ▶ Establish specific locations for construction vehicle/equipment refueling, maintenance, and storage that are lined and/or bermed to prevent release of any 	Prior to and through construction	SP and its primary contractors for engineering design and construction		

Mitigation Measure	Implementation		Completion of Implementation	
	Timing/Schedule	Responsibility	Action	Date Completed
<p>potential spills into surface water or groundwater.</p> <ul style="list-style-type: none"> ▶ Provide winterization that isolates and protects disturbed areas from high streamflow on the Upper Truckee River and Angora Creek (up to the 50-year event). ▶ Protect stockpiled and transported materials or debris from wind or water erosion. ▶ Avoid overwinter storage of materials, vehicles, equipment, or debris within the 100-year floodplain. ▶ Provide site-specific and reachwide dewatering/bypassing plans that indicate the scheduling approach and or maximum diverted flows to minimize risks from summer thunderstorms, specific diversion/bypass/ dewatering methods and equipment, defined work areas and diversion locations, the types and locations of temporary BMPs for the diversions and reintroduction points, measures and options for treating turbid water before release back to the channel, and stated water quality performance standards. ▶ Provide wetting flows before activation of new and reconnected river channel sections based on a “channel seasoning” plan that indicates the water source(s), volumes and duration required, phased placement of clean, washed gravels; and the measures and options for treating potentially turbid water. ▶ Monitor the status and effectiveness of temporary erosion control, stormwater facilities, and flood flow protection measures throughout the construction area, including each of the internally draining zones that could separately discharge to various surface water bodies. Monitor turbidity in the Upper Truckee River upstream and downstream of the construction zone and, if needed to further describe background, upstream in Angora Creek. Monitoring will be conducted by the engineer or its qualified representative regularly during summer construction and on an event basis when runoff equals or exceeds the BMP design standards. Failures and/or threats of BMP failures will be documented and remedial measures identified for implementation. BMP failures will be repaired within 24 hours of documentation. 				
<p>Mitigation Measure 3.4-7A: Minimize Fine Sediment and Organic Material Available for Mobilization.</p> <p>Final project design and revegetation specifications for a reactivated channel and floodplain that has remnant channels with accumulated fine sediment and/or organic materials will include measures to minimize the risk that such materials would become mobilized if a large flood flow occurs during the first few years after construction. The measures would remove and/or stabilize the materials adequately to resist expected erosive forces if a large flood (i.e., 25-year peak flow) occurred within the first 5 years after implementation:</p> <ul style="list-style-type: none"> ▶ Remove loose, unvegetated, or otherwise unstable fine sediment and/or organic material within remnant channel sections to be reactivated (either directly connected to the restored channel or as part of reactivated floodplain) to eliminate the potential pollutant source. The excavated materials could be salvaged for soil amendment and revegetation use in off-channel areas if suitable or will be disposed of properly off-site. ▶ Revegetate loose, unvegetated, or otherwise unstable fine sediment and/or organic material within remnant channel sections to be reactivated (either directly connected to the restored channel or as part of reactivated floodplain) to increase roughness and reduce velocities. Revegetation of these areas will meet species, density, planting methods, irrigation, and success criteria similar to streambank plantings. 	From project design through construction	SP and its primary contractors for engineering design and construction		
<p>Mitigation Measure 3.4-7B: Adaptively Manage Potential Flood Damage in the Interim Period after Construction.</p> <p>State Parks will develop and implement a project reach adaptive management plan focused on potential short-term water quality degradation that could result if unexpectedly large flood flows occur within the first 5 years after construction. The plan would identify specific data collection and monitoring protocols, describe decision-making processes and authorities for corrective actions or activities. The performance criteria for the corrective actions would focus on preventing initial flood damage or turbidity effects from becoming a persistent, recurring, or chronic source.</p>	Post Construction	SP		
<p>Mitigation Measure 3.4-8: Prevent Water Quality Degradation from Golf Course Operations.</p> <p>State Parks will incorporate measures within the final stormwater system design that:</p> <ol style="list-style-type: none"> 1. limit opportunities for irrigation and stormwater that will be in contact with managed golf course landscaping to interact with unaltered runoff from upslope areas within Washoe Meadows SP. This can be accomplished by incorporating buffer strips along downslope sides of intensively managed turf, intercepting and routing flows around landscape areas if needed, allowing natural drainages to continue to convey water from upslope without adding golf course runoff to those drainages by routing the golf course stormwater to other artificial drainages, or similar measures; 2. prevent irrigation and stormwater that will be in contact with managed golf course landscaping from interacting with shallow groundwater and/or surface water in the vicinity of natural seeps within Washoe Meadows SP. The measures required would be determined by site-specific analysis of the surface/groundwater interactions and could include the installation of sheet pile and/or other subsurface barriers; and, 3. minimize potential percolation and/or surface overflow from any new detention and/or storage pond features that will have irrigation or stormwater runoff from the golf course landscaping through inclusion of adequate liners and appropriate sizing. 	From project design through operations	SP and its primary contractors for engineering design and construction. Golf Course concessionaire.		

Mitigation Measure	Implementation		Completion of Implementation	
	Timing/Schedule	Responsibility	Action	Date Completed
Biological Resources				
Mitigation Measure 3.5-1A: Prepare and Implement Effective Site Management Plans. This mitigation measure is identical to Mitigation Measure 3.4-6 in, “Geomorphology and Water Quality.”	Prior to and through construction	SP and its primary contractors for engineering design and construction		
Mitigation Measure 3.5-1B: Implement Preconstruction Surveys for Western Pearlshell Mussels. Before the initiation of construction activities, State Parks will survey for western pearlshell mussels to determine whether they are present. If it is determined that western pearlshell mussels are present in the study area, then specific measures will be included to address this species in the native-fish and mussel capture and translocation plan described in Mitigation Measure 3.5-1C below.	Prior to and during construction	SP		
Mitigation Measure 3.5-1C: Develop and Implement Native-Fish and Mussel Capture and Translocation Plan. State Parks or its representative will develop and implement a measure to prevent the loss of native fish and mussel species occupying habitat within the study area. Before any construction activities that require dewatering commences, a CDFG-approved biologist will conduct native-fish and mussel relocation activities within the construction dewatering area. All captured native fish and mussel species will be immediately released to a suitable habitat near the study area. Future restoration should not be planned for the relocation site within the next few years to allow for reestablishment of habitat and coordination with other agencies (i.e., USFS, Conservancy, City of South Lake Tahoe) should be completed so all relocation is not occurring in one reach of the river. The qualified biologist will place nets with 1/8-inch mesh at the upstream and downstream extents of the area to be dewatered to keep fish out of the area during fish removal activities. After completion of removal activities, the work area will be cleared for dewatering. Fish rescue and relocation will continue until the area is completely dewatered or until it is determined that no fishes remain in the dewatering area. These activities will take place in consultation with CDFG.	Prior to and during construction	SP		
Mitigation Measure 3.5-1D: Limit Potential Localized Channel Erosion in the Upper Truckee River and Tributary Creeks. This mitigation measure is identical to Mitigation Measure 3.4-1A in, “Geomorphology and Water Quality.”	From project design through construction	SP and its primary contractors for engineering design and construction		
Mitigation Measure 3.5-1E: Provide Bed and Bank Stabilization Measures at and Immediately Upstream and Downstream of Bridge Removal Sites. This mitigation measure is identical to Mitigation Measure 3.4-1B in, “Geomorphology and Water Quality.”	From project design through construction	SP and its primary contractors for engineering design and construction		
Mitigation Measure 3.5-1F: Ensure Bed and Bank Stability Downstream of the Treated Reaches. This mitigation measure is identical to Mitigation Measure 3.4-1C in, “Geomorphology and Water Quality.”	From project design through construction	SP and its primary contractors for engineering design and construction		
Mitigation Measure 3.5-1G: Ensure Bed and Bank Stability in the Lower Reaches of the Two Tributary Creeks. This mitigation measure is identical to Mitigation Measure 3.4-1D in “Geomorphology and Water Quality.”	From project design through construction	SP and its primary contractors for engineering design and construction		
Mitigation Measure 3.5-1H: Monitor and Supplement Coarse-Sediment Delivery Downstream and Monitor Instream Habitat Conditions. State Parks will implement Mitigation Measure 3.4-5 in, “Geomorphology and Water Quality.” In addition, State Parks will monitor instream habitat conditions for potential geomorphic response–related effects. Specifically, if sediment deposition is occurring within the study area that results in the loss of surface water connectivity and/or creates an impediment to fish movement in the low flow channel, State Parks will conclude that a project effect on fish movement/migration is occurring. In response, State Parks will regrade portions of the instream area to create a low-flow channel that restores surface water connectivity and fish movement/migration. State Parks will use BMPs similar to those described for the project alternatives and implement Mitigation Measures 3.5-1A through 3.5-1C to ensure that any subsequent adverse effects on fish habitat would be avoided and/or minimized.	Post Construction	SP		
Mitigation Measure 3.5-3A: Conduct Delineation of Waters of the United States and Obtain Authorization for Fill and Required Permits. Before approval of detailed design used for project construction, a delineation of waters of the United States, including wetlands that would be affected by project implementation, will be conducted by a qualified biologist through the formal Section 404 wetland delineation process. The delineation will be submitted to and verified by the Sacramento District of USACE. Authorization for fill or reconstruction of jurisdictional waters of the United States, including wetlands, will be secured from the Sacramento District of USACE through the Section 404 permitting process. Section 404 permitting through either a nationwide or individual permit that will likely require the following terms: <ul style="list-style-type: none"> ▶ a determination of the volume and types of material to be placed into waters of the United States; ▶ a determination of the total area of waters of the United States to be directly and indirectly affected; ▶ a wetland delineation in accordance with the 1987 Wetland Delineation Manual and the Western Mountain Regional Supplement (USACE 2008) when 	Prior to construction	SP		

Mitigation Measure	Implementation		Completion of Implementation	
	Timing/Schedule	Responsibility	Action	Date Completed
<p>wetlands are proposed for impacts;</p> <ul style="list-style-type: none"> ▶ a description of habitat, including plant communities, located in the study area; ▶ a description of any environmental impacts that are expected to occur, including methods to avoid, minimize, or mitigate adverse impacts on water quality or aquatic functions at the study area; ▶ any other information pertinent to the wetland, stream or water body involved; ▶ for projects involving the restoration of greater than 3 acres of wetlands, evidence that USFWS has been provided with a courtesy copy of the project notification; and ▶ a copy of the 401 water quality certification or waiver issued for the project. <p>State Parks will coordinate with USACE as appropriate and obtain coverage under Regional General Permit 16 for the construction of all aspects of the project. All general terms required for permit compliance will be implemented.</p> <p>In addition, implementation of the project would require a streambed alteration agreement from CDFG for work on the bed and banks of the Upper Truckee River. State Parks will obtain the streambed alteration agreement from CDFG and implement all terms required for permit compliance.</p>				
<p>Mitigation Measure 3.5-3B: Implement Vegetation Protection Measures and Revegetate Disturbed Areas.</p> <p>To minimize the loss of native wetland vegetation at the site, salvage actions will be implemented for wet meadow and riparian vegetation. As detailed in Chapter 2, “Project Alternatives,” and mentioned in the impact discussion, riparian vegetation within the SEZ would be avoided to greatest extent feasible. A minimum number of channel access points will be used to avoid and minimize adverse effects on bank vegetation. If avoidance is not possible, trees will be shielded, and shrubs will be pruned while protecting soil and root structures. In areas where existing streambank vegetation must be removed, plant materials will be salvaged, stored, and reused as possible.</p>	Prior to and during construction	SP		
<p>Mitigation Measure 3.5-3C: Avoid Effects on the Verified fen, Unverified Fen, Lodgepole Pine Wet, and Wet Meadow through Final Project Design and Implement Protection Measures During Project Construction.</p> <p>To avoid potential adverse effects of golf course relocation and operation on the spring (mapped as lodgepole pine wet type and west meadow) west of the Upper Truckee River, and potential effects of quarry restoration on the large fen adjacent to and west of the quarry, the following mitigation measures will be implemented.</p> <ol style="list-style-type: none"> 1. State Parks will develop and implement specific parameters and measures in accordance with Mitigation Measure 3.4-8 to ensure that the final design, operation, and management of golf course holes 9, 10, 11, and 12 avoids potential direct and indirect impacts to the spring in Washoe Meadows SP. 2. Before construction, a qualified biologist will clearly identify the boundaries of the relevant spring in the field with flagging, and protective fencing will be placed around the features to protect them from project-related effects. No construction-related activities will be allowed within areas fenced for avoidance, and construction personnel will be briefed about the presence of this sensitive resource and the need to avoid impacts to it. 3. The edges of the spring will be further protected from indirect effects of the managed turf by the “naturalized landscape” and “minimally managed landscape” buffer areas that are part of the project design. The latter, which will function as the ultimate buffer between the golf course and the adjacent native vegetation, will be areas of native vegetation within the golf course that are generally not mowed, irrigated, or fertilized. Vegetation height and structure may be managed (trim, thin, etc.) to enhance course playability, but in general these areas will serve to buffer the spring from indirect effects of the golf course management. 4. Proposed restoration of the quarry will be further designed to avoid potential direct or indirect effects on the large fen west of the quarry. The plans and specifications will ensure that the groundwater and surface water hydrology that support the fen will not be adversely affected by the project. 	From project design through construction	SP and its primary contractors for engineering design and construction		
<p>Mitigation Measure 3.5-4: Conduct Follow-up, Pre-construction, Focused Surveys and Avoid, Minimize, or Compensate for Impacts on Special-Status Plants.</p> <p>To avoid, minimize, or compensate for possible adverse effects on special-status plant species resulting from the proposed restoration of the Upper Truckee River or quarry wetlands, the following management requirements would be implemented in the following order:</p> <ol style="list-style-type: none"> 1. A qualified botanist familiar with the vegetation of the Tahoe Basin will conduct a focused preconstruction survey for special-status plants (e.g., marsh skullcap, Oregon fireweed, Bolander’s candle moss) along all portions of the Upper Truckee River where construction (e.g., geomorphic restoration, bridge construction) is proposed. Preconstruction surveys will also be conducted at the quarry wetlands for special-status plants that could occur there and be affected by proposed wetland restoration in the quarry (e.g., three-ranked hump-moss, shore sedge, Bolander’s candle moss, marsh skullcap, and other special-status plants associated with mesic conditions). Surveys will be conducted between June and September when target species are clearly identifiable and will follow CDFG’s <i>Guidelines for Assessing the Effects of Proposed Development on Rare, Threatened, and Endangered Plants and Plant Communities</i> (CDFG 2000). 	From project design through construction	SP and its primary contractors for engineering design and construction		

Mitigation Measure	Implementation		Completion of Implementation	
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<p>2. If no special-status plants are found during the survey, the results of the survey will be documented in a letter report to the lead agencies that would become part of the project environmental record, and no further actions will be required.</p> <p>3. If occurrences of special-status plants are documented during the survey, they will be clearly identified in the field and protected from impacts associated with construction activities. Protective measures will include flagging and fencing of known plant locations and avoidance where possible. No construction-related activities will be allowed within areas fenced for avoidance, and construction personnel will be briefed about the presence of the plants and need to avoid effects on the populations.</p> <p>4. If avoidance is not possible, a mitigation plan to reduce impacts on special-status plants to a less-than-significant level will be developed in coordination with the lead agencies, CDFG (for CNPS List 2 species), and USFS (for forest sensitive species), depending on the species affected. The mitigation plan will include provisions for minimizing impacts on special-status plant populations during construction and for relocation and establishment of plants at new protected locations in the study area. The mitigation plan will also include provisions for follow-up monitoring to determine mitigation success, and remedial measures should the initial efforts to mitigate fail. The plan will be adopted and implemented by State Parks.</p>				
<p>Mitigation Measure 3.5-6: Minimize Tree Removal and Develop a Tree Removal and Management Plan.</p> <p>Where feasible, the project will avoid and minimize the removal of trees, especially those 30 inches in DBH or larger. This avoidance and minimization will be achieved through project design to the greatest extent feasible. Tree removal that cannot be avoided will be mitigated with the following measures.</p> <p>In accordance with Chapter 71, Section 71.3.B of the TRPA Code of Ordinances, a tree removal and management plan will be prepared by a qualified environmental professional (i.e., a restoration specialist, registered professional forester [RPF], or certified arborist with restoration qualifications, or similar qualified professional), and will be submitted to a TRPA RPF or other qualified TRPA professional for review and approval. TRPA approval of the plan will be obtained before project approval. Alternatively, if a timber harvesting plan is required to be submitted to California Department of Forestry and Fire Protection and meets the requirements described in this mitigation measure, the timber harvesting plan may be submitted to TRPA for review and approval in lieu of a separate tree removal and management plan.</p> <p>The tree removal and management plan will adhere to the provisions in Chapter 71 of the TRPA Code of Ordinances, including the preservation of trees larger than 30 inches DBH (Section 71.2.A). The plan will include protection measures for snags and coarse woody debris. In accordance with the TRPA criteria <i>Standards for Common Vegetation</i>, the plan will maintain relative species richness, relative abundance, and relative age class, as appropriate and feasible, to contribute to the attainment of the regionwide threshold standard.</p> <p>Permanent disturbance (i.e., disturbance after project construction caused by the proposed land use changes) and temporary disturbance (i.e., disturbance from construction activities) of all trees to be preserved will be minimized. This will include minimizing cuts, fills, grade changes, paving or other coverage, soil compaction, and landscaping effects within the critical root zone of all trees, as determined by a qualified environmental professional. Creation of detailed site plans and construction documents will be coordinated with a qualified environmental professional to minimize permanent and temporary disturbance. The tree removal and management plan will demonstrate how site development design will minimize the permanent disturbance of all trees to be preserved, and how construction planning will minimize temporary disturbance of all trees to be preserved.</p> <p>To minimize temporary disturbance, the tree removal and management plan will provide for vegetation protection during construction in accordance with Chapters 65 and 30 of the TRPA Code of Ordinances. Protection measures will include the following, at a minimum:</p> <ul style="list-style-type: none"> ▶ Sturdy high-visibility protective fencing will be installed at the limits of construction (including all grading, road improvements, underground utilities, staging, storage, parking, or other development activity), and outside of the critical root zone of all trees to be preserved that have critical root zones in the limits of construction. The critical root zone is defined here as the area 5 times the diameter of the tree. This fencing will be included on all site plans (e.g., staging, grading, drainage, and utility plans) and will be depicted in the tree removal and management plan. ▶ If grading, trenching, or transplanting is necessary within the root zone of trees to be preserved, the work will be supervised by a qualified environmental professional, a RPF, or another qualified biologist, and the following measures will be implemented: <ul style="list-style-type: none"> • Soil will be removed in lines radial to, rather than tangential to, the tree to avoid excessive ripping and shattering of roots. • If root cutting cannot be avoided, roots will be cut cleanly at a 90-degree angle. • A minimum of 6 inches of soil or sand will be placed over exposed cuts and roots to reduce soil desiccation until the area is backfilled. • Native soil will be used to backfill all cuts. ▶ All necessary pruning will be performed under the supervision of a certified arborist or RPF or similar qualified specialist. <p>All tree protection obligations required in the tree removal and management plan will be incorporated into construction contracts. Tree protection measures will be installed, and will be inspected by staff from TRPA before issuance of a grading permit.</p> <p>As part of the tree removal and management plan, a tree replacement plan may be prepared by a qualified environmental professional, in accordance with Chapters 30 and 77 of the TRPA Code of Ordinances. Tree replacement needs and specifications will be determined in cooperation with TRPA during development of the tree removal and management plan. Determining whether tree replacement is appropriate, and the amount of project-related tree removal</p>	From project design through construction	SP and its primary contractors for engineering design and construction		

Mitigation Measure	Implementation		Completion of Implementation	
	Timing/Schedule	Responsibility	Action	Date Completed
<p>subject to mitigation by tree replacement, should be based on several considerations related to local and Basin-wide vegetation and fuels management goals and opportunities. These considerations include: (1) the condition, stocking level, and encroachment potential of stands where trees would be removed relative to vegetation/fuels management objectives, desired ecological conditions, and relevant TRPA thresholds for those areas (e.g., stands proposed for removal that are presently overstocked, encroaching into other native vegetation types, or otherwise undesirable may not warrant full replacement); (2) whether on- or off-site tree replacement, which could increase tree density and cover at replanting sites, would either contribute to or conflict with fuels/vegetation and forest health goals for those locations or Basin-wide; and (3) how tree replacement may affect attainment of TRPA thresholds for vegetation. If a tree replacement plan is required, it would be submitted to and approved by a TRPA RPF or other qualified TRPA professional before tree removal or the issuance of a grading permit. Tree replacement will only be implemented in a manner that is also consistent with fire fuel management objectives for the replanted properties.</p> <p>If tree replacement is required, the following provisions shall be incorporated into the tree replacement plan.</p> <ul style="list-style-type: none"> ▶ The tree replacement plan will include a plant list, a description of appropriate planting stock for new trees, a planting plan, planting and maintenance techniques, and measures to control the introduction or spread of invasive plants. Transplanting will follow the International Society of Arboriculture’s standard digging and transplanting techniques to ensure proper handling and successful transplanting of trees and vegetation. ▶ All trees planted to offset project impacts will be monitored for a period of at least 5 years, in conjunction with the monitoring program described below. Any tree that does not survive will be replaced on a 1:1 basis, and likewise monitored for a period of 5 years. ▶ Tree replacement may occur on-site if remaining undeveloped project areas can support additional trees, as determined by a qualified environmental professional and consistent with fire fuel management objectives. If the remaining undeveloped project areas cannot support sufficient plantings, off-site replacement will be required. Off-site replacement will occur in areas in need of additional trees, will be located as close to the study area as possible, and will be preserved in perpetuity by a conservation easement, deed restriction, or other similar mechanism. ▶ A certified arborist, a RPF, or qualified biologist will inspect the results of construction activities to document which trees were removed by grading and construction, and to document disturbance of preserved trees. This documentation will be provided to TRPA, and the total number of trees to be replanted, as described in the tree replacement plan, will be modified as necessary to reflect the actual tree removal and disturbance that occurs during construction. ▶ A vegetation monitoring approach will be developed and included as part of the tree replacement plan. Monitoring will be implemented by a certified arborist, a RPF, or another qualified biologist, for areas to be revegetated as mitigation. This approach will include monitoring protocols, including the protocol for evaluating tree health and vigor. A monitoring report detailing vegetation success will be submitted annually to TRPA through the monitoring period, for a minimum period of 5 years. The mitigation and monitoring of a replaced tree will continue until the tree satisfies the criteria for a successfully established sapling, dies, or is otherwise no longer part of a mitigation effort. Criteria for successful establishment will include survivorship for a period of at least 5 years, with at least 2 years without supplemental watering. 				
<p>Mitigation Measure 3.5-7A: Implement Weed Management Practices during Project Construction.</p> <p>In consultation with TRPA, State Parks or its representative will implement appropriate weed management practices during project construction. Recommended practices include the following:</p> <ul style="list-style-type: none"> ▶ A qualified biologist with experience in the Tahoe Basin will conduct a preconstruction survey to determine whether any populations of invasive/noxious weeds are present within areas proposed for ground-disturbing activities. This could be conducted in coordination with the focused special-status plant survey recommended above under Mitigation Measure 3.5-4, “Conduct Follow-up, Pre-construction, Focused Surveys and Avoid, Minimize, or Compensate for Impacts on Special-Status Plants.” If noxious weed species are documented, they will be removed or their spread otherwise prevented before the start of construction. Control measures may include herbicide application, hand removal, or other means of mechanical control. This would help eliminate the threat of spreading the species throughout the study area and adjacent areas. ▶ All equipment entering the study area from weed-infested areas or areas of unknown weed status will be cleaned of all attached soil or plant parts before being allowed into the study area. ▶ To ensure that fill material and seeds imported to the study area are free of invasive/noxious weeds, the project will use on-site sources of fill and seeds whenever available. Fill and seed materials that need to be imported to the study area will be certified weed-free. In addition, only certified weed-free imported materials (or rice straw in upland areas) will be used for erosion control. <p>After project construction, the study area will be monitored on an annual basis for infestations of invasive weeds until the restored vegetation has become fully established. If new populations of invasive weeds are documented during monitoring, they will be treated and eradicated to prevent further spread. Emphasis in monitoring will be given to those areas designated as “minimally managed landscape” and “naturalized landscape” that serve as a buffer between the newly created golf course holes west of the Upper Truckee river and adjacent forest and riparian vegetation to ensure that these areas do not act as source points for infestations of weeds.</p>	Prior to and through construction	SP and its primary contractors for engineering design and construction		

Mitigation Measure	Implementation		Completion of Implementation	
	Timing/Schedule	Responsibility	Action	Date Completed
<p>Mitigation Measure 3.5-7B: Implement Aquatic Invasive Species Management Practices during Project Construction.</p> <p>In consultation with TRPA, State Parks or its representative will implement appropriate aquatic invasive species management practices during project construction. Recommended practices include the following:</p> <ul style="list-style-type: none"> ▶ All equipment, including individual equipment such as waders, wading boots, etc., entering the study area that will be used in or around the Upper Truckee River, or new aquatic golf course features will be decontaminated using recommended methods (USACE 2009) before being allowed into the study area. 	Prior to and through construction	SP and its primary contractors for engineering design and construction		
<p>Mitigation Measure 3.5-8A: Conduct Preconstruction Surveys for Nesting Special-Status Birds (Yellow Warbler, Willow Flycatcher, Olive-Sided Flycatcher, Yellow-Headed Blackbird, Waterfowl, and Long-Eared Owl), and Implement a Limited Operating Period If Necessary.</p> <p>For construction activities that would occur in suitable habitat during the nesting season (generally April 1–August 31, depending on species and weather), a qualified wildlife biologist will conduct focused surveys for active nest sites of special-status birds. The biologist should be able to identify Sierra Nevada bird species audibly and visually. The following provides general guidelines for conducting surveys for yellow warbler, olive-sided flycatcher, willow flycatcher, waterfowl, and long-eared owl.</p> <p>Yellow Warbler, Olive-Sided Flycatcher, Yellow-Headed Blackbird, Waterfowl, Long-Eared Owl</p> <p>Focused surveys for yellow warbler, olive-sided flycatcher, yellow-headed blackbird, waterfowl, and long-eared owl nests will be conducted by a qualified wildlife biologist within 14 days before construction activities are initiated each construction season. The preconstruction survey for yellow warbler, olive-sided flycatcher, yellow-headed blackbird, waterfowl, and long-eared owl nests will be conducted using a nest-searching technique appropriate for the species. For example, for yellow warbler, an appropriate technique involves first conducting point counts in suitable riparian habitat to determine occupancy, followed by nest searching if the species is present. For long-eared owl, surveys typically involve tape playbacks of recorded long-eared owl calls.</p> <p>Willow Flycatcher</p> <p>For construction activities initiated in suitable breeding habitat for willow flycatcher after May 31, a preconstruction survey for nesting willow flycatchers will be conducted each construction season. The survey will follow <i>A Willow Flycatcher Survey Protocol for California</i> (Bombay et al. 2003). The protocol requires a minimum of two survey visits to determine presence or absence of willow flycatcher: one visit during survey period 2 (June 15–25) and one during either survey period 1 (June 1–14) or period 3 (June 26–July 15).</p> <p>If an active special-status bird nest is located during the preconstruction surveys, the biologist will notify TRPA and CDFG. If necessary, modifications to the project design to avoid removal of occupied habitat while still achieving project objectives will be evaluated, and implemented to the extent feasible. If avoidance is not feasible or conflicts with project objectives, the following limited operating periods will apply to avoid disturbances during the sensitive nesting season. If a yellow warbler, willow flycatcher, yellow-headed blackbird, or waterfowl nest is located, construction will be prohibited within a minimum of 500 feet (or at a distance directed by the appropriate regulatory agency) of the nest to avoid disturbance until the nest is no longer active. If an active long-eared owl nest is located, construction within 0.25 mile of the nest site will be delayed until the site is no longer active. These recommended buffer areas may be reduced through consultation with TRPA or CDFG.</p>	Prior to and through construction	SP and its primary contractors for engineering design and construction		
<p>Mitigation Measure 3.5-8B: Conduct Preconstruction Surveys for Special-Status Bats, Avoid Removal of Important Roosts, and Implement a Limited Operating Period If Necessary.</p> <p>Bat surveys will be conducted by a qualified wildlife biologist within 14 days before any tree removal or clearing each construction season. Locations of vegetation and tree removal or excavation will be examined for potential bat roosts. Potential roost sites identified will be monitored on two separate occasions for bat activity, using bat detectors to help identify species. Monitoring will begin 30 minutes before sunset and will last up to 2 hours at any potential roost identified. Removal of any significant roost locations discovered will be avoided to the extent feasible. If avoidance is not feasible, roost sites will not be disturbed by project activities until September 1 or later, when juveniles at maternity roosts would be volant (i.e., able to fly).</p>				
Earth Resources				
<p>Mitigation Measure 3.6-1A: Prepare and Implement Effective Site Management Plans.</p> <p>This mitigation measure is similar to Mitigation Measure 3.4-6. The project is expected to be required to develop and implement several construction phase site management plans as part of various permit and approval requirements, including but not limited to a grading and erosion control plan, a dewatering and channel seasoning plan, a winterization plan, and a monitoring and oversight plan. The following measures will be implemented by State Parks within each of these plans to be developed for specific permits or as independent mitigation measures;</p> <ul style="list-style-type: none"> ▶ Restrict the area and duration of construction disturbance to the absolute minimum necessary to accomplish work. ▶ Protect existing vegetation outside construction area and salvage and re-use riparian or plant new vegetation in disturbed areas. ▶ Design, install, and maintain temporary BMPs to protect disturbed areas and minimize soil erosion, prevent surface runoff interaction with disturbed surfaces, and limit the potential for release of sediment to surface water bodies for storm events up to the 20-year precipitation event. ▶ Design, install, and maintain internally draining construction area(s) on either side of each of the Upper Truckee River, Angora Creek, and the unnamed 	From project design through construction	SP and its primary contractors for engineering design and construction		

Mitigation Measure	Implementation		Completion of Implementation	
	Timing/Schedule	Responsibility	Action	Date Completed
<p>creek within the study area to prevent discharge of untreated stormwater into these surface water bodies. Anticipate runoff from upslope groundwater seeps west of the Upper Truckee River, and reroute it around the construction zone.</p> <ul style="list-style-type: none"> ▶ Salvage topsoil to be reused on-site during project-related grading. ▶ Provide winterization that isolates and protects disturbed areas from high streamflow on the Upper Truckee River and Angora Creek (up to the 50-year event). ▶ Secure a source of transportation and a location for deposition and/or storage of all excavated and imported materials at the project site. Protect stockpiled and transported materials or debris from wind or water erosion. Store soil and other loose material at least 100 feet from the active channel during the construction season. ▶ Avoid overwinter storage of materials, vehicles, equipment, or debris within the 100-year floodplain. ▶ Provide site-specific and reachwide dewatering/bypassing plans that indicate the scheduling approach and or maximum diverted flows to minimize risks from summer thunderstorms, specific diversion/bypass/ dewatering methods and equipment, defined work areas and diversion locations, the types and locations of temporary BMPs for the diversions and reintroduction points, measures and options for treating turbid water before release back to the channel, and stated water quality performance standards. ▶ Provide wetting flows before activation of new and reconnected river channel sections based on a "channel seasoning" plan that indicates the water source(s); volumes and duration required; phased placement of clean, washed gravels; and the measures and options for treating potentially turbid water. ▶ Monitor the status and effectiveness of temporary erosion control, stormwater facilities, and flood flow protections throughout the construction area, including each of the internally draining zones that could separately discharge to various surface water bodies. Monitor turbidity in the Upper Truckee River upstream and downstream of the construction zone and, if needed, to further describe background, upstream in Angora Creek. Monitoring shall be conducted by the engineer or its qualified representative on a regular basis during summer construction and on an event basis when runoff equals or exceeds the BMP design standards. Document failures and/or threats of BMP failures, and identify remedial measures implementation. Repair BMP failures within 24 hours of documentation. 				
<p>Mitigation Measure 3.6-1B: Provide On-Site Storm Drainage Facilities and Accompanying Stormwater Drainage Plan to Prevent Surface Erosion from Discharging to Creek or River Channels.</p> <p>This mitigation measure is similar to Mitigation Measure 3.3-1. Stormwater improvements shall be incorporated into the final detailed project design. Before issuance of grading permits, State Parks shall submit a detailed stormwater drainage plan to El Dorado County and TRPA for review and approval. The plan shall identify the locations, sizes, and types of facilities used to retain and treat project related runoff. The detailed design shall meet the following minimum performance criteria:</p> <ul style="list-style-type: none"> ▶ Stormwater facilities shall be installed in the sub-watershed of each existing natural drainages (e.g., swales, seeps, creeks) that will experience project-related changes to topographic, soil, and/or vegetation cover; ▶ Peak runoff discharge from the stormwater system to each of the existing natural drainage swales, creeks, or the Upper Truckee River shall be equal or less than pre-project conditions up to the 10-year event; ▶ Nuisance perennial discharge of excess irrigation water shall be prevented; and ▶ Where rerouting of drainages or point discharges from the stormwater facilities are necessary, those discharges shall be designed to prevent streambed or streambank erosion in the receiving water body. <p>The stormwater designs and drainage plan shall strive to incorporate BMPs where feasible, including but not limited to:</p> <ul style="list-style-type: none"> ▶ pervious pavement or pavers, ▶ strategically placed bioswales and vegetated swales, ▶ constructed wetlands and detention ponds, ▶ rock- or boulder-lined areas to prevent disruption or erosion, and ▶ training of maintenance personnel on stormwater pollution prevention measures. 	From project design through construction	SP and its primary contractors for engineering design and construction		
<p>Mitigation Measure 3.6-2: Prepare a Final Geotechnical Engineering Report, and Implement All Applicable Recommendations.</p> <p>Before construction begins, State Parks will obtain the services of a licensed geotechnical engineer to prepare a final engineering report for the proposed project. The final engineering report shall address and make recommendations on the following:</p> <ul style="list-style-type: none"> ▶ structural/seismic design of bridges; ▶ site preparation, including tree removal; ▶ appropriate sources and types of fill; 	From project design through construction	SP and its primary contractors for engineering design and construction		

Mitigation Measure	Implementation		Completion of Implementation	
	Timing/Schedule	Responsibility	Action	Date Completed
<ul style="list-style-type: none"> ▶ potential need for soil amendments; ▶ access roads, pavement, asphalt, and parking areas; ▶ shallow groundwater table; and ▶ soil and slope stability. <p>All recommendations contained in the final engineering report shall be implemented by State Parks. Special recommendations contained in the engineering report shall be noted on the grading plans and implemented as appropriate before construction begins. Design and construction of all phases of the project shall be in accordance with the 2007 or subsequently adopted CBC.</p>				
Scenic Resources				
<p>Mitigation Measure 3.7-2: Prepare and Implement a Landscaping and Forest Management Plan.</p> <p>To address the degradation of visual quality resulting from tree removal and construction of the golf course in Washoe Meadows SP, State Parks will prepare and implement a landscaping and forest management plan to maximize visual screening of the golf course, while balancing vegetation management with other resource objectives, including habitat quality and fire fuel management. State Parks will plant native vegetation that contributes to visual screening around the perimeter of the golf course footprint consistent with the surrounding natural landscape. Plantings will be undertaken between May 1 and October 15 and will include regular watering in the growing season of the first three years to ensure adequate initial growth. The plantings will provide screening to mitigate the increased visibility of the golf course from surrounding neighborhoods and trails.</p> <p>The plan will include information on species used for plantings, implementation approach and timing, irrigation, monitoring, and adaptive management. The plan will also require that trees be removed in a staggered pattern to the extent feasible to maximize the visual screening by the remaining trees. The buffer landscape will also be managed to maintain a minimum depth of 200 feet between residential properties and the golf course. The forest vegetation in the buffer will be managed to maintain an effective visual screen, appropriate fire fuel control, and wildlife habitat qualities. The plan will be prepared in conjunction with detailed golf course design so that precise areas of disturbance are known and the landscaping and forest management process can be coordinated with golf course construction.</p>	From project design through construction	SP and its primary contractors for engineering design and construction		
Cultural Resources				
<p>Mitigation Measure 3.9-1: Avoid Impacts to Documented Significant Cultural Resources (CA-Eld-2156, CA-Eld-2158, CA-Eld-2160, and CA-Eld-555) through a Combination of Site Capping, Project Design Revision, and Archaeological/Washoe Tribe Monitoring.</p> <p>State Parks will employ one or a combination of three mitigation techniques that can be used to protect sites CA-Eld-2156, CA-Eld-2158, CA-Eld-2160, and CA-Eld-555 as determined during development of more detailed design. To the extent feasible, State Parks will design the project to avoid disturbance of the identified resources. If avoidance is not feasible, State Parks will cap the site locations over which the golf course and/or other related facilities would be constructed. The site capping method has been employed in recent years and, assuming certain qualities of fill and capping methodology, has been endorsed by the Advisory Council on Historic Preservation. Using either technique protects the resource from damage. Based on the layout of the project, capping a large area encompassing the easternmost portion of CA-Eld-2158 (“Locus B,” the NRHP-eligible portion of the site) and CA-Eld-2160 and CA-Eld-2156 may be the most effective approach. During the design development, State Parks will consult with the Washoe Tribe to confirm that design revisions and/or capping are acceptable approaches to protect the resources. CA-Eld-2156, which is bisected by an existing road and experiencing erosion would also be capped.</p> <p>Mitigation Technique (a): Site Capping. Capping of these sites is consistent with preservation methods described in the archaeological literature. Mathewson and Gonzalez (1988); Mathewson, Gonzalez, and Eblen (1992:10–12); and Mathewson (1989) all concur that burial and capping of an archaeological site, when performed appropriately, preserves the deposit in place. Their reasons are described as follows:</p> <ul style="list-style-type: none"> ▶ Burial of an archeological site, unlike excavation, maintains the archaeological resource in place. ▶ An archaeological site is continually changing and decaying with time; hence, the goal of preservation is not to prevent change but to reduce the natural process of decay by shielding a site from adverse human and natural effects. ▶ Capping a site with soils of comparable or greater pH value than the pH of the on-site deposit can slow down decay of the organic constituents of an archaeological deposit. ▶ Capping the sites will make them less permeable to infiltration of surface water and will thus reduce the frequency and severity of cycles of inundation and drying that expedite the decay of organic remains. <p>Given these conditions and measures, the best method of preservation is to cap the sites with an initial lift of material that has a pH value that is equal to or greater than that currently located at the site locations. This material will be placed on the site so as to avoid direct ground disturbance of surface layers and to avoid compaction of on-site soils and cultural strata.</p> <p>The potential for compaction decreases with depth; therefore, it is critical that potential stress from compaction be minimized during the initial placement of sediments covering the site. To meet this objective, an initial 1-foot-thick lift of uncompacted soil equal to or higher in pH than soils on-site will be placed directly over the cultural site by mechanized equipment. Working from outside the cultural site, the initial lift will be placed over the cultural site with a</p>	From project design through construction	SP and its primary contractors for engineering design and construction		

Mitigation Measure	Implementation		Completion of Implementation	
	Timing/Schedule	Responsibility	Action	Date Completed
<p>Caterpillar D6 LGP (low-ground-pressure) dozer or equivalent low-ground-pressure equipment. Within the cultural site boundaries, this initial lift will be placed in such a manner that the dozer travels only on previously placed material and never directly on the original ground surface.</p> <p>Mitigation Technique (b): Project Revised Design to Avoid the Resource. If necessary to account for continued access to CA-Eld-555 in its present condition, State Parks will revise the final design of the southernmost proposed portion of the golf course. The final layout would leave an area within which the site is located completely undeveloped and designated as an Environmentally Sensitive Area. The boundaries of this area will be clearly marked and/or restricted with construction cyclone fencing or other suitable materials. No ground-disturbing activities will be permitted within this Environmentally Sensitive Area, nor will it be used for equipment or materials staging, or transit for vehicles or persons while golf course construction is ongoing.</p> <p>Mitigation Technique (c): Archaeological/Washoe Tribe Monitoring. While the project will be designed to avoid these four sites to the extent feasible and/or other adequate measures will be developed to protect them during project construction and future golf course operation and maintenance activities, data recovery would be necessary at these sites, if complete protection is not feasible. Construction, and if necessary, data recovery would be monitored by a qualified member of the Washoe Tribe. Washoe and archaeological monitors will evaluate subsequent project-related ground-disturbing activities within and in the immediate vicinity of these site locations. If data recovery is necessary, findings of effect and one or more historic property treatment plans will be prepared and approved by the State Historic Preservation Officer, the lead Federal agency, and the Washoe Tribe THPO. Following data recovery investigations, a data recovery report will be prepared in accordance with the Secretary of the Interior’s guidelines and guidance provided by the California Office of Historic Preservation and the THPO.</p>				
<p>Mitigation Measure 3.9-2: Stop Work and Implement Measures to Protect Cultural Resources Discovered during Ground-Disturbing Activities.</p> <p>If unrecorded cultural resources are encountered during project-related ground-disturbing activities, a qualified cultural resources specialist will be contacted to assess the potential significance of the find.</p> <p>If an inadvertent discovery of cultural materials (e.g., unusual amounts of shell, animal bone, glass, ceramics, structure/building remains) is made during project-related construction activities, such as repairs to the river or golf course, ground disturbances in the area of the find will be halted and a qualified professional archaeologist and the Washoe Tribe’s THPO will be notified regarding the discovery. The archaeologist, in cooperation with the THPO, will determine whether the resource is potentially significant per CRHR, TRPA, and/or NRHP criteria and will develop appropriate mitigation to protect the integrity of the resource and ensure that no additional resources are affected. Mitigation could include but is not necessarily limited to preservation in place, archival research, subsurface testing, or contiguous block unit excavation and data recovery.</p>	During Construction	SP and its primary construction contractor		
<p>Mitigation Measure 3.9-3: Stop Work and Comply with Relevant State Laws if Human Remains are Uncovered during Construction.</p> <p>In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, potentially damaging excavation in the area of the burial will be halted and the El Dorado County Coroner and a professional archaeologist will be contacted to determine the nature and extent of the remains.</p> <p>The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code, Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the Native American Heritage Commission (NAHC) by phone within 24 hours of making that determination (Health and Safety Code, Section 7050[c]).</p> <p>Following the coroner’s findings, State Parks or its authorized representative, an archaeologist, and the NAHC-designated Most Likely Descendant (MLD) will determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in Section 5097.9 of the California Public Resources Code.</p> <p>The landowner will ensure that the immediate vicinity (according to generally accepted cultural or archaeological standards and practices) is not damaged or disturbed by further development activity until consultation with the MLD has taken place. The MLD will have 48 hours to complete a site inspection and make recommendations after being granted access to the site. A range of possible treatments for the remains may be discussed, including nondestructive removal and analysis, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment. Assembly Bill [AB] 2641 (Chapter 863, Statutes of 2006) suggests that the concerned parties may extend discussions beyond the initial 48 hours to allow for the discovery of additional remains. AB 2641 includes a list of site protection measures and states that the landowner will comply with one or more of the following requirements:</p> <ul style="list-style-type: none"> ▶ record the site with the NAHC or the appropriate Information Center, ▶ utilize an open-space or conservation zoning designation or easement, and/or ▶ record a document with the county in which the property is located. <p>State Parks or its authorized representative will rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance if the NAHC is unable to identify a MLD or if the MLD fails to make a recommendation within 48 hours after being granted access to the site. State Parks or its authorized representative may also reinter the remains in a location not subject to further disturbance if it rejects the recommendation of the MLD, and mediation by the NAHC fails to provide measures acceptable to State Parks.</p>	During Construction	SP and its primary construction contractor		

Mitigation Measure	Implementation		Completion of Implementation	
	Timing/Schedule	Responsibility	Action	Date Completed
Transportation, Parking, and Circulation				
<p>Mitigation Measure 3.10-2: Survey Pavement Conditions and Repair Damage. State Parks will prepare a baseline survey of pavement conditions along roads and bicycle trails on potential haul routes prior to initiating construction. The survey will include all local roads between the project and U.S. 50, where effects on pavement would be expected. This information shall be used as the basis for indentifying and repairing any damage caused by project related large truck traffic at the end of the project. State Parks will also monitor pavement conditions each year and make improvements, as needed, to ensure the safety of motorists, pedestrians, and bicyclists.</p>	During and post construction	SP and its primary contractors for engineering design and construction		
<p>Mitigation Measure 3.10-3: Construction Traffic Management Plan. State Parks will implement a Construction Traffic Management Plan to ensure the safety of local traffic, pedestrians, and bicyclists. The plan will be prepared sufficiently in advance of project construction for adequate review, comment, and concurrence by the El Dorado County Department of Public Works. The plan will include advance public advisories, construction-period signage, flag personnel, and other special traffic-control actions. Specific measures contained in the plan include the following.</p> <ul style="list-style-type: none"> ▶ Distribute or mail flyers to residents in the nearby Upper Truckee North and Meyers neighborhoods advising about upcoming project traffic prior to the initiation of construction. ▶ Place advisory signs along construction routes in advance of construction to alert traffic, pedestrian, and bicyclists about the upcoming construction traffic activity. ▶ Install construction area signage on designated haul routes to inform the public of the presence of trucks. These signs shall identify the construction truck crossing on the Sawmill Road bike trail. ▶ Provide flag personnel at the Sawmill Road crossing when truck activity at this location is heavy (i.e., more than 10 trucks per hour). ▶ Provide flag personnel at the Chilicothe Street/Cholula Street and San Bernardino Street/Cholula Street intersections to separate opposing vehicles, pedestrians, and cyclists when these large trucks use the route (i.e., one or more heavy trucks per day). ▶ Provide information to all truck drivers identifying haul routes, speed limits, location of flaggers, and any other pertinent public safety information. ▶ Monitor truck and traffic Conditions to identify traffic congestion, safety concerns regarding truck, vehicle, pedestrian and bicycle conflicts and to adjust the TCM as needed. 	Prior to and through construction	SP and its primary contractor for construction		
Air Quality				
<p>Mitigation Measure 3.11-1: Reduce the Generation of Construction-Related Emissions of ROG, NO_x, and PM₁₀. In accordance with the TRPA Code of Ordinances and El Dorado County Code, State Parks shall implement the following mitigation measures during construction:</p> <ul style="list-style-type: none"> ▶ State Parks shall obtain all necessary TRPA and El Dorado County permits and approvals and shall follow all required TRPA codes and procedures with respect to best management practices (BMPs) (TRPA Code Chapter 25), project grading (TRPA Code Chapter 64), excavation- and construction-related and emissions-generating activities (TRPA Code Chapter 91: Air Quality Control), and all required County laws and procedures with respect to BMPs, project grading and excavation, and construction-related and emissions-generating activities. The following specific emissions-related mitigation measures are recommended by EDCAQMD: <ul style="list-style-type: none"> • State Parks shall require the prime contractor to provide an approved plan demonstrating that the heavy-duty (i.e., greater than 50 horsepower) off-road vehicles to be used in project construction and operated by either the prime contractor or any subcontractor will achieve, at a minimum, a fleet-averaged 20-percent NO_x reduction compared to the most recent ARB fleet average. Implementation of this measure requires the prime contractor to submit a comprehensive inventory of all off-road construction equipment greater than 50 horsepower that will be used an aggregate of 40 or more hours during the construction project. The inventory shall include the horsepower rating, engine production year, and hours of use or fuel consumed for each piece of equipment. The inventory shall be updated monthly. • State Parks shall require that the 15% of on-site equipment include options for reducing criteria air pollutant exhaust emissions such as using late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, and/or after-treatment products. ▶ Dust control measures shall be required for any grading activity creating substantial quantities of dust. They shall be approved by TRPA before groundbreaking and shall comply with the provisions of Chapter 64.4 of the TRPA Code of Ordinances, El Dorado County Code, and the EDCAQMD-recommended control measures listed below: <ul style="list-style-type: none"> • State Parks shall require that the prime contractor enclose, cover, or water twice daily all disturbed soil areas, including storage piles, to keep soil moist at all times. • State Parks shall require that the prime contractor water all haul roads twice daily. 	During construction	SP and its primary contractor for construction		

Mitigation Measure	Implementation		Completion of Implementation	
	Timing/Schedule	Responsibility	Action	Date Completed
<ul style="list-style-type: none"> State Parks shall require the prime contractor to cover or maintain 2 feet of freeboard on all haul loads to reduce dust emissions from escaping over the side of the truck. Activities disturbing the soil shall not occur between October 15 and May 1 of each year, unless approval has been granted by TRPA. All construction sites shall be winterized by October 15 of each construction year in accordance with the provisions of Chapter 64.2.D of the TRPA Code of Ordinances, unless an extension is granted by TRPA. <p>► State Parks shall require its contractors and suppliers, its general contractor, and all of the general contractor’s subcontractors and suppliers to comply with all of the terms and conditions of all project permits, approvals, and conditions attached thereto, including all TRPA and El Dorado County permits and approvals.</p>				
Public Services and Utilities				
<p>Mitigation Measure 3.13-1: Incorporate Public Service and Emergency Access Provisions in the Construction Traffic Management Plan.</p> <p>As part of the Construction Traffic Management Plan, prepared pursuant to Mitigation Measure 3.10-3, State Parks will coordinate with the appropriate public service agencies, providing construction-related traffic details and evaluating the need for specific actions to maintain adequate public service access to the study area and surrounding vicinity during construction. The plan will include measures to inform public service agencies of access conditions, create and maintain emergency access routes for the study area and vicinity affected by project access routes, and instruct construction personnel about providing priority for public service emergency response.</p>	Prior to and through construction	SP and its primary contractor for construction		
<p>Mitigation Measure 3.13-2a: Verify Utility Locations, Coordinate with Utility Providers, Prepare and Implement a Response Plan, and Conduct Worker Training with Respect to Accidental Utility Damage.</p> <p>As part of detailed design development, State Parks will consult with applicable utility providers to determine the exact location of underground facilities in the project area, including the public right-of-way, and design the final grading plans to avoid existing utilities where possible. If these utilities cannot be avoided, State Parks shall coordinate with the applicable utility to determine the best possible course of action to minimize potential disturbance.</p> <p>Before the start of construction, utility locations will be verified through field surveys and the use of the Underground Service Alert services. Any buried utility lines shall be clearly marked in the area of construction on the construction specifications in advance of any earthmoving activities.</p> <p>Before construction begins, State Parks will provide advance notification of any needed disturbance to area businesses and residents. Utility service provider consultation will continue during construction to ensure that facilities are avoided and protected and that utility service disruptions are avoided as construction proceeds.</p> <p>Before the start of construction, a response plan will be prepared to address potential accidental damage to a utility line. The plan will identify chain-of-command rules for notifying authorities and appropriate actions and responsibilities to ensure the safety of the public and workers. Worker education training in response to such situations will be conducted by the contractor. The response plan will be implemented by State Parks and its contractors during construction activities.</p>	Prior to and through construction	SP and its primary contractor for construction		
<p>Mitigation Measure 3.13-2b: Protect Vulnerable Portions of the Sewer Pipeline from the 100-Year Flood Event.</p> <p>This mitigation measure is additional to Mitigation Measure 3.4-2a. During detailed design development and in coordination with STPUD, State Parks will design protections for the buried sewer pipeline north and west of the proposed reconnected meanders on the Upper Truckee River upstream of existing RS 4100 and downstream of RS 7900. Final design will include actions to prevent channel adjustments resulting from the 100-year peak event from exposing/undermining sewer pipelines. Examples of potential protective actions could include bank protection, sheet pile, or relocation of sewer pipelines. Final design schematics will be reviewed and approved by STPUD Engineering Department and the actions will be installed during project construction.</p>	From project design through construction	SP and its primary contractors for engineering design and construction		
Human Health and Risk of Upset				
<p>Mitigation Measure 3.14-2: Implement Measures to Reduce the Risk of Health Hazards Associated with Potential Exposure to Hazardous Substances.</p> <p>If evidence of previously undiscovered soil or groundwater contamination (e.g., stained soil, odorous groundwater) is encountered during construction activities, the construction contractor will immediately stop work in that area and notify State Parks. State Parks will notify the appropriate Federal, State, and local agencies and will ensure that any contaminated areas are cleaned up in accordance with recommendations made by the El Dorado County Environmental Management Department, Lahontan RWQCB, DTSC, or other appropriate Federal, State, or local regulatory agencies as generally described above before authorizing work to continue in the area.</p>	During construction	SP and its primary contractor for construction		

Mitigation Measure	Implementation		Completion of Implementation	
	Timing/Schedule	Responsibility	Action	Date Completed
<p>Mitigation Measure 3.14-3: Notify Applicable School District with Jurisdiction over Schools within One-Quarter Mile of Project Construction Activities.</p> <p>As required by Public Resource Code Section 21151.4, State Parks shall provide written notification of the project to the Lake Tahoe Unified School District and the Lake Tahoe Environmental Science Magnet School at least 30 days before certification of the EIR/EIS/EIS and shall consult with the school district and Lake Tahoe Environmental Science Magnet School regarding the potential impacts on schoolchildren associated with hazards from project implementation.</p>	Prior to construction	SP and its primary contractor for construction		
<p>Mitigation Measure 3.14-6: Establish and Implement a Management Agreement with the El Dorado County Vector Control District.</p> <p>State Parks will establish and implement a management agreement with EDCVCD. As a performance criterion for the management agreement, the terms and conditions of the agreement will be designed to ensure that EDCVCD can maintain mosquito abundance at or below pre-project levels. The agreement will include but not be limited to:</p> <ul style="list-style-type: none"> ▶ measures that ensure necessary access for monitoring and control measures; ▶ applicable best management practices from the California Department of Public Health’s <i>Best Management Practices for Mosquito Control on California State Properties</i> (CDPH 2008), including: <ul style="list-style-type: none"> • implementing procedures for coordinating State Parks and EDCVCD management activities, including procedures for golf course ponds; and • providing public information for visitors and the community regarding control measures being implemented, the risk of transmission of mosquito-borne disease, and personal protective measures. 	Post construction	SP and Golf Course Concessionaire		
Cumulative Impacts				
<p>Mitigation Measure 3.16-10A: Cumulative Geomorphology and Water Quality – Implement Alternative-Specific Measures to Minimize or Correct Temporary Water Quality Effects Following Construction.</p> <p>The nature of this mitigation measure would vary by project site/reach and by alternative selected, and each project lead agency/sponsor shall develop and implement these measures separately during detailed design development. The measures would be alternative and site specific and designed to minimize or correct potential water quality effects from a large flood (25-year recurrence or larger) within 5 years of construction. The performance criterion for the mitigation will be to minimize the risk of significant water quality impact(s) during the 5 year period following completion of construction. For example, some of the proposed alternatives shall include longer revegetation/stabilization periods before reactivation of channel sections, other alternatives shall include preproject removal of accumulated fines and organic matter in reactivated floodplains/channels, and some shall involve monitoring and the potential replenishment of coarse sediment to downstream reaches.</p>	Post construction	SP		
<p>Mitigation Measure 3.16-10B: Cumulative Geomorphology and Water Quality – Implement an Interim Adaptive Management Plan on the Upper Truckee River.</p> <p>The project proponents for all the restoration project reaches on the Upper Truckee River (i.e., California Tahoe Conservancy, State Parks, United States Forest Service, and the City of South Lake Tahoe) currently participate in the Upper Truckee River Watershed Advisory Group (UTRWAG), which is a forum to facilitate discussion of issues important to the planning, implementation, and monitoring of SEZ and river improvement, enhancement, and restoration projects in the watershed. The aforementioned agencies also participate in a subcommittee of the UTRWAG that focuses on coordinated adaptive management (activities necessary for resource management of the various UTR improvement projects). These activities include:</p> <ul style="list-style-type: none"> ▶ sharing and evaluating monitoring data ▶ determining effectiveness of implementation and monitoring ▶ identifying potential problems and sources ▶ making suggestions and providing mutual feedback regarding potential activities or actions in response to resource degradation or revisions to objectives or monitoring in the various Upper Truckee River project areas <p>The project proponents shall continue adaptive management with a plan focused on preventing potential short-term water quality degradation that may result if unexpectedly large flood flows occur within the first 5 years after construction of each project. Each project reach will collect and evaluate monitoring data for its reach. The UTRWAG subcommittee will coordinate annual data review and field inspections for each project reach during the period of adjustment and initial flood vulnerability and will develop recommendations for an adaptive management action. Potential actions could include changes to objectives or monitoring, minor maintenance, (e.g., additional re-vegetation or spot repairs) or intervention such as corrective action to ameliorate a chronic or worsening trend and continued monitoring to determine if there is need for future action. The adaptive management subcommittee will focus on identifying potential problems, and guiding levels of monitoring or action to prevent them from becoming a persistent, recurring, or chronic source. The coordinated effort will foster early identification of short-term surface water quality degradation and will aid in the facilitation of remedial actions Adaptive management shall be in force for the interim period of channel adjustment and initial flood vulnerability (i.e., at least 5 years but no more than 10 years from the end of construction—sufficient length to allow for expected natural channel adjustments).</p>	Post construction	SP		

Mitigation Measure	Implementation		Completion of Implementation	
	Timing/Schedule	Responsibility	Action	Date Completed
Mitigation Measure 3.16-11A: Cumulative Biological Resources – Implement Alternative-Specific Measures to Minimize or Correct Temporary Water Quality Effects Following Construction. This mitigation measure is identical to Mitigation Measure 3.16-10A.	Post construction	SP		
Mitigation Measure 3.16-11B: Cumulative Biological Resources – Implement an Interim Adaptive Management Plan on the Upper Truckee River. This mitigation measure is identical to Mitigation Measure 3.16-10A.	Post construction	SP		
Mitigation Measure 3.16-28: Cumulative Air Quality – Develop and Implement a Carbon Sequestering Plan for Project Related Tree Removal Project construction will be handled in a manner that either extends the duration of its sequestration function (i.e., chip and used as mulch or till into soils) or is used for renewable energy purposes thereby minimizing landfill disposal or open burning of woodpiles.	Prior to and during construction	SP		