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

Upper Truckee River and Marsh Restoration Project

Volume 2
SCH# 2007032099

Lead Agencies:

California
Department of
General Services

California
Tahoe Conservancy

Tahoe Regional
Planning Agency
Lake Tahoe
Environmental
Improvement Program

U.S. Department of
Interior Bureau of
Reclamation

February 2013

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Appendices

3.10 LAND USE

This section describes the regulatory setting relevant to land use in the study area, existing land uses within the study area and vicinity, and impacts of Alternatives 1–5. Cumulative public services impacts are addressed in Section 3.18, "Cumulative Impacts." Consistency with TRPA goals and policies is presented in Table 3.10-1.

3.10.1 AFFECTED ENVIRONMENT

REGULATORY SETTING

Numerous federal, state, regional, and local laws, rules, regulations, plans, and policies define the framework for regulating land use in the Tahoe Basin. The following discussion focuses on land use-related requirements applicable to the proposed alternatives.

Federal

No federal plans, policies, regulations, or laws related to land use are applicable to the proposed alternatives under consideration.

State

The following state program related to land use is relevant to the proposed alternatives and is described in detail in Chapter 5, "Compliance, Consultation, and Coordination":

- California State Lands Commission management of public lands

Tahoe Regional Planning Agency

Regional Plan Goals and Policies

The Goals and Policies document for the 1987 *Regional Plan* establishes an overall framework for development and environmental conservation in the Lake Tahoe region. TRPA goals and policies are included for six elements: land use, transportation, conservation, recreation, public services and facilities, and implementation (TRPA 2006). The goals and policies relevant to the project are listed in Table 3.10-1 and are discussed in Section 3.10.2, "Environmental Consequences and Mitigation Measures," below.

Code of Ordinances

The TRPA Code of Ordinances establishes standards and regulations for implementation of the Regional Plan for the Tahoe Basin. Public agencies and organizations in the Basin must comply with TRPA provisions or may establish equivalent or higher requirements in their jurisdiction. The Code of Ordinances is a coordinated series of documents addressing environmental and land-use planning issues in the Tahoe Basin, including the Tahoe Regional Planning Compact, environmental threshold carrying capacities, Goals and Policies, the Plan Area Statements and maps, and other TRPA plans and programs. The Code of Ordinances is intended to implement the Goals and Policies while maintaining the environmental thresholds (TRPA 2011).

A September 16, 2010 federal ruling struck down updated shorezone ordinances; TRPA is currently appealing the ruling. The decision to appeal follows an assessment by the agency of the ruling over the complex environmental analysis of rules that were crafted to resolve multiple Lake Tahoe shorezone issues. The lawsuit was brought by the League to Save Lake Tahoe and the Sierra Club. The Upper Truckee River and Marsh Restoration project application was submitted prior to this ruling and will be processed under rules that were in effect prior to the October, 2008 adoption (TRPA 2010).

Table 3.10-1
Consistency with Relevant TRPA Land Use Goals and Policies

TRPA Goals and Policies	Consistency					Discussion
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	
Land Use Goal 1: Restore, maintain, and improve the quality of the Lake Tahoe Region for the visitors and residents of the region.						
Policy 1: The primary function of the region shall be as a mountain recreation area with outstanding scenic and natural values.	Y	Y	Y	Y	Y	All of the action alternatives (Alternatives 1–4) would involve providing recreation opportunities and improving the natural values of the Upper Truckee River within the study area. Under Alternative 5, the No Project/No Action Alternative, the study area would remain as a habitat area and an area of informal recreation, which would continue to support natural and recreational uses.
Policy 2: The Regional Plan gives a high priority to correcting past deficiencies in land use. The Plan shall encourage a redirection strategy for substantially and adversely altered areas, wherever feasible.	Y	Y	Y	Y	NA	All of the action alternatives (Alternatives 1–4) would include enhancements that would improve effects of past land use or remove coverage of the Upper Truckee River and various other habitats in the study area. Alternative 5, the No Project/No Action Alternative, would not involve changing land uses in the study area, which would support recreational uses, but would not restore the river or redirect recreational access away from sensitive habitats.
Land Use Goal 2: Direct the amount and location of new land uses in conformance with the environmental threshold carrying capacities and other goals of the Tahoe Regional Planning Compact.						
Policy 2: Specific land use policies shall be implemented through the use of planning area statements for each of the planning areas identified in the map included in the Regional Plan. Areas of similar use and character have been mapped and categorized within one or more of the following five land use classifications: conservation, recreation, residential, commercial and public service, and tourist. These land use classifications shall dictate allowable land uses.	Y	Y	Y	Y	Y	The study area is located in six PASs 99 (Al Tahoe), 100 (Truckee Marsh), 102 (Tahoe Keys), 103 (Sierra Tract Commercial), 104 (Highland Woods), and 111 (Tahoe Island). Alternatives 1–5 would be consistent with the permissible uses in these PASs.
Policy 3: The Plan Area Statements shall also identify the management theme for each planning area by designating each area for (1) maximum regulation, (2) development with mitigation, or (3) redirection of development. These designations shall provide additional policy direction for regulating land use.	N	Y	Y	Y	Y	Implementing any of the action alternatives would result in an increase in recreational development; however, long-term environmental impacts of development would be mitigated with the exception of recreational development under Alternative 1 related to the bridge and potential effects to Tahoe yellow cress. All other components of Alternative 1 and the other action alternatives would redirect recreational access away from sensitive habitats. Implementing Alternative 5 would not result in a change in

Table 3.10-1
Consistency with Relevant TRPA Land Use Goals and Policies

TRPA Goals and Policies	Consistency					Discussion
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	
						existing development.
Policy 4: The Plan Area Statements set forth special policy direction to respond to the particular need, problems, and future development of a specific area. Each Plan Area Statement may vary in detail or specificity depending on the nature of the area and the detail or specificity related to local jurisdictional plans.	Y	Y	Y	Y	Y	The study area is located in six PASs 99 (Al Tahoe), 100 (Truckee Marsh), 102 (Tahoe Keys), 103 (Sierra Tract Commercial), 104 (Highland Woods), and 111 (Tahoe Island). Alternatives 1–5 would be consistent with the permissible uses in these PASs.
Policy 5: All Plan Area Statements, community plans, or other specific plans adopted by the agency shall specify the total additional development which may be permitted within the region, not to exceed the limitations set forth in A, B, C, D, and E in the Regional Plan. Reconstruction and relocation of existing development are not considered additional development.	Y	Y	Y	Y	Y	None of the alternatives (Alternatives 1–5) would include additional residential, commercial, or public service development. Therefore, these uses would not be increased under any of the alternatives. Implementing Alternative 1, 3, or 4 would include one or two kiosks, which would not likely require the allocation of summer-day-use PAOTs, and if necessary, sufficient summer-day-use PAOTs are currently available and could be allocated to these alternatives. Implementing Alternative 2 or 5 would not include any kiosks and therefore, would not require the allocation of PAOTs.
Policy 11: Uses of the bodies of water within the region shall be limited to outdoor water-dependent uses required to satisfy the goals and policies of this plan.	Y	Y	Y	Y	Y	The portion of the Upper Truckee River within the study area would continue to be used for informal water-related recreation under all of the alternatives.
Land Use Goal 3: All new development shall conform to the coefficients of allowable land coverage as set forth in "The Land Capability Classification of the Lake Tahoe Basin, California-Nevada, a Guide for Planning, Bailey, 1974."						
Policy 1: Allowed base land coverage for all new projects and activities shall be calculated by applying the Bailey coefficients, as shown below, to the applicable area within the parcel boundary. Land Capability District / Max Allowable Coverage 1a 1% 1b 1% 1c 1% 2 1% 3 5%	Y	Y	Y	Y	NA	Coverage within the study area is regulated by the Dillingham Settlement Agreement and the Bailey's Land Capability coefficients. Most existing would be removed and/or relocated to higher capability lands within the study area under Alternatives 1–4, as allowed per the Regional Plan Goals and Policies. Coverage also would be added by public access, and recreation infrastructure elements, Nonetheless, implementing any of the action alternatives would comply with the Dillingham Settlement Agreement and Bailey's Land Capability coefficients. See Section 3.6, "Geology and Soils, Mineral Resources, and Land Capability and Coverage," for additional coverage discussion.

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Consistency with Relevant TRPA Land Use Goals and Policies

TRPA Goals and Policies	Consistency					Discussion
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	
4 20% 5 25% 6 30% 7 30%						
Policy 2: The allowed coverage in Policy 1 may be increased by transfer of land coverage within hydrologically related areas up to the limits as set for the in A, B, C, D, and F of this policy.	Y	Y	Y	Y	NA	See Land Use Goal 3, Policy 1 above.
Policy 3: Rehabilitation, reconstruction, and upgrading of the existing inventory of structures, or other forms of coverage in the Tahoe region, are high priorities of the Regional Plan. To encourage rehabilitation and upgrading of structures, the policies listed under this policy shall apply.	Y	Y	Y	Y	Y	See Land Use Goal 3, Policy 1 above.
Land Use Goal 4: Provide to the greatest possible extent, within the constraints of the environmental threshold carrying capacities, a distribution of land use that ensures the social, environmental, and economic well-being of the region.						
Policy 1: All persons shall have the opportunity to use and enjoy the region's natural resources and amenities.	Y	Y	Y	Y	Y	Under all of the action alternatives, the study area would be managed and available for the public to use and enjoy recreation and natural resources. All of the action alternatives would improve and redirect most recreational access away from sensitive habitats with the exception of recreational development under Alternative 1 related to the bridge and potential effects to Tahoe yellow cress. Alternative 5, the No Project/No Action Alternative, would not involve changing land uses in the study area, which would continue to support informal recreational uses.
Policy 2: No person or persons shall develop property so as to endanger the public health, safety, and welfare.	Y	Y	Y	Y	Y	Construction of the action alternatives would likely involve the use of hazardous materials, such as fuels and other materials, but this would be short term, and all materials would be used in accordance with applicable Federal, state, and local laws, including California Occupational Safety and Health Administration (Cal/OSHA) requirements and manufacturers' instructions. No alternatives would involve constructing any buildings for human occupancy, and no buildings would be demolished as part of any of the alternatives.

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Consistency with Relevant TRPA Land Use Goals and Policies

TRPA Goals and Policies	Consistency					Discussion
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	
						No alternatives would increase risk of wildland fire, hazards to aviation, or mosquito vector control. For these reasons, implementing any of Alternatives 1–5 would not endanger public health, safety, or welfare.
Noise Goal 1: Single event noise standards shall be attained and maintained.						
Policy 3: Motor vehicles and motorcycles shall comply with the appropriate noise thresholds.	Y	Y	Y	Y	Y	As discussed in Section 3.11, "Noise," construction traffic under all of the alternatives would comply with appropriate noise thresholds. None of the alternatives would result significant increases in noise related to operation.
Policy 4: Off-road vehicle use is prohibited in the Lake Tahoe region except on specified roads, trails or designated areas where the impacts can be mitigated.	Y	Y	Y	Y	Y	Off-road vehicle use is not permitted under any Alternatives or under existing conditions within the study area.
Policy 6: The plan will permit uses only if they are consistent with the noise standards. Sound proofing practices may be required on all structures containing uses that would otherwise adversely impact the prescribed noise levels.	Y	Y	Y	Y	Y	Under all alternatives, noise levels created by project activities would be consistent with applicable noise standards established by the TRPA and the CSLT. No standards would be exceeded at sensitive receptors, and no new sensitive receptors would be created.
Natural Hazards Goal 1: Risks from natural hazards (e.g., flood, fire, avalanche, earthquake) will be minimized.						
Policy 2: Prohibit construction, grading, and filling of lands within the 100-year floodplain and in the area of wave run-up, except as necessary to implement the goals and policies of the plan. Require all public utilities, transportation facilities, and other necessary public uses located in the 100-year floodplain and area of wave run-up to be constructed or maintained to prevent damage from flooding and to not cause flooding.	Y	Y	Y	Y	Y	None of the action alternatives (Alternatives 1–4) propose any construction, grading, or filling of lands within the wave run-up of Lake Tahoe. The action alternatives would include short-term grading and construction within the 100-year floodplain, but they would produce long-term improvements in risks from flooding. Alternatives 1, 2, 3, and 4 would involve removing existing fill in the 100-year floodplain. Under Alternative 5, existing fill and public uses within the 100-year floodplain would remain.

Table 3.10-1
Consistency with Relevant TRPA Land Use Goals and Policies

TRPA Goals and Policies	Consistency					Discussion
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	
Policy 3: Inform residents and visitors of the wildfire hazard associated with occupancy in the basin, encourage use of fire resistant materials and preventative techniques when constructing structures, especially in the highest fire hazard areas. Manage forest fuels to be consistent with state laws and other goals and policies of this plan.	Y	Y	Y	Y	Y	No habitable structures are proposed under any alternative. Forest management practices for reducing fire hazards in the study area would be consistent with acceptable strategies for the maintenance of forest health and diversity, prevention of fire, protection of water quality, and enhancement of wildlife habitats.
Water Quality Goal 1: Reduce loads of sediment and algal nutrients to Lake Tahoe; meet sediment and nutrient objectives for tributary streams, surface runoff, and subsurface runoff, and restore 80% of the disturbed lands.						
Policy 1: Reduce loads of sediment and algal nutrients to Lake Tahoe; meet sediment and nutrient objectives for tributary streams, surface runoff, and sub-surface runoff, and restore 80 percent of the disturbed lands.	Y	Y	Y	Y	NA	Alternatives 1–4 include river and floodplain restoration that would increase retention of sediment and algal nutrients in the floodplain of the study area, and thus reduce loads of sediment and nutrients to Lake Tahoe. Alternatives 1–4 would also restore disturbed lands. Alternative 5 (No-Project/No-Action) would not implement river restoration, and existing, disturbed conditions would continue; however, this alternative not result in new conditions that would be inconsistent with this policy.
Policy 2: All persons who own land and all public agencies that manage public lands in the Lake Tahoe region shall put BMPs in place; maintain their BMPs; protect vegetation on their land from unnecessary damage; and restore the disturbed soils on their land.	Y	Y	Y	Y	NA	Under any of the action alternatives (Alternatives 1–4), any new or modified facilities would have appropriately designed BMPs installed and maintained. Additionally, the action alternatives would restore disturbed soils and would construct additional recreation infrastructure features. Existing facilities' BMPs would be maintained under Alternative 5, but disturbed soils would not be restored, and much of the study area would remain unprotected from unnecessary damage from recreational use; however, this alternative would not result in new conditions that would be inconsistent with this policy.
Policy 3: Application of BMPs to projects shall be required as a condition of approval for all projects.	Y	Y	Y	Y	NA	All of the action alternatives (Alternatives 1–4) would require implementation of temporary and permanent BMPs as appropriate. Any future management activities under Alternative 5 would comply with potential BMP requirements.
Policy 4: Restore at least 80 percent of the disturbed lands within the region.	Y	Y	Y	Y	NA	Implementing Alternative 1, 2, 3, or 4 would require some disturbance of new lands; however, all of the action alternatives would result in restoration of floodplain and SEZ lands and most of the recreation components would be designed to direct the public away from sensitive lands within the study area with the exception of recreational development under Alternative 1

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Consistency with Relevant TRPA Land Use Goals and Policies

TRPA Goals and Policies	Consistency					Discussion
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	
						related to the bridge and potential effects to Tahoe yellow cress. Under Alternative 5, disturbed lands within the study area would continue to exist in their current degraded state; however, this alternative would be a continuation of existing conditions and would not result in new conditions that would be inconsistent with this policy.
Policy 7: Off road vehicle use is prohibited in the Lake Tahoe region except on specified roads, trails, or designated areas where the impacts can be mitigated.	Y	Y	Y	Y	Y	Off-road vehicle use is prohibited within the study area and the study area would continue to be patrolled for unauthorized uses under all of the alternatives (Alternatives 1–5). Also see Noise Goal 1, Policy 3 for constriction related traffic.
Policy 8: Transportation and air quality measures aimed at reducing airborne emissions of oxides of nitrogen in the Tahoe Basin shall be carried out.	Y	Y	Y	Y	NA	As discussed in Section 3.2, "Air Quality," measures would be implemented under Alternative 1–4 that would reduce the generation of construction-related emissions of ROG, NO_X, and PM_{10} to a less-than-significant level. None of the alternatives would result in a significant increase in long-term emissions. Alternative 5 would not result in short-term or long-term increase in air quality pollutants.
Water Quality Goal 2: Reduce or eliminate the addition of other pollutants that affect, or potentially affect, water quality in the Tahoe Basin.						
Policy 9: Evaluate the feasibility and effectiveness of ponding facilities along stream corridors as a strategy for removing instream loads of sediment and nutrients.	Y	Y	Y	Y	NA	Implementing any of Alternatives 1–4 would increase the frequency and area of potential floodplain trapping of sediment and nutrients. Implementing any of Alternatives 1–4 would also stabilize the river, which also would reduce sediment and nutrient loads. Alternative 5 would not include options for treating instream loads of sediment and nutrients by off-channel ponding or settling; however, this alternative would be a continuation of existing conditions and would not result in new actions that would be inconsistent with this policy.
Community Design Goal 1: Ensure preservation and enhancement of the natural features and qualities of the region, provide public access to scenic views, and enhance the quality of the built environment.						
Policy 1: The scenic quality ratings established by the environmental thresholds shall be maintained or improved.	N	Y	Y	Y	Y	As discussed in Section 3.14, "Scenic Resources," Alternatives 2–5 would comply with scenic quality standards for TRPA, including TRPA's Scenic Resource Thresholds identified in TRPA's Code of Ordinances and TRPA's Design Review Guidelines. Construction of the bridge and boardwalk under Alternative 1 could degrade the scenic quality rating for Shoreline Travel Unit 33.

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TRPA Goals and Policies	Consistency					Discussion
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	
Policy 2: Restoration programs based on incentives will be implemented in those areas designated in need of scenic restoration to achieve the recommended rating.	Y	Y	Y	Y	Y	Two of the six PASs in the study area are designated as scenic restoration areas. As discussed in Section 3.14, "Scenic Resources," Alternatives 2–5 would maintain the scenic quality of the study area and would not substantially degrade the scenic quality of the area. Although the bridge proposed under Alternative 1 could degrade the scenic quality within PAS 100, this PAS does not have a scenic restoration area designation.
Community Design Goal 2: Regional building and community design criteria shall be established to ensure attainment of the scenic thresholds, maintenance of desired community character, compatibility of land uses, and coordinated project review.						
Policy 1: Regional design review shall include site design, building height, bulk and scale, landscaping, lighting, and signing to be used in evaluating projects throughout the region. This review may entail additional requirements or special requirements not listed above.	Y	Y	Y	Y	Y	Each of the action alternatives (Alternatives 1–4) would include the appropriate review requirements for all project improvements. If necessary, special requirements would be included. Alternative 5 would not include new design requirements; however, existing signage follows building and community design criteria.
Transportation Objective 4: Develop and encourage the use of pedestrian and bicycle facilities as a safe and viable alternative to automobile use.						
Policy A: There shall be a high priority on constructing pedestrian and bicycle facilities in urbanized areas of the Region and where reductions in congestion will result.	Y	Y	Y	Y	NA	The study area is surrounded by urban areas. Implementing Alternatives 1-4 would include foot or bicycle trails. Alternative 5 would not include any new pedestrian or bicycle facilities; however, there are currently informal pedestrian and bicycle facilities in the study area that would remain intact under this alternative.
Policy B: Pedestrian and bicycle facilities shall be constructed, or upgraded, and maintained along major travel routes.	Y	Y	Y	Y	Y	Pedestrian and bicycle facilities within the study area would be improved under Alternatives 1-4; however, none of these facilities are located along major travel routes. Alternative 5 would have no effect on existing informal pedestrian or bicycle facilities.
Policy E: Bicycle and pedestrian linkages shall be provided between residential and non-residential areas.	Y	Y	Y	Y	NA	Each of the action alternatives (Alternatives 1–4) assumes that the location of existing bicycle trails around the perimeter of the study area would remain. Alternatives 1, 3, and 4 would provide additional links to this system. For Alternative 1, these linkages would include a boardwalk trail constructed along the northern edge of the study area, between Cove East Beach and East Barton Beach, with a bridge spanning the mouth of the Upper Truckee River.

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TRPA Goals and Policies	Consistency					Discussion
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	
						Alternative 5 would not include any new pedestrian or bicycle facility linkages; however, there are currently informal pedestrian and bicycle facilities in the study area that would remain intact under this alternative.
Vegetation Goal 1: Provide for a wide mix and increased diversity of plant communities in the Tahoe Basin.						
Policy 1: Forest management practices shall be allowed when consistent with acceptable strategies for the maintenance of forest health and diversity, prevention of fire, protection of water quality, and enhancement of wildlife habitats.	Y	Y	Y	Y	Y	Alternatives 1–5 would comply with vegetation standards for TRPA, including TRPA's thresholds for vegetation identified in TRPA's Code of Ordinances, and with TRPA's Design Review Guidelines. Forest management practices described for reducing fire hazards and enhancing habitat quality in the study area would be consistent with acceptable strategies for the maintenance of forest health and diversity, prevention of fire, protection of water quality, and enhancement of wildlife habitats.
Policy 2: Opportunities to improve the age structure of the pine and fir plant communities shall be encouraged when consistent with other environmental considerations.	Y	Y	Y	Y	Y	All alternatives provide opportunities to improve the age structure of the pine and fir plant communities with tree thinning and management of forest fuel loads and forest habitat enhancement for the study area. Fir plant communities are not present within the study area.
Policy 4: Edge zones between adjacent plant communities will be maximized and treated for their special value relative to plant diversity and wildlife habitat.	Y	Y	Y	Y	Y	Implementing Alternative 1–5 would not substantially alter the extent of edge zones between adjacent plant communities. Under any of Alternatives 1–5, edge zones would be managed for their special value relative to plant diversity and wildlife habitat. Alternatives 1–4 would include most edge habitat in the study area in the core area that would be enhanced and managed for sensitive biological resources. Alternative 5 would include most edge zones in the Biological Preference management district (but would not implement any substantial enhancements).
Policy 5: Permanent disturbance or unnecessary alteration of natural vegetation associated with development activities shall not exceed the approved boundaries [or footprints] of the building, driveway, or parking structures, or that which is necessary to reduce the risk of fire or erosion.	Y	Y	Y	Y	Y	Under each of the action alternatives, permanent disturbance or unnecessary alteration of natural vegetation associated with development activities shall be minimized, and all disturbance would be short term. Under Alternative 5, no new disturbance is proposed; however, vegetation disturbance along the river banks will continue to occur.
Policy 8: Revegetation of disturbed sites shall require the use of species approved by the agency. TRPA shall prepare specific policies designed to avoid the unnecessary use of landscaping which requires long-term irrigation and fertilizer use.	Y	Y	Y	Y	NA	Alternatives 1–5 would not install landscaping with long-term irrigation and fertilizer requirements. Under Alternatives 1–4, revegetation would be with plant species native to the area, as shown on Sheet L-12, "Revegetation Section and Plant List," in Appendix C. Implementing Alternative 5 would not result in the revegetation of disturbed sites.

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Consistency with Relevant TRPA Land Use Goals and Policies

TRPA Goals and Policies	Consistency					Discussion
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	
Policy 9: All proposed actions shall consider the cumulative impact of vegetation removal with respect to plant diversity and abundance, wildlife habitat and movement, soil productivity and stability, and water quality and quantity.	Y	Y	Y	Y	NA	Section 3.18, "Cumulative Impacts," considers the cumulative impacts of vegetation removal with respect to plant diversity and abundance, wildlife habitat and movement, soil productivity and stability, and water quality and quantity for Alternatives 1–5.
Vegetation Goal 2: Provide for the maintenance and restoration of such unique eco-systems as wetlands, meadows, and other riparian vegetation.						
Policy 1: Riparian plant communities shall be managed for the beneficial uses of passive recreation, groundwater recharge, and nutrient catchment, and as wildlife habitats.	Y	Y	Y	Y	Y	Alternatives 1–5 all would manage riparian plant communities for the beneficial uses of passive recreation, groundwater recharge, and nutrient catchment, and as wildlife habitats.
Policy 2: Riparian plant communities shall be restored or expanded whenever and wherever possible.	Y	Y	Y	Y	NA	Under any of Alternatives 1–4, riparian plant communities would be restored and expanded. Under Alternative 5, the riparian area would continue to exist in its current degraded state; however, this alternative would be a continuation of existing conditions and would not result in new conditions that would be inconsistent with this policy.
Vegetation Goal 3: Conserve threatened, endangered, and sensitive plant species and uncommon plant communities of the Lake Tahoe basin.						
Policy 1: Uncommon plant communities shall be identified and protected for their natural values.	N	Y	Y	Y	Y	A rare plant survey of the study area has been conducted for the project. Based on this survey, and on-going monitoring of the Tahoe yellow cress population in the study area, potential impacts on population sites and critical habitat of all sensitive plant species have been identified, and with environmental commitments and mitigation planned as part of the alternatives, the construction and operation of any of Alternatives 1–5 would avoid population sites and critical habitat of sensitive plant species with the exception of recreational development under Alternative 1 related to the bridge and potential effects to Tahoe yellow cress.
Policy 2: The population sites and critical habitat of all sensitive plant species in the Lake Tahoe Basin shall be identified and preserved.	N	Y	Y	Y	Y	See Vegetation Goal 3, Policy 1 above.
Policy 3: The conservation strategy for the Tahoe yellow cress in the Lake Tahoe Basin shall foster stewardship for the species.	Y	Y	Y	Y	Y	Under any of Alternatives 1–5, implementation of the *Tahoe Yellow Cress Management Plan* would continue. This plan was developed to support the regional conservation strategy for Tahoe yellow cress and to promote stewardship of the species. It includes monitoring, public outreach, management actions, and an adaptive management process.

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Consistency with Relevant TRPA Land Use Goals and Policies

TRPA Goals and Policies	Consistency					Discussion
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	
Wildlife Goal 1: Maintain suitable habitats for all indigenous species of wildlife without preference to game or nongame species through maintenance of habitat diversity.						
Policy 1: All proposed actions shall consider impacts to wildlife.	Y	Y	Y	Y	Y	Potential direct, indirect, and cumulative impacts on common and sensitive wildlife resources related to implementation of Alternatives 1–5 were evaluated. Mitigation measures are proposed where feasible. Impacts to common and sensitive wildlife are short-term and only where necessary to construct an Alternative. Long-term benefits will improve habitat.
Policy 2: Riparian vegetation shall be protected and managed for wildlife.	Y	Y	Y	Y	Y	Alternatives 1–4 would implement recreation infrastructure elements, and would manage for its habitat values, a core habitat area that includes most riparian vegetation in the study area. The discussion for each of Alternatives 1–4 describes the long-term beneficial effects on riparian vegetation and wildlife that would result from implementing any of these alternatives. Alternative 5 would not implement the recreation infrastructure elements of Alternatives 1–4, but would continue existing management practices, that manage most riparian habitats and a large portion of the study area as a "biological preference zone" and has habitat maintenance and enhancement objectives.
Policy 3: Non-native wildlife and exotic species shall be controlled and release of such animals into the wild is forbidden.	Y	Y	Y	Y	Y	Implementing any of Alternatives 1–5 would continue management to conserve habitat values. Actions to control non-native wildlife and exotic species would be developed and implemented if non-native wildlife and/or exotic species degraded habitat values.
Policy 4: Domestic animals and pets shall be controlled and appropriately contained.	Y	Y	Y	Y	Y	Under any of Alternatives 1–5, the dog leash policy would be retained, and the Conservancy would continue to enforce and conduct outreach regarding this policy.
Wildlife Goal 2: Preserve, enhance, and, where feasible, expand habitats essential for threatened, endangered, rare, or sensitive species found in the basin						
Policy 1: Endangered, threatened, rare, and special interest species shall be protected and buffered against conflicting land uses.	N	Y	Y	Y	NA	Alternatives 1–4 include elements to protect habitat for endangered, threatened, rare, and special interest species against conflicting uses (e.g., some recreational uses) and include mitigation measures to avoid effects on endangered, threatened, and rare species during construction activities. Alternative 1 could potentially increase use in the vicinity of Tahoe yellow cress due to the proposed bridge across the Upper Truckee River. No construction activities would occur under Alternative 5, and existing disturbance of wildlife habitat would continue. However, this alternative

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TRPA Goals and Policies	Consistency					Discussion
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	
						would not result in new conditions that would be inconsistent with this policy.
Fisheries Goal 1: Improve aquatic habitat essential for the growth, reproduction, and perpetuation of existing and threatened fish resources in the Lake Tahoe basin.						
Policy 2: Unnatural blockages and other impediments to fish movement will be prohibited and removed wherever appropriate.	Y	Y	Y	Y	Y	None of the alternatives would involve creating unnatural blockages to fish movement.
Policy 3: An instream maintenance program should be developed and implemented.	Y	Y	Y	Y	Y	Implementation of any of Alternatives 1–4 would include monitoring and adaptive management of instream habitat conditions. This monitoring and adaptive management would be a program that would implement instream maintenance. Under Alternative 5, existing management would continue, which includes only limited monitoring and maintenance of instream conditions. However, this alternative would not result in new conditions that would be inconsistent with this policy.
Policy 5: Habitat improvement projects are acceptable practices in streams and lakes.	Y	Y	Y	Y	NA	All of the action alternatives (Alternatives 1–4) would include river restoration elements that would improve fish habitat conditions in the Upper Truckee River within the study area. Under Alternative 5, the No-Project/No-Action Alternative, existing conditions would continue, and these conditions are degraded along portions of the Upper Truckee River channel.
Soils Goal 1: Minimize soil erosion and the loss of soil productivity.						
Policy 1: Allowable impervious land coverage shall be consistent with the threshold for impervious land coverage.	Y	Y	Y	Y	Y	The threshold for impervious land coverage (SC-1) adopted by TRPA in 1982 states that "Impervious cover shall comply with the Land Capability Classification of the Lake Tahoe Basin, California-Nevada, A Guide to Planning (Bailey 1974)." See Land Use Goal 3, Policy 1 above.
Policy 2: No new land coverage or other permanent disturbance shall be permitted in Land Capability Districts 1-3 except for those uses as noted under Soils Goal 1, Policy 2.	Y	Y	Y	Y	NA	Implementing Alternatives 1–4 would remove existing coverage from LCD 1band be consistent with Settlement Agreement and/or the Baily System. These alternatives also would create new land coverage in LCD 1b (public access and recreation infrastructure) Soils Goal 1.2.B permits such uses, where such encroachment is essential for public outdoor recreation, and precautions are taken to ensure that such lands are protected to the fullest extent possible.

Table 3.10-1
Consistency with Relevant TRPA Land Use Goals and Policies

TRPA Goals and Policies	Consistency					Discussion
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	
Policy 6: Grading, filling, clearing of vegetation (that disturbs soil), or other disturbances of the soil are prohibited during inclement weather and for the resulting period when the site is covered with snow or is in a saturated, muddy, or unstable condition, special regulations and construction techniques will apply to all construction activities occurring from October 15 to May 1.	Y	Y	Y	Y	NA	Any of Alternatives 1–4 would comply with seasonal and weather restrictions on any construction activities. No construction would occur under Alternative 5 (No-Project/No-Action).
Policy 7: All existing natural functioning SEZs shall be retained as such and disturbed SEZs shall be restored whenever possible.	Y	Y	Y	Y	NA	Implementing any of Alternatives 1–4 would restore previously disturbed SEZ. Under Alternative 5 (No-Project/No-Action), existing channel instability and reduced connectivity of the channel and floodplain of the Upper Truckee River would continue; however, this alternative would be a continuation of existing conditions and would not result in new conditions that would be inconsistent with this policy.
Shorezone Goal 1: Provide for the appropriate shorezone uses of Lake Tahoe, Cascade Lake, and Fallen Leaf lake while preserving their natural and aesthetic qualities.						
Policy 1: All vegetation at the interface between the backshore and the foreshore zones shall remain undisturbed unless allowed by permit for uses otherwise consistent with the shorezone policies.	Y	Y	Y	Y	Y	Alternative 1 could disturb vegetation at the interface between the backshore and foreshore zones depending on the location and placement of the proposed bridge and boardwalk in the final designs. However, the bridge and boardwalk would only be constructed if permitted as a use otherwise consistent with shorezone policies. Alternatives 2–5 would not disturb vegetation at the interface between the backshore and foreshore zones.
Policy 4: Class 1 capability shorezones shall be managed consistent with the goals and policies of the stream environment zone subelement.	Y	Y	Y	Y	NA	The stream environment zone subelement consists of a single goal ("Provide for the long-term protection and restoration of stream environment zones") and seven policies. Three policies are not applicable to Alternatives 1–5; these policies address groundwater development, golf course, and revising the procedures for identifying stream environment zones. Alternatives 1–4 would be consistent with the applicable policies. Alternative 5 would not be consistent with Policy 1, which addresses restoration of disturbed SEZ. However, this alternative would be a continuation of existing conditions and would not result in new conditions that would be inconsistent with this policy. See Stream Environment Zone Goal 1, Policies 1, 2, 5, and 6.

Table 3.10-1
Consistency with Relevant TRPA Land Use Goals and Policies

TRPA Goals and Policies	Consistency					Discussion
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	
Policy 8: Stream channel entrances to the lake shall be maintained to allow unobstructed access of fishes to upstream spawning sites.	Y	Y	Y	Y	Y	Implementing any of Alternatives 1–5 would maintain the entrance of the Upper Truckee River to the lake and allow access of fishes to upstream spawning sites. The mouth of the Upper Truckee River is not obstructed under existing conditions, and although implementing Alternatives 1–4 would reduce the size of the river mouth, these modifications would not create an obstruction to fish passage. Alternative 3 could potentially result in the mouth of the river closing due to natural barrier beach processes, but this would be temporary and be only during certain years. Under Alternative 5 the river mouth would remain similar to existing conditions.
Policy 13: Allow public access to the shorezone where lawful and feasible on public lands.	Y	Y	Y	Y	Y	Implementing any of Alternatives 1–5 would allow public access to the shorezone in the study area. Public access is allowed to the shorezone under existing conditions and would be retained under any of the alternatives.
Scenic Goal 1: Maintain and restore the scenic qualities of the natural appearing landscape.						
Policy 1: All proposed development shall examine impacts to the identified landscape view from roadways, bicycle paths, public recreation areas, and Lake Tahoe.	Y	Y	Y	Y	NA	Section 3.14, "Scenic Resources," analyzes the project's effects on scenic resources, including views from roadways, bicycle paths, public recreation areas, and Lake Tahoe. Implementing any of the Alternatives 2–5 would result in less-than-significant impacts on the scenic quality and views from U.S. 50, Lake Tahoe, public recreation areas, bicycle paths, and the surrounding area. No development is proposed under Alternative 5 (No Project/No Action). Construction of the bridge and boardwalk under Alternative 1 would degrade the scenic quality rating for Shoreline Travel Unit 33 and Lake Tahoe. This impact is significant and unavoidable.
Policy 2: Any development proposed in areas targeted for scenic restoration or within a unit highly sensitive to change shall demonstrate the effect of the project on the 1982 Travel Route Ratings of the Scenic Thresholds.	Y	Y	Y	Y	NA	Section 3.14, "Scenic Resources," analyzes the project's effects on scenic resources, including views from roadways and Lake Tahoe. Implementing any of the Alternatives 2–4) would result in less-than-significant impacts on the scenic quality and views from U.S. 50 and would not degrade Roadway Travel Unit 35. In addition, implementing Alternative 2, 3, or 4would have a less-than-significant impact on views from Lake Tahoe and Shoreline Travel Unit 33. No development is proposed under Alternative 5 (No Project/No Action). Construction of the bridge and boardwalk under Alternative 1 could degrade the scenic quality rating for Shoreline Travel Unit 33 and Lake Tahoe. This impact is significant and unavoidable.

Table 3.10-1
Consistency with Relevant TRPA Land Use Goals and Policies

TRPA Goals and Policies	Consistency					Discussion
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	
Policy 3: The factors or conditions that contribute to scenic degradation in identified areas need to be recognized and appropriately considered in restoration programs to improve scenic quality.	N	Y	Y	Y	NA	See Scenic Goal 1, Policy 1 above.
Open Space Goal 1: Manage areas of open space to promote conservation of vegetation and protection of watersheds.						
Policy 1: Management practices in open space that provide for the long term health and protection of the resource(s) shall be permitted when consistent with the other goals and policies of this plan.	Y	Y	Y	Y	Y	Under existing conditions, the study area is managed to provide for the long-term health and protection of resources, and would continue to be managed to provide for the long-term health and protection of resources. However, some resource degradation has occurred in the study area, primarily as a result of the construction of the Tahoe Keys development (beginning in 1959) affecting the channel of the Upper Truckee River, and secondarily as a result of disturbance of habitat by recreational use. The habitat restoration and enhancement elements of Alternatives 1–4 would reduce this degradation. Alternative 5 would not include these habitat restoration and enhancement elements, and thus degraded conditions would not be restored. However, the study area would continue to be managed to provide for the long-term health and protection of the resources of the study area.
Policy 2: The beneficial uses of open space shall be protected by regulating uses and restricting access as necessary to maintain soil productivity and acceptable vegetative cover.	Y	Y	Y	Y	Y	Alternatives 1–4 include elements and management practices that would regulate uses and restrict access to enhance soil productivity and acceptable vegetative cover. Under Alternative 5, some vegetative cover and soil would continue to exist in its current degraded state; however, this alternative would not result in new conditions that would be inconsistent with this policy.
Stream Environment Zone Goal 1: Provide for the long-term preservation and restoration of stream environment zones.						
Policy 1: Restore all disturbed SEZ lands in undeveloped, unsubdivided lands, and restore 25 percent of the SEZ lands that have been disturbed, developed, or subdivided.	Y	Y	Y	Y	NA	Implementing any of the action alternatives (Alternatives 1–4) would restore disturbed SEZ land in the study area. Under Alternative 5, SEZ lands in the study area would remain in the existing disturbed state; however, this alternative would not result in new conditions that would be inconsistent with this policy.

Table 3.10-1
Consistency with Relevant TRPA Land Use Goals and Policies

TRPA Goals and Policies	Consistency					Discussion
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	
Policy 2: SEZ lands shall be protected and managed for their natural values.	Y	Y	Y	Y	NA	Under Alternatives 1–4, protection of SEZ lands would be increased and current management for their natural values would continue. Under Alternative 5, SEZ lands would continue to be managed for their natural values, but additional recreation infrastructure elements would not be constructed, and existing levels of disturbance by recreation use would continue. However, this alternative would not result in new conditions that would be inconsistent with this policy.
Policy 3: Groundwater development in SEZ lands shall be discouraged when such development could possibly impact associated plant communities or instream flows.	Y	Y	Y	Y	Y	None of the alternatives (Alternatives 1–5) would require the use of groundwater. In addition, restoration of the Upper Truckee River floodplain under Alternatives 1, 2, 3, or 4 would enhance groundwater recharge in the study area.
Policy 5: No new land coverage or other permanent land disturbance shall be permitted in SEZ except for those uses as noted under Stream Environment Zone Goal 1, Policy 5.	Y	Y	Y	Y	NA	See Land Use Goal 3, Policy 1 above.
Policy 6: Replacement of existing coverage in SEZs may be permitted where the project will reduce impacts on SEZ and will not impede restoration efforts.	Y	Y	Y	Y	NA	See Land Use Goal 3, Policy 1 above.
Cultural Goal 1: Identify and preserve sites of historical, cultural, and architectural significance within the region.						
Policy 1: Historical or culturally significant landmarks in the Basin shall be identified and protected from indiscriminate damage or alteration.	Y	Y	Y	Y	NA	Section 3.3, "Archaeological and Historical Resources," analyzes the project's effects on recorded and presently undocumented cultural resources potentially stemming from proposed construction and operation. Implementation of Environmental Commitments 2 and 3 (Table 2-6) would avoid impacts on cultural sites, features, and artifacts and on human remains under all of the proposed alternatives. Alternative 5 would not affect historical or cultural resources.
Policy 2: Sites and structures designated as historically, culturally, or archaeologically significant shall be given special incentives and exemptions to promote the preservation and restoration of such structures and sites.	Y	Y	Y	Y	NA	Section 3.3, "Archaeological and Historical Resources," analyzes the project's effects on recorded and presently undocumented cultural resources potentially stemming from proposed golf course construction and operation. Implementation of Environmental Commitments 2 and 3 (Table 2-7)would avoid impacts on cultural sites, features, and artifacts and on human remains under all of the proposed alternatives. Alternative 5 would not affect historical or cultural resources.

Table 3.10-1
Consistency with Relevant TRPA Land Use Goals and Policies

TRPA Goals and Policies	Consistency					Discussion
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	
Dispersed Recreation Goal 1: Encourage opportunities for dispersed recreation when consistent with environmental values and protection of the natural resources.						
Policy 1: Low density recreational experiences shall be provided along undeveloped shorelines and other natural areas, consistent with the tolerance capabilities and character of such areas.	Y	Y	Y	Y	Y	Each action alternative (Alternatives 1–4) proposes a combination of foot or bicycle trails, observation areas, a fishing platform (Alternatives 2 and 3), viewpoints, and signage. These elements would enhance public access and recreation. Public-access elements that emphasize habitat protection would not provide new access to locations within the study area; they would be intended to direct and manage continued use, discouraging access to sensitive habitats and the marsh interior, in areas already used by the public. Alternative 5 would not include new recreational facilities; however, the existing informal recreational facilities and public access to the study area would not be reduced.
Policy 2: Areas selected for nature study and wildlife observation shall be appropriately regulated to prevent unacceptable disturbance of the habitat and wildlife.	Y	Y	Y	Y	Y	Under all of the action alternatives (Alternatives 1–4), public-access elements that emphasize habitat protection would not provide new access to locations within the study area; they would be intended to direct and manage continued use, discouraging access to sensitive habitats and the marsh interior, in areas already used by the public. Alternative 5 would not include public-access elements that emphasize habitat protection. Existing informal recreational facilities and public access would continue similar to existing conditions; however, this alternative would not result in new conditions that would be inconsistent with this policy.
Policy 3: Trail systems for hiking and horseback riding shall be expanded to accommodate projected demands and provide a link with major regional or interstate trails.	Y	Y	Y	Y	NA	The study area is surrounded by urban areas. Alternative 1, 2, 3, or 4 would include foot or bicycle trails. Alternative 5 would not include any new pedestrian or bicycle facilities; however, there are currently informal pedestrian and bicycle facilities in the study area that would remain intact under this alternative.
Policy 4: Existing trails that are either underutilized or located in environmentally sensitive areas shall be relocated to enhance their use and to protect natural resources.	Y	Y	Y	Y	N	Under all of the action alternatives (Alternatives 1–4), public-access elements that emphasize habitat protection would not provide new access to locations within the study area; they would be intended to direct and manage continued use, discouraging access to sensitive habitats and the marsh interior, in areas already used by the public. Alternative 5 would not include public-access elements that emphasize habitat protection. Existing informal recreational facilities and public access would continue similar to existing conditions. However, this alternative would not result in new conditions that would be inconsistent with this policy.

Table 3.10-1
Consistency with Relevant TRPA Land Use Goals and Policies

TRPA Goals and Policies	Consistency					Discussion
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	
Dispersed Recreation Goal 2: Provide high-quality recreational opportunities.						
Policy 1: Wilderness and other undeveloped and unroaded areas shall be managed for low-density use.	Y	Y	Y	Y	Y	All of the action alternatives (Alternatives 1–4) would include elements that would enhance public access and recreation as well as enhance habitat protection. Under Alternative 5, the study area would continue to be managed for low-density recreation.
Policy 2: Separate use areas shall be established for the dispersed winter activities of snowmobiling, cross-country skiing and snowshoeing when conflicts of use exist.	Y	Y	Y	Y	Y	The study area would be used for formal and informal recreation year-round under all of the alternatives. Under all of the alternatives (Alternatives 1–5) snowshoeing and cross-country skiing would be common uses in the winter.
Developed Recreation Goal 1: Provide a fair share of the total basin capacity for outdoor recreation.						
Policy 1: All existing reservations of services for outdoor recreation shall continue to be committed for such purposes.	Y	Y	Y	Y	Y	Each action alternative (Alternatives 1–4) proposes a combination of foot or bicycle trails, observation areas, a fishing platform (Alternatives 2 and 3), viewpoints, and signage. These elements would enhance public access and recreation. Public-access elements that emphasize habitat protection would not provide new access to locations within the study area; they would be intended to direct and manage continued use, discouraging access to sensitive habitats and the marsh interior, in areas already used by the public. Alternative 5 would not include new recreational facilities; however, the existing informal recreational facilities and public access to the study area would not be reduced.
Policy 3: Provisions shall be made for additional developed outdoor recreation facilities capable of accommodating 6,114 PAOT in overnight facilities and 6,761 PAOT in summer day-use facilities and 12,400 PAOT in winter day-use facilities.	Y	Y	Y	Y	NA	As shown in Section 3.10, "Land Use," Table 3.10-8, summer day uses associated with the action alternatives would require PAOT allocations. Because plan areas associated with the study area do not have available PAOTs, they would need to be obtained from the regional pool.
Developed Recreation Goal 2: Provide for the appropriate type, location, and rate of development of outdoor recreational uses.						
Policy 1: Expansion of recreational facilities and opportunities should be in response to demand.	Y	Y	Y	Y	NA	Improvements to recreational facilities under the action alternatives (Alternatives 1–4) are intended to enhance and reduce the impacts of existing dispersed recreation, and not to support new uses or substantially expand the existing facilities. Alternative 5 would not include new recreational facilities; however, the existing informal recreational facilities and public access to the study area would not be reduced.

Table 3.10-1
Consistency with Relevant TRPA Land Use Goals and Policies

TRPA Goals and Policies	Consistency					Discussion
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	
Policy 2: Bicycle trails shall be expanded to provide alternatives for travel in conjunction with transportation systems.	Y	Y	Y	Y	NA	Each action alternative (Alternatives 1–4) proposes a combination of foot or bicycle trails, observation areas, a fishing platform (Alternatives 2 and 3), viewpoints, and signage. These elements would enhance public access and recreation. Public-access elements that emphasize habitat protection would not provide new access to locations within the study area; they would be intended to direct and manage continued use, discouraging access to sensitive habitats and the marsh interior, in areas already used by the public. Alternative 5 would not include new recreational facilities; however, the existing informal recreational facilities and public access to the study area would not be reduced.
Policy 3: Public boat launching facilities shall be expanded, where appropriate, and when consistent with environmental constraints.	Y	Y	Y	Y	NA	None of the alternatives would expand the existing boat launching facilities within the study area.
Policy 6: Existing recreational facilities in some sensitive areas, except those that are slope dependent such as downhill skiing, shall be encouraged, through incentives to relocate to higher capability lands.	Y	Y	Y	Y	N	See Developed Recreation Goal 2, Policy 1 above.
Policy 7: Development of day-use facilities shall be encouraged in or near established urban areas, whenever practical.	Y	Y	Y	Y	NA	The study area is surrounded by urban areas. Each action alternative (Alternatives 1–4) proposes a combination of day-use facilities such as foot or bicycle trails, observation areas, a fishing platform (Alternatives 2 and 3), viewpoints, and signage. Alternative 5 would not include new recreational facilities; however, the existing informal day-use recreational facilities and public access to the study area would not be reduced.
Policy 8: Visitor information facilities shall be located, to the extent feasible, near entry points to the basin or close to urban areas.	Y	Y	Y	Y	NA	See Developed Recreation Goal 2, Policy 7 above.
Developed Recreation Goal 3: Protect natural resources from overuse and rectify incompatibility between uses.						
Policy 1: Recreation development in the Tahoe basin shall be consistent with the special resources of the area.	Y	Y	Y	Y	NA	Recreation elements proposed under Alternatives 1–4 would enhance public access and recreation. Public-access elements that emphasize habitat protection would not provide new access to locations within the study area; they would be intended to direct and manage continued use, discouraging access to sensitive habitats and the marsh interior, in areas already used by the public. Alternative 5 would not include new recreational facilities; however,

Table 3.10-1
Consistency with Relevant TRPA Land Use Goals and Policies

TRPA Goals and Policies	Consistency					Discussion
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	
						the existing informal recreational facilities and public access to the study area would not be reduced.
Policy 2: Regulate intensity, timing, type, and location of use to protect resources and separate incompatible uses.	Y	Y	Y	Y	Y	See Developed Recreation Goal 3, Policy 1 above.
Developed Recreation Goal 4: Provide for the efficient use of outdoor recreation resources.						
Policy 2: Seasonal facilities should provide opportunities for alternative uses in the off-season, whenever appropriate.	Y	Y	Y	Y	Y	The study area would be used for formal and informal recreation year-round under all of the alternatives. Under all of the alternatives (Alternatives 1–5), walking/running, beach activities, bicycling, wildlife viewing, and dog walking, fishing, and kayaking are common uses of the study area during spring, summer, and fall, and snowshoeing and cross-country skiing are common uses in the winter.
Urban Recreation Goal 1: Provide sufficient capacity for local-oriented forms of outdoor recreation and indoor recreation in urban areas.						
Policy 2: Urban outdoor recreational facilities located in sensitive areas should be encouraged to relocate to other suitable sites.	Y	Y	Y	Y	NA	See Developed Recreation Goal 3, Policy 1 above.
Institutional Goal 1: Coordinate all planning and development review activities with the affected jurisdictions and agencies.						
Policy 1: All projects proposed in the region [other than those to be reviewed and approved under the special provisions of the Compact relating to gaming] shall obtain the review and approval of the Agency.	Y	Y	Y	Y	NA	All action alternatives will be reviewed.
Policy 2: No project may be approved unless it is found to comply with the Regional Plan and with any ordinances, rules, and regulations enacted to effectuate the Regional Plan.	Y	Y	Y	Y	NA	The action alternatives reflect implementation of Regional Plan provisions, ordinances, rules and regulations. Alternative 5 does not change the relationship of the study area to the Regional Plan.

Note: NA = not applicable.
Sources: TRPA 1996; TRPA 2004; Consistency analysis conducted by AECOM in 2010

Plan Area Statements

Chapter 11, "Plan Area Statements and Plan Area Maps," of the TRPA Code of Ordinances requires that all projects and activities be consistent with the provisions of a particular area's applicable Plan Area Statement (PAS). For each plan area, a "statement" is made describing how that particular area should be regulated to achieve regional environmental and land-use objectives and providing detailed plans and policies for specific areas of the basin.

The study area is located within six separate PASs: 99 (Al Tahoe), 100 (Truckee Marsh), 102 (Tahoe Keys), 103 (Sierra Tract Commercial), 104 (Highland Woods), and 111 (Tahoe Island). Approximately five acres of the study area extend beyond the shoreline and are not within any PASs (Exhibit 3.10-1). PAS 100 and PAS 102 together cover about 90 percent of the study area. The remaining ten percent of the study area is located within PASs 99, 103, 104, and 111. The following PAS descriptions include the land-use classification and management strategy. The permissible uses for each PAS within the study area are listed in Tables 3.10-2 through 3.10-7. The establishment of new uses not listed is prohibited within any plan area. Existing uses not listed as permissible within individual PASs are considered nonconforming uses but may be continued if legally commenced before July 1, 1987, subject to the provisions of TRPA Code of Ordinances Section 21.5.

PAS 99—Al Tahoe. Approximately 13 acres of the study area are located in PAS 99. The eastern boundary of the study area is in PAS 99 (Al Tahoe) and includes various parcels along El Dorado Avenue and the lakefront near Lakeview, Lily, and San Francisco Avenues. The land-use classification for PAS 99 is residential and the management strategy is redirection. According to the planning statement for PAS 99, "The area should remain residential with upgrading in those areas identified as substandard." Specific permissible uses for PAS 99 in general, and for Shorezone Tolerance District 4 (as listed in the PAS), are provided in Table 3.10-2.

PAS 100—Truckee Marsh. Approximately 527 acres of the study area (including the center of the marsh, the Upper Truckee River, and Trout Creek) are located within PAS 100 (Truckee Marsh) (TRPA 2005a). The land-use classification for PAS 100 is conservation and the management strategy is maximum regulation. This management strategy calls for strict regulation to ensure preservation and enhancement of the existing environment, with little or no additional development of residential, commercial, tourist, recreational, or public service uses (TRPA Code Section 11.6.2.B.1).

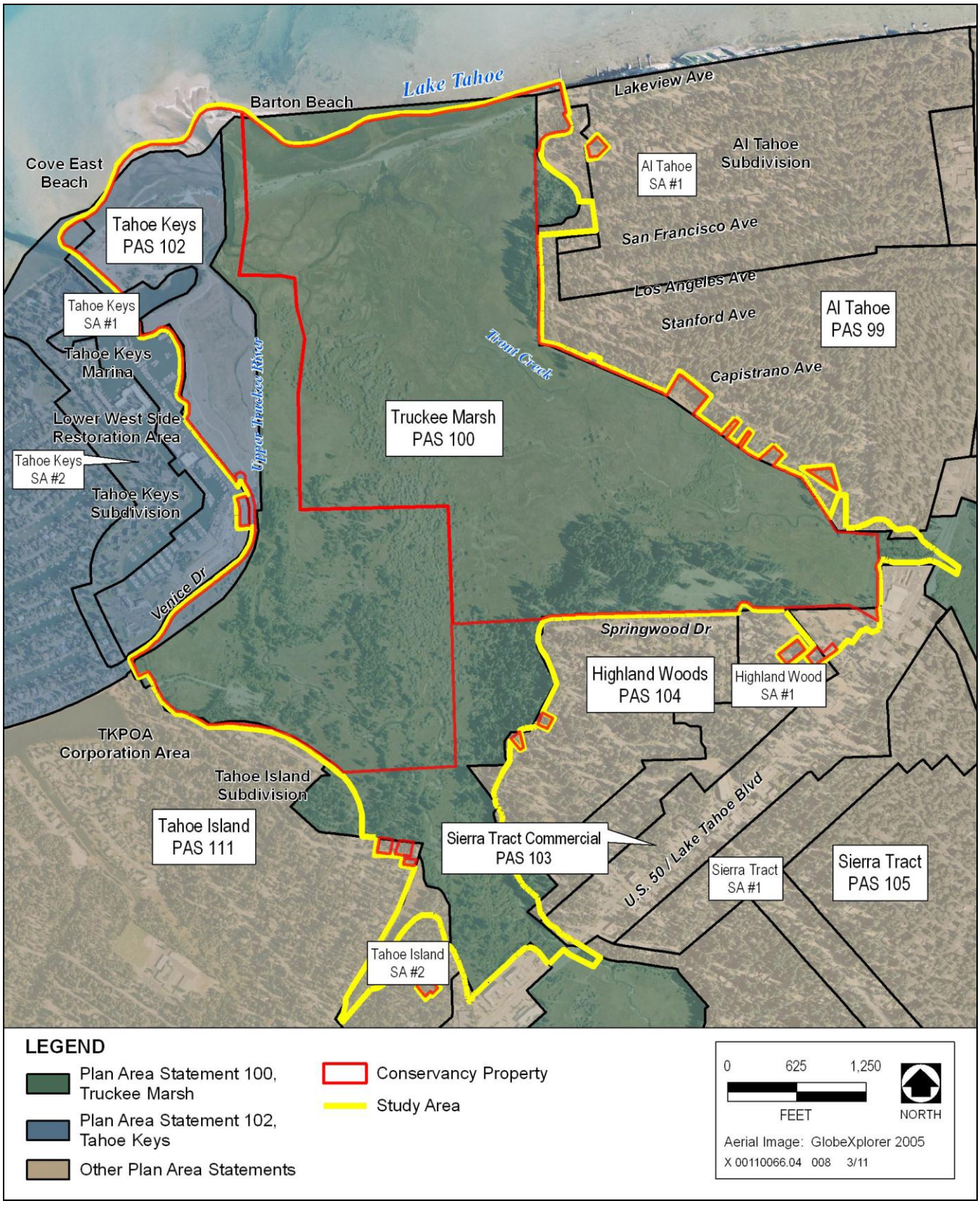
According to the planning statement for PAS 100, "This area should be managed primarily for its natural values including those management practices which contribute to the quality of fish and wildlife habitats, support dispersed recreation, and maintain the nutrient catchment capacity of the stream environment zone."

Specific permissible uses for PAS 100 in general, and for Shorezone Tolerance District 1 (as listed in the PAS), are provided in Table 3.10-3.

PAS 102—Tahoe Keys. Approximately 67 acres in the western portion of the study area is located within PAS 102 (TRPA 2005c). The portion of PAS 102 within the study area is entirely within the Cove East parcel, and includes the Lower West Side (LWS) Restoration Area, the Sailing Lagoon, and Cove East Beach. The land-use classification for PAS 102 is residential and the management strategy is mitigation.

According to the planning statement for PAS 102, "This area should continue to maintain the existing residential and commercial character of the neighborhood."

The Sailing Lagoon is located in PAS 102, Special Area (SA) 1, which is a subsection of PAS 102 that includes the open-water area of the Tahoe Keys Marina. Specific permissible uses for PAS 102 in general, and for Shorezone Tolerance District 1 (as listed in the PAS), are provided in Table 3.10-4.



Source: TRPA 2009

Exhibit 3.10-1 **Plan Area Statements in the Study Area and Vicinity**

Table 3.10-2
Permissible Uses for Plan Area Statement 99*

GENERAL	
Recreation	Day-use areas (A), riding and hiking trails (A), beach recreation (A), participant sports facilities (S)
Resource Management	Reforestation (A), sanitation salvage cut (A), special cut (A), thinning (A), early successional stage vegetation management (A), structural and nonstructural fish/wildlife habitat management (A), fire detection and suppression (A), fuels treatment/management (A), insect and disease suppression (A), sensitive and uncommon plant management (A), erosion control (A), SEZ restoration (A), and runoff control (A)
Public Service	Local public health and safety facilities (S), transit stations and terminals (S), pipelines and power transmission (S), transmission and receiving facilities (S), transportation routes (S), public utility centers (S), churches (S), and local post offices (S)
SPECIAL AREA 1 The following uses are in addition to the general list of uses.	
Recreation	Outdoor recreation concessions (S)

Notes: SEZ = Stream Environment Zone. The list indicates whether the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed are considered nonconforming uses within this plan area.
*Observation areas are considered "Day-use Area" uses and require "Persons at One Time" (PAOTs). No Summer Day-Use PAOTs are available in this PAS; however, PAOTs may be obtained from the regional pool as discussed in Section 3.13, "Recreation."
Source: TRPA 2005b

Table 3.10-3
Permissible Uses for Plan Area Statement 100

GENERAL	
Recreation	Riding and hiking trails (S) and cross country skiing courses (S)
Resource Management	Sanitation salvage cut (S), early successional stage vegetation management (S), nonstructural fish habitat management (S), nonstructural wildlife habitat management (A), structural fish habitat management (S), structural wildlife habitat management (S), farm/ranch accessory structure (S), grazing (S), range pasture management (S), range improvement (S), fire detection and suppression (A), fuels treatment (S), insect and disease suppression (A), sensitive plant management (S), uncommon plant community management (S), erosion control (S), runoff control (S), special cuts (S), and SEZ restoration (S)
Public Service	Transportation routes (S), pipelines and power transmission (S), transmission and receiving facilities (S), public utility centers (S)
SHOREZONE	
Within the specified shorezone tolerance district, the following primary uses may be permitted in the backshore, nearshore, and foreshore. Accessory structures shall be regulated pursuant to the regulations applicable to the primary use upon which they are dependent in accordance with Chapter 18. The following structures may be permitted in the shorezone as an allowed (A) or special (S) use only if they are accessory to an existing, allowed use located on the same or adjoining littoral parcel.	
Shorezone Tolerance District 1	
Primary Uses	Safety and navigation facilities (A)
Accessory Structures	Fences (S) and shoreline protective structures (S)

Notes: SEZ = Stream Environment Zone. The list indicates whether the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed are considered nonconforming uses within this plan area.
Source: TRPA 2005a

Table 3.10-4 Permissible Uses for Plan Area Statement 102*	
GENERAL	
Recreation	Day-use areas (A), riding and hiking trails (S), beach recreation (A), participant sports facilities (S)
Resource Management	Reforestation (A), sanitation salvage cut (A), special cut (A), thinning (A), early successional stage vegetation management (A), structural and nonstructural fish/wildlife habitat management (A), fire detection and suppression (A), fuels treatment/management (A), insect and disease suppression (A), sensitive and uncommon plant management (A), erosion control (A), SEZ restoration (A), and runoff control (A)
Public Service	Local public health and safety facilities (S), transit stations and terminals (S), pipelines and power transmission (S), transmission and receiving facilities (S), transportation routes (S), public utility centers (S), churches (S), schools - kindergarten through secondary (S), and social service organization (S)
SPECIAL AREA 1 The following uses are in addition to the general list of uses.	
Recreation	Marinas (A), beach recreation (A), outdoor recreation concessions (A)
Resource Management	Those uses listed on the general list for this plan area
Notes: SEZ = Stream Environment Zone. The list indicates whether the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed are considered nonconforming uses within this plan area. *Observation areas are considered "Day-use Area" uses and require "Persons at One Time" (PAOT). No Summer Day-Use PAOTs are available in this PAS; however, PAOTs may be obtained from the regional pool as discussed in Section 3.13, "Recreation." Source: TRPA 2005c	

Table 3.10-5 Permissible Uses for Plan Area Statement 103	
GENERAL	
Recreation	Day use areas (A), participant sports facilities (S), outdoor recreation concessions (S), riding and hiking trails (S), and visitor information center (S)
Resource Management	Reforestation (A), sanitation salvage cut (A), thinning (A), timber stand improvement (A), tree farms (A), early successional stage vegetation management (A), nonstructural fish habitat management (A), nonstructural wildlife habitat management (A), structural fish habitat management (A), structural wildlife habitat management (A), fire detection and suppression (A), fuels treatment (A), insect and disease suppression (A), sensitive plant management (A), uncommon plant community management (A), erosion control (A), runoff control (A), and SEZ restoration (A)
Public Service	Churches (A), cultural facilities (A), day care centers/pre-schools (A), government offices (A), local assembly and entertainment (A), local post office (A), local public health and safety facilities (A), membership organizations (A), public utility centers (S), schools - kindergarten through secondary (S), social service organizations (A), pipelines and power transmission (S), transit stations and terminals (S), transportation routes (S), and transmission and receiving facilities (S)
Notes: SEZ = Stream Environment Zone. The list indicates whether the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed are considered nonconforming uses within this plan area. Source: TRPA 2005d	

Table 3.10-6 Permissible Uses for Plan Area Statement 104	
GENERAL	
Resource Management	Reforestation (A), sanitation salvage cut (A), management special cut (A), thinning (A), early successional stage vegetation management (A), structural and nonstructural fish/wildlife habitat management (A), fire detection and suppression (A), fuels treatment/management (A), insect and disease suppression (A), sensitive and uncommon plant management (A), erosion control (A), SEZ restoration (A), and runoff control (A)
Public Services	Local public health and safety facilities (S), transit stations and terminals (S), pipelines and power transmission (S), transmission and receiving facilities (S), transportation routes (S), public utility centers (S), and day care centers/pre-schools (S)
Recreation	Participant sports facilities (S), day use areas (A), and riding and hiking trails (A)
Notes: SEZ = Stream Environment Zone. The list indicates whether the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed are considered nonconforming uses within this plan area. Source: TRPA 2005e	

Table 3.10-7 Permissible Uses for Plan Area Statement 111	
GENERAL	
Recreation	Participant sports facilities (S), day use areas (A), and riding and hiking trails (A)
Resource Management	Reforestation (A), sanitation salvage cut (A), management special cut (A), thinning (A), early successional stage vegetation management (A), structural and nonstructural fish/wildlife habitat management (A), fire detection and suppression (A), fuels treatment management (A), insect and disease suppression (A), sensitive and uncommon plant management (A), erosion control (A), SEZ restoration (A), and runoff control (A)
SPECIAL AREA 1 The following uses are in addition to the general list of uses.	
Recreation	Outdoor recreation concessions (S)
Notes: SEZ = Stream Environment Zone. The list indicates if the use is allowed (A) or must be considered under the provisions for a special use (S). Existing uses not listed are considered nonconforming uses within this Plan Area. Source: TRPA 2005g	

PAS 103—Sierra Tract Commercial. A small area (approximately five acres) in the easternmost portion of the study area that borders U.S. Highway 50 (U.S. 50) and Macinaw Road is located in PAS 103 (Sierra Tract Commercial). The land-use classification for PAS 103 is commercial/public service and the management strategy is redirection. According to the planning statement for PAS 103, "This area should continue to provide commercial services for the residents and visitors of the south shore and provide opportunities for developing mixed-use projects." Specific permissible uses (as listed in the PAS) are provided in Table 3.10-5.

PAS 104—Highland Woods. Several small portions of the study area (totaling six acres), located along the southeastern boundary of the Upper Truckee Marsh, are located within PAS 104 and SA 1 of PAS 104. The land-use classification for PAS 104 is residential and the management strategy is mitigation. According to the planning statement for PAS 104, "The area should remain residential, maintaining the existing character of the neighborhood." Specific permissible uses, as listed in the PAS, are provided in Table 3.10-6.

PAS 111—Tahoe Island. Approximately ten acres in the southwest corner of the study area (near Eloise Avenue) is located within SA 2 of PAS 111 (Tahoe Island). SA 2 is the only portion of PAS 111 within the study area. Part

of this area is within SEZ and drains to the Upper Truckee River within the study area. The land-use classification for PAS 111 is residential and the management strategy is mitigation. According to the planning statement for PAS 111, "This area should continue to be residential, maintaining the existing character of the neighborhood." Specific permissible uses, as listed in the PAS, are provided in Table 3.10-7.

Shorezone Tolerance Districts

Three of the plan areas within the study area (PASs 99, 100, and 102) are located within shorezone tolerance districts.

Shorezone tolerance districts were developed in 1971 by USFS in cooperation with TRPA to provide a relative quantification of the tolerance of land in the Tahoe Basin to human disturbance (Bailey 1974). TRPA established eight districts ranging in sensitivity, with 1.0 being the most sensitive designation. (These districts are described in the *Shorezone Ordinance for Lake Tahoe* [TRPA 1976].) The designations reflect the distribution of shorezone resources and features of varying sensitivity and importance. The purpose of the shorezone tolerance districts is to establish development standards and regulations for construction, marina operations and maintenance, pier installation, and other shorezone uses specific to the sensitivity of this transitional area.

Chapter 90, "Definitions," of the TRPA Code of Ordinances defines the shorezone as the land and water area along the shoreline of the lake consisting of the nearshore, foreshore, and backshore. Chapter 90 further defines these three components of the shorezone as follows:

- **Nearshore:** The zone extending from the low water elevation of Lake Tahoe (6,223.0 feet Lake Tahoe Datum) to a lake bottom elevation of 6,193 feet Lake Tahoe Datum, but in any case, a minimum lateral distance of 350 feet measured from the shoreline (6,229.1 feet Lake Tahoe Datum). In other lakes, the nearshore extends to a depth of 25 feet below the low water elevation.

- **Foreshore:** The zone of lake level fluctuation that is the area between the high and low water level. (For Lake Tahoe, the elevations are 6,229.1 feet Lake Tahoe Datum and 6,223.0 feet Lake Tahoe Datum, respectively.)

- **Backshore:** The land area located between the highwater line of the lake and the upland area of instability or the wave run-up area.

The study area includes approximately 4,240 linear feet of lakefront, which is located within Shorezone Tolerance Districts 1 and 4. The majority of the lakefront (3,840 linear feet) is in Shorezone Tolerance District 1, and the remaining 400 linear feet, on the eastern boundary of the study area, is within Shorezone Tolerance District 4. The following descriptions include the shorezone district's restrictions on land use applicable to the restoration study area.

Shorezone Tolerance District 1. Section 83.7.1 of the TRPA Code of Ordinances describes Shorezone Tolerance District 1 as a "low sandy barrier that separates the lake proper from marshes and wetlands" and as "ecologically fragile," and states that "any substantial use or alteration can lead to excessive sedimentation beach erosion and water turbidity" (TRPA 2011). Permissible uses include the primary uses of safety and navigation facilities, and accessory uses include fences and shoreline protective structures (see Tables 3.10-2 and 3.10-3). Regulations for and restrictions on land uses in Shorezone Tolerance District 1, outlined in Section 83.7.2 of the TRPA Code of Ordinances, are as follows (TRPA 2011):

A. Access to the shoreline shall be restricted to planned footpaths which minimize the impact to the backshore.

B. Vegetation shall not be manipulated or otherwise disturbed except when permitted under Chapter 85 (Development Standards in the Backshore).

C. No drainage or modification of backshore wetlands shall be permitted.

D. New development in the backshore of a Shorezone Tolerance District 1 shall be regulated in accordance with the regulations in this Code for stream environment zones.

E. Replacement of existing land coverage in the backshore of a Shorezone Tolerance District 1 shall be in accordance with the regulations for replacing existing land coverage in stream environment zones.

Shorezone Tolerance District 4. Section 83.9.1.A of the TRPA Code of Ordinances describes Shorezone Tolerance District 4 as "volcanic rock shorelines with moderate potential for erosion" (TRPA 2011). The permissible uses (primary and accessory) for Shorezone Tolerance District 4 within Plan Area Statement 99 are listed in Table 3.10-2. Regulations for and restrictions on land uses within Shorezone Tolerance District 4 outlined in Section 83.9.2 of the TRPA Code of Ordinances are described below (TRPA 2011).

A. Permitted development or continued use may be conditioned upon installation and maintenance of vegetation to stabilized backshore areas and protection of existing cliffs from accelerated erosion.

B. Projects shall not be permitted in the backshore unless TRPA finds that such project is unlikely to require the cliff area to be mechanically stabilized or that the project will not accelerate cliff crumbling, beach loss or erosion.

C. Access to the shoreline shall be restricted to stabilized access ways that minimize the impact to the backshore.

D. Access to buoys shall be designed to cause the least possible environmental harm to the foreshore and backshore.

E. Access to piers, floating platforms and boat ramps shall be designed to cause the least possible alteration to the natural backshore.

Environmental Improvement Program

The Environmental Improvement Program (EIP) includes a list of specific projects throughout the Basin that are needed to attain and maintain the thresholds (TRPA 1997). EIP-listed projects within the study area include 560, 650, 981, and 1002.

EIP Project #560 includes implementation of the proposed project and the Lower West Side Project to restore the mouth of the Upper Truckee River and associated floodplain and was previously funded as EIP Project #1002. EIP Project #650 calls for restoring 40 acres of SEZ on lands that have been acquired by the public, and EIP Project #981 calls for developing a protection plan and constructing protective structures, along Cove East beaches.

Tahoe Keys Marina Master Plan

A master plan has been adopted by TRPA for the Tahoe Keys Marina (TRPA 2002). The objectives of the *Tahoe Keys Marina Master Plan* are to facilitate obtaining necessary permits and environmental certifications, executing a land exchange with the Conservancy and the Tahoe Keys Property Owners Association (TKPOA), and constructing proposed projects.

City of South Lake Tahoe

General Plan

The City of South Lake Tahoe *2030 General Plan* (City General Plan) was adopted in 2011. The City General Plan designates the land use in the study area as Conservation. This designation provides for the permanent preservation of natural resources, habitat protection, watershed management, public and quasi-public uses, areas

that contain public health and safety hazards such as floodways, and areas containing environmentally sensitive features.

Lake Tahoe Airport Comprehensive Land Use Plan

The *Lake Tahoe Airport Comprehensive Land Use Plan* (CLUP) establishes planning boundaries for the Lake Tahoe Airport and defines compatible types and patterns of future land uses that might occur in the area surrounding the airport (CSLT 2007). The purpose of the CLUP is to provide the Lake Tahoe Airport area with compatibility guidelines for height, noise, and safety.

The CLUP designates airport safety zones to the land surrounding the airport to minimize the number of people exposed to aircraft crash hazards. The southeastern portion of the study area between the Highland Woods subdivision and Trout Creek is within the approach/departure zone. The approach/departure zone, which is located under the takeoff and landing slopes for each runway, extends outward for 5,000 feet from Runway 36 (with a width of 500–1,500 feet) and 10,000 feet from Runway 18 (with a width of 1,010–3,500 feet), and is less restrictive than the clear zone.

Conservation Strategy for Tahoe Yellow Cress

The *Conservation Strategy for Tahoe Yellow Cress* (*Rorippa subumbellata)* is a regional conservation strategy for Tahoe yellow cress, a state-listed endangered species that grows in the study area (Pavlik, Murphy, and TYCTAG 2002). The conservation strategy is described in Section 3.4, "Biological Resources: Vegetation and Wildlife."

ENVIRONMENTAL SETTING

Study Area

The study area for the Upper Truckee River and Marsh Restoration Project is approximately 633 acres, and includes parcels owned by the Conservancy, other public agencies, and private landowners (Exhibit 1-2 in Chapter 1). It is generally bounded by U.S. 50 and the Highland Woods subdivision on the south, the Al Tahoe subdivision on the east, and Tahoe Island/Sky Meadows and Tahoe Keys subdivisions on the west. The study area includes the downstream reaches of Trout Creek and the Upper Truckee River, adjacent wetland and uplands habitats, more than three-fourths of a mile of Lake Tahoe shoreline, and the LWS Restoration Area (located in the northwest portion of the study area, just east of the Tahoe Keys Marina). Land uses and land use policies in the study area are heavily influenced by natural resource values because of the unique habitat qualities and natural setting provided by the study area. For a complete description of the natural resource land uses in the study area see Section 3.4, "Biological Resources: Vegetation and Wildlife." The study area is very accessible and is used extensively by the public. A number of streets in adjacent neighborhoods end at the boundary of the study area, and numerous user-created trails begin at these access points and extend into the study area. In addition, an improved and Conservancy-maintained pedestrian trail connects East Venice Drive and Cove East Beach. The study area is also accessible by boat from Lake Tahoe and by canoes, kayaks, and rafts from the Upper Truckee River. Visitors use the study area for numerous informal, dispersed recreation activities, including: rafting, kayaking, canoeing, walking, jogging, dog walking, wildlife viewing, photography and sightseeing, swimming, fishing, bicycling, and beach use.

Residential Subdivisions Adjacent to the Study Area

The study area is bordered by four residential subdivisions: Al Tahoe, Highland Woods, Tahoe Island, and Tahoe Keys. These subdivisions are described below.

The Al Tahoe residential subdivision is located immediately east of and adjacent to the study area. The subdivision contains a mixture of older and newer homes (single-family and multi-family dwellings), with some commercial uses within the subdivision near U.S. 50. The subdivision is served by both Class II and Class III

bicycle trails. A Class I bicycle path also connects this subdivision to U.S. 50 and the Highland Woods subdivision.

The Highland Woods residential subdivision is located adjacent to the southern portion of the study area, between the Upper Truckee River and Trout Creek. The residential uses consist primarily of single-family dwellings with a few multi-family dwellings within the subdivision. A Class I bicycle path provides access to this subdivision from the study area at the end of Rubicon Trail. As the bicycle path continues into the subdivision, it transitions to a Class III bicycle path. A Class I bicycle path extends from this subdivision toward the Tahoe Island and Tahoe Keys subdivisions (as shown in Exhibit 2-1 in Chapter 2).

The Tahoe Island subdivision is located southwest of the study area. The residential uses consist primarily of single-family dwellings, with a few multi-family dwellings in the subdivision. A Class III bicycle path serves the subdivision, and a Class I path extends between this subdivision and Highland Woods. A Class II bicycle path on Tahoe Keys Boulevard extends into PAS 102.

The Tahoe Keys development contains multi-family and single-family houses and condominiums. This area also includes the Tahoe Keys Village commercial and professional center and the Tahoe Keys Marina. The subdivision contains Class II and Class III bicycle paths.

All of the residential subdivisions have access points leading into the study area. Some of these access points and trails are established and recognized by the Conservancy while others are user-created.

Sierra Tract Commercial / U.S. Highway 50 Corridor

A variety of commercial uses exist within the U.S. 50 corridor: restaurants, retail, gas stations, professional offices, hotels, hardware/lumber, and more. Existing commercial uses adjacent to the study area, near the U.S. 50 bridge at the Upper Truckee River, include Carrow's Restaurant, Motel 6, and Tahoe Amusement Park. Meek's Lumber and the Tahoe Center shopping center are located near the U.S. 50 bridge at Trout Creek.

Tahoe Keys Marina

The Tahoe Keys Marina includes mixed-use commercial development (restaurant, meeting rooms, retail shops), marina facilities such as boat slips, facilities for fueling vessels, a boat launching area, offices, and parking. The marina serves residents of and visitors to the Tahoe Basin. The LWS Restoration Area is located immediately west of and adjacent to the Tahoe Keys Marina parking lot.

Lake Tahoe Airport

The Lake Tahoe Airport is located approximately one mile south of the study area along U.S. 50. The Lake Tahoe Airport is owned and operated by the CSLT. The airport is equipped to serve as a commercial air carrier/general aviation airport, although it does not currently support commercial flights and there is no commercial operator at the airport. The airport has one north-south asphalt runaway, which is 8,544 feet long by 150 feet wide. The Lake Tahoe Airport is adjacent to the Upper Truckee River upstream of the study area. The southeastern portion of the study area between the Highland Woods subdivision and Trout Creek is within the approach/departure zone. (See Section 3.7, "Human Health/Risk of Upset," for additional information on the Lake Tahoe Airport and airspace safety.)

3.10.2 Environmental Consequences and Mitigation Measures

Significance Criteria

For this analysis, significance criteria are based on the checklist presented in Appendix G of the State CEQA Guidelines (Appendix G) and the TRPA Initial Environmental Checklist.

CEQA Criteria

Under CEQA, an alternative was determined to result in a significant effect related to land use if it would:

- physically divide an established community (CEQA 1);
- conflict with any applicable land-use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect (CEQA 2); or
- conflict with any applicable habitat conservation plan or natural community conservation plan (CEQA 3).
- conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)) or timberland (as defined in Public Resources Code Section 4526) (CEQA 4).
- result in the loss of forest land or conversion of forest land to non-forest use (CEQA 5).
- involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to nonforest use (CEQA 6).

NEPA Criteria

An environmental document prepared to comply with NEPA must consider the context and intensity of the environmental effects that would be caused by or result from the proposed action. Under NEPA, the significance of an effect is used solely to determine whether an EIS must be prepared. The factors that are taken into account under NEPA to determine the significance of an action in terms of the context and the intensity of its effects are encompassed by the CEQA criteria used for this analysis. NEPA requires documentation and discussion of any beneficial effects of a project in addition to its negative impacts. Where appropriate, these beneficial effects are discussed and called out specifically for the purposes of NEPA in the following impact analysis.

TRPA Criteria

Based on TRPA's Initial Environmental Checklist, an alternative was determined to have a significant impact related to land use if it would:

- include uses that are not listed as permissible uses in the applicable PAS, adopted community plan, or master plan (TRPA 1); or
- expand or intensify an existing nonconforming use (TRPA 2).

METHODS AND ASSUMPTIONS

The focus of this analysis is on land-use impacts that would result from implementation of the proposed alternatives. Evaluation of potential impacts was based on consultation with appropriate agencies and a review of the planning documents pertaining to the study area:

- *Regional Plan for the Lake Tahoe Basin* (TRPA 2004);
- TRPA PASs, 99 (Al Tahoe), 100 (Truckee Marsh), 102 (Tahoe Keys), 103 (Sierra Tract–Commercial), 104 (Highland Woods), and 111 (Tahoe Island) (TRPA 2005a, 2005b, 2005c, 2005d, 2005e, 2005f);
- *2030 General Plan* (CSLT 2011);
- *Lake Tahoe Airport Comprehensive Land Use Plan* (CSLT 2007); and
- *Tahoe Keys Marina Master Plan* (TRPA 2002).

EFFECTS NOT DISCUSSED FURTHER IN THIS EIR/EIS/EIS

Changes in zoning and forest land effects (CEQA 4, 5, 6; TRPA 1)—No environmental impacts would occur related to changes in zoning, including any that could affect forest land. The zoning of the study area is expressed by the PASs, and no changes to the PASs are proposed as part of this project.

IMPACT ANALYSIS AND MITIGATION MEASURES

Alternative 1: Channel Aggradation and Narrowing (Maximum Recreation Infrastructure)

IMPACT 3.10-1 (Alt. 1) **Potential to Physically Divide an Established Community. (CEQA 1; NEPA)** *Implementation of Alternative 1 would not create a physical division within an established community. The restoration features of Alternative 1 that would modify the river, floodplain, and lagoon areas would not adversely affect accessibility of the area, existing transportation, or create a barrier to access within and through the community. Some of the proposed public access and recreation infrastructure elements would benefit the neighboring community, specifically the bridge and boardwalks, would provide transportation connectivity. This would be a beneficial effect. This impact would be* ***less than significant****.*

Restoration components of Alternative 1 would modify the Upper Truckee River and associated floodplain in the study area, and restore lagoon and dune habitats. These restoration components would include raising and reconfiguring a portion of the river's main channel, reconfiguring two sections of split channel, reducing the capacity of the river mouth, and changing the hydrologic connectivity of the Sailing Lagoon. These restoration components would be modifications to an existing natural feature and would not adversely affect accessibility of the study area, nor would they hinder existing transportation or access within or through the community.

Public access and recreation infrastructure features of Alternative 1 would include kiosks, pedestrian trails and bicycle paths, viewing platforms, boardwalks, and a bridge over the Upper Truckee River. The kiosks, viewing platforms, and pedestrian trail and bicycle paths would not reduce accessibility to the study area, nor would they hinder existing transportation access within and through the community. On the contrary, the bridge and connected boardwalk features would provide new transportation connectivity within the community. These public access features would enhance passage over an existing natural physical barrier (the Upper Truckee River) and would therefore improve connection between existing neighborhoods (Al Tahoe and Tahoe Keys) via alternate modes of transportation.

In summary, neither the restoration components nor the public access and recreation infrastructure components of Alternative 1 would physically divide an established community because these components would either be modifications to existing features or would not create a barrier to connectivity to surrounding communities. In addition, some of the public access components would increase connectivity of established communities by providing additional access corridors through the study area allowing better connectivity of the surrounding community. This impact would be **less than significant**.

IMPACT 3.10-2 (Alt. 1) **Potential Conflict with Land-Use Plans, Policies, or Regulations Intended to Protect the Environment. (CEQA 2; TRPA 2)** *Implementation of Alternative 1 would not conflict with applicable plans, policies, or regulations intended to protect the environment. Land uses under Alternative 1 would either be consistent with the permissible land uses of applicable PASs or a special-use permit would be obtained prior to construction ensuring consistency. Land use under Alternative 1 would also be consistent with the goals and objectives of the City General Plan, the Tahoe Keys Marina Master Plan, the TRPA Regional Plan, EIP, and the compatible land uses identified in the CLUP for the approach/departure zone, which extends into the southeastern corner of the study area. This impact would be* ***less than significant****.*

The permissible uses within the seven applicable plan areas (as described within the corresponding PASs) are listed in Tables 3.10-2 through 3.10-7. Table 3.10-8 presents permissible uses related to the project for each of the seven PASs, SEZ restoration and a wide range of vegetation and habitat management activities are identified as permissible uses and in all plan areas riding and hiking trails are also a permissible use. The more intensive components of Alternative 1 (i.e., kiosks, boardwalks, viewing platforms) would either be constructed in a PAS that allows recreational development (PAS 102) or transportation routes (PAS 100). Because all of the proposed uses are listed as allowable uses, Alternative 1 would not conflict with the applicable PASs.

Applicable land-use regulations and restrictions in Shorezone Tolerance Districts 1 and 4 include limiting shoreline access to planned footpaths and stabilized access ways, and in District 1, replacement of existing land coverage in the backshore in accordance with the regulations for SEZs. Alternative 1 would include observation platforms, boardwalks, pedestrian trails, and bicycle paths; however, any new access would be a stabilized access way, and would provide planned pedestrian trails that would discourage and reduce public access into sensitive areas.

Alternative 1 is consistent with the conservation land use category of the City General Plan. In particular, Alternative 1 supports conservation, environmental improvements and the correction of past land-use deficiencies. Regarding specific land-use designations, the CSLT has adopted the TRPA permissible uses for each plan area. In addition, the components included as part of Alternative 1 would be consistent with the TRPA *Regional Plan* goals and policies, as discussed in Table 3.10-1.

The southeast corner of the study area is in the approach/departure zone of the Lake Tahoe Airport. Land uses designated as compatible for this zone include most recreation uses (except for camping and participant sports facilities) and the full range of resource management uses, including SEZ restoration and vegetation management. Thus, the restoration, public access and recreation infrastructure features of Alternative 1 would be considered compatible land uses by the CLUP and would not conflict with the CLUP.

In addition, Alternative 1 would not impair navigation within the Upper Truckee River that is under the jurisdiction of the CSLC, and the Conservancy would obtain a State Lands Lease, if determined necessary by CSLC, to ensure consistency with CSLC policies and regulations.

Implementation of Alternative 1 would also include implementation of EIP Projects #560, 650, 981, and 1002 described above, which would further implementation of the EIP.

In summary, Alternative 1 would not conflict with applicable land-use plans, policies, or regulations intended to protect the environment, and in some cases would further implementation of goals or policies of the land use plans. Therefore, this impact would be **less than significant**.

IMPACT 3.10-3 (Alt. 1) **Potential Conflict with Regional Conservation Strategy for Tahoe Yellow Cress. (CEQA 3)** *The regional, multi-agency, conservation strategy for Tahoe yellow cress includes specific actions to be implemented in the study area. The Conservancy has prepared a Tahoe yellow cress management plan for the study area that incorporates these applicable actions of the regional conservation strategy. Alternative 1 would implement these actions but would also construct a boardwalk and increase recreational use in Tahoe yellow cress habitat that the regional conservation strategy identifies as a core site for conservation. The actions in the Conservancy's management plan would not be sufficient to fully mitigate the effects of the increase in recreational use. Therefore, this impact would be* ***significant****.*

Alternative 1 would construct a boardwalk close to potential and occupied Tahoe yellow cress habitat east of the Upper Truckee River. Consequently, Alternative 1 would increase the number of recreational users and associated disturbance throughout this habitat, which would adversely affect Tahoe yellow cress. These effects on Tahoe yellow cress are described in greater detail in Section 3.4, "Biological Resources: Vegetation and Wildlife" in the discussion of Impacts 3.4-3, 3.4-4, and 3.4-5.

Table 3.10-8
Alternative Elements Compatibility with Permissible Uses

Elements included in Action Alternatives[1]					TRPA Use Category	Plan Area Statements						
Element	Alt. 1	Alt. 2	Alt. 3	Alt. 4		99	100	102	103	104	105	111
Restoration and Enhancement Elements						Proposed in/Permissible In Plan Area?						
Stabilization of Eroding Banks Downstream of U.S. 50 Bridge	✓	✓	✓	✓	Erosion Control	N	Y/S	N	Y/A	N/A	N	N/A
River and Floodplain Restoration[2]	✓	✓	✓	✓	SEZ Restoration	N	Y/S	Y/A	N	N/A	N	N/A
River Mouth Size Reduction	✓	✓	✓		SEZ Restoration	N	Y/S	Y/A	N	N/A	N	N/A
Removal of Existing Fill from Floodplain	✓	✓	✓		SEZ Restoration	N	Y/S	N	N	N/A	N	N/A
Reactivation of Floodplain Terrace			✓		SEZ Restoration	Y/A	Y/S	Y/A	N	N/A	N	N/A
Modification of Existing Stormwater Discharge Locations		✓	✓		Erosion Control	N	Y/S	N	N	N/A	N	N/A
Reestablishment of River Overflow Lagoon	✓	✓	✓		SEZ Restoration	N	N	Y/A	N	N/A	N	N/A
Removal of Existing Fill from Trout Creek Lagoon	✓	✓			SEZ Restoration	Y/A	Y/S	N	N	N/A	N	N/A
Beach-Dune Restoration	✓	✓			SEZ Restoration	N	N	Y/A	N	N/A	N	N/A
Forest Enhancement	✓	✓	✓	✓	Nonstructural Wildlife Habitat Management	N	Y/A	Y/A	N	N/A	N	N/A
Core Habitat Enhancement	✓	✓	✓	✓	Nonstructural Wildlife Habitat Management	Y/A	Y/A	N	N	N/A	N	N/A

Table 3.10-8
Alternative Elements Compatibility with Permissible Uses

Elements included in Action Alternatives[1]					TRPA Use Category	Plan Area Statements						
Element	Alt. 1	Alt. 2	Alt. 3	Alt. 4		99	100	102	103	104	105	111
Restoration and Enhancement Elements						Proposed in/Permissible In Plan Area?						
Recreation Public Infrastructure												
Bicycle Path(s)	✓		✓	✓	Transportation Routes	Y/S	Y/S	Y/S	N	N/A	N	N/A
Pedestrian Trail(s)	✓	✓	✓	✓	Riding and Hiking Trails	Y/A	Y/S	Y/S	N	N/A	N	N/A
Observation Areas and Viewpoints	✓		✓	✓	Day-use area (vista point)	Y/A	Y/Accessory to Transportation Routes or Riding and Hiking Trails	Y/A	N	N/A	N	N/A
Bridge and boardwalk	✓				Transportation Routes	N	Y/S	Y/S	N	N/A	N	N/A
Boardwalk(s)	✓		✓	✓	Transportation Routes	N	Y/S	Y/S	N	N/A	N	N/A
Kiosk(s)	✓		✓	✓	Accessory use	Y/Accessory to Transportation Routes or Riding and Hiking Trails or Day Use Area	Y/Accessory to Transportation Routes or Riding and Hiking Trails or Day Use Area	Y/Accessory to Transportation Routes or Riding and Hiking Trails or Day Use Area	N	N/A	N	N/A
River Access (Boat Take-Out) at East Venice Drive	✓			✓	Erosion Control	N	N	Y/A	N	N/A	N	N/A
River Access (Boat Take-Out) at River Street		✓	✓		Erosion Control	N	Y/S	N	N	N/A	Y/A	N/A
Fishing Platform		✓	✓		Day Use Area	N	N	Y/A	N	N/A	N	N/A

Notes:
[1] No-Project/No-Action Alternative does not include any of these elements.
[2] River and floodplain restoration includes river channel restoration, secondary channel reactivation, floodplain lowering, and fill of abandoned channel segments.
N = not proposed, no use determination; NOT APP = PAS 104 and 111 are in project area but no proposed permanent improvements (uses); Observation area = Viewpoints;
Y/S = Yes proposed and Special Use; Y/A = Yes proposed, Allowed Use

To attain long-term conservation of Tahoe yellow cress, the regional, multi-agency conservation strategy for Tahoe yellow cress (*Conservation Strategy for Tahoe Yellow Cress [Rorippa subumbellata]* [Pavlik, Murphy, and TYCTAG 2002]) establishes six goals, 14 objectives, and a number of specific actions. This regional plan identifies occupied and potential Tahoe yellow cress habitat east of the Upper Truckee River as a core site for conservation, and habitat west of the river as a medium-priority restoration site. For the study area, the Conservancy has prepared a Tahoe yellow cress management plan that incorporates the applicable actions of the regional conservation strategy (e.g., maintaining an exclosure and conducting monitoring) (Conservancy 2008) and would be implemented as a component of Alternative 1. However, these actions would not be sufficient to fully mitigate the effects of increased recreational use of Tahoe yellow cress habitat. (See the discussion of Impact 3.4-5 [Alt. 1].) Therefore, Alternative 1 would conflict with several goals of the regional conservation strategy for Tahoe yellow cress, including Goal 1, Protect Occupied Habitat and Potentially Suitable Habitat That Does/Could Support Natural Populations; Goal 2, Improve Tahoe Yellow Cress Populations; and Goal 3, Promote Conditions that Favor a Positive Metapopulation Dynamic.

The goals and objectives include protecting occupied and potentially suitable habitat at core and priority sites, improving Tahoe yellow cress populations, and promoting conditions that favor a positive metapopulation dynamic. Therefore, this impact would be **significant**.

All feasible measures to reduce effects on Tahoe yellow cress, and thus reduce the potential conflict with the regional conservation strategy, have been included in the Conservancy's Tahoe yellow cress management plan for the study area, which would be implemented as a component of Alternative 1. Therefore, this impact would be **significant and unavoidable**.

Alternative 2: New Channel—West Meadow (Minimum Recreation Infrastructure)

IMPACT 3.10-1 (Alt. 2) **Potential to Physically Divide an Established Community. (CEQA 1)** *Implementation of Alternative 2 would not create a physical division within an established community. The restoration features of Alternative 2 that would modify the river, floodplain, and lagoon areas would not adversely affect accessibility of the area, existing transportation, or access within and through the community. New public access and recreation infrastructure features also would not adversely affect accessibility of the area, existing transportation, or access within and through the community. This impact would be* ***less than significant****.*

This impact is similar to Impact 3.10-1 (Alt. 1) above. Alternative 2 would not provide the new neighborhood connections associated with the bridge and boardwalks that would improve connectivity under Alternative 1; however, Alternative 2 would include similar restoration, public access, and recreation infrastructure features as Alternative 1. Modifications to the channel and floodplain of the Upper Truckee River, lagoon and dune restoration, a fishing platform, and pedestrian trails under Alternative 2 are not expected to physically divide any established communities because these features would not create barriers that would affect accessibility through the surrounding communities. Therefore, this impact would be **less than significant**.

IMPACT 3.10-2 (Alt. 2) **Potential Conflict with Land-Use Plans, Policies, or Regulations Intended to Protect the Environment. (CEQA 2; TRPA 2)** *Implementation of Alternative 2 would not conflict with applicable plans, policies, or regulations intended to protect the environment. Land uses under Alternative 2 would be consistent with the permissible land uses of applicable PASs, including special areas, shorezone tolerance districts, and the Tahoe Keys Marina Master Plan. Land use under Alternative 2 would also be consistent with the goals and objectives of the City General Plan, CSLC policies, TRPA Regional Plan, EIP, and the compatible land uses identified in the CLUP for the approach/departure zone. This impact would be* ***less than significant****.*

This impact is identical to Impact 3.10-2 (Alt. 1) above. Table 3.10-8 presents permissible uses related to the project for each of the seven PASs. Although the restoration, public access, and recreation infrastructure features of Alternative 2 differ from those of Alternative 1, the features of Alternative 2 would not adversely affect

applicable land-use plans, policies, or regulations intended to protect the environment for the same reasons given previously for Alternative 1. This impact would be **less than significant**.

IMPACT 3.10-3 (Alt. 2) **Potential Conflict with Regional Conservation Strategy for Tahoe Yellow Cress. (CEQA 3)** *The regional, multi-agency, conservation strategy for Tahoe yellow cress includes specific actions to be implemented in the study area. Alternative 2 has been designed to be consistent with this conservation strategy. The Conservancy has also prepared a Tahoe yellow cress management plan for the study area that incorporates the applicable actions of the regional conservation strategy. This impact would be* ***less than significant****.*

To attain long-term conservation of Tahoe yellow cress, the regional, multi-agency conservation strategy for Tahoe yellow cress (*Conservation Strategy for Tahoe Yellow Cress [Rorippa subumbellata]* [Pavlik, Murphy, and TYCTAG 2002]) establishes six goals, 14 objectives, and a number of specific actions. For the study area, the Conservancy has prepared a Tahoe yellow cress management plan that incorporates the applicable actions of this regional conservation strategy (Conservancy 2008). The actions implemented at East Barton and Barton beaches for Tahoe yellow cress would include annual monitoring and adjustment of the location and design of an exclosure to prevent trampling of Tahoe yellow cress plants by visitors and their dogs. Alternative 2 would implement all applicable actions identified by the regional conservation strategy for Tahoe yellow cress, and the other features of Alternative 2 would not conflict with the goals, objectives, or actions of the regional conservation plan. Therefore, this impact would be **less than significant**.

Alternative 3: Middle Marsh Corridor (Moderate Recreation Infrastructure)

IMPACT 3.10-1 (Alt. 3) **Potential to Physically Divide an Established Community. (CEQA 1)** *Implementation of Alternative 3 would not create a physical division within an established community. The restoration features of Alternative 3 that would modify the river, floodplain, and lagoon areas would not adversely affect accessibility of the area, existing transportation, or access within and through the community. New recreation components also would not adversely affect accessibility of the area, existing transportation, or access within and through the community. This impact would be* ***less than significant.***

This impact is similar to Impact 3.10-1 (Alt. 1) above. Alternative 3 would not provide the new neighborhood connections associated with the bridge and boardwalks that would improve access under Alternative 1; however, Alternative 3 would include similar restoration, public access, and recreation infrastructure features as Alternative 1. Although navigation along the Upper Truckee River could be adversely affected under Alternative 3, the reach of river within the study area is not a primary transportation corridor between communities and access would continue to be provided over the river. Modifications to the channel and floodplain of the Upper Truckee River, lagoon and dune restoration, a fishing platform, and pedestrian trails under Alternative 3 are not expected to physically divide any established communities because these features would not create barriers that would affect access to the surrounding communities. Therefore, this impact would be **less than significant**.

IMPACT 3.10-2 (Alt. 3) **Potential Conflict with Land-Use Plans, Policies, or Regulations Intended to Protect the Environment. (CEQA 2; TRPA 2)** *Implementation of Alternative 3 would not conflict with applicable plans, policies, or regulations intended to protect the environment. Land uses under Alternative 3 would be consistent with the permissible land uses of applicable PASs, including special areas, shorezone tolerance districts, and the Tahoe Keys Marina Master Plan. Land use under Alternative 3 would also be consistent with the goals and objectives of the City General Plan, CSLC policies, TRPA Regional Plan, EIP, and the compatible land uses identified in the CLUP for the approach/departure zone. This impact would be* ***less than significant****.*

This impact is identical to Impact 3.10-2 (Alt. 1) above. Table 3.10-8 presents permissible uses related to the project for each of the PASs. Although the restoration, public access, and recreation infrastructure features of Alternative 3 differ from those of Alternative 2, the features of Alternative 3 would not adversely affect applicable

land-use plans, policies, or regulations intended to protect the environment for the same reasons given previously for Alternative 1. This impact would be **less than significant**.

IMPACT 3.10-3 (Alt. 3) **Potential Conflict with Regional Conservation Strategy for Tahoe Yellow Cress. (CEQA 3)** *The regional, multi-agency, conservation strategy for Tahoe yellow cress includes specific actions to be implemented in the study area. Alternative 3 has been designed to be consistent with this conservation strategy. The Conservancy has also prepared a Tahoe yellow cress management plan for the study area that incorporates the applicable actions of the regional conservation strategy. This impact would be* ***less than significant****.*

This impact is identical to Impact 3.10-3 (Alt. 2) above. Although the restoration, public access, and recreation infrastructure features of Alternative 3 differ slightly from those of Alternative 2, the features of Alternative 3 would not conflict with the goals, objectives, or actions of the regional, multi-agency, conservation strategy for Tahoe yellow cress (*Conservation Strategy for Tahoe Yellow Cress [Rorippa subumbellata]* [Pavlik, Murphy, and TYCTAG 2002]) for the same reasons given previously for Alternative 2. This impact would be **less than significant**.

Alternative 4: Inset Floodplain (Moderate Recreation Infrastructure)

IMPACT 3.10-1 (Alt. 4) **Potential to Physically Divide an Established Community. (CEQA 1)** *The restoration features of Alternative 4 that would modify the river and floodplain would not adversely affect accessibility of the area, existing transportation, or access within and through the community. New recreation components also would not adversely affect accessibility of the area, existing transportation, or access within and through the community. This impact would be* ***less than significant****.*

This impact is similar to Impact 3.10-1 (Alt. 1) above. Alternative 4 would not provide the new neighborhood connections associated with the bridge and boardwalks that would improve access under Alternative 1; however, Alternative 4 would include similar restoration, public access, and recreation infrastructure features as Alternative 1. Modifications to the channel and floodplain of the Upper Truckee River, lagoon and dune restoration, a fishing platform, and pedestrian trails under Alternative 4 are not expected to physically divide any established communities because these features would not create barriers that would affect access to the surrounding communities. Therefore, this impact would be **less than significant**.

IMPACT 3.10-2 (Alt. 4) **Potential Conflict with Land-Use Plans, Policies, or Regulations Intended to Protect the Environment. (CEQA 2; TRPA 2)** *Implementation of Alternative 4 would not conflict with applicable plans, policies, or regulations intended to protect the environment. Land uses under Alternative 4 would be consistent with the permissible land uses of applicable PASs, including special areas, shorezone tolerance districts, and the Tahoe Keys Marina Master Plan. Land use under Alternative 4 would also be consistent with the goals and objectives of the City General Plan, TRPA Regional Plan, EIP, CSLC policies, and the compatible land uses identified in the CLUP for the approach/departure zone. This impact would be* ***less than significant****.*

This impact is similar to Impact 3.10-2 (Alt. 1) above. Table 3.10-8 presents permissible uses related to the project for each of the seven PASs. Although the restoration, public access, and recreation infrastructure features of Alternative 4 differ slightly from those of Alternative 1, the features of Alternative 4 would not adversely affect applicable land-use plans, policies, or regulations intended to protect the environment for the same reasons given previously for Alternative 1. This impact would be **less than significant**.

IMPACT 3.10-3 (Alt. 4) **Potential Conflict with Regional Conservation Strategy for Tahoe Yellow Cress. (CEQA 3)** *The regional, multi-agency, conservation strategy for Tahoe yellow cress includes specific actions to be implemented in the study area. Alternative 4 has been designed to be consistent with this conservation strategy. The Conservancy has also prepared a Tahoe yellow cress management plan for the study area that incorporates the applicable actions of the regional conservation strategy. This impact would be* ***less than significant****.*

This impact is identical to Impact 3.10-3 (Alt. 2) above. Although the restoration, public access, and recreation infrastructure features of Alternative 4 differ slightly from those of Alternative 2, the features of Alternative 4 would not conflict with the goals, objectives, or actions of the regional, multi-agency, conservation strategy for Tahoe yellow cress (*Conservation Strategy for Tahoe Yellow Cress [Rorippa subumbellata]* [Pavlik, Murphy, and TYCTAG 2002]) for the same reasons given previously for Alternative 2. This impact would be **less than significant**.

Alternative 5: No-Project/No-Action

IMPACT 3.10-1 (Alt. 5) **Potential to Physically Divide an Established Community. (CEQA 1)** *Over time, existing natural and artificial features and natural processes are not expected to create a new physical division in the study area or within adjacent established communities. Implementation of Alternative 5 would not include new facilities or substantial physical alterations of the study area. Therefore, Alternative 5 would not create a physical division within an established community.* ***No impact*** *would occur.*

In the foreseeable future, existing natural and artificial features within the study area (i.e., the existing river, marsh, and public trails) are not expected to create any new physical division within the study area or an established community in the vicinity of the study area. The existing trails would remain in their current location and, presumably, would continue to be used for the purposes for which they are used today. Implementation of Alternative 5 would not include new facilities or substantial physical alterations of the study area. Therefore, there would be no changes to public access, and implementing Alternative 5 would not create any barriers that would divide an established community. **No impact** would occur.

IMPACT 3.10-2 (Alt. 5) **Potential Conflict with Land-Use Plans, Policies, or Regulations Intended to Protect the Environment. (CEQA 2; TRPA 2)** *Implementation of Alternative 5 would not conflict with applicable plans, policies, and regulations. For the foreseeable future, restoration of the channel and floodplain of the Upper Truckee River in the study area would not occur under Alternative 5. Under Alternative 5, EIP projects (Nos. 560, 650, 981, and 1002) necessary to attain, maintain, or surpass multiple thresholds, would not be implemented. However, these are only a subset of projects identified within the EIP as potential means for attainment of the various Threshold Standards, specifically the water quality and SEZ restoration objectives. Therefore, implementation of Alternative 5 would not conflict with but would also not assist with the attainment of the goals of the TRPA Regional Plan. This impact would be* ***less than significant.***

Implementation of Alternative 5 would not alter land use in the study area, and thus would not conflict with applicable plans, policies, and regulations intended to protect the environment. Restoration of the channel and floodplain of the Upper Truckee River in the study area would not occur for the foreseeable future and restoration of the river and floodplain in the study area has been identified as an EIP project (#560) necessary to attain, maintain, or surpass multiple thresholds. In addition, implementation of EIP Projects #650, 981, and 1002 described above, would not occur under Alternative 5. Therefore, implementation of Alternative 5 would not conflict with but would also not assist in the implementation of the goals of the TRPA *Regional Plan*. This impact would be **less than significant**.

IMPACT 3.10-3 (Alt. 5) **Potential Conflict with Regional Conservation Strategy for Tahoe Yellow Cress. (CEQA 3)** *Under Alternative 5, existing land uses and management practices in the study area would continue into the foreseeable future. The Conservancy would continue to manage the study area consistent with the regional, multi-agency, conservation strategy for Tahoe yellow cress. Therefore, Alternative 5 would not conflict with this conservation strategy. The impact would be* ***less than significant****.*

This impact would be similar to Impact 3.10-3 (Alt. 1) above. Although Alternative 5 would not include the restoration, public access, and recreation infrastructure features described under Alternatives 1–4, the existing land uses in the study area would continue into the future and the Conservancy would continue to manage the study area consistent with the conservation strategy for the Tahoe yellow cress (*Conservation Strategy for Tahoe Yellow Cress [Rorippa subumbellata]* [Pavlik, Murphy, and TYCTAG 2002]). Therefore, Alternative 5 would not conflict with the goals, objectives, or actions of the regional conservation strategy for Tahoe yellow cress. This impact would be **less than significant**.

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3.11 NOISE

This section includes a description of acoustic fundamentals, existing ambient noise conditions, applicable noise regulations, and an analysis of potential short- and long-term noise impacts associated with implementation of Alternatives 1–5. Mitigation measures are not needed because potentially significant adverse noise impacts would not occur for any alternatives. Consistency with TRPA goals and policies is presented in Section 3.2, "Land Use," Table 3.2-1. The project's effects on thresholds are described in Section 4.5, "Consequences for Environmental Threshold Carrying Capacities." Cumulative noise impacts are addressed in Section 3.18, "Cumulative Impacts."

3.11.1 AFFECTED ENVIRONMENT

REGULATORY SETTING

Federal, state, and local governments have established noise standards and guidelines to protect citizens from potential hearing damage and various other adverse physiological and social effects associated with noise. The federal government regulates noise levels in the workplace, near aircraft, and for certain products. The State of California regulates vehicular and freeway noise affecting sensitive land uses, sets standards to control sound transmission and occupational noise, and identifies noise insulation standards and airport noise/land use compatibility criteria. Local communities generally regulate compatibility between land uses and noise levels by establishing allowable noise levels on private property and levels associated with the use of certain types of sources. The applicable standards and guidelines for the proposed alternatives are discussed below.

Federal

To address the human response to groundborne vibration, the Federal Transit Administration (FTA) of the U.S. Department of Transportation has set forth guidelines for maximum-acceptable vibration criteria for different types of land uses. These criteria are 65 vibration decibels (VdB) referenced to 1 microinch per second (μin/sec) and based on the root mean square (RMS) velocity amplitude for land uses where low ambient vibration is essential for interior operations (e.g., hospitals, high-tech manufacturing, and laboratory facilities); 80 VdB for residential uses and buildings where people normally sleep; and 83 VdB for institutional land uses with primarily daytime operations (e.g., schools, churches, clinics, and offices) (FTA 2006:Chapters 10 and 12).

Standards have also been established to address the potential for groundborne vibration to cause structural damage to buildings. These standards were developed by the Committee of Hearing, Bio Acoustics, and Bio Mechanics (CHABA) at the request of the U.S. Environmental Protection Agency (EPA) (FTA 2006: Chapters 7 to 13). For fragile structures, CHABA recommends a maximum limit of 0.25 inch per second (in/sec) peak particle velocity (PPV) (FTA 2006).

State

The California Governor's Office of Planning and Research (OPR) published the *State of California General Plan Guidelines* (OPR 2003), which provides guidance for the acceptability of projects within specific community noise equivalent level (CNEL) contours. Table 3.11-1 summarizes acceptable and unacceptable community noise exposure limits for various land use categories based on State of California standards. Generally, residential uses are considered acceptable in areas where exterior noise levels do not exceed 60 A-weighted decibels (dBA) CNEL. (See "Sound and the Human Ear" and "Noise Descriptors" in the "Environmental Setting" section below for descriptions of the dBA and CNEL concepts, respectively.) Residential uses are normally unacceptable in areas exceeding 70 dBA CNEL and conditionally acceptable within 55–70 dBA CNEL. Schools are normally acceptable in areas up to 70 dBA CNEL and normally unacceptable in areas exceeding 70 dBA CNEL. Commercial uses are normally acceptable in areas up to 70 dBA CNEL. Between 67.5 and 77.5 dBA CNEL, commercial uses are conditionally acceptable, depending on the noise insulation features and the noise reduction requirements. The guidelines also present adjustment factors that may be used to arrive at noise-acceptability standards that reflect the particular community's noise-control goals, sensitivity to noise, and assessment of the relative importance of noise issues.

Table 3.11-1
State of California Land Use Noise Compatibility Guidelines

Land Use Category	Community Noise Exposure (CNEL or L_{dn}, dBA)			
	Normally Acceptable[1]	Conditionally Acceptable[2]	Normally Unacceptable[3]	Clearly Unacceptable[4]
Residential—Low-Density Single-Family, Duplex, Mobile Home	< 60	55–70	70–75	75+
Residential—Multi-Family	< 65	60–70	70–75	75+
Transient Lodging—Motel, Hotel	< 65	60–70	70–80	80+
Schools, Libraries, Churches, Hospitals, Nursing Homes	< 70	60–70	70–80	80+
Auditoriums, Concert Halls, Amphitheaters		< 70	65+	
Sports Arena, Outdoor Spectator Sports		< 75	70+	
Playgrounds, Neighborhood Parks	< 70		67.5–75	72.5+
Golf Courses, Riding Stables, Water Recreation, Cemeteries	< 75		70–80	80+
Office Building, Business Commercial and Professional	< 70	67.5–77.5	75+	
Industrial, Manufacturing, Utilities, Agriculture	< 75	70–80	75+	

Notes:
CNEL = community noise equivalent level; dBA = A-weighted decibels; L_{dn} = day-night noise level
[1] Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
[2] New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.
[3] New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded.
[4] New construction or development should generally not be undertaken.
Source: OPR 2003

Tahoe Regional Planning Agency

Goals and Policies

The Goals and Policies document of the 1987 Regional Plan (TRPA 2006) establishes an overall framework for development and environmental conservation in the Lake Tahoe region. Chapter II (Land Use Element) of the Goals and Policies document considers seven subelements, including the Noise subelement.

The Goals and Policies document presents the overall approach to meeting TRPA's environmental carrying capacity thresholds (thresholds) (see "Thresholds" below). The following goals and policies in the Noise subelement of the Goals and Policies are relevant to the project:

- **Goal 1. Single Event Noise Standards shall be attained and maintained.** People can be annoyed by a specific noise source. Thresholds were adopted that apply to aircraft, boats, motor vehicles, off-road vehicles, and snowmobiles to reduce impacts associated with single noise events.

  - **Policy 3:** Motor vehicles and motorcycle shall comply with the appropriate noise thresholds.

  - **Policy 5:** The use of snowmobiles will be restricted to designated areas.

- **Policy 6:** The plan will permit uses only if they are consistent with the noise standards. Sound proofing practices may be required on all structures containing uses that would otherwise adversely impact the prescribed noise levels.

- **Goal 2. Community noise equivalent levels shall be attained and maintained.** CNEL thresholds were adopted to reduce the annoyance associated with cumulative noise events on people and wildlife. In the Lake Tahoe Basin, the main sources of noise are attributed to the major transportation corridors and the Lake Tahoe Airport in South Lake Tahoe. Therefore, the policies are directed towards reducing the transmission of noise from those sources. The CNEL thresholds will be attained upon implementation of the following policies.

    - **Policy 1:** Transmission of noise from transportation corridors shall be reduced. The noise associated with the transportation corridors can be decreased by reducing the number of trips and by installing mitigation measures. Trip reduction will be accomplished by the transit improvements identified in the Transportation Element. Ordinances will establish specific site design criteria for projects to help reduce the transmission of noise from the transportation corridors. The design criteria will also be incorporated into the water quality and transportation improvement programs. The mitigation measures may include setbacks, earth berms, and barriers.

    - **Policy 3:** TRPA will further define CNELs for wilderness and roadless areas, and for critical wildlife habitat areas.

The Noise subelement also establishes the following CNEL values for transportation corridors:

- U.S. Highway 50 (U.S. 50) (65 dBA)
- State Routes (SRs) 89, 207, 28, 267, and 431 (55 dBA)
- Lake Tahoe Airport (60 dBA)

The CNEL values for transportation corridors override the land use–based CNELs and are limited to an area within 300 feet from the edge of the road ("edge of pavement"). The airport CNEL value applies to areas affected by approved flight plans.

Plan Area Statements

The study area is located within six separate PASs: 099 (Al Tahoe), PAS 100 (Truckee Marsh), 102 (Tahoe Keys), PAS 103 (Sierra Tract Commercial), PAS 104 (Highland Woods), and PAS 111 (Tahoe Island) (see Exhibit 3.10-1, "Plan Area Statements in the Study Area and Vicinity," in Section 3.10, "Land Use"). The most conservative CNEL for the applicable PASs is 50 dBA CNEL in PAS 100. The maximum CNEL within the study area is 65 dBA CNEL for the U.S. 50 corridor.

Code of Ordinances

Chapter 68 (Noise Limitations) of the TRPA Code of Ordinances establishes noise limitations for single noise events from aircraft, marine craft, motor vehicles, motorcycles, off-road vehicles, and over-snow vehicles (TRPA 2011). Section 68.3 states that TRPA shall use the maximum level recorded on a noise meter, L_{max} (maximum noise level), for measuring single noise events. The noise levels set forth in Subsection 68.3.1 are the maximum permissible noise levels for the types of operations listed, unless specifically exempted under Section 68.9. Section 68.4 states that TRPA shall use CNELs to measure community noise levels, and the PASs shall set forth CNELs that shall not be exceeded by any one activity or combination of activities. In addition, community noise levels shall not exceed levels existing on August 26, 1982, where such levels are known. The CNELs set forth in the PASs are based on the land use classification, the presence of transportation corridors, and the applicable threshold.

Chapter 68 also provides guidance on the measurement of noise levels (Section 68.5), noise monitoring (Section 68.6), and performance standards (Section 68.7). The noise limitations established in Chapter 68 of the TRPA

Code of Ordinances do not apply to noise from TRPA-approved construction or maintenance projects, or the demolition of structures, provided that such activities are limited to the hours between 8:00 a.m. and 6:30 p.m.

Environmental Threshold Carrying Capacities

Noise thresholds are a combination of single-event L_{max} standards for specific sources (aircraft [Threshold N-1], motor vehicles, off-road vehicles, boats, snowmobiles [Threshold N-2]) and numerical CNEL values for various land use categories and transportation corridors [Threshold N-3]). Tables 3.11-2 and 3.11-3 summarize Thresholds N-1 and N-2 for single events (L_{max}) and Threshold N-3 for community noise events. In addition, Threshold N-3 contains the following policy statement (TRPA 2002):

> It shall be the policy of the TRPA Governing Board in the development of the Regional Plan to define, locate, and establish CNEL levels for transportation corridors.

Table 3.11-2
TRPA Environmental Threshold Carrying Capacity Noise Standards for Single Events (L_{max})[1]

Single Event	Threshold
Aircraft	*Departures (all aircraft):* – 80 dBA at 6,500 m from start to takeoff roll. – 77.1 dBA at 6,500 m from start to takeoff roll between 8:00 p.m. and 8:00 a.m. *Arrivals:* – General aviation and commuter aircraft—84 dBA at 2,000 m from the runway threshold approach. – Transport category aircraft—86 dBA at 2,000 m from the runway threshold approach. – All aircraft—77.1 dBA 2,000 m from the runway threshold approach between 8:00 p.m. and 8:00 a.m.
Watercraft	82.0 dBA at 50 feet with the engine operating at 3,000 rotations per minute
Motor Vehicles	*< 6,000 lb gross vehicle weight:* – 76.0 dBA at 50 feet (< 35 miles per hour [mph]) – 82.0 dBA at 50 feet (>35 mph) *> 6,000 lb gross vehicle weight:* – 82.0 dBA at 50 feet (< 35 mph) – 86.0 dBA at 50 feet (> 35 mph)
Motorcycles	77.0 dBA at 50 feet (< 35 mph), 86.0 dBA at 50 feet (> 35 mph)
Off-Road Vehicles	72.0 dBA at 50 feet (< 35 mph), 86.0 dBA at 50 feet (> 35 mph)
Over-Snow Vehicles (snowmobiles)	82.0 dBA at 50 feet

Notes: dBA = A-weighted decibels; lb = pounds; m = meters; mph = miles per hour
[1] Used for evaluation of Thresholds N-1 and N-2
Sources: TRPA 2002, 2007a

Table 3.11-3 TRPA Environmental Threshold Carrying Capacity Noise Standards for Community Events (CNEL)[1]	
Land Use Category	**Maximum Average Noise Level or CNEL Range (dBA) for Background Noise**
High Density Residential	55
Low Density Residential	50
Hotel	60
Commercial	60
Industrial	65
Urban Outdoor Recreation	55
Rural Outdoor Recreation	50
Wilderness and Roadless	45
Critical Wildlife Habitat	45

Notes: CNEL = community noise equivalent level; dBA = A-weighted decibels

[1] Used for evaluation of Threshold N-3

Sources: TRPA 2002, 2007a

El Dorado County

General Plan Noise Element

The following goals, objectives, policies, and criteria in the Noise Element of the *El Dorado County General Plan* (El Dorado County 2004) are relevant to the project:

- **Goal 6.5: Acceptable Noise Levels.** Ensure that County residents are not subjected to noise beyond acceptable levels.

  - **Objective 6.5.1: Protection of Noise-Sensitive Development.** Protect existing noise-sensitive developments (e.g., hospitals, schools, churches, and residential) from new uses that would generate noise levels incompatible with those uses and, conversely, discourage noise-sensitive uses from locating near sources of high noise levels.

  - **Policy 6.5.1.1:** Where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table 3.11-4 or the performance standards of Table 3.11-5, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

  - **Policy 6.5.1.2:** Where proposed non-residential land uses are likely to produce noise levels exceeding the performance standards of Table 3.11-5 at existing or planned noise-sensitive uses, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

  - **Policy 6.5.1.3:** Where noise mitigation measures are required to achieve the standards of Tables 3.11-4 and 3.11-5, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project and the noise barriers are not incompatible with the surroundings.

Table 3.11-4
Maximum Allowable Noise Exposure for Transportation Noise Sources, El Dorado County

Land Use	Outdoor Activity Areas[a] L_{dn}/CNEL, dBA	Interior Spaces	
		L_{dn}/CNEL, dBA	L_{eq}, dB[b]
Residential	60[c]	45	–
Transient Lodging	60[c]	45	–
Hospitals, Nursing Homes	60[c]	45	–
Theaters, Auditoriums, Music Halls	–	–	35
Churches, Meeting Halls, Schools	60[c]	–	40
Office Buildings	–	–	45
Libraries, Museums	–	–	45
Playgrounds, Neighborhood Parks	70	–	45

Notes: CNEL = community noise equivalent level; dB = decibels; dBA = A-weighted decibels; L_{dn} = day-night noise level; L_{eq} = equivalent noise level

[a] In Communities and Rural Centers, where the location of outdoor activity areas is not clearly defined, the exterior-noise-level standard shall be applied to the property line of the receiving land use. For residential uses with front yards facing the identified noise source, an exterior noise level criterion of 65 dB L_{dn} shall be applied at the building façade, in addition to a 60-dB L_{dn} criterion at the outdoor activity area. In Rural Regions, an exterior-noise-level criterion of 60 dB L_{dn} shall be applied at a 100-foot radius from the residence unless it is within Platted Lands where the underlying land use designation is consistent with the Community Region densities, in which case the 65-dB L_{dn} may apply. The 100-foot radius applies to properties that are 5 acres and larger; the balance will fall under the property-line requirement.

[b] As determined for a typical worst-case hour during periods of use.

[c] Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn} CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn} CNEL may be allowed, provided that available exterior-noise-level reduction measures have been implemented and interior noise levels are in compliance with this table.

Source: El Dorado County 2004:Table 6-1

- **Policy 6.5.1.6:** New noise-sensitive uses shall not be allowed where the noise level, due to non-transportation noise sources, will exceed the noise level standards of Table 3.11-5 unless effective noise mitigation measures have been incorporated into the development design to achieve those standards.

- **Policy 6.5.1.7:** Noise created by new proposed nontransportation noise sources shall be mitigated so as not to exceed the noise level standards of Table 3.11-5 for noise-sensitive uses.

- **Policy 6.5.1.8:** New development of noise-sensitive land uses will not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources which exceed the levels specified in Table 3.11-4 unless the project design includes effective mitigation measures to reduce exterior noise and noise levels in interior spaces to the levels specified in Table 3.11-5.

- **Policy 6.5.1.9:** Noise created by new transportation noise sources, excluding airport expansion but including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table 3.11-4 at existing noise-sensitive land uses.

- **Policy 6.5.1.10:** To provide a comprehensive approach to noise control, the County shall:

  A. Develop and employ procedures to ensure that noise mitigation measures required pursuant to an acoustical analysis are implemented in the project review process and, as may be determined necessary, through the building permit process.

Table 3.11-5
Noise-Level Performance Protection Standards for Noise-Sensitive Land Uses Affected by Nontransportation* Sources, El Dorado County

Noise Level Descriptor	Daytime 7:00 a.m.–7:00 p.m.		Evening 7:00 p.m.–10:00 p.m.		Night 10:00 p.m.–7:00 a.m.	
	Community	Rural	Community	Rural	Community	Rural
Hourly L_{eq}, dBA	55	50	50	45	45	40
Maximum Level, dBA	70	60	60	55	55	50

Notes: dB = decibels; dBA = A-weighted decibels; L_{eq} = equivalent noise level

Each of the noise levels specified above shall be lowered by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise-level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

El Dorado County can impose noise level standards that are up to 5 dB less than those specified above based upon determination of existing low ambient noise levels in the vicinity of the project site.

In Community areas the exterior noise level standard shall be applied to the property line of the receiving property. In Rural Areas the exterior noise level standard shall be applied at a point 100 feet away from the residence. The above standards shall be measured only on property containing a noise-sensitive land use as defined in Objective 6.5.1. This measurement standard may be amended to provide for measurement at the boundary of a recorded noise easement between all effected property owners and approved by El Dorado County.

* For the purposes of the Noise Element, transportation noise sources are defined as traffic on public roadways, railroad line operations, and aircraft in flight. Control of noise from these sources is preempted by federal and state regulations. Control of noise from facilities of regulated public facilities is preempted by California Public Utilities Commission regulations. All other noise sources are subject to local regulations. Nontransportation noise sources may include industrial operations; outdoor recreation facilities; heating, ventilation, and air conditioning units; schools; hospitals; commercial land uses; and other outdoor land uses.

Source: El Dorado County 2004:Table 6-2

B. Develop and employ procedures to monitor compliance with the standards of the Noise Element after completion of projects where noise mitigation measures were required.

C. The zoning ordinance shall be amended to provide that noise standards will be applied to ministerial projects with the exception of single-family residential building permits if not in areas governed by the Airports Comprehensive Land Use Plans. (See Objective 6.5.2.)

Policy 6.5.1.11: The standards outlined in Tables 3.11-6, 3.11-7, and 3.11-8 shall apply to those activities associated with actual construction of a project as long as such construction occurs between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday, and 8:00 a.m. and 5:00 p.m. on weekends, and on federally recognized holidays. Exceptions are allowed if it can be shown that construction beyond these times is necessary to alleviate traffic congestion and safety hazards.

- **Policy 6.5.1.12:** When determining the significance of impacts and appropriate mitigation for new development projects, the following criteria shall be taken into consideration.

A. Where existing or projected future traffic noise levels are less than 60 dBA L_{dn} at the outdoor activity areas of residential uses, an increase of more than 5 dBA L_{dn} caused by a new transportation noise source will be considered significant;

B. Where existing or projected future traffic noise levels range between 60 and 65 dBA L_{dn} at the outdoor activity areas of residential uses, an increase of more than 3 dBA L_{dn} caused by a new transportation noise source will be considered significant; and

Table 3.11-6
Maximum Allowable Noise Exposure for Nontransportation Noise Sources in Community Regions and Adopted Plan Areas—Construction Noise, El Dorado County

Land Use Designation[1]	Time Period	Noise Level (dBA)	
		L_{eq}	L_{max}
Higher-Density Residential (MFR, HDR, MDR)	7 a.m.–7 p.m. 7 p.m.–10 p.m. 10 p.m.–7 a.m.	55 50 45	75 65 60
Commercial and Public Facilities (C, R&D, PF)	7 a.m.–7 p.m. 7 p.m.–7 a.m.	70 65	90 75
Industrial (I)	Any Time	80	90

Notes: dBA = A-weighted decibels; L_{eq} = equivalent noise level; L_{max} = maximum noise level; MFR = multi-family residential; HDR = high density residential; MDR = medium density residential; C = commercial; R&D = Research and Development; PF = public facilities; I = industrial

[1] Adopted plan areas should refer to those land use designations that most closely correspond to the similar general plan land use designations for similar development.

Source: El Dorado County 2004:Table 6-3

Table 3.11-7
Maximum Allowable Noise Exposure for Nontransportation Noise Sources in Rural Centers—Construction Noise, El Dorado County

Land Use Designation[1]	Time Period	Noise Level (dBA)	
		L_{eq}	L_{max}
Higher-Density Residential (MFR, HDR, MDR)	7 a.m.–7 p.m. 7 p.m. –10 p.m. 10 p.m.–7 a.m.	55 50 40	75 65 55
Commercial and Public Facilities (C, R&D, PF)	7 a.m.–7 p.m. 7 p.m.–7 a.m.	65 60	75 70
Industrial (I)	Any Time	70	80
Open Space (OS)	7 a.m.–7 p.m. 7 p.m.–7 a.m.	55 50	75 65

Notes: dBA = A-weighted decibels; L_{eq} = equivalent noise level; L_{max} = maximum noise level; MFR = multi-family residential; HDR = high density residential; MDR = medium density residential; C = commercial; R&D = Research and Development; PF = public facilities; I = industrial; OS = Open Space

[1] Adopted Plan areas should refer to those land use designations that most closely correspond to the similar General Plan land use designations for similar development.

Source: El Dorado County 2004:Table 6-4

Table 3.11-8
Maximum Allowable Noise Exposure for Nontransportation Noise Sources in Rural Regions—Construction Noise, El Dorado County

Land Use Designation[1]	Time Period	Noise Level (dBA)	
		L_{eq}	L_{max}
All Residential (LDR)	7 a.m.–7 p.m.	50	60
	7 p.m.–10 p.m.	45	55
	10 p.m.–7 a.m.	40	50
Commercial and Public Facilities (C, R&D, PF)	7 a.m.–7 p.m.	65	75
	7 p.m.–7 a.m.	60	70
Rural Land, Natural Resources, Open Space, and Agricultural Lands (RR, NR, OS, AL)	7 a.m.–7 p.m.	55	75
	7 p.m.–7 a.m.	50	65

Notes: dBA = A-weighted decibels; L_{eq} = equivalent noise level; L_{max} = maximum noise level; LDR = low density residential; C = commercial; R&D = Research and Development; PF = public facilities; I = industrial; RR = Rural Residential; NR = Natural Resources; OS = Open Space; AL = Agricultural Lands

[1] Adopted Plan areas should refer to those land use designations that most closely correspond to the similar General Plan land use designations for similar development.

Source: El Dorado County 2004:Table 6-5

C. Where existing or projected future traffic noise levels are greater than 65 dBA L_{dn} at the outdoor activity areas of residential uses, an increase of more than 1.5 dBA L_{dn} caused by a new transportation noise will be considered significant.

- **Policy 6.5.1.13:** When determining the significance of impacts and appropriate mitigation to reduce those impacts for new development projects, including ministerial development, the following criteria shall be taken into consideration:

  A. In areas in which ambient noise levels are in accordance with the standards in Table [3.11-5], increases in ambient noise levels caused by new nontransportation noise sources that exceed 5 dBA shall be considered significant; and

  B. In areas in which ambient noise levels are not in accordance with the standards in Table [3.11-5], increases in ambient noise levels caused by new nontransportation noise sources that exceed 3 dBA shall be considered significant.

- **Policy 6.5.1.14:** The County will adopt a noise ordinance to resolve neighborhood conflicts and to control unnecessary noise in the County. Examples of the types of noise sources that can be controlled through the use of a quantitative noise ordinance include noisy mechanical equipment (e.g., swimming pool pumps, HVAC [heating, ventilation, air conditioning] units), and amplified music in commercial establishments.

- **Policy 6.5.1.15:** The County will establish and maintain coordination among city, county, and state agencies involved in noise abatement and other agencies to reduce noise generated from sources outside the County's jurisdiction.

El Dorado County Code of Ordinances

The following section from Chapter 9.16, "Noise," of the El Dorado County Code (El Dorado County 1988) is relevant to the project:

- **9.16.050 Loud and Raucous Noises—Prohibited.** Except as otherwise provided in this chapter, it is unlawful for any person to willfully make, emit, or transmit or cause to be made, emitted, or transmitted any loud and raucous noise upon or from any public highway or public thoroughfare or from any aircraft of any kind whatsoever, or from any public or private property to such an extent that it unreasonably interferes with the peace and quiet of another's private property. (Ord. 3189 §1 (part), 1981: prior code §7582)

City of South Lake Tahoe

Regarding noise, the CSLT has four goals with a total of seven objectives (CSLT 1999a). These goals and objectives are listed below.

- **Goal 1:** To reduce or minimize the scale of nuisance created by noise affecting residents, businesses and visitors.
  - **Objective 1:** Establish standards for ambient community noise environment.
  - **Objective 2:** Reduce levels of noise created by construction equipment.
  - **Objective 3:** Provide for early review and identification of potential noise concerns associated with development.
  - **Objective 4:** Provide as noise-free an environment within residences as possible.
- **Goal 2:** The City will support, in its role as operator of the Lake Tahoe Airport, the maximum utilization of the airport facility and its services for the benefit of the entire community, within the noise standards and environmental constraints, consistent with the Circulation Element.
  - **Objective 1:** The City will establish guidelines for the operation and future expanded utilization of the airport facilities and services within noise standards and environmental constraints, consistent the Circulation Element.
- **Goal 3:** Noise levels along major vehicular corridors should not affect the general health and welfare of residents and visitors.
  - **Objective 1:** Provide for the implementation of appropriate noise levels along major vehicular corridors.
- **Goal 4:** Minimize noise to residents in close proximity to industrially zoned areas.
  - **Objective 1:** Restrict industrial activities to appropriate PAS.

The CSLT has these goals and objectives regarding noise; however, because TRPA has jurisdictional powers over the entirety of the CSLT, CSLT has deferred some government powers to TRPA to prevent conflicts and redundancy. Noise control is one such jurisdiction that the CSLT has deferred to TRPA. In City Code S5-18, the CSLT legally defers the responsibility of noise regulation to TRPA (CSLT 1999b).

ENVIRONMENTAL SETTING

Acoustic Fundamentals

Noise is generally defined as sound that is loud, disagreeable, unexpected, or unwanted. Sound, as described in more detail below, is mechanical energy transmitted in the form of a wave, because of a disturbance or vibration, and as any pressure variation in air that the human ear can detect.

Sound Characteristics

Frequency, wavelength, and amplitude are characteristics typically used to describe sound. Sound is in the form of a sinusoidal longitudinal wave. Amplitude is defined as the maximum positive displacement from the undisturbed position of the medium to the top of the wave (crest). The amplitude of the wave determines the loudness of the sound. The frequency is determined by the number of wave cycles per second. The frequency is used to describe the pitch of the sound and is the reciprocal of the wave period, which is defined as the duration of one cycle. The wavelength is the distance between two successive crests. An inverse relationship exists between frequency and wavelength; thus, as frequency increases wavelength shortens, and vice versa (Caltrans 1998).

Sound and the Human Ear

Because of the ability of the human ear to detect a wide range of sound pressure fluctuations, sound pressure levels are expressed in logarithmic units called decibels (dB). The sound pressure level in decibels is calculated by taking the logarithm of the ratio between the actual sound pressure and the reference sound pressure squared. The reference sound pressure is considered the absolute hearing threshold (Caltrans 1998).

In addition, because the human ear is not equally sensitive to all sound frequencies, a specific frequency dependent rating scale was devised to relate noise to human sensitivity. An A-weighted decibel (dBA) scale performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. The basis for compensation is the faintest sound audible to the average ear at the frequency of maximum sensitivity. The dBA scale has been chosen by most authorities for purposes of environmental noise regulation. Exhibit 3.11-1 presents typical indoor and outdoor noise levels.

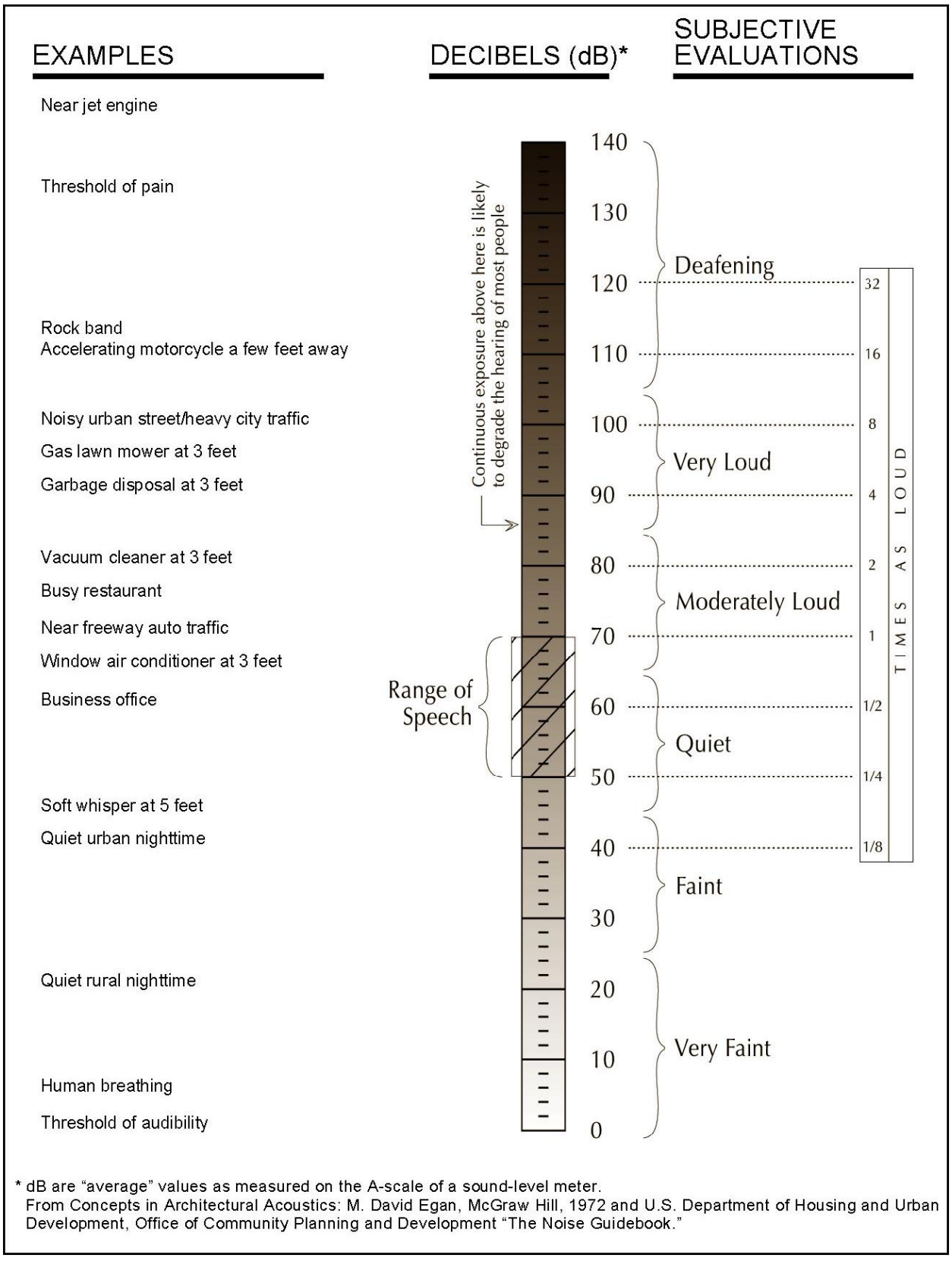
As indicated, typical sounds range from 40 dBA (very quiet) to 100 dBA (very loud). Conversation is roughly 60 dBA at a three to five-foot distance between subjects. As background noise levels exceed 60 dBA, speech intelligibility becomes increasingly difficult. Noise becomes physically discomforting at 110 dBA.

With respect to how humans perceive and react to changes in noise levels, a 1-dBA increase is imperceptible, a 3-dBA increase is barely perceptible, a 6-dBA increase is clearly noticeable, and a 10-dBA increase is subjectively perceived as approximately twice as loud (Egan 1988), as presented in Table 3.11-9. Table 3.11-9 was developed on the basis of test subjects' reactions to changes in the levels of steady-state pure tones or broadband noise and to changes in levels of a given noise source. It is probably most applicable to noise levels in the range of 50–70 dBA, as this is the usual range of voice and interior noise levels.

Table 3.11-9
Subjective Reaction to Changes in Noise Levels of Similar Sources

Change in Level (dBA)	Subjective Reaction	Factor Change in Acoustical Energy
1	Imperceptible (except for tones)	1.3
3	Just barely perceptible	2.0
6	Clearly noticeable	4.0
10	About twice (or half) as loud	10.0

Note: dBA = A-weighted decibels
Source: Egan 1988



Source: Data compiled by EDAW (now AECOM) in 2006

Exhibit 3.11-1 **Typical Noise Levels**

Sound Propagation and Attenuation

As sound (noise) propagates from the source to the receptor, the attenuation—the manner of noise reduction in relation to distance—depends on surface characteristics, atmospheric conditions, and the presence of physical barriers. The inverse-square law describes the attenuation caused by the pattern in which sound travels from the source to receptor. Sound travels uniformly outward from a point source in a spherical pattern with an attenuation rate of 6 dBA per doubling of distance (dBA/DD). However, from a line source (e.g., a road), sound travels uniformly outward in a cylindrical pattern with an attenuation rate of 3 dBA. The surface characteristics between the source and the receptor may result in additional sound absorption and/or reflection. Atmospheric conditions such as wind speed, temperature, and humidity may affect noise levels. Furthermore, the presence of a barrier between the source and the receptor may also attenuate noise levels. The actual amount of attenuation depends on the size of the barrier and the frequency of the noise. A noise barrier may be any natural or human-made feature such as a hill, tree, building, wall, or berm (Caltrans 1998).

All buildings provide some exterior-to-interior noise reduction. A building constructed with a wood frame and a stucco or wood sheathing exterior typically provides a minimum exterior-to-interior noise reduction of 25 dBA with its windows closed, whereas a building constructed of a steel or concrete frame, a curtain wall or masonry exterior wall, and fixed plate-glass windows of one-quarter-inch thickness typically provides an exterior-to-interior noise reduction of 30–40 dBA with its windows closed (Paul S. Veneklasen & Associates 1973, cited in Caltrans 2002).

Noise Descriptors

The selection of a proper noise descriptor for a specific source depends on the spatial and temporal distribution, duration, and fluctuation of the noise. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise are defined below (Caltrans 1998, Lipscomb and Taylor 1978):

- **L_{max} (maximum noise level):** The maximum instantaneous noise level during a specific period of time. The L_{max} may also be referred to as the "peak (noise) level."

- **L_{min} (minimum noise level):** The minimum instantaneous noise level during a specific period of time.

- **L_X (statistical descriptor):** The noise level exceeded X% of a specific period of time.

- **L_{eq} (equivalent noise level):** The energy mean (average) noise level. The instantaneous noise levels during a specific period of time in dBA are converted to relative energy values. From the sum of the relative energy values, an average energy value is calculated, which is then converted back to dBA to determine the L_{eq}. In noise environments determined by major noise events, such as aircraft overflights, the L_{eq} value is heavily influenced by the magnitude and number of single events that produce the high noise levels.

- **L_{dn} (day-night noise level):** The 24-hour L_{eq} with a 10-dBA "penalty" for noise events that occur during the noise-sensitive hours between 10:00 p.m. and 7:00 a.m. In other words, 10 dBA is "added" to noise events that occur in the nighttime hours, and this generates a higher reported noise level when determining compliance with noise standards. The L_{dn} attempts to account for the fact that noise during this specific period of time is a potential source of disturbance with respect to normal sleeping hours.

- **CNEL (community noise equivalent level):** Similar to the L_{dn} described above, but with an additional 5-dBA "penalty" added to noise events that occur during the noise-sensitive hours between 7:00 p.m. and 10:00 p.m., which are typically reserved for relaxation, conversation, reading, and television. When the same 24-hour noise data are used, the reported CNEL is typically approximately 0.5 dBA higher than the L_{dn}.

- **SEL (single-event [impulsive] noise level):** A receiver's cumulative noise exposure from a single impulsive noise event, which is defined as an acoustical event that is of short duration and involves a change in sound

pressure above some reference value. SELs typically represent the noise events used to calculate the L_{eq}, L_{dn}, and CNEL.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound-level L_{eq}, which corresponds to a steady-state A-weighted sound level containing the same total energy as a time-varying signal over a given time period (usually 1 hour). The L_{eq} is the foundation of the composite noise descriptors such as L_{dn} and CNEL, as defined above, and correlates well with community response to noise.

Negative Effects of Noise on Humans

Negative effects of noise exposure include physical damage to the human auditory system, interference, and disease. Exposure to noise may result in physical damage to the auditory system, which may lead to gradual or traumatic hearing loss. Gradual hearing loss is caused by sustained exposure to moderately high noise levels over a period of time; traumatic hearing loss is caused by sudden exposure to extremely high noise levels over a short period. Gradual and traumatic hearing loss both may result in permanent hearing damage. In addition, noise may interfere with or interrupt sleep, relaxation, recreation, and communication. Although most interference may be classified as annoying, the inability to hear a warning signal may be considered dangerous. Noise may also be a contributor to diseases associated with stress, such as hypertension, anxiety, and heart disease. The degree to which noise contributes to such diseases depends on the frequency, bandwidth, and level of the noise, and the exposure time (Caltrans 1998: N-2200).

Vibration

Vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structureborne noise. Sources of groundborne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, and landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, and construction equipment). Vibration sources may be continuous, such as factory machinery, or transient, such as explosions. As is the case with airborne sound, groundborne vibrations may be described by amplitude and frequency.

Vibration amplitudes are usually expressed in PPV or RMS, as in RMS vibration velocity; the PPV and RMS velocity are normally described in in/sec (see the description of federal regulations under "Regulatory Setting" above). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings (FTA 2006: 7-3, Caltrans 2002: 6).

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to average vibration amplitude. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over 1 second. As with airborne sound, the RMS velocity is often expressed in decibel notation as VdB, which serves to compress the range of numbers required to describe vibration (FTA 2006: 7-4), and based on a reference value of 1 μin/sec (see the description of federal regulations under "Regulatory Setting" above).

The background vibration-velocity level in residential areas is usually approximately 50 VdB. Groundborne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels (FTA 2006: 7-8).

Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration is rarely perceptible. The range of

interest is from approximately 50 VdB, the typical background vibration-velocity level, to 100 VdB, the general threshold where minor damage can occur in fragile buildings. Construction activities can generate groundborne vibrations, which can pose a risk to nearby structures. Constant or transient vibrations can weaken structures, crack facades, and disturb occupants (FTA 2006: 7-5).

Construction vibrations can be transient, random, or continuous. Transient construction vibrations are generated by blasting, impact pile driving, and wrecking balls. Continuous vibrations result from vibratory pile drivers, large pumps, horizontal directional drilling, and compressors. Random vibration can result from jackhammers, pavement breakers, and heavy construction equipment. Table 3.11-10 describes the general human response to different levels of groundborne vibration-velocity levels.

Table 3.11-10
Human Response to Groundborne Vibration Levels

Vibration Velocity (VdB)	Human Response
65	Approximate threshold of perception for many humans.
75	Approximate dividing line between barely perceptible and distinctly perceptible.
85	Vibration acceptable only if there are an infrequent number of events per day.

Note: VdB = vibration decibels
Source: FTA 2006

Existing Noise Environment

The study area is located along the south shore of Lake Tahoe, bounded generally by U.S. 50 and the Highland Woods neighborhood on the south, the Al Tahoe neighborhood on the east, and Tahoe Islands/Sky Meadows and Tahoe Keys neighborhoods on the west. The study area is approximately 592 acres and includes parcels owned by the California Tahoe Conservancy and other public and private entities. It includes the downstream reaches of Trout Creek and the Upper Truckee River, adjacent wetland and upland habitats, and the Lower West Side Wetlands Restoration Project site (see Exhibit 1-2 in Chapter 1, "Introduction and Statement of Purpose and Need").

Existing ambient noise levels across the majority of the site, except for those areas closest to U.S. 50, are relatively quiet. The predominant noise sources in the study area consist of natural area-source sounds, such as wind, water moving, and birds. Other noise sources include urban sounds, such as dogs barking, people working (e.g., hammering or chopping wood) or recreating outdoors, occasional aircraft overflights, use of motorized watercraft on Lake Tahoe, activity at the Tahoe Keys Marina, and traffic noise associated with vehicles traveling on U.S. 50 and on local residential streets (e.g., Colorado Avenue/Colorado Court, Tahoe Keys Boulevard, East Venice Drive, El Dorado Avenue, and Springwood Drive).

Ambient noise levels in the study area are affected primarily by vehicular traffic on nearby roadways. Roadways in the vicinity of the study area, including U.S. 50, frequently experience moderate to high levels of traffic on a seasonal basis, particularly in summer and winter when the Tahoe Basin draws the most visitors.

Ambient noise measurements were conducted by EDAW (now AECOM) on October 1, 2007, to document the existing ambient noise levels at various locations within the study area. Short-term noise-level measurements were taken in accordance with the American National Standards Institute acoustic standards at four locations using a Larson Davis Model 820 sound-level meter. The short-term L_{eq}, L_{max}, and L_{min} values for each ambient-noise-level measurement location are presented in Table 3.11-11.

Table 3.11-11
Summary of Measurements of Ambient Noise Levels

Measurement Location[1]	Date and Time (on October 1, 2007)	A-Weighted Sound Level (dBA)		
		L_{eq}	L_{max}	L_{min}
1	10:55 a.m.–11:10 a.m.	47.6	69.5	40.7
2	11:40 a.m.–11:55 p.m.	50.2	63.7	40.2
3	12:15 p.m.–12:30 p.m.	45.2	55.6	39.9
4	12:40 p.m.–12:55 p.m.	45.3	53.5	39.8

Notes: dBA = A-weighted decibels; L_{eq} = equivalent noise level; L_{max} = maximum noise level; L_{min} = minimum noise level

[1] Locations of ambient-noise-level measurements correspond to those shown in Exhibit 3.11-2.

Source: Data collected by EDAW (now AECOM) in 2007

Based on the measurements conducted, average daytime noise levels (in dBA L_{eq}) at all measurement locations generally ranged from the mid-40s to low 50s. All locations are in attainment with the most stringent PAS standards (50 dBA CNEL). Observations made during AECOM's field visit indicate that natural sources, such as bird calls or wind rustling trees account for much of the noise recorded by the sound-level meters, and sound generated by these sources is not typically considered undesirable. It is also important to note that because noise measurement locations were on the perimeter of the study area and off-site unnatural noise sources (such as vehicle traffic) were included in the overall measurement, existing sound levels across the interior of the site are expected to be lower.

As stated above, one of the key noise sources within the study area and the vicinity is vehicle traffic on area roadways. For the purposes of this analysis, existing traffic noise levels were modeled for affected roadway segments of U.S. 50 using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model (see Table 3.11-12), based on data obtained from the traffic analysis prepared for this project (see Section 3.16, "Transportation, Parking, and Circulation"). Additional input data included day/night percentages of autos, medium- and heavy-duty trucks, vehicle speeds, ground attenuation factors, and roadway widths. As discussed above in "Regulatory Setting," the average noise level standard for the U.S. 50 corridor is 65 dBA CNEL.

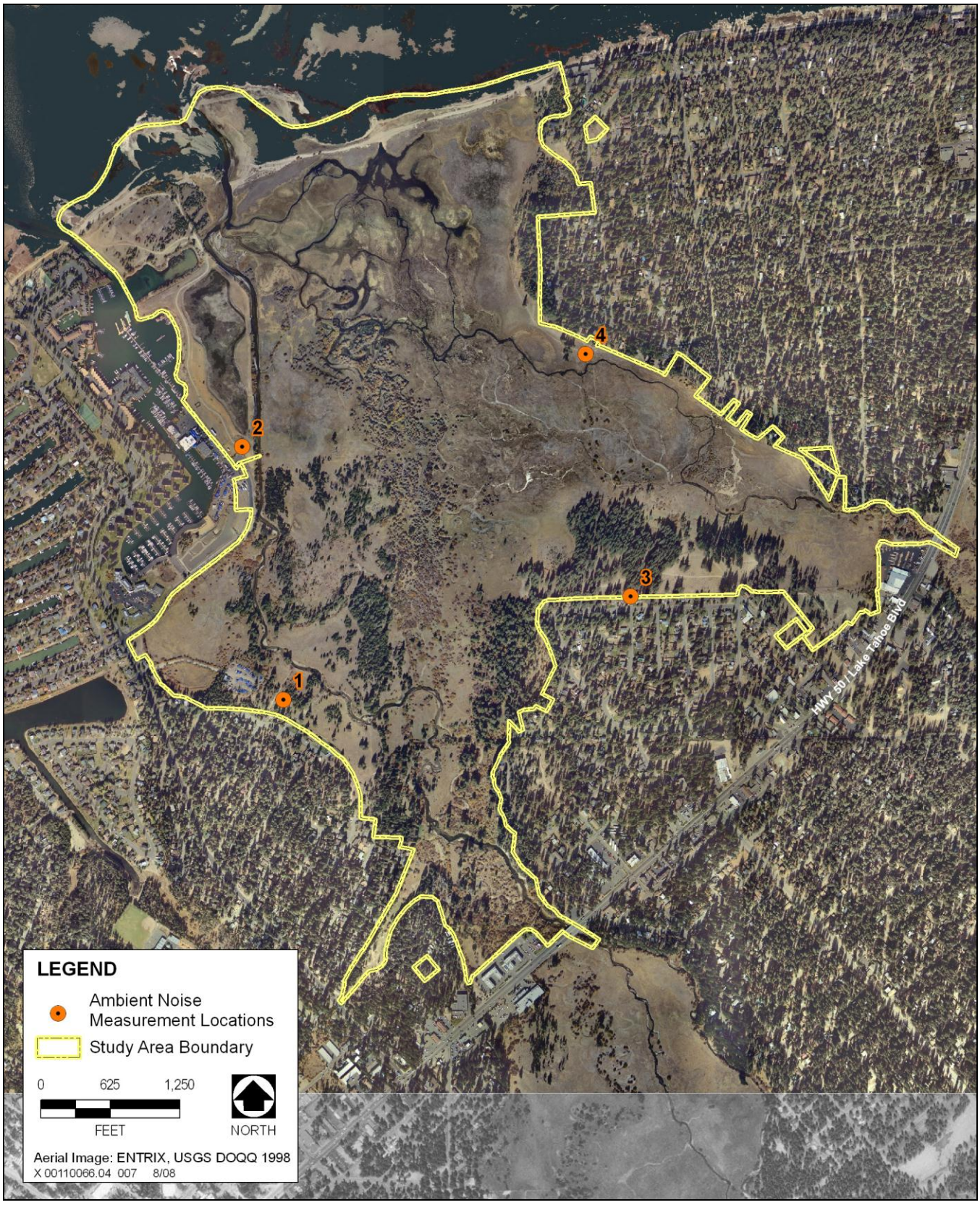
Table 3.11-12
Summary of Modeled Existing Traffic Noise Levels

Roadway Segment	Modeling Assumptions					Distance (feet) from Roadway Edge to CNEL/ L_{dn} (dBA)[1]				CNEL/ L_{dn} (dBA) from Roadway Edge	
	Average Daily Traffic Volume	Speed (mph)	Grade (%)	Traffic Distribution Percentages (%)		70 CNEL	65 CNEL	60 CNEL	55 CNEL	50 feet	300 feet
				Auto/Medium Truck/Heavy Truck	Day/ Evening/ Night						
U.S. 50 at the CSLT Upper Truckee River Bridge	33,000	35	0	96/3/1	79/ 12.5/ 9.5	57.7	119.4	255.0	548.1	68.2	58.2

Note: CNEL = community noise equivalent level; dBA = A-weighted decibels; L_{dn} = day-night noise level; mph = miles per hour; U.S. 50 = U.S. Highway 50. Traffic noise modeling assumes no natural or human-made shielding (e.g., vegetation, berms, wall, or buildings).

[1] See Appendix J for complete modeling results and input parameters.

Source: Modeling performed by EDAW (now AECOM) in 2007



Source: Data provided by kdAnderson and Associates and EDAW (now AECOM) in 2007

Exhibit 3.11-2 **Ambient Noise Measurement Locations**

Currently traffic noise levels in the project vicinity are in attainment within the 300-foot, 65-dBA CNEL corridor of U.S. 50.

Noise-Sensitive Receptors

Noise sensitive receptors adjacent to the study area include the residential neighborhoods of Highland Woods to the south, Tahoe Keys and Tahoe Islands/Sky Meadows to the west, and Al Tahoe to the east. The closest sensitive receptors in these neighborhoods would be those located on East Venice Drive, Springwood Drive, Michael Drive, Colorado Avenue/Colorado Court, and El Dorado Avenue, all of which are located directly adjacent to the study area.

3.11.2 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

For this analysis, significance criteria are based on the checklist presented in Appendix G of the State CEQA Guidelines; the TRPA Initial Environmental Checklist; and regulatory standards of federal, state, and local agencies, specifically standards established by El Dorado County. Federal law defers to state and local regulations for the purposes of assessing noise impacts, and TRPA has not set any criteria for vibration, so the state standards are applied. These criteria also encompass the factors taken into account under NEPA to determine the significance of an action in terms of the context and intensity of its effects.

CEQA Criteria

A noise impact is considered significant if implementation of the proposed project would result in any of the following:

- short-term construction-generated noise levels that exceed the relevant El Dorado County standards or a substantial increase (greater than 3 dBA) in ambient noise at nearby existing noise-sensitive receptors during the more sensitive early morning, evening, and nighttime hours of the day (i.e., outside the hours considered exempt by the Noise Element of the *El Dorado County General Plan*—7:00 a.m. and 7:00 p.m., Monday through Friday, and 8:00 a.m. and 5:00 p.m. on weekends, and on federally recognized holidays) (CEQA 1);

- long-term (operational) stationary- or area-source noise levels that exceed applicable noise standards or a substantial increase (greater than 3 dBA) in ambient noise at nearby existing noise-sensitive receptors (CEQA 2);

- short- or long-term (operational) traffic-generated noise levels that exceed the relevant El Dorado County noise standards for transportation noise sources or a substantial increase (greater than 3 dBA) in ambient noise levels at nearby existing noise-sensitive receptors (CEQA 3);

- increases in existing CNELs beyond those permitted in the applicable PAS, community plan, or master plan (CEQA 4); or

- exposure of persons to or generation of excessive groundborne vibration or noise levels that exceed Caltrans's recommended standard with respect to the prevention of structural building damage (0.2 in/sec PPV and 0.08 in/sec PPV, respectively, for normal and historical buildings) or FTA's maximum-acceptable vibration standard with respect to human response (80 VdB for residential structures) at nearby existing or proposed vibration-sensitive land uses (e.g., residences) (CEQA 5).

NEPA Criteria

An environmental document prepared to comply with NEPA must consider the context and intensity of the environmental effects that would be caused by or result from the proposed action. Under NEPA, the significance of an effect is used solely to determine whether an EIS must be prepared. The factors that are taken into account under NEPA to determine the significance of an action in terms of the context and the intensity of its effects are encompassed by the CEQA criteria used for this analysis.

TRPA Criteria

Based on TRPA's Initial Environmental Checklist, an alternative would result in a significant impact on noise if it would result in any of the following:

- increases in existing CNELs beyond those permitted in the applicable PAS, community plan, or master plan (TRPA 1);
- the exposure of people to severe noise levels (TRPA 2); or
- single-event noise levels greater than those set forth in the TRPA Noise Environmental Threshold (TRPA 3).

METHODS AND ASSUMPTIONS

To assess potential noise impacts from construction, stationary sources, and area sources, noise-sensitive receptors and their relative exposure levels were identified. Noise (and vibration) levels of specific equipment anticipated to be used in project construction or operation were determined and resultant noise levels at sensitive receptors were modeled assuming documented noise (vibration) attenuation rates.

The FHWA Traffic Noise Prediction Model was used to model traffic noise levels along affected roadways, based on daily volumes and the distribution thereof from the traffic analysis prepared for this project (which is described in Section 3.16, "Transportation, Parking, and Circulation"). The project's contribution to the existing traffic-source noise levels along area roadways was determined by comparing the modeled noise levels at 50 feet from the roadway edge under no-project and plus-project conditions. The project's land use compatibility with future (2030) traffic source noise levels was determined by comparing modeled noise levels at proposed noise-sensitive receptors under plus-project conditions.

The significance criteria applied in this analysis address the exterior noise standards established by El Dorado County. Unless otherwise stated, standards for interior noise levels would not be exceeded if exterior noise-level standards are achieved because buildings would commonly provide sufficient exterior-to-interior noise reduction.

EFFECTS NOT DISCUSSED FURTHER IN THIS EIR/EIS/EIS

Exceedance of Single-Event Noise Level Thresholds (TRPA 3)—No alternative would result in increasing or creating single-event noise level sources (aircraft, watercraft, motor vehicles, motorcycles, off-road vehicles, and over-snow vehicles) regulated by TRPA. Haul trucks related to construction under all action alternatives would not exceed single-event noise standards; and they would operate only during exempted hours and therefore would not violate single-event noise standards when applicable. None of the alternatives would create significant single-event noise impacts.

Alternative 1: Channel Aggradation and Narrowing (Maximum Recreation Infrastructure)

IMPACT 3.11-1 (Alt. 1) **Short-Term Project Construction Noise Levels Exceeding Applicable Thresholds. (CEQA 1, TRPA 2)** *Short-term construction activities could exceed applicable noise thresholds if they would occur outside hours exempted by TRPA and El Dorado County. However, noise-generating construction activities related to implementation of Alternative 1 would be limited to the hours during which construction noise is exempt from the provisions of the applicable standards. Therefore, this impact would be* ***less than significant****.*

The construction activities required for Alternative 1 would include excavating, grading, removing vegetation, clearing, cut-and-fill earthmoving, trenching, erecting frames, installing equipment, cleaning up the construction site, transporting materials, winterizing the site, paving, and installing bicycle trails, pedestrian paths, and signage. The closest existing noise-sensitive receptors (residences along El Dorado Avenue) are a minimum of 100 feet from the nearest proposed construction activities along the boundary of the study area.

The specific construction equipment required for the above-mentioned activities is not available at this time, but would likely include the equipment outlined in Table 3.11-13. According to FTA and FHWA, and as shown in Table 3.11-13, maximum noise levels for these types of equipment can range from 74 to 101 dBA L_{max} at 50 feet when used without feasible noise control. These noise levels and equipment would equate to a maximum combined noise level of 95.4 dBA L_{eq} at 50 feet (FHWA 2006: 12–6, 7). Based on 95.4 dBA L_{eq}, a typical noise-attenuation rate of 6 dBA/DD, and no intervening shielding or topographic interference, exterior noise levels at noise-sensitive receptors located within 4,500 feet could exceed the local PAS standard, 55 dBA.

Table 3.11-13
Typical Equipment Noise Levels

Type of Equipment	Noise Level (dBA) at 50 feet	
	Manufacturer's Specifications (L_{max})	Actual (L_{max})
Backhoe	80	77.6
Boring Jack Power Unit	80	83
Horizontal Boring Hydraulic Jack	80	82
Grader	85	NA
Dozer	85	81.7
Backhoe	80	77.6
Flatbed Truck	84	74.3
Pickup Truck	55	75
Dump Truck	84	76.5
Excavator	85	80.7
Pumps	77	80.9
Trenching Machine	82	80.4
Impact Pile Driver	95	101.3
Compactor (ground)	80	83.2
Paver	85	77.2
Pavement Scarifier	85	89.5

Notes: dBA = A-weighted decibels; L_{max} = maximum noise level; NA = not available
Sources: FTA 2006:Table 12-1, FHWA 2006

In addition, project construction under Alternative 1 would result in a short-term increase in traffic on the local area's roadway network, but this increase would not be sufficient to substantially increase traffic noise levels. It is expected that up to 176 daily trips (consisting of four haul-truck trips, 152 employee commute trips, and 20 miscellaneous trips) would occur during the periods of maximum construction activity. (This would be more trips than under Alternative 3 [up to 158 daily trips, respectively] and fewer than under Alternatives 2 and 4 [up to 192 and 306 daily trips, respectively].) Construction-related traffic would be distributed over the roadway network identified in Section 3.16, "Transportation, Parking, and Circulation" (e.g., San Francisco Avenue, Lakeview Avenue, East Venice Drive, Silver Dollar Avenue, and Sunset Drive). The daily haul-truck trips would traverse the haul routes designated in Section 3.16. Typically, traffic must double to create a perceptible increase in overall traffic noise (Caltrans 1998:N-96). Because all affected roadways (except Sunset Drive, as described below) have a peak-month minimum of 1,000 average daily trips (ADT), an increase of 176 trips would not double the current traffic level. Therefore, the additional construction-related traffic would not increase overall traffic noise levels.

Sunset Drive has an existing peak-month ADT of 85 trips. During the phase of construction when Sunset Drive would be in use, ten construction-related trips per day would occur on that street (see Section 3.16). This is less than the doubling of trips required to create an increase in traffic noise levels (Caltrans 1998:N-96). Thus, the additional construction-related traffic on Sunset Drive would not increase overall traffic noise levels.

Noise from construction activity that occurs between 8:00 a.m. and 6:30 p.m. each day is exempt from the provisions of the applicable TRPA regulations. Noise from construction activity that occurs between 7:00 a.m. and 7:00 p.m. on weekdays (or between 8:00 a.m. and 5:00 p.m. on weekends and federal holidays) is exempt from the provisions of the applicable El Dorado County regulations. In addition, construction activities would be temporary, and as described in Chapter 2, "Project Alternatives," noise-generating construction activities would not occur during the more noise-sensitive hours (i.e., before 8:00 a.m. and after 6:30 p.m. on weekdays, or after 5:00 p.m. on weekends or holidays). Additionally, project-generated construction traffic would not create a substantial increase in local traffic-noise levels. (There would not be a perceptible increase in overall traffic noise, and noise from single events [e.g., a truck driving along a haul route] would not exceed TRPA noise standards for single events [Table 3.11-2].) Because noise from project construction sources would be exempt, would not exceed the applicable standards, and would not increase overall local traffic-noise levels, this direct impact would be **less than significant**.

IMPACT 3.11-2 (Alt. 1) **Long-Term, Project-Related Generation of Stationary- and Area-Source Noise. (CEQA 2, TRPA 2)**

Alternative 1 does not include any new long-term stationary or area noise sources. The additional recreation facilities would not create perceptible increases in vehicle or recreation-activity noise above existing levels in the study area. This impact would be ***less than significant****.*

In addition to restoration features, Alternative 1 includes construction of self-service kiosks, bicycle paths, pedestrian trails, a pedestrian bridge and boardwalks around the perimeter of the study area. Current noise sources within and in the vicinity of the study area are the Tahoe Keys Marina and Maintenance Facility, Fresh Ketch Restaurant, the channel from Tahoe Keys to Lake Tahoe, the existing user-created trail network, a boat launch with parking lot, and adjacent residential properties. Alternative 1 would provide for a potential "maximum" level of public access and recreation infrastructure that would include two kiosks, a 27-space parking lot, three observation areas, boardwalks and pedestrian trails, bicycle paths, and path bridges.

Noise levels in the study area are within the 50-dBA CNEL standard of PAS 100 (which contains most of the study area), and are within the 55-dBA CNEL standards of the surrounding PAS areas. (See Table 3.11-11.) Typically, the activity level would need to double before a noticeable increase in noise would occur (Caltrans 1998:N-96). As discussed in Section 3.16, "Transportation, Parking, and Circulation," the volume of visitors recreating in the study area could be doubled as a result of the added recreation features of Alternative 1. However, activities in the adjacent commercial and residential land uses are major components of existing noise and would not be considerably increased by Alternative 1. Because biking, walking, fishing, and use of kiosks normally generate lower noise levels than adjacent land uses (e.g., maintenance yards and boating activities, and

use of landscape maintenance equipment), the change in noise levels from adding more recreational activity to the current ambient noise environment would, therefore, be imperceptible and would not cause PAS standards to be exceeded both in the study area and at the surrounding land uses.

In summary, no change in the ambient noise environment would occur, nor would applicable thresholds for the surrounding noise-sensitive receptors and study area be exceeded. Therefore, this impact would be **less than significant**.

IMPACT 3.11-3 (Alt. 1) **Long-Term Generation of Project-Related Traffic Noise. (CEQA 3)** *Long-term project-generated traffic would not result in a perceptible increase in ambient noise levels on nearby local roadways or highways. This impact would be* ***less than significant****.*

Operation of Alternative 1 is expected to result in fewer than 100 vehicle trips per day (see Section 3.16, "Transportation, Parking, and Circulation"). These trips would be distributed over the local street network identified in Section 3.16.

The FHWA model was used to calculate traffic-source noise levels along the affected local street network for existing (baseline) traffic conditions with and without implementation of Alternative 1, based on the predicted ADT volumes and their distribution over the roadway network. (See Section 3.16 for a detailed discussion of traffic projections.) Other modeling parameters include fleet mixes (i.e., percentages of automobiles, medium-duty trucks, and heavy-duty trucks during daytime, evening, and nighttime hours), vehicle speeds, ground attenuation factors, roadway grades, and roadway widths. The alternative's contribution to the existing traffic noise levels along area roadways was determined by comparing predicted existing roadside noise levels with and without traffic associated with project operation under Alternative 1.

Table 3.11-14 summarizes the net change in ADT volumes and in modeled traffic noise levels from existing no-project to plus-project conditions. A map of the local roads and highway segments is shown in Section 3.16. According to the traffic analysis prepared for this project, implementation of Alternative 1 would result in an increase of fewer than 100 trips in the total ADT volumes on the affected roadway segments. Such traffic increases would result in noise-level increases of less than 0.1 dBA CNEL along East Venice Drive, Lakeview Drive, and San Francisco Avenue; 0.2 dBA CNEL along Sunset Drive; and 0.1 dBA CNEL along Silver Dollar Avenue (refer to Table 3.11-14), which would be imperceptible to the human ear.

Table 3.11-14
Summary of Net Change in Average Daily Traffic Volumes and Modeled Traffic Noise Levels for Alternative 1

Roadway Segment	Existing Traffic Volumes	Average Daily Traffic Volume		Net Change in Traffic Noise Levels (CNEL [dBA])
		Existing + Alternative 1	Net Change, Alternative 1	
San Francisco Avenue	1,000	1,020	20	0.1
Lakeview Avenue	2,100	2,125	25	0.1
East Venice Drive	1,500	1,540	40	0.1
Silver Dollar Avenue	1,250	1,260	10	0.1
Sunset Drive	85	90	5	0.2

Notes: CNEL = community noise equivalent level; dBA = A-weighted decibels. Traffic noise levels were modeled using the Federal Highway Administration model based on traffic information from data generated by kdAnderson for the Peak Month of traffic (see Section 3.16, "Transportation, Parking, and Circulation") and assuming no natural or human-made shielding (e.g., vegetation, berms, walls, buildings). Refer to Appendix J for modeling input assumptions and output results.

Source: Modeling performed by EDAW (now AECOM) in 2008

Thus, traffic associated with the long-term operation of Alternative 1 would not result in a perceptible (3-dBA or greater) increase in daily noise levels along affected local roadways or highways. Therefore, this impact would be **less than significant**.

IMPACT 3.11-4 (Alt. 1) **Land Use Compatibility of Study Area Noise Levels and Surrounding Land Uses. (CEQA 4, TRPA 1)** *Noise generated by surrounding land uses would not cause noise levels within the study area to exceed applicable standards, and Alternative 1 would not create any new noise sources that would increase noise levels above applicable standards at surrounding land uses. Therefore, both Alternative 1 and surrounding land uses would be compatible. This impact would be* ***less than significant****.*

After project completion the study area would return to use as a managed natural area and recreation area, similar to its existing condition. No sensitive receptors are located within the study area, and no major sound sources would be created by the project under Alternative 1. Noise levels in the study area and surrounding neighborhoods would be influenced by activities at surrounding land uses and traffic noise on nearby roadways (e.g., U.S. 50, Venice Boulevard, El Dorado Avenue, Springwood Drive), at Tahoe Keys Marina, at Fresh Ketch Restaurant, and from boating activities. However, based on noise measurements taken on-site, noise levels are in compliance with the applicable standards, 55 dBA CNEL for residential neighborhoods surrounding the study area and 50 dBA CNEL within the study area (see Table 3.11-11). Additionally, no substantial increase in traffic is expected to occur. Therefore, traffic noise levels would remain similar to current levels.

After completion of construction, noise levels would return to their preproject levels. Because no exceedance or increase in noise would occur within the study area or at nearby sensitive receptors as a result of Alternative 1, this direct impact would be **less than significant**.

IMPACT 3.11-5 (Alt. 1) **Short- and Long-Term Increases in Groundborne Vibration Levels. (CEQA 5)** *Project-generated groundborne vibration would not disrupt humans' activities, including sleep, or damage structures. This impact would be* ***less than significant****.*

Long-term project operation under Alternative 1 would not include any major sources of vibration. However, construction activities could result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and operations involved. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. Table 3.11-15 displays vibration levels for typical construction equipment.

Table 3.11-15
Vibration Levels for Typical Construction Equipment

Equipment	PPV at 25 feet (in/sec)	Approximate L_V at 25 feet
Large Bulldozer	0.089	87
Caisson Drilling	0.089	87
Trucks	0.076	86
Jackhammer	0.035	79
Small Bulldozer	0.003	58
Construction Blasting	NA	109[a]

Notes: in/sec = inches per second; L_V = velocity level in decibels, based on the root mean square velocity amplitude; NA = not available; PPV = peak particle velocity

[a] Calculated from a reference level of 100 VdB at 50 feet.

Source: FTA 2006

According to FTA, vibration levels associated with the use of such equipment would be approximately 87 VdB (referenced to 1 μin/sec and based on the RMS velocity amplitude) at 25 feet, as shown in Table 3.11-15. Using FTA's recommended procedure (see subsection "Vibration" above, FTA 2006: 12-11 to 12-13) for applying a propagation adjustment to these reference levels, predicted worst-case vibration levels would exceed 80 VdB (FTA's maximum-acceptable vibration standard with respect to human annoyance for residential uses) within 60 feet of vibration-sensitive receptors. The closest existing vibration-sensitive receptors (residences along El Dorado Avenue) are a minimum of 100 feet from the nearest proposed construction activities along the boundary of the study area.

As stated in Impact 3.11-1 (Alt. 1), noise-generating construction activities would not occur during the more noise-sensitive hours (i.e., before 8:00 a.m. and after 6:30 p.m. weekdays, or after 5:00 p.m. on weekends and holidays). Thus, vibration from construction sources would not disrupt the sleep of occupants of vibration-sensitive land uses.

Excessive vibration levels associated with project construction would be limited to the daytime hours of 8:00 a.m. to 6:30 p.m. on weekdays and 8:00 a.m. to 5:00 p.m. on weekends/holidays, as required by TRPA and El Dorado County regulations. Additionally, no existing sensitive receptors are within 60 feet of the affected study area. This direct impact would be **less than significant**.

Alternative 2: New Channel—West Meadow (Minimum Recreation Infrastructure)

IMPACT 3.11-1 (Alt. 2) **Short-Term Project Construction Noise Levels Exceeding Applicable Thresholds. (CEQA 1, TRPA 2)**

Short-term construction activities could exceed applicable noise thresholds if they would occur outside hours exempted by TRPA and El Dorado County. However, noise-generating construction activities related to implementation of Alternative 2 would be limited to the hours during which construction noise is exempt from the provisions of the applicable standards. Therefore, this impact would be ***less than significant****.*

Construction activities under Alternative 2 would be similar to those under Alternative 1, but would not include any new structures.

The construction equipment required in Alternative 2 would likely include loaders, dozers/tractors, cranes, scrapers, excavators, backhoes, graders, generators, and trucks. According to EPA and FHWA, maximum noise levels for these types of equipment can range from 78 to 85 dBA at 50 feet when used without feasible noise control (Table 3.11-13). Based on these noise levels and a typical noise-attenuation rate of 6 dBA/DD, exterior noise levels at noise-sensitive receptors located within 2,500 feet could exceed the local PAS standard, 55 dBA CNEL.

In addition, project construction under Alternative 2 would result in a short-term increase in traffic on the local area's roadway network. It is expected that up to 192 daily trips (consisting of 10 haul-truck trips, 154 employee commute trips, and 28 miscellaneous trips) would occur during the periods of maximum construction activity. (This would be more trips than under Alternatives 1 and 3 [up to 176 and 158 daily trips, respectively] and fewer than under Alternative 4 [up to 306 daily trips].) As under Alternative 1, construction-related traffic would be distributed over the roadway network identified in Section 3.16, "Transportation, Parking, and Circulation" (e.g., San Francisco Avenue, Lakeview Avenue, East Venice Drive, Silver Dollar Avenue, and Sunset Drive). The daily haul-truck trips would traverse haul routes designated in Section 3.16. Typically, traffic must double to create an increase in perceptible traffic noise (Caltrans 1998: N-96). Because all affected roadways (except Sunset Drive) have a peak-month minimum of 1,000 ADT, an increase of 192 trips would not double the current traffic level. Therefore, the additional construction-related traffic would not increase traffic noise levels. In addition, for the same reasons as described under Impact 3.11-1 (Alt. 1), the additional construction-related traffic on Sunset Drive would not increase traffic noise levels.

Noise from construction activity that occurs between 8:00 a.m. and 6:30 p.m. each day is exempt from the provisions of the applicable TRPA regulations. Noise from construction activity that occurs between 7:00 a.m. and 7:00 p.m. on weekdays (or between 8:00 a.m. and 5:00 p.m. on weekends and federal holidays) is exempt from the provisions of the applicable El Dorado County regulations. In addition, construction activities would be temporary, and as described in Chapter 2, "Project Alternatives," noise-generating construction activities would not occur during the more noise-sensitive hours (i.e., before 8:00 a.m. and after 6:30 p.m. on weekdays, or after 5:00 p.m. on weekends or holidays). Additionally, project-generated construction traffic would not create an increase in local traffic-noise levels. (There would not be a perceptible increase in overall traffic noise, and noise from single events [e.g., a truck driving along a haul route] would not exceed TRPA noise standards for single events [Table 3.11-2].) Because noise from project construction sources would be exempt, would not exceed the applicable standards, and would not increase local traffic-noise levels, this direct impact would be **less than significant**.

IMPACT 3.11-2 (Alt. 2) **Long-Term Project-Related Generation of Stationary- and Area-Source Noise. (CEQA 2, TRPA 2)** *Alternative 2 does not include any new long-term stationary or area noise sources. The additional recreation facilities would not create perceptible increases in vehicle noise or pedestrian activity above existing levels in the study area. This impact would be* ***less than significant****.*

Alternative 2 would include restoration elements described in Chapter 2, "Project Alternatives." Unlike under Alternative 1, no new buildings would be constructed. Limited trail upgrades would occur along with installation of new signage and an interpretive program.

Alternative 2 would provide a "minimum" level of infrastructure that would include signage, a pedestrian trail to Cove East Beach (which would replace the existing pedestrian trail), five viewpoints, and a fishing platform. Because Alternative 2 is a minimum infrastructure alternative, fewer new users would be generated by Alternative 2 than by the maximum recreation alternative, Alternative 1. Because existing recreation numbers are approximately 20 visitors per hour and both current and potential new users would be dispersed throughout the study area, and because Alternative 2 would generate only a slight increase in use of the study area, the additional new users accessing the study area from multiple entry points would not generate a substantial increase in area noise levels or cause PAS standards to be exceeded in the study area or at the surrounding land uses.

Alternative 2 would not create or increase area-source noise. Thus, no change in the ambient noise environment would occur, nor would applicable thresholds for the surrounding noise-sensitive receptors and study area be exceeded. Therefore, this indirect impact would be **less than significant**.

IMPACT 3.11-3 (Alt. 2) **Long-Term Generation of Project-Related Traffic Noise. (CEQA 3)** *Long-term project-generated traffic would not result in a perceptible increase in ambient noise levels on the affected roadway network. This impact would be* ***less than significant****.*

Impact 3.11-3 (Alt. 2) would be similar to Impact 3.11-3 (Alt. 1). Alternative 2 would add fewer than 100 trips per day to the existing roadway network (see Table 3.11-14). Refer to Impact 3.11-3 (Alt. 1) and Table 3.11-14 for a more detailed discussion of long-term, project-generated traffic noise levels in the study area and surrounding areas. This direct impact would be **less than significant**.

IMPACT 3.11-4 (Alt. 2) **Land Use Compatibility of Study Area Noise Levels and Surrounding Land Uses. (CEQA 4, TRPA 1)** *Noise generated by surrounding land uses would not cause noise levels within the study area to exceed applicable standards, and Alternative 2 would not create any new noise sources that would increase noise levels above applicable standards at surrounding land uses. Therefore, both Alternative 2 and surrounding land uses would be compatible. This impact would be* ***less than significant****.*

Impact 3.11-4 (Alt. 2) would be similar to Impact 3.11-4 (Alt. 1). No standards would be exceeded and no new sources would be created. Refer to Impact 3.11-4 (Alt. 1) for a more detailed discussion of land use compatibility of the study area and surrounding areas. This direct impact would be **less than significant**.

IMPACT 3.11-5 (Alt. 2) **Short- and Long-Term Increases in Groundborne Vibration Levels. (CEQA 5)** *Project-generated groundborne vibration would not disrupt humans' activities, including sleep, or damage structures. This impact would be* ***less than significant****.*

Impact 3.11-5 (Alt. 2) would be similar to Impact 3.11-5 (Alt. 1). No long-term vibration sources would be created and construction activities would be restricted to 8:00 a.m. to 6:30 p.m. on weekdays (and to 5:00 p.m. on weekends and holidays). Refer to Impact 3.11-5 (Alt. 1) for a more detailed discussion of project-generated groundborne vibration. This direct impact would be **less than significant**.

Alternative 3: Middle Marsh Corridor (Moderate Recreation Infrastructure)

IMPACT 3.11-1 (Alt. 3) **Short-Term Project Construction Noise Levels Exceeding Applicable Thresholds. (CEQA 1, TRPA 2)** *Short-term construction activities could exceed applicable noise thresholds if they would occur outside hours exempted by TRPA and El Dorado County. However, noise-generating construction activities related to implementation of Alternative 1 would be limited to the hours during which construction noise is exempt from the provisions of the applicable standards. Therefore, this impact would be* ***less than significant****.*

Construction activities under Alternative 3 would be similar to those under Alternative 1.

The construction equipment required in Alternative 3 would likely include a loader, dozer/tractor, crane, scraper, excavator, backhoe, grader, generator, and trucks. According to EPA and FHWA, maximum noise levels for these types of equipment can range from 78 to 85 dBA at 50 feet when used without feasible noise control (Table 3.11-13). Based on these noise levels and a typical noise-attenuation rate of 6 dBA/DD, exterior noise levels at noise-sensitive receptors located within 2,500 feet could exceed local PAS standards (50 or 55 dBA CNEL).

In addition, project construction under Alternative 3 would result in a short-term increase in traffic on the local area's roadway network. It is expected that up to 158 daily trips (consisting of four haul-truck trips, 136 employee commute trips, and 14 miscellaneous trips) would occur during the periods of maximum construction activity. (This would be fewer trips than under Alternatives 1, 2, and 4 [up to 176, 192, and 306 daily trips, respectively].) Construction-related traffic would be distributed over the roadway network identified in Section 3.16 (e.g., San Francisco Avenue, Lakeview Avenue, East Venice Drive, Silver Dollar Avenue, and Sunset Drive). The daily truck haul trips would occur through haul routes designated in Section 3.16. Typically, it requires a doubling of traffic to create an increase in perceptible traffic noise (Caltrans 1998: N-96). Because all affected roadways (except Sunset Drive) have a peak-month minimum of 1,000 ADT, an increase of 158 trips would not double the current traffic level. Therefore, the additional construction-related traffic would not increase the traffic noise levels. In addition, for the same reasons as described under Impact 3.11-1 (Alt. 1), the additional construction-related traffic on Sunset Drive would not increase traffic noise levels.

Noise from construction activity that occurs between 8:00 a.m. and 6:30 p.m. each day is exempt from the provisions of the applicable TRPA regulations. Noise from construction activity that occurs between 7:00 a.m. and 7:00p.m. on weekdays (or between 8:00 a.m. and 5:00 p.m. on weekends and federal holidays) is exempt from the provisions of the applicable El Dorado County regulations. In addition, construction activities would be temporary, and as described in Chapter 2, "Project Alternatives," noise-generating construction activities would not occur during the more noise-sensitive hours (i.e., before 8:00 a.m. and after 6:30 p.m. on weekdays, or after 5:00 p.m. on weekends or holidays). Additionally, project-generated construction traffic would not create an increase in local traffic noise levels. (There would not be a perceptible increase in overall traffic noise, and noise from single events [e.g., a truck driving along a haul route] would not exceed TRPA noise standards for single events [Table 3.11-2].)

Because noise from project construction sources would be exempt, would not exceed the applicable standards, and would not increase local traffic noise levels, this direct impact would be **less than significant**.

IMPACT 3.11-2 (Alt. 3) **Long-Term Project-Related Generation of Stationary- and Area-Source Noise. (CEQA 2, TRPA 2)** *Alternative 3 does not include any new long-term stationary or area noise sources. The increased recreation facilities would not create perceptible increases in vehicle noise or pedestrian activity above existing levels in the study area. This impact would be* ***less than significant****.*

Alternative 3 includes restoration elements described in Chapter 2, "Project Alternatives," and a new self-service kiosk. User-created trails along the perimeter of the site would be upgraded with boardwalks and bicycle paths, pedestrian trails, and new signage and an interpretative program added.

Alternative 3 would provide a "moderate" level of infrastructure that would include three pedestrian trails (two segments of which would be boardwalks), a kiosk, one observation area, six viewpoints, a fishing platform, and signage at multiple locations. Because Alternative 3 is a moderate infrastructure alternative, fewer new users would be generated by Alternative 3 than by the maximum recreation alternative, Alternative 1, but more than the minimum recreation alternative, Alternative 2. Because existing recreation numbers are approximately 20 visitors per hour and both current and potential new users would be dispersed throughout the study area, and because Alternative 3 would generate only a small increase in use of the study area, the additional new users accessing the study area from multiple entry points would not generate a substantial increase in area noise levels or cause PAS standards to be exceeded both in the study area and at the surrounding land uses.

Implementing the project would not create or increase area-source noise. Thus, no change in the ambient noise environment would occur, nor would applicable thresholds for the surrounding noise-sensitive receptors and study area be exceeded. Therefore, this indirect impact would be **less than significant**.

IMPACT 3.11-3 (Alt. 3) **Long-Term Generation of Project-Related Traffic Noise. (CEQA 3)** *Long-term project-generated traffic would not result in a perceptible increase in ambient noise levels on nearby local roadways or highways. This impact would be* ***less than significant****.*

Impact 3.11-3 (Alt. 3) would be similar to Impact 3.11-3 (Alt. 3). Alternative 3 would add fewer than 100 trips per day to the existing roadway network (see Table 3.11-14). Refer to Impact 3.11-3 (Alt. 1) and Table 3.11-14 for a more detailed discussion of long-term project-generated traffic noise levels of the study area and surrounding areas. This direct impact would be **less than significant**.

IMPACT 3.11-4 (Alt. 3) **Land Use Compatibility of Study Area Noise Levels and Surrounding Land Uses. (CEQA 4, TRPA 1)** *Noise generated by surrounding land uses would not cause noise levels within the study area to exceed applicable standards, and Alternative 3 would not create any new noise sources that would increase noise levels above applicable standards at surrounding land uses. Therefore, both Alternative 3 and surrounding land uses would be compatible. This impact would be* ***less than significant****.*

Impact 3.11-4 (Alt. 3) would be similar to Impact 3.11-4 (Alt. 1). No standards would be exceeded and no new sources would be created. Refer to Impact 3.11-4 (Alt. 1) for a more detailed discussion of land use compatibility of the study area and surrounding areas. This direct impact would be **less than significant**.

IMPACT 3.11-5 (Alt. 3) **Short- and Long-Term Increases in Groundborne Vibration Levels. (CEQA 5)** *Project-generated groundborne vibration would not disrupt humans' activities, including sleep, or damage structures. This impact would be* ***less than significant****.*

Impact 3.11-5 (Alt. 3) would be similar to Impact 3.11-5 (Alt. 1). No long-term vibration sources would be created and construction activities would be restricted to 8:00 a.m. to 6:30 p.m. weekdays (and to 5:00 p.m. on

weekends and holidays). Refer to Impact 3.11.1-5 for a more detailed discussion of project-generated groundborne vibration. This direct impact would be **less than significant**.

Alternative 4: Inset Floodplain (Moderate Recreation Infrastructure)

IMPACT 3.11-1 (Alt. 4) **Short-Term Project Construction Noise Levels Exceeding Applicable Thresholds. (CEQA 1, TRPA 2)**
Short-term construction activities could exceed applicable noise thresholds if they occur outside hours exempted by TRPA and El Dorado County. However, noise-generating construction activities related to implementation of Alternative 1 would be limited to the hours during which construction noise is exempt from the provisions of the applicable standards. Therefore, this impact would be ***less than significant***

Construction activities under Alternative 4 would be similar to those under Alternative 1.

The construction equipment required in Alternative 4 would likely include a loader, dozer/tractor, crane, scraper, excavator, backhoe, grader, generator, and trucks. According to EPA and FHWA, maximum noise levels for these types of equipment can range from 78 to 85 dBA at 50 feet when used without feasible noise control (Table 4.11-13). Based on these noise levels and a typical noise-attenuation rate of 6 dBA/DD, exterior noise levels at noise-sensitive receptors located within 2,500 feet could exceed local PAS standards (50 or 55 dBA CNEL).

In addition, project construction under Alternative 4 would result in a short-term increase in traffic on the local area's roadway network. It is expected that up to 306 daily trips (consisting of 106 haul-truck trips, 66 employee commute trips, and 22 miscellaneous trips) would occur during the periods of maximum construction activity. (This would be more trips than under Alternatives 1, 2, and 3 [up to 176, 192, and 158 daily trips, respectively].) Construction-related traffic would be distributed over the roadway network identified in Section 3.16, "Transportation, Parking, and Circulation" (e.g., San Francisco Avenue, Lakeview Avenue, East Venice Drive, Silver Dollar Avenue, and Sunset Drive). The daily truck haul trips would traverse haul routes designated in Section 3.16. Typically, traffic must double to create a perceptible increase in traffic noise (Caltrans 1998:N-96). Because all affected roadways (except Sunset Drive) have a peak-month minimum of 1,000 ADT, an increase of 306 trips would not double the current traffic level. Therefore, the additional construction-related traffic would not result in a perceptible increase overall traffic noise levels. In addition, for the same reasons as described under Impact 3.11-1 (Alt. 1), the additional construction-related traffic on Sunset Drive would not increase traffic noise levels.

Noise from construction activity that occurs between 8:00 a.m. and 6:30 p.m. each day is exempt from the provisions of the applicable TRPA regulations. Noise from construction activity that occurs between 7:00 a.m. and 7:00 p.m. on weekdays (or between 8:00 a.m. and 5:00 p.m. on weekends and federal holidays) is exempt from the provisions of the applicable El Dorado County regulations. In addition, construction activities would be temporary, and as described in Chapter 2, "Project Alternatives," noise-generating construction activities would not occur during the more noise-sensitive hours (i.e., before 8:00 a.m. and after 6:30 p.m. on weekdays, or after 5:00 p.m. on weekends or holidays). Additionally, project-generated construction traffic would not create an increase in local traffic noise levels. (There would not be a perceptible increase in overall traffic noise, and noise from single events [e.g., a truck driving along a haul route] would not exceed TRPA noise standards for single events [Table 3.11-2].) Because noise from project construction sources would be exempt, would not exceed the applicable standards, and would increase local traffic noise levels, this direct impact would be **less than significant**.

IMPACT 3.11-2 (Alt. 4) **Long-Term Project-Related Generation of Stationary- and Area-Source Noise. (CEQA 2, TRPA 2)**
Alternative 4 does not include any new long-term stationary and area noise sources. The increased recreation facilities would not create perceptible increases in vehicle noise or pedestrian activity above existing levels in the study area. This impact would be ***less than significant.***

Alternative 4 includes restoration elements described in Chapter 2, "Project Alternatives," and a new self-service kiosk. User-created trails along the perimeter of the site would be upgraded with boardwalks and bicycle access, and new signage would be installed and an interpretative program added.

The new recreational infrastructure proposed in Alternative 4 would be similar to Alternative 3 (see Impact 3.11-2 [Alt. 1] and Impact 3.11-2 [Alt. 3]), and as in Alternative 3, activity levels would not double. Therefore, a perceptible increase in noise would not occur, nor would noise standards be exceeded.

Alternative 4 would provide a "moderate" level of infrastructure that would include three pedestrian trails, a kiosk, two observation areas, five viewpoints, and signage at multiple locations. Because Alternative 4 is a moderate infrastructure alternative, Alternative 4 would generate fewer new users than the maximum recreation alternative, Alternative 1, and comparable increase to Alternative 3, and more new users than the minimum recreation alternative, Alternative 2. Because existing recreation numbers are approximately 20 users per hour and both current and potential new users would be dispersed throughout the study area, and because Alternative 4 would generate only a small increase in use of the study area, the additional new users accessing the study area from multiple entry points would not generate a substantial increase in area noise levels or cause PAS standards to be exceeded both in the study area and at the surrounding land uses.

Alternative 4 would not create or increase area-source noise. Thus, no change in the ambient noise environment would occur, nor would applicable thresholds for the surrounding noise-sensitive receptors and study area be exceeded. Therefore, this indirect impact would be **less than significant**.

IMPACT 3.11-3 (Alt. 4) **Long-Term Generation of Project-Related Traffic Noise. (CEQA 3)** *Long-term project-generated traffic would not result in a perceptible increase in ambient noise levels on nearby local roadways or highways. This impact would be* ***less than significant****.*

Impact 3.11-3 (Alt. 4) would be similar to Impact 3.11-3 (Alt. 1). Like Alternative 1, Alternative 4 would add fewer than 100 trips per day to the existing roadway network (see Table 3.11-14), and as in Alternative 1, the additional long-term traffic would not double existing levels and therefore would not increase traffic noise on the affected roadways. Refer to Impact 3.11-3 (Alt. 1) and Table 3.11-14 for a more detailed discussion of long-term project-generated traffic noise levels of the study area and surrounding areas. This direct impact would be **less than significant**.

IMPACT 3.11-4 (Alt. 4) **Land Use Compatibility of Study Area Noise Levels and Surrounding Land Uses. (CEQA 4, TRPA 1)** *Noise generated by surrounding land uses would not cause noise levels within the study area to exceed applicable standards, and Alternative 4 would not create any new noise sources that would increase noise levels above applicable standards at surrounding land uses. Therefore, both Alternative 4 and surrounding land uses would be compatible. This impact would be* ***less than significant****.*

Impact 3.11-4 (Alt. 4) would be similar to Impact 3.11-4 (Alt. 1). There would likely be some differences in the timing and magnitude of noise in the long term because different features would be constructed than under Alternative 1, and future use of those features would differ; however, these differences would be small because the general locations and nature of restoration and recreation features would be similar to those for Alternative 1, and as under Alt. 1, use of these features would not cause applicable noise standards to be exceeded. Refer to Impact 3.11-4 (Alt. 1) for a more detailed discussion of land use compatibility of the study area and surrounding areas. This direct impact would be **less than significant**.

IMPACT 3.11-5 (Alt. 4) **Short- and Long-Term Increases in Groundborne Vibration Levels (CEQA 5).** *Project-generated groundborne vibration would not disrupt humans' activities, including sleep, or damage structures. This impact would be* ***less than significant****.*

Impact 3.11-5 (Alt. 4) would be similar to Impact 3.11-5 (Alt. 1). As in Alternative 1, no long-term vibration sources would be created and construction activities that may cause vibration would be restricted to between 8:00 a.m. and 6:30 p.m. on weekdays, and 8:00 a.m. and 5:00 p.m. on weekends and holidays. Refer to Impact 3.11-5 (Alt. 1) for a more detailed discussion of project-generated groundborne vibration. This direct impact would be **less than significant**.

Alternative 5: No-Project/No-Action

IMPACT 3.11-1 (Alt. 5) **Short-Term Project Construction Noise Levels Exceeding Applicable Thresholds. (CEQA 1, TRPA 2)** *Short-term construction activities would not occur under Alternative 5. **No impact** would occur.*

Under Alternative 5, thresholds for construction noise would not be exceeded because no short-term construction activities would occur. Noise levels would remain comparable to current conditions. **No impact** would occur.

IMPACT 3.11-2 (Alt. 5) **Long-Term Project-Related Generation of Stationary- and Area-Source Noise. (CEQA 2, TRPA 2)** *Alternative 5 does not include any new long-term stationary and area noise sources and thus would not generate additional noise from such sources. **No impact** would occur.*

As the No-Project/No-Action Alternative, Alternative 5 does not include any new long-term stationary and area-noise sources. Use of the study area would remain comparable to existing use, and thus, vehicle noise and noise from pedestrian activity would remain at existing levels. **No impact** would occur.

IMPACT 3.11-3 (Alt. 5) **Long-Term Generation of Project-Related Traffic Noise. (CEQA 2, TRPA 2)** *There would be no long-term change in traffic caused by activities in the study area; therefore, Alternative 5 would not increase ambient noise levels on nearby local roadways or highways. **No impact** would occur.*

As the No-Project/No-Action Alternative, Alternative 5 would not result in a long-term change in traffic caused by activities in the study area. As a result, this alternative would not increase ambient noise levels on nearby local roadways or highways. Therefore, **no impact** would occur.

IMPACT 3.11-4 (Alt. 5) **Land Use Compatibility of Study Area Noise Levels and Surrounding Land Uses. (CEQA 3)** *Noise from surrounding land uses would not cause applicable standards to be exceeded within the study area, and Alternative 5 would not create any new sources that would increase noise levels at surrounding land uses. **No impact** would occur.*

Because the project would not be constructed under Alternative 5, noise from surrounding land uses would not cause applicable standards to be exceeded or change within the study area, and no new sources would be created under this alternative that would increase noise levels at surrounding land uses. **No impact** would occur.

IMPACT 3.11-5 (Alt. 5) **Short- and Long-Term Increases in Groundborne Vibration Levels. (CEQA 5)** *Alternative 5 would not generate groundborne vibration that could cause disrupt humans' activities, including sleep, or damage structures. **No impact** would occur.*

Under Alternative 5, no construction would occur. As a result, this alternative would not generate groundborne vibration that could cause disruption to humans or damage to structures. Therefore, **no impact** would occur.

3.12 PUBLIC SERVICES

This section describes existing public services, presents an analysis of potential impacts resulting from Alternatives 1–5, and identifies mitigation measures for those impacts determined to be significant. Specifically, it addresses potential project impacts on law enforcement, fire and emergency services, and animal control services. Potential impacts of the proposed alternatives on recreation and recreation facilities are addressed in Section 3.13, "Recreation," and potential impacts on utilities are described in Section 3.17, "Utilities." Cumulative public services impacts are addressed in Section 3.18, "Cumulative Impacts." Consistency with TRPA goals and policies is presented in Section 3.10, "Land Use," Table 3.10-1.

3.12.1 AFFECTED ENVIRONMENT

REGULATORY SETTING

Federal

No federal plans, policies, regulations, or laws regarding the provision of public services in the study area are related to the potential effects of the proposed alternatives.

State

No state plans, policies, regulations, or laws regarding the provision of public services are related to the potential effects of the proposed alternatives.

Tahoe Regional Planning Agency

Goals and Policies

The following policies related to public services in Chapter VI (Public Services and Facilities Element) of *Regional Plan for the Lake Tahoe Basin Goals and Policies* (TRPA 2006) are applicable:

- **Goal 1:** Public services should be allowed to upgrade and expand to support existing and new development consistent with the Regional Plan.
    - **Policy 1:** Public services and facilities should be allowed to upgrade and expand consistent with the land use element of the Regional Plan and federal, state, and local standards.
    - **Policy 2:** Expansion of public services and facilities should be phased in to meet the needs of new development without creating inefficiencies from overexpansion or under-expansion.
- **Goal 4:** To ensure protection of the public health, safety and general welfare of the region, educational and public safety services should be sized to be consistent with projected growth levels in this plan.
    - **Policy 1:** The impact on educational and public safety services shall be considered when reviewing projects and plan amendments proposed within the region. To the extent feasible, adverse impacts should be mitigated as part of the review process.
    - **Policy 2:** Educational and emergency service organizations should anticipate and plan for projected demands and needs consistent with the Regional Plan and are encouraged to advise the agency when development potentials exceed current or anticipated service capabilities or capacities.

Code of Ordinances

Although the TRPA Code of Ordinances contains numerous ordinances applicable to the design, construction, and operation of facilities providing public services, it does not contain ordinances related to public services that are applicable to the project.

City of South Lake Tahoe

Law Enforcement

Enforcement of several sections of the municipal code of the CSLT could be affected by the project. These sections include:

- **Chapter 16, Article 36. Prohibited parking, stopping or standing areas – Generally.** No operator of any vehicle shall stop, stand, park or leave standing such vehicle in any of the following places, except when necessary to avoid conflict with other traffic or in compliance with the direction of a police officer or other authorized officer or traffic sign or signal:

  A. On either side of any street between the projected property lines of any public walk, public steps, street or thoroughfare terminating at such street, when such area is indicated by appropriate signs or by red paint upon the curb surface.

  B. In any area where the city traffic engineer determines that the parking or stopping of a vehicle would constitute a traffic hazard or would endanger life or property, when such area is indicated by appropriate signs or by red paint upon the curb surface.

  C. In any area established by resolution of the city council as a no parking area, when such area is indicated by appropriate signs or by red paint upon the curb surface.

  D. In any area where the parking or stopping of any vehicle would constitute a traffic hazard or would endanger life or property.

  E. On any street or highway where the use of such street or highway or a portion thereof is necessary for snow removal, the cleaning, repair or construction of the street or highway or the installation of underground utilities or where the use of the street or highway or any portion thereof is authorized for a purpose other than the normal flow of traffic or where the use of the street or highway or any portion thereof is necessary for the movement of equipment, articles or structures of unusual size and the parking of such vehicle would prohibit or interfere with such use or movement; provided, that signs giving notice of such no parking are erected or placed at least 24 hours prior to the effective time of such no parking.

  F. Within 20 feet of the approach to any traffic signal, boulevard stop sign or official electric flashing device.

  G. In any area or space established by resolution of the city council as parking area or space limited to and designated specifically for handicapped persons; provided that such area or space is posted by an appropriate sign so defining its purpose.

- **Chapter 18A, Article II. Protection of Property, Section 18A-6 Operating Vehicles – Generally.** No person shall drive or operate any vehicles, including bicycles, in a park other than on a paved vehicular road or path provided for that purpose; provided, however, that a bicyclist shall be permitted to wheel or push a bicycle in any area in which pedestrian traffic is permitted. (Ord. 174 § 1; Ord. 834 § 1)

- **Chapter 18A, Article II. Protection of Property, Section 18A-11 Miscellaneous Regulations.** It shall be unlawful and an infraction for any person to do any of the following in any park:

  A. Hunting and Firearms. Hunt, trap or pursue wildlife at any time. No person shall use, carry, or possess firearms of any descriptions, or air-rifles, spring-guns, bow and arrows (except in areas which may be set aside as archery ranges), slings or any other forms of weapons potentially inimical to wildlife and dangerous to human safety, or any instrument that can be loaded with and fire blank cartridges, or any kind of trapping device. Shooting into park areas from beyond park boundaries is forbidden.

  B. Camping in other than designated area. No person shall camp in any public space, public street, or private property without evidence of consent of the property owner, except in areas specifically designated for such use. "Camp" shall mean residing in or using a park or other public space for living accommodation purposes, such as sleeping activities, or making preparations to sleep (including the laying down of bedding for the purpose of sleeping), or storing personal belongings, (including but not limited to clothing, sleeping bags, bedrolls, blankets, sheets, luggage, backpacks, kitchen utensils, cookware, and regularly cooking meals, or living in a parked vehicle. These activities constitute camping when it reasonably appears, in light of all the circumstances, that a person(s) is using a park or other public space as a living accommodation regardless of his/her intent or the nature of any other activities in which he/she might also be engaging.

     For purposes of this section, the following terms shall have the meaning below prescribed:

     1. "Public space" means any public park, public beach or any open space area including meadows and forested areas within the city limits.

     2. "Public street" means any public right-of-way or public sidewalk including public benches.

     3. "Private property" means any property owned by a private individual or entity.

  F. Fireworks and Explosives. Bought, or have in his possession, or set off or otherwise cause to explode or discharge or burn, any firecrackers, torpedo, rocket, or other fireworks or explosives of flammable material, or discharge them or throw them into any such area from land or highway adjacent thereto. This prohibition includes any substance, compound, mixture, or article that in conjunction with any other substance or compound would be dangerous from any of the foregoing standpoints.

- **Chapter 18A. Parks and Beaches, Article III. Use Regulations, Section 18A-11. Miscellaneous Regulations.** It shall be unlawful and an infraction for any person to do any of the following in any park:

  G. Closed Areas. Enter an area posted as "Closed to the Public", nor shall any person use, or abet the use of an area in violation of posted notices.

- **Chapter 18A. Parks and Beaches, Article IV. Operating Policy, Section 18A-13 Closed Areas.** Any section or part of any park may be declared closed to the public by the director at any time and for any interval of time, either temporarily or at regular and stated intervals (daily or otherwise) and either entirely or merely to certain uses, as the director shall find reasonably necessary. (Ord. 174 § 1; Ord. 834 § 1)

Fire Protection and Emergency Services

The following goals and objectives related to public services in the Safety Element of the *City of South Lake Tahoe General Plan* (CSLT 1999) are applicable:

- **Goal 2:** To ensure the adequacy of fire protection within the City limits.

- **Objective 1:** Develop and maintain a fire protection program which provides adequate water supply and utilizes the most efficient procedures to minimize loss of life, injury, and property damage.

► **Goal 3:** To ensure the adequacy of wildland fire protection within the City and surrounding areas.

- **Objective 1:** Develop and maintain a program which effectively addresses fire protection in forest areas, meadows, and other unpopulated areas.

The City's General Plan is currently being updated, and this update is anticipated to be completed in November 2009 (CSLT 2008).

Animal Control

According to Section 6-22 of the CSLT Municipal Code:

> It shall be unlawful for any person owning or having charge of any stray dog, as defined herein, to cause, permit or allow such dogs, whether licensed or unlicensed, to stray, wander or otherwise be at loose or at large upon any public street, alley, park, beach, way or other public property within the city, or upon any private property within the city other than private property of which the owner of the dog has ownership or control, unless such dog is kept securely confined by a leash, rope, cord or chain not over 10 feet in length held by some person or securely attached to some stationary object. Nothing contained in this section shall be deemed to prevent a dog from being used without a leash to herd, guard or gather domestic animals or fowls in the normal and customary manner of "working dogs." Nor shall this section be deemed to prohibit participation in obedience trials or dog shows without a leash so long as the dog is under the charge and control of a person competent to control such dog and the dog does not harm or damage, or threaten to harm or damage, any person or public or private property. (Ordinance. 515 § 7; Ordinance 548 § 2)

ENVIRONMENTAL SETTING

Law Enforcement

South Lake Tahoe Police Department

Police service in the study area is provided by the South Lake Tahoe Police Department (SLTPD). SLTPD is located within the government complex at the intersection of Al Tahoe and Johnson Boulevards. This complex also houses the El Dorado County Superior Court, Sheriff-Coroner, and Sheriff's Department, among others.

SLTPD is allocated 41 sworn officers for an estimated 1.7 officers per 1,000 residents (based on the current population of approximately 24,000 residents). These staffing numbers may vary slightly, based on availability of grant-funded positions and increases from seasonal work force employment. The population of South Lake Tahoe can reach 75,000 during the summer months. Because of this fluctuation, SLTPD does not use staffing ratios to determine human resource needs. SLTPD's response-time goal is to arrive in less than 3 minutes for priority one calls (rape, robbery, or crimes in progress), none of which has generally been an issue in the study area. Only priority one calls are tracked; thus, response-time goals are not set for other calls (Daniels, pers. comm., 2007).

SLTPD has informal mutual aid agreements with the El Dorado County Sheriff's Department and the Douglas County Sheriff's Department for response during critical incidents. While the study area is state land, it is within a local response area, not a state response area (PRC Section 4125-4128).

El Dorado County Sheriff's Department

The Conservancy contracts with the El Dorado County Sheriff's Department to provide patrols of the project area. Although the study area is not the primary jurisdiction of the Sheriff's Department, the Conservancy utilizes its services to supplement management of the property.

Fire Protection and Emergency Services

The study area is serviced by the South Lake Tahoe Fire Department (SLTFD). SLTFD serves a land area of 18 square miles along Lake Tahoe's South Shore, and the study area is in the northwestern portion. The department responds to events including structural fires, vegetation fires, hazardous materials spills, water and ice rescue incidents, emergency medical incidents, and aircraft incidents. SLTFD maintains a minimum daily staff of 11 and currently employs 41 fire suppression personnel. The ratio of on-duty firefighters per 1,000 residents is 1.7 personnel per 1,000 residents (based on the current estimated population of 24,000 residents). The ratio of total force to population is 2.2 personnel per 1,000 residents (Gigliotti, pers. comm., 2007).

SLTFD manages three fire stations, all within the city limits:

- Fire Station #1, located at 1252 Ski Run Boulevard, includes Engine 1 (staffed by one captain and one engineer) and Medic 1 (staffed by one firefighter paramedic and one firefighter);
- Fire Station #2, located at 2951 Lake Tahoe Boulevard, includes Engine 2 (staffed by one captain and one engineer), and Truck 2 (can be staffed by the Engine 2 crew for extrication or commercial fires); and
- Fire Station #3, located at 2101 Lake Tahoe Boulevard, includes Engine 3 (staffed by one captain and one engineer), Medic 3 (staffed by one firefighter paramedic and one firefighter), and SLTFD administrative offices.

Fire Station 3 provides first response to the study area. This station is located near the junction of U.S. Highway 50 (U.S. 50) and U.S. 89, approximately 0.75 mile from the southwest corner of the study area (near the junction of Tahoe Keys Boulevard and Sky Meadows Court). The average response time by the entire department (including all three fire stations) is approximately 3.5 minutes. The average response time by Fire Station 3 for any service call is approximately 5 minutes (Gigliotti, pers. comm., 2007).

Animal Control

The South Lake Tahoe operations of El Dorado County Animal Control (EDCAC) provide services in the Tahoe Basin portion of El Dorado County, from Tahoma on the West Shore to Stateline on the South Shore and west along U.S. 50 to the community of Kyburz, California. EDCAC also provides limited animal control services to Alpine County. The animal shelter (located at 1120 Shakori Drive in South Lake Tahoe [Meyers], just off SR 89) has six staff members: one supervising animal control officer, one senior animal control officer, two animal control officers, one public services assistant, and one kennel attendant. Response time varies, depending on officer location in the field and prioritization of pending calls. Typical response time is 5–15 minutes (Gerat, pers. comm., 2007).

Officers also respond to requests for service to investigate complaints about barking dogs, dogs running loose, animal neglect or cruelty, and potentially dangerous or vicious animals. Such service is provided Monday–Saturday, from 8:00 a.m. to 5:00 p.m. In addition, EDCAC provides 24-hour emergency response to reports of injured animals, animal bites, and impounds pursuant to an arrest of the animal's owner. The animal shelter, houses stray animals and provides adoption services. Even though EDCAC is an El Dorado County agency, it enforces CSLT ordinances.

SIGNIFICANCE CRITERIA

For this analysis, significance criteria are based on the checklist presented in Appendix G of the State CEQA Guidelines; the TRPA Initial Environmental Checklist; factual or scientific information and data; and regulatory standards of federal, state, and local agencies. These criteria also encompass the factors taken into account under NEPA to determine the significance of an action in terms of the context and intensity of its effects.

CEQA Criteria

Under CEQA, an alternative was determined to result in a significant effect related to public services if it would:

- create a need for the development of new service facilities (e.g., fire, police, schools), the construction of which could result in significant environmental impacts (CEQA 1);
- create circumstances where existing services and facilities could not meet established performance standards (CEQA 2); or
- substantially impede existing services (CEQA 3).

NEPA Criteria

An environmental document prepared to comply with NEPA must consider the context and intensity of the environmental effects that would be caused by or result from the proposed action. Under NEPA, the significance of an effect is used solely to determine whether an EIS must be prepared. The factors that are taken into account under NEPA to determine the significance of an action in terms of the context and the intensity of its effects are encompassed by the CEQA criteria used for this analysis.

TRPA Criteria

TRPA's Initial Environmental Checklist indicates that a public services impact would be considered significant if it had an unplanned effect on, or resulted in a need for, new or altered governmental services—specifically:

- fire protection (TRPA 1);
- police protection (TRPA 2);
- schools (TRPA 3);
- parks or other recreation facilities (TRPA 4); or
- maintenance of public facilities, including roads (TRPA 5).

METHODS AND ASSUMPTIONS

Impacts on public services that could result from the proposed alternatives were identified by considering whether and how existing services or future demand for services would be affected by project implementation. Evaluation of potential public service impacts was based on a review of documents pertaining to the study area, including the TRPA Regional Plan, the TRPA Code of Ordinances, the *TRPA Community Wildfire Protection Plan for the California Portion of the Lake Tahoe Basin* (TRPA 2004b), the TRPA *Fuel Reduction and Forest Restoration Plan for the Lake Tahoe Basin Wildland Urban Interface* (TRPA 2007), the *City of South Lake Tahoe General Plan* (CSLT 1999), and the CSLT Municipal Code. Additional background information on current services, staffing, and equipment for law enforcement, fire and emergency services, and animal control was obtained through consultation with the SLTPD, SLTFD, and EDCAC, as well as with the HSP private security company.

Population growth in the Tahoe Basin is anticipated to cause a proportionate increase in demand for public services and in use of the study area.

EFFECTS NOT DISCUSSED FURTHER IN THIS EIR/EIS/EIS

Increased Demand on Schools (CEQA 1, 2, 3 in part; TRPA 3)—No impacts on school demands are anticipated to result from any of the project alternatives. There are no schools within the study area, and none of the alternatives would contribute to population growth or the number of students in the community.

IMPACT ANALYSIS AND MITIGATION MEASURES

Alternative 1: Channel Aggradation and Narrowing (Maximum Recreation Infrastructure)

IMPACT 3.12-1 (Alt. 1) **Potential for Longer Emergency-Vehicle Response Times Caused by Roadway Obstruction during Construction. (CEQA 2, 3; TRPA 1, 2)** *Implementation of Alternative 1 could obstruct roadways in the project vicinity, and thus could slow or stop emergency vehicles. However, as described in Environmental Commitment 12, the Conservancy, the project contractor(s), or both would prepare and implement traffic control plans for construction activities that may affect a road right-of-way. Therefore, this impact would be* ***less than significant****.*

Alternative 1 would include various construction activities over approximately four years. Although a majority of project construction activities would occur on site, nearby roadways including East Venice Drive, Washington Avenue, Tahoe Keys Boulevard, and U.S. 50 would be affected (see Section 3.16, "Transportation, Parking, and Circulation"). Ongoing construction activities could result in temporary lane closures, increased truck traffic, and other roadway effects that could slow or temporarily stop emergency vehicles, temporarily increasing response times and impeding existing service. However, as described in Environmental Commitment 12, "Prepare and Implement Traffic Control Plans" (Table 2-6), the Conservancy, the project contractor(s), or both would prepare and implement traffic control plans for construction activities that may affect road right-of-way. The traffic control plans would follow standards of the agency responsible for the affected roadway and would be signed by a professional engineer. Measures typically used in traffic control plans include advertising of planned lane closures, warning signage, a flag person to direct traffic flows when needed, and methods to ensure continued access by emergency vehicles. These measures would substantially reduce any potential effects on response times and existing service. Therefore, this impact would be **less than significant**.

IMPACT 3.12-2 (Alt. 1) **Potential Need for Additional Public Services or Facilities as a Result of Increased Demand for Public Services. (CEQA 1–3; TRPA 1, 2, 4, 5)** *Alternative 1 would create additional recreation facilities and could attract additional visitors to the study area. Therefore, it could increase the demand for fire protection, police, and animal control services. However, Alternative 1 is not expected to attract enough visitors to require a substantial increase in fire protection, police protection, or animal control services or facilities. Therefore, this impact would be* ***less than significant****.*

Features of Alternative 1 that might attract additional visitors would include kiosks, interconnected bicycle paths, pedestrian trails, boardwalks, a bridge over the Upper Truckee River, and observation platforms and viewpoints. (The proposed bridge and boardwalk over the Upper Truckee River would be a new public-access element in the study area.)

The proposed public access and recreational facilities would be similar and related to existing uses. The study area already includes user-created trails and attracts visitors to the site and the beach. Some of these features would reduce the effects of existing uses on natural resources by directing use to less environmentally sensitive locations, rather than support substantial additional use. Therefore, an increase in the number of visitors would not be substantial; the resulting increase in demand for public services would also not be substantial, and would not create the need for additional services or new facilities.

SLTFD foresees no added fire protection concerns with Alternative 1, including fire protection service to the proposed visitor centers (Zachau, pers. comm., 2007).

Therefore, this impact would be **less than significant**.

Alternative 2: New Channel—West Meadow (Minimum Recreation Infrastructure)

IMPACT 3.12-1 (Alt. 2) **Potential for Longer Emergency-Vehicle Response Times Caused by Roadway Obstruction during Construction. (CEQA 2, 3; TRPA 1, 2)** *Implementation of Alternative 2 could obstruct roadways in the project vicinity, and thus could slow or stop emergency vehicles. However, as described in Environmental Commitment 12, the Conservancy, the project contractor(s), or both would prepare and implement traffic control plans for construction activities that may affect road right-of-way. Therefore, this impact would be* ***less than significant****.*

Impact 3.12-1 (Alt. 2) would be similar to Impact 3.12-1 (Alt. 1). Although slightly smaller in scale than Alternative 1, construction of Alternative 2 would have similar effects on roadways, and thus could slow or stop emergency vehicles. For the same reasons as described above, this impact would be **less than significant**.

IMPACT 3.12-2 (Alt. 2) **Potential Need for Additional Public Services or Facilities as a Result of Increased Demand for Public Services. (CEQA 1–3; TRPA 1, 2, 4, 5)** *Alternative 2 would create additional recreation facilities and could attract additional visitors to the study area. Therefore, it could increase the demand for fire protection, police, and animal control services. However, Alternative 2 is not expected to attract enough visitors to require a significant increase in fire protection, police protection, or animal control services or facilities. Therefore, this impact would be* ***less than significant****.*

This impact would be similar to Impact 3.12-2 (Alt. 1), but smaller in magnitude because Alternative 2 would add fewer recreation facilities to the study area. For the same reasons as described for Alternative 1 above, this impact would be **less than significant**.

Alternative 3: Middle Marsh Corridor (Moderate Recreation Infrastructure)

IMPACT 3.12-1 (Alt. 3) **Potential for Longer Emergency-Vehicle Response Times Caused by Roadway Obstruction during Construction. (CEQA 2, 3; TRPA 1, 2)** *Implementation of Alternative 3 could obstruct roadways in the project vicinity, and thus could slow or stop emergency vehicles. However, as described in Environmental Commitment 12, the Conservancy, the project contractor(s), or both would prepare and implement traffic control plans for construction activities that may affect road right-of-way. Therefore, this impact would be* ***less than significant****.*

Impact 3.12-1 (Alt. 3) would be similar to Impact 3.12-1 (Alt. 1). Although slightly smaller in scale than Alternative 1, construction of Alternative 3 would have similar effects on roadways, and thus could slow or stop emergency vehicles. For the same reasons as described above, this impact would be **less than significant**.

IMPACT 3.12-2 (Alt. 3) **Potential Need for Additional Public Services or Facilities as a Result of Increased Demand for Public Services. (CEQA 1–3; TRPA 1, 2, 4, 5)** *Alternative 2 would create additional recreation facilities and could attract additional visitors to the study area. Therefore, it could increase the demand for fire protection, police, and animal control services. However, Alternative 3 is not expected to attract enough visitors to require a significant increase in fire protection, police protection, or animal control services or facilities. Therefore, this impact would be* ***less than significant****.*

This impact would be similar to Impact 3.12-2 (Alt. 1), but smaller in magnitude because Alternative 3 would add fewer recreation facilities to the study area. For the same reasons as described for Alternative 1 above, this impact would be **less than significant**.

Alternative 4: Inset Floodplain (Moderate Recreation Infrastructure)

IMPACT 3.12-1 (Alt. 4) **Potential for Longer Emergency-Vehicle Response Times Caused by Roadway Obstruction during Construction. (CEQA 2, 3; TRPA 1, 2)** *Implementation of Alternative 4 could obstruct roadways in the project vicinity, and thus could slow or stop emergency vehicles. However, as described in Environmental Commitment 12, the Conservancy, the project contractor(s), or both would prepare and implement traffic control plans for construction activities that may affect road right-of-way. Therefore, this impact would be* ***less than significant****.*

Impact 3.12-1 (Alt. 4) would be similar to Impact 3.12-1 (Alt. 1). Although slightly smaller in scale than Alternative 1, construction of Alternative 4 would have similar effects on roadways, and thus could slow or stop emergency vehicles. For the same reasons as described above, this impact would be **less than significant**.

IMPACT 3.12-2 (Alt. 4) **Potential Need for Additional Public Services or Facilities as a Result of Increased Demand for Public Services. (CEQA 1–3; TRPA 1, 2, 4, 5)** *Alternative 4 would create additional recreation facilities and could attract additional visitors to the study area. Therefore, it could increase the demand for fire protection, police, and animal control services. However, Alternative 4 is not expected to attract enough visitors to require a significant increase in fire protection, police protection, or animal control services or facilities. Therefore, this impact would be* ***less than significant****.*

This impact would be similar to Impact 3.12-2 (Alt. 1), but smaller in magnitude because Alternative 4 would add fewer recreation facilities to the study area. For the same reasons as described for Alternative 1 above, this impact would be **less than significant**.

Alternative 5: No-Project/No-Action

IMPACT 3.12-1 (Alt. 5) **Potential for Longer Emergency-Vehicle Response Times Caused by Roadway Obstruction during Construction. (CEQA 2, 3; TRPA 1, 2)** *Because no construction activities would occur, no roadways in the project vicinity would be obstructed, resulting in no effect on emergency response.* ***No impact*** *would occur.*

Alternative 5 would not result in any construction activities in the study area. As a result, it would not obstruct roadways in the project vicinity. Therefore, this alternative would not slow or stop emergency vehicles, resulting in no effect on emergency-response times. **No impact** would occur.

IMPACT 3.12-2 (Alt. 5) **Potential Need for Additional Public Services or Facilities as a Result of Increased Demand for Public Services. (CEQA 1–3; TRPA 1, 2, 4, 5)** *Because no additional recreation facilities would be created, no additional visitors would be attracted to the study area, resulting in no effect on demand for fire protection, police, and animal control services.* ***No impact*** *would occur.*

Alternative 5 would not create additional recreation facilities in the study area. Therefore, this alternative would not attract additional visitors to the study area. As a result, it would not cause the demand for fire protection, police, and animal control services to increase. **No impact** would occur.

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3.13 RECREATION

This section summarizes the regulations that address recreation in the study area, describes existing recreation facilities and uses in the project vicinity, presents an analysis of potential impacts of Alternatives 1–5 on those facilities and uses, and identifies mitigation measures for those impacts determined to be significant. Cumulative recreation impacts are addressed in Section 3.18, "Cumulative Impacts." Consistency with TRPA goals and policies is presented in Section 3.10, "Land Use," Table 3.10-1. The project's effects on thresholds are described in Section 4.5, "Consequences for Environmental Threshold Carrying Capacities."

3.13.1 AFFECTED ENVIRONMENT

REGULATORY SETTING

Federal

No federal plans, policies, ordinances, laws, or regulations specific to recreation are applicable.

State

The California State Lands Commission (CSLC) regulates an established public-trust easement for navigable waterways and for lateral access between the high and low-water lines along navigable waterways. The regulation of this public-trust easement is described in detail in Chapter 5, "Compliance, Consultation, and Coordination."

Tahoe Regional Planning Agency

Goals and Policies

The Goals and Policies portion of the Regional Plan (TRPA 2006) establishes an overall framework for development and environmental conservation in the Lake Tahoe region. Chapter V (Recreation Element) of TRPA's Goals and Policies consists of three subelements: dispersed recreation, developed recreation, and urban recreation. Existing and proposed recreation activities in the study area are dispersed in nature; however, under the various alternatives, these activities would shift from dispersed closer to developed recreation when viewed within the context of the Recreation Opportunity Spectrum (an organizing concept that relates the level of recreation infrastructure with their common activities). Dispersed recreation involves outdoor recreation activities that are not concentrated at a specific facility location, but are dispersed around the study area, such as hiking, jogging, primitive camping, nature study, fishing, cross-country skiing, rafting/kayaking, and swimming. The following goals related to dispersed recreation are applicable to existing and proposed recreation in the study area:

- **Goal 1:** Encourage opportunities for dispersed recreation when consistent with environmental values and protection of the natural resources.
- **Goal 2:** Provide high-quality recreational opportunities.

The following goals related to developed recreation are applicable to existing and proposed recreation in the study area:

- **Goal 1:** Provide a fair share of the total basin capacity for outdoor recreation.
- **Goal 2:** Provide for the appropriate type, location, and rate of development of outdoor recreational uses.
- **Goal 3:** Protect natural resources from overuse and rectify incompatibility between uses.

- **Goal 4:** Provide for the efficient use of outdoor recreation resources.

Code of Ordinances

As described in Chapter 50 of the TRPA Code of Ordinances, TRPA regulates the rate of expansion and the distribution of recreation use in the Lake Tahoe region by identifying targets for recreation use and regulating development to maintain them. Targets measured in persons-at-one-time (PAOTs) have been identified for outdoor recreation at overnight, summer day-use, and winter day-use facilities.

TRPA allocates PAOTs to plan area statements (PASs) and community plans and to a regional pool in which PAOTs are held in reserve for overnight and summer day-use facilities (Shaw, pers. comm., 2008). If a proposed expansion of recreation facilities meets TRPA criteria, the project will be approved, and the numerical target for PAOTs necessary to accommodate the increased level of activity associated with the project will be set for the project as part of the TRPA permitting process. The PAOTs required for the permitted activity will be allocated from the PAOTs designated for the relevant PAS, community plan, or reserve pool. Through this process, TRPA essentially grants permission for the project to increase use of the recreational facility by a particular number of people. PAOT allocation allows agencies to quantitatively measure development of recreation facilities and to determine how well that development is keeping pace with pressures for other urban development, such as residential and commercial development.

A PAOT allocation would be necessary only if recreation capacity were increasing or if new facilities were created that would be likely to attract new visitors to the Lake Tahoe region. Dispersed outdoor recreation activities—hiking, jogging, primitive camping, nature study, fishing, cross-country skiing, rafting/kayaking, and swimming—are not subject to PAOT allocations because these activities do not constitute "additional recreation" as defined in the TRPA Code of Ordinances.

Unlike dispersed recreation, developed recreation facilities are likely to increase recreation capacity and require TRPA to allocate PAOTs. Developed recreation involves activities enhanced by the use of built facilities, such as campgrounds, marinas, and ski resorts. Some of the recreation uses proposed under the action alternatives are classified as day-use facilities and would require day-use PAOT allocation from either the PAS in which they are located or from the regional pool where PAOTs are not available from within the PAS.

Lake Tahoe Bicycle and Pedestrian Plan

The *Lake Tahoe Bicycle and Pedestrian Plan* (BPP) (TRPA 2010) was prepared by TRPA and the Tahoe Metropolitan Planning Organization as a guide for planning, constructing, and maintaining a regional network of bicycle paths and pedestrian trails, and supporting facilities and programs throughout the Lake Tahoe region. The plan contains goals and policies, an analysis of demand (including a model for estimating bicycle path use along major transportation corridors), conceptual alignments for various areas throughout the Tahoe Basin, a prioritized list of projects, and conceptual construction cost estimates.

The following goals and policies of the BPP apply to the project:

Goal 1. Complete a bicycle and pedestrian network that provides convenient access to Basin destinations and destinations outside the Basin.

- **Policy 1.1.** To the extent possible, accommodate all users, encompassing a wide range of abilities and travel objectives, in the bicycle and pedestrian network.

Goal 3. Provide environmental, economic, and social benefits to the region through increased bicycling and walking.

- **Policy 3.2.** Seek partnerships and opportunities for environmental restoration in conjunction with Bicycle and Pedestrian Plan facility implementation.

- **Policy 3.3.** Include design features, landscaping, signage, or barriers on shared-use paths through sensitive environmental areas to discourage pets and humans from leaving the path.

City of South Lake Tahoe

Although the project area is located within the city limits of South Lake Tahoe, as a state agency, the Conservancy is not subject to the CSLT's municipal code. Nonetheless, the Conservancy's management of the study area conforms to the CSLT's municipal code, and the Conservancy also contracts with the CSLT to provide security patrols within the study area and to enforce CSLT regulations for parks. Regulations governing activities in public parks and beaches are contained in Chapter 18A of the municipal code. The following sections of the CSLT code require dogs to be on leashes:

- **Chapter 6, Animal Control. Article IV. General Regulations—Dog Controls, Section 6-22: Stray dogs generally.** It shall be unlawful for any person owning or having charge of any stray dog, as defined herein [not under restraint by a leash], to cause, permit or allow such dogs, whether licensed or unlicensed, to stray, wander or otherwise be at loose or at large upon any public street, alley, park, beach, way or other public property within the city, or upon any private property within the city other than private property of which the owner of the dog has ownership or control, unless such dog is kept securely confined by a leash, rope, cord or chain not over 10 feet in length held by some person or securely attached to some stationary object.

- **Chapter 18A, Parks and Beaches. Article II. Protection of Property, Section 18A-11: Use of park and beaches regulated.** It shall be unlawful and an infraction for any person to do any of the following in any park:

  J. Domestic Animals. Have been responsible for the entry of a dog or other domestic animal into areas other automobile parking concourses and walks immediately adjacent thereto, and in such other areas as may be clearly marked by signs bearing the words "Domestic Animals Permitted in This Area". Nothing herein shall be construed as permitting the running of dogs at large. All dogs in those areas where such animals are permitted shall be restrained at all times on adequate leashes not greater than six feet in length.

Unless specifically permitted, the CSLT's municipal code also prohibits camping in public spaces, the use of fireworks or firearms within the city limits, and the operation of off-road vehicles on public property. None of these activities are permitted within the study area. The following sections of the municipal code address these activities:

- **Chapter 18A, Parks and Beaches. Article II. Protection of Property, Section 18A-6: Operating vehicles—Generally.** No person shall drive or operate any vehicles, including bicycles, in a park other than on a paved vehicular road or path provided for that purpose; provided, however, that a bicyclist shall be permitted to wheel or push a bicycle in any area in which pedestrian traffic is permitted. (Ord. 174 §1; Ord. 834 §1)

- **Chapter 18A, Parks and Beaches. Article II. Protection of Property, Section 18A-11: Use of park and beaches regulated.** It shall be unlawful and an infraction for any person to do any of the following in any park:

  A. Hunting and Firearms. Hunt, trap or pursue wildlife at any time. No person shall use, carry, or possess firearms of any descriptions, or air-rifles, spring-guns, bow and arrows (except in areas which may be set aside as archery ranges), slings or any other forms of weapons potentially inimical to wildlife and dangerous to human safety, or any instrument that can be loaded with and fire blank cartridges, or any kind of trapping device. Shooting into park areas from beyond park boundaries is forbidden.

B. Camping. Camping in other than designated area. No person shall camp in any public space, public street, or private property without evidence of consent of the property owner, except in areas specifically designated for such use. "Camp" shall mean residing in or using a park or other public space for living accommodation purposes, such as sleeping activities, or making preparations to sleep (including the laying down of bedding for the purpose of sleeping), or storing personal belongings, (including but not limited to clothing, sleeping bags, bedrolls, blankets, sheets, luggage, backpacks, kitchen utensils, cookware, and regularly cooking meals, or living in a parked vehicle. These activities constitute camping when it reasonably appears, in light of all the circumstances, that a person(s) is using a park or other public space as a living accommodation regardless of his/her intent or the nature of any other activities in which he/she might also be engaging.

For purposes of this section, the following terms shall have the meaning below prescribed:

1. "Public space" means any public park, public beach or any open space area including meadows and forested areas within the city limits.

2. "Public street" means any public right-of-way or public sidewalk including public benches.

3. "Private property" means any property owned by a private individual or entity.

F. Fireworks and Explosives. Bought, or have in his possession, or set off or otherwise cause to explode or discharge or burn, any firecrackers, torpedo, rocket, or other fireworks or explosives of flammable material, or discharge them or throw them into any such area from land or highway adjacent thereto. This prohibition includes any substance, compound, mixture, or article that in conjunction with any other substance or compound would be dangerous from any of the foregoing standpoints.

The municipal code also prohibits entering areas marked as closed:

- **Chapter 18A, Parks and Beaches. Article III. Use Regulations, Section 18A-11: Use of park and beaches regulated.** It shall be unlawful and an infraction for any person to do any of the following in any park:

  G. Closed Areas. Enter an area posted as "Closed to the Public", nor shall any person use, or abet the use of an area in violation of posted notices.

- **Chapter 18A, Parks and Beaches. Article IV. Operating Policy, Section 18A-13: Closed areas.** Any section or part of any park may be declared closed to the public by the director at any time and for any interval of time, either temporarily or at regular and stated intervals (daily or otherwise) and either entirely or merely to certain uses, as the director shall find reasonably necessary. (Ord. 174 §1; Ord. 834 §1)

ENVIRONMENTAL SETTING

Recreation Facilities and Opportunities in the Study Area

Overview of Recreation Use

Recreation within the study area is dispersed and does not currently include developed facilities, except for one trail, constructed as part of the Lower West Side Wetland Restoration Project in 2001. With the exception of this trail, which connects East Venice Drive to Cove East Beach, the study area does not contain officially designated trails or other facilities for recreation use. However, a network of user-created trails provides access to the study area from adjoining neighborhoods. Similarly, user-created boat take-outs exist along the Upper Truckee River. The study area is commonly used for walking, running, beach activities, bicycling, wildlife viewing, fishing, and dog walking. These uses occur primarily during late spring, summer, and early fall, and in that period are greatest

during summer weekends and holidays. During summer weekends and holidays, use of the study area can exceed 100 to 300 visitors per day, but during other days, the number of visitors is much smaller. Winter outdoor recreation use also includes cross-country skiing, snow play, and snow shoeing. Most visitors use the portion of the study area west of the Upper Truckee River. Thus, the eastern portion of the study area provides dispersed recreation opportunities characterized by solitude and a lack of formal facilities or infrastructure. Recreational use of off-road vehicles is prohibited in the study area.

A report prepared for the Conservancy summarizing findings of the Upper Truckee Marsh Land Steward program (Rozance 2007) indicates that running, walking, and dog walking are the most popular forms of recreation in the study area, followed by beach use and bicycle riding. The policy for dog walking within the study area is for dogs to be on leashes, except during the waterfowl breeding season (May 1 through July 31), when the area east of the Upper Truckee River is closed to dogs. The LWS portion of the study area remains open to leashed dogs during waterfowl breeding season. Although many dog owners do not comply with this policy, the Conservancy has engaged in outreach and education efforts to ensure that dog owners are aware of leash laws in the area.

There are several resource management issues associated with existing recreational use of the study area. These issues include degradation of the banks of the Upper Truckee River and Trout Creek, disturbance of beach and dune habitat occupied by Tahoe yellow cress, and disruption of wildlife use of the study area. These resource management issues are discussed further in Section 3.4, "Biological Resources: Vegetation and Wildlife."

Beaches and the Sailing Lagoon

The beaches within the study area (i.e., Cove East Beach, Barton Beach, and East Barton Beach) have only a limited area for recreational activities compared with other public beaches on the West Shore south of Emerald Bay and on the South Shore (e.g., Baldwin, Kiva, Pope, and El Dorado Beaches).

Cove East Beach is located in the western portion of the study area adjacent to and east of the Tahoe Keys Marina (Exhibit 1-2). The multipurpose trail on the Lower West Side Wetland Restoration Project site begins at the end of the East Venice Drive cul-de-sac, heads north toward Lake Tahoe, and loops around the perimeter of Cove East Beach. From this trail, recreationists can access the lake, Cove East Beach, and the Sailing Lagoon adjacent to the Tahoe Keys Marina. Users also access the beach by boat. Although the multipurpose trail and trash receptacles are the only facilities, Cove East Beach is considered a developed beach. Cove East Beach is accessible without an entrance fee. Visitors driving cars to the beach and study area typically park on East Venice Drive.

The Sailing Lagoon has approximately 144,000 square feet of water surface area and is connected to the Tahoe Keys Marina. It is used for small-craft sailing and recreational fishing.

Barton Beach is an undeveloped beach between the mouth of the Upper Truckee River and East Barton Beach. The beach is accessed from the east by way of East Barton Beach, as well as by boat. There are no facilities on the beach, but there is a user-created trail south of the beach that runs parallel to it.

A user-created network of trails provides access to East Barton Beach. Some trails have been established across private property; however, it is possible to access East Barton Beach via trails located on public property owned by the State of California and managed by the Conservancy. These trails are accessed via connections to the Al Tahoe and Highland Woods residential subdivisions adjacent to this portion of the marsh. The closest access point to East Barton Beach that is entirely on public land is at the end of San Francisco Avenue in the Al Tahoe neighborhood.

Approximately half of East Barton Beach is excluded from public access by a fenced exclosure that is maintained for the protection of Tahoe yellow cress. However, outside of the exclosure, a network of user-created trails exists in this area.

River and Marsh

The Upper Truckee River is used seasonally, primarily during spring runoff periods and summer, for nonmotorized watercraft activities, including kayaking, canoeing, tubing, and boat fishing. Other river uses in the warmer months include swimming, shore fishing, and relaxing along the banks of the river. There are no formal or designated access points to the river within the study area. Recreationists most often access this section of the river by entering the river at various locations upstream of the U.S. 50 bridge, such as floating the river from Elks Club Drive. The East Venice Drive cul-de-sac is used as a user-created put in/take out point for kayaks, canoes, and tubes.

A user-created trail network provides access to the marsh area from the Al Tahoe neighborhood to the east and Tahoe Keys to the west. There are several access points for the trail system from these neighborhoods, many of which are on private property. Recreational activities in this portion of the study area include dog walking, hiking, jogging, and nature viewing.

During the late fall, winter, and spring when the snow reaches sufficient depths, visitors to the marsh travel on snowshoes or cross-country skis. CSLT regulations, discussed above, prohibit the use of snowmobiles within the marsh.

Dogs are allowed in the publicly owned portions of the study area, but are required by CSLT ordinances to be leashed. Signage encouraging users to keep dogs on leashes, including mention of relevant ordinances, is posted at various official entrances to the site, including those located at Cove East Beach, Tahoe Island/Sky Meadows, and Al Tahoe. "Mutt mitts" for dog-waste collection and trash cans are also located at these locations. Unleashed dogs are a recognized issue for recreation use management in the study area.

Recreation Facilities and Opportunities in the Vicinity of the Study Area

Recreation opportunities in the vicinity of the study area (i.e., in the southwestern portion of the Tahoe Basin) are abundant and diverse. These activities include those associated with the lake's open water (e.g., swimming, boating, use of personal watercraft, fishing), shoreline (e.g., sunbathing, camping, bicycling, sightseeing), river recreation (e.g., fishing, paddling, swimming), and the terrain surrounding the lake (e.g., hiking, wilderness camping, mountain biking, skiing, snowboarding). A substantial amount of public land is available for outdoor recreation in the vicinity, including National Forest System land, state parks, and other state and local-government lands.

Parks, Beaches, and Campgrounds

Several parks, beaches, and campgrounds exist near the study area, in the southwestern portion of the Tahoe Basin. South Shore beaches are listed in Table 3.13-1. Regan Beach is adjacent to the Al Tahoe neighborhood and east of the study area. This beach includes parking, lake access, a snack bar, picnic area, volleyball court, and a grassy area for picnicking and lounging.

The El Dorado Recreation Area is a CSLT recreation facility that includes El Dorado Beach and a boat ramp north of U.S. 50 and a camping area south of U.S. 50. A Class I bicycle path is adjacent to El Dorado Beach, providing bicyclists and pedestrians from surrounding areas a convenient way to access this beach. Farther south, off Al Tahoe Boulevard, is Bijou Community Park and an area designated by the CSLT for use as a dog park.

Pope Beach is a U.S. Forest Service (USFS) facility located west of the Tahoe Keys subdivision and has parking, picnic areas, and beach access. Farther west are other USFS facilities: Kiva Beach, Camp Richardson, and Baldwin Beach. Camp Richardson is a fully developed campground with beach access, camping, and commercial venues. A Class I bicycle path serves the area from Pope Beach to Baldwin Beach from the 15th Street bicycle path and bridge on the westernmost boundary of the incorporated City limits.

Table 3.13-1
Public Beaches in the Study Area Vicinity

Name	Owner	Facilities
Baldwin Beach	USFS	Restrooms, picnic tables, and barbeques
Camp Richardson	USFS*	Restrooms, picnic area, playground, marina, camping, store, and restaurants
El Dorado Beach	CSLT	Restrooms, picnic area, boat launch and dock, swim area, camping, and kayak and water toy concession
Emerald Bay	CSP	Restrooms, picnic area, pier, and camping
Fallen Leaf Lake	USFS	Picnic tables and barbeques
Kiva Beach	USFS	Restrooms, picnic tables, and barbeques
Nevada Beach	USFS	Restrooms, picnic tables, and barbeques
Pope Beach	USFS	Restrooms, picnic tables, and barbeques
Regan Beach	CSLT	Restrooms, picnic tables, barbeques, snack bar, and volleyball court
Zephyr Cove	USFS*	Restrooms, picnic area, pier, store, and restaurants

*Owned by USFS and operated by a contracted concessionaire
Sources: USFS 2011, CSLT 2011a,b

Open Space and Trails

Abundant open space exists in the project vicinity, primarily on USFS land southwest of the study area in the vicinity of Fallen Leaf Lake and on the south side of Pioneer Trail. There are numerous hiking trails and paths for bicycling located throughout the USFS lands. Another publicly-owned open space area with a trail system is located between the Upper Truckee River and Trout Creek, south of Pioneer Trail.

A system of bicycle paths serves the perimeter of the study area. On the east side of the study area, a Class II bicycle lane on Lakeview Avenue connects to a Class III bicycle route that follows Bellevue Avenue and El Dorado Avenue, ending at Oakland Avenue. The west side of the study area is served by a Class II bicycle lane on Tahoe Keys Boulevard and a Class II bicycle route on East Venice Drive. On the south side of the study area, a combination of Class I bicycle path and Class III bicycle route segments connects to El Dorado Beach to the east and the "wye" (the intersection of U.S. 50 and Highway 89) and Camp Richardson to the west. These path segments south of the study area are in the "South Y to Al Tahoe" corridor, which is one of the 22 major corridors for bicycle and pedestrian travel in the Tahoe Basin identified in the BPP (TRPA 2010).

Tahoe Keys Marina

Tahoe Keys Marina is a privately-owned, full-service marina and boat-launching facility adjacent to the study area. The Marina is the largest marina on the lake and is open year-round, offering indoor and outdoor, wet and dry dock storage with over 280 slips, including a double inland concrete launch ramp (TRPA 2002). The launch ramp is open to the public for a launch fee. The Marina also provides a restaurant, chandlery/mini-mart, restrooms, gas dock, a certified Marine Service Department, and boat-lifting facilities. In addition to boating-related services, the Tahoe Keys Marina offers other recreational services through the Sport Fishing and Charter Fleet. These services include balloon rides, fishing and sailing charters, and sailing lessons (TRPA 2002). During the summer, boaters using the launch ramp park their vehicles and trailers both inside the marina parking lot and on the street along East Venice Drive. The channel connecting the Tahoe Keys Marina to the lake is along the northeastern boundary of the study area. The Sailing Lagoon is currently connected to this channel. The Tahoe Keys Master Plan (2002) proposes to expand parking and boat storage facilities, relocate smaller boat slips, and upgrade channel markers, signage, and restraints.

3.13.2 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

CEQA Criteria

Under CEQA, an alternative was determined to result in a significant effect related to recreation if it would:

- increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated (CEQA 1),
- include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment (CEQA 2), or
- preclude existing recreation activities within the project study area (CEQA 3).

These criteria are based on the checklist presented in Appendix G of the State CEQA Guidelines.

NEPA Criteria

An environmental document prepared to comply with NEPA must consider the context and intensity of the environmental effects that would be caused by or result from the proposed action. Under NEPA, the significance of an effect is used solely to determine whether an EIS must be prepared. The factors that are taken into account under NEPA to determine the significance of an action in terms of the context and the intensity of its effects are encompassed by the CEQA criteria used for this analysis.

TRPA Criteria

Based on TRPA's Initial Environmental Checklist, an alternative would result in significant recreation impact if it would:

- result in conflicts with regional PAOT objectives (TRPA 1);
- result in conflicts between recreation uses, either existing or proposed (TRPA 2); or
- result in a decrease or loss of public access to any lake, waterway, or public lands (TRPA 3).

In development of mitigation measures for significant impacts of the project, effects on environmental threshold carrying capacities (thresholds) of the Tahoe Regional Planning Compact were considered. The project's effects on thresholds are described in Section 4.5, "Consequences for Environmental Threshold Carrying Capacities."

METHODS AND ASSUMPTIONS

The alternatives could cause short-term and long-term effects on recreation resources and activities. Short term construction activities would involve loading and unloading of haul trucks, operation of earth-moving equipment, and other types of noise and disturbance that could reduce public access or recreational opportunities during the construction season (May 1–October 15) over a four-year construction schedule.

Long-term effects on recreation resources and activities would result from providing infrastructure that changes the spectrum of recreation settings from dispersed to more developed and from altering accessibility throughout the site to varying degrees, depending on the alternative, which may lead to an increase in visitors within the project study area. As described in Chapter 2, "Project Alternatives," the action alternatives were developed to balance recreation and public access with ecosystem restoration and habitat protection. This balance would be attained by providing

well-designed public access and recreation facilities in nonsensitive areas and habitat protective elements and environmental education to direct use away from sensitive areas.

The evaluation of long-term effects of the alternatives must consider the potential increase of recreational visitors to the study area. The study area would not be advertised by the Conservancy as a destination and would include no commercial activities. However, recreation use could increase proportionally to the change in the amount and connectivity of public access- and recreation-related infrastructure, because the proposed infrastructure would affect (increase) the accessibility of the project study area to recreational users. A record of precise counts of visitors does not exist for the study area, although the Conservancy has a comprehensive qualitative understanding of recreation use from staff observations and the activities of a site steward during summer months. Without a quantified inventory record of visitors, it is not feasible to develop precise quantitative estimates of changes in recreation users for each alternative. However, qualitative assessment is feasible based on the relative degree of proposed recreation and access infrastructure for each alternative. Based on this qualitative assessment of the alternatives relative to each other, implementing Alternative 2 (minimal recreation infrastructure) is expected to result in the least increase in visitation. Implementing Alternative 1 (maximum recreation infrastructure) would result in the greatest increase in visitation, and implementing Alternative 3 or 4 (moderate recreation infrastructure) would result in an intermediate increase, between Alternatives 1 and 2 in magnitude, but negligibly different between Alternatives 3 and 4. The potential increase in the number of visitors is not considered to be substantial enough to create new or unmitigable impacts on recreation resources (impacts on other resource areas notwithstanding) for the following reasons:

(1) The recreation and public access elements of the alternatives are related to reducing the impacts on natural resources of the existing use of the study area.

(2) The most popular recreational uses of the study area are dispersed outdoor recreation. The Tahoe Basin has an abundance of locations where people can engage in the same recreation activities on public lands; thus, there is not a substantial unmet demand for such recreational opportunities.

(3) Even though the action alternatives would move recreational uses from dispersed toward developed outdoor recreation (with Alternative 1 having the most change), the recreation uses proposed are not categorically fully-developed facilities (e.g., campgrounds, marinas), and the increase in the number of visitors would not be similar to the increase associated with those uses.

(4) Adjacent neighborhoods account for a substantial portion of visitors to the study area, and implementing the project would not alter the number of residents in adjacent neighborhoods or substantially alter access to the study area from adjacent neighborhoods.

Nonetheless, several aspects of the proposed public access infrastructure could increase the number of visitors to the study area. For example, several existing trail surfaces may be modified with pavement, boardwalk, or other hardscape materials that would result in a greater level of accessibility to a broader spectrum of potential users and therefore could increase trail use and thus visitation to the study area (in a manner analogous to the "maintenance" factor in the Tahoe Bike Trail User Model [LSC Transportation Consultants 2009]). Information related to the existing and anticipated numbers of visitors is provided in Section 3.16, "Transportation, Parking, and Circulation."

Alternative 1: Channel Aggradation and Narrowing (Maximum Recreation Infrastructure)

IMPACT 3.13-1 (Alt. 1) **Short-Term Increase in Use of Surrounding Neighborhood and Regional Parks and Recreation Facilities during Construction. (CEQA 1)** *Construction activities associated with Alternative 1 would require portions of the study area to be closed temporarily at various times during the four-year-long construction period. As described in Environmental Commitment 13, the Conservancy would prepare a Public Outreach Plan. The plan would identify strategies to inform the general public and partnering agencies of access restrictions and their anticipated timelines, alternate locations for passive recreation activities, and site access information. Recreation activities in portions of the study area would be temporarily disrupted as a result of construction. However, all of those recreation activities could be accommodated on the surrounding beaches, parks, and public open spaces without causing or accelerating any substantial physical deterioration of the existing facilities. Therefore, construction of Alternative 1 is not expected to increase the use of surrounding parks or other recreation facilities enough to either result in substantial physical deterioration of those facilities or accelerate such deterioration. This impact would be* ***less than significant****.*

Construction activities associated with Alternative 1 would require short-term closure of portions of the study area at various times. Although the study area is not considered an existing park or recreation facility, dispersed recreation activities do occur throughout the study area, and those activities would be displaced during project construction. Although there is a four-year-long construction schedule, construction phasing would be designed so that recreation access would be made available where and when safe access is available. As described in Environmental Commitment (EC) 13, "Prepare and Implement a Public Outreach Plan" (Table 2-6), the Conservancy would prepare a Public Outreach Plan that identifies strategies to inform the general public and partnering agencies of access restrictions and their anticipated timelines, alternate locations for passive recreation activities, and site access information. Communication of this information may be through signage at access points, messages posted to the Conservancy website, public service announcements, and news articles in the local and regional newspapers.

The study area is near other public beaches on the south and west shores of Lake Tahoe, and is close to public lands that provide similar dispersed recreation opportunities (see "Environmental Setting" in Section 3.13.1). Data collected by the Conservancy's Upper Truckee Marsh Land Steward program (UTMLS) indicate that the primary recreational uses of the marsh are walking, running, dog walking, beach use, and bicycle riding (Rozance 2007). All of these uses can be accommodated on the surrounding beaches, parks, and public open spaces. Data collected by the Conservancy indicate that during peak use (i.e., summer weekends and holidays), 100 to 300 people per day have visited the marsh, but that the number of visitors is much less at other times. It is reasonable to expect that visitors would use several alternative locations if the marsh were not available during construction of Alternative 1; thus, only a small increase in users would be experienced at surrounding facilities and only during the construction period. Given the low-impact nature of dispersed recreation activities and the small number of recreationists who would be displaced during construction, it is not anticipated that this would cause or accelerate any substantial physical deterioration of surrounding facilities. Because the Conservancy will provide outreach and recreation access information for the study area and because alternate locations for dispersed recreation can support existing study area recreationists during construction, this impact would be **less than significant**.

IMPACT 3.13-2 (Alt. 1) **Short-Term Construction Impacts of Recreation Facilities That May Have an Adverse Physical Effect on the Environment. (CEQA 2)** *The short-term impacts of constructing the project's recreation facilities are analyzed in the various resource sections of this DEIR/DEIS/DEIS. Alternative 1 has short-term construction impacts on wildlife, and water quality, as discussed in Section 3.4, "Biological Resources: Vegetation and Wildlife and Section 3.9, "Geomorphology and Water Quality." Therefore, the physical effect of constructing recreation facilities under Alternative 1 would be* ***potentially significant****.*

The short-term impacts of constructing the project's recreation facilities are analyzed in the various resource sections of this DEIR/DEIS/DEIS. Construction of recreational facilities in Alternative 1 has short-term construction impacts on wildlife and water quality, as discussed in Section 3.4, "Biological Resources: Vegetation and Wildlife and Section 3.9, "Geomorphology and Water Quality." Environmental Commitments (Table 2-6) and mitigation measures have been established to lessen these impacts to the extent feasible. These impacts would be **potentially significant**.

Beyond Environmental Commitments described in Table 2-6, the following mitigation measures for the relevant impacts would be implemented:

Mitigation Measure 3.4-8A (Alt. 1): Conduct Preconstruction Surveys for Nesting Special-Status Birds (Yellow Warbler, Willow Flycatcher, Waterfowl, and Long-Eared Owl) and Implement Buffers If Necessary.

Described in Section 3.4.

Mitigation Measure 3.4-8B (Alt. 1): Conduct Preconstruction Surveys for Special-Status Bats, Avoid Removal of Important Roosts, and Implement a Limited Operating Period If Necessary**.**

Described in Section 3.4.

Significance after Mitigation: With implementation of the measures described above, the short term construction impacts of recreation facilities on the environment would be minimized; however, all impacts could not be fully mitigated. Therefore, the impact of constructing recreation facilities would be **significant and unavoidable**.

IMPACT 3.13-3 (Alt. 1) Short-Term Decrease or Loss of Public Access and Recreation Opportunities within Lakes, Waterways, or Public Land during Construction. (CEQA 3; TRPA 2, 3) *Closure of portions of the study area during construction would have a short-term effect on recreation opportunities and access to the Upper Truckee River and marsh in the study area. However, alternate opportunities for dispersed recreation are abundant in the project vicinity and elsewhere in the Tahoe Basin. Many opportunities are located near the marsh, such as at Regan Beach, at El Dorado Recreation Area, and on other public lands. The east channel of the Tahoe Keys Marina would be affected by removal of the Sailing Lagoon; however, as described in Environmental Commitments 13 and 14, the Conservancy would prepare a Public Outreach Plan and Waterway Traffic Control Plan to address boater and other recreation access conflicts. Because construction would be short-term, waterway conflicts would be managed, and multiple dispersed recreation facilities would be available in the vicinity, implementation of Alternative 1 is not expected to substantially reduce or preclude existing recreation opportunities or access to lakes, waterways, or public lands. This impact would be* ***less than significant****.*

Closure of portions of the study area including closure to boating of sections of the Upper Truckee River and restricted access in the east channel of the Tahoe Keys Marina at the Sailing Lagoon would have a short-term impact on recreation opportunities and access locally. However, because of the considerable amount of publicly-held land in the Tahoe Basin, including areas adjacent to rivers and lakes, regional recreation facilities could absorb the displacement of recreational activity from the study area. The primary recreation activities that would be temporarily displaced by construction activities for Alternative 1 would be walking, bicycling, fishing, dog walking, sunbathing, swimming, and boating; these activities would be compatible with existing recreational activities at other public lands in the Tahoe Basin. To the extent feasible and without compromising health and safety, portions of the study area could remain accessible to members of the public on a very limited basis. The accessibility of the area would vary depending on the stages of active construction, hauling of materials, and revegetation efforts that may require closure of areas until plantings are established. As described in EC 13, "Prepare and Implement a Public Outreach Plan," and EC 14, "Prepare and Implement a Waterway Traffic Control Plan for Alternatives That Affect the Sailing Lagoon" (Table 2-6), the Conservancy would prepare a

Public Outreach Plan and Water Traffic Control Plan to address safety, accessibility, and other recreation opportunities. Because the Conservancy will provide outreach and recreation access information for the study area and alternate locations for dispersed recreation can support existing study area recreationists during construction, this impact would be **less than significant**.

IMPACT 3.13-4 (Alt. 1) Long-Term Change in Use of Surrounding Neighborhood and Regional Parks and Recreation Facilities. (CEQA 1) *Implementation of Alternative 1 is not expected to increase the use of existing parks or other recreation facilities enough to either result in substantial physical deterioration of the facility or accelerate such deterioration. Once the facilities are constructed under this alternative, there would likely be an increase in the number of visitors to the study area because bridge, boardwalk, bike path, and ADA pedestrian trail improvements would attract a more diverse group of visitors. Alternative 1 would provide sufficient facilities for visitors to prevent physical deterioration of facilities surrounding the study area. Thus, the potential increase in use of the study area would not result in substantial physical deterioration of surrounding facilities. In addition, disconnecting the Sailing Lagoon from the east channel of the Tahoe Keys as proposed under Alternative 1 would not substantially affect the movement of boat traffic into and out of the marina because the channel would not be narrowed and boats could continue to move into and out of the channel. This impact would be less than significant.*

The features of Alternative 1 that would modify the Upper Truckee River, its floodplain, and the marsh (i.e., raising and reconfiguring a portion of the main channel, reconfiguring two sections of split channel, and reducing the capacity of the river mouth) would not have any substantial, long-term impacts on surrounding recreation facilities or parks.

Alternative 1 proposes the "maximum" recreation infrastructure (compared to the other alternatives), including kiosks, stabilization of an existing river boat take-out, observation platforms, bridges across the Upper Truckee River and Trout Creek, boardwalks and trails, and bicycle paths. Design of public access and recreation infrastructure under Alternative 1 focuses on maintaining existing recreation opportunities, and reducing effects of recreational use on sensitive resources. However, these improvements, including ADA trail improvements, could attract a more diverse group of visitors, and Alternative 1 moves more toward developed recreation than the other alternatives.

Although the number of visitors to the study area would likely increase as a result of the project, neither a considerable increase in visitors to the Tahoe Basin nor an associated increase in use of other existing parks and recreation facilities outside the study area would be likely because Alternative 1 proposes infrastructure to support these uses. Therefore, any increase in visitors is not expected to cause physical deterioration of surrounding recreation facilities.

Although disconnecting the Sailing Lagoon from the east channel of the Tahoe Keys could potentially affect boat traffic into and out of the marina, the effect on passage would not be substantial. Under existing conditions, the Sailing Lagoon offers boaters with small watercraft the option to use a sheltered area for boating. Additionally, the Sailing Lagoon provides a location for small boats to pull out of the marina channel to allow larger boats to pass. However, the placement of the bulkhead isolating the Sailing Lagoon would not narrow the east channel of the marina; rather, it would be 30 feet east of the existing bulkhead, so most boats could continue to pass each other in the existing channel. The east channel extends both south and west of its existing connection to the Sailing Lagoon and provides the option for boats to move out of the path of other boats in the absence of the Sailing Lagoon. Therefore, disconnecting the Sailing Lagoon from the east channel of the Tahoe Keys would not substantially affect boat traffic into and out of the marina. This impact would be **less than significant**.

IMPACT 3.13-5 (Alt. 1) **Long-Term Operation and Expansion of Recreation Facilities That May Have an Adverse Physical Effect on the Environment. (CEQA 2)** *The recreation facilities associated with Alternative 1 may result in adverse physical effects on the environment. The recreation facilities associated with Alternative 1 are designed to preserve the natural resources in the study area while providing compatible recreational opportunities, public access, and recreational infrastructure intended to reduce adverse physical effects on the environment by redirecting use from sensitive to less sensitive areas. However, the boardwalk and bridge would likely attract more visitors than the other alternatives, potentially becoming an attraction, and may lead to negative impacts on the Tahoe yellow cress population because visitors might leave the boardwalk and walk on the beach. Thus, this effect would be* ***potentially significant.***

The locations of the recreation facilities under Alternative 1 have been designed to minimize adverse physical effects on the environment by removing user-created trails in the core habitat area and focusing recreation opportunities in less sensitive areas. The proposed kiosks and parking area would be located near other compatible uses and outside of sensitive habitat areas. Other proposed recreation facilities would be located primarily along the perimeter of the study area outside of the core habitat area. In the eastern and southern portions of the study area, bicycle paths, observation areas, and signage should discourage foot and bicycle traffic in sensitive areas and thus reduce the environmental impacts of existing recreational use.

In the northern portion of the study area, however, the boardwalk and bridge included in Alternative 1 would adversely affect the population of Tahoe yellow cress, a species state listed as endangered, that occupies Barton Beach. Alternative 1 includes a proposed new multi-use trail connection across the northern end of the marsh just behind the study area's beaches with a raised boardwalk and bridge over the Upper Truckee River. The proposed bridge would be elevated sufficiently to be prominently visible from the lake. The trail link is not a major regional trail connection feature; the link is not included in the Lake Tahoe Bicycle and Pedestrian Plan (TRPA 2010). This trail would be the first and only boardwalk and bridge on the edge of the south shore of Lake Tahoe—a possible attraction in and of itself, regardless of poor connectivity to the regional trail network, because 75% of summertime Tahoe visitors engage in beach activities (TRPA 2001). This new access to Barton Beach would create negative impacts on the population of Tahoe yellow cress by disturbing habitat and trampling Tahoe yellow cress plants. The Conservancy's Tahoe yellow cress management plan for the study area includes management measures to reduce the adverse effects of recreational use and would be implemented as a component of Alternative 1, but these measures would not be sufficient to prevent a substantial effect on Tahoe yellow cress. Given the anticipated attraction of additional recreational users by this boardwalk and bridge, coupled with its co-location with a Tahoe yellow cress population and scenic lake views, this impact would be **significant**.

All feasible management measures to reduce effects on Tahoe yellow cress have been included in the Conservancy's Tahoe yellow cress management plan for the study area and would be implemented as a component of Alternative 1. Alternative designs may be able to keep a substantial number of persons on the boardwalk (e.g., a higher railing or trail elevated higher off the ground). Such design features, however, would further exacerbate the already unmitigable scenic resource impacts of the current conceptual design. It is not possible to quantify the increased visitation to the study area associated with this infrastructure, nor can the number of visitors that attempt to leave the boardwalk be determined. Because no feasible mitigation exists, this impact would remain **significant and unavoidable**.

IMPACT 3.13-6 (Alt. 1) **Long-Term Decrease or Loss of Public Access and Recreation Opportunities within Lakes, Waterways, or Public Lands. (CEQA 3; TRPA 2, 3)** *Under Alternative 1, some user-created trails would be decommissioned to redirect visitors out of the core habitat area. This change would limit access in the core area adjacent to the Upper Truckee River; however, a bridge, boardwalk, and trails would provide additional access over the river, providing a connection that was not previously available. Implementation of Alternative 1 would not substantially reduce dispersed recreation opportunities or access in the long term, but the additional infrastructure would create more developed recreation opportunities. In addition, disconnecting the Sailing Lagoon from the east channel of the Tahoe Keys as proposed under Alternative 1 would not substantially affect the movement of boat traffic into and out of the Marina. This impact would be* ***less than significant.***

Under Alternative 1, some user-created trails would be decommissioned (see Exhibit 3.6-2 for their locations) to redirect visitors out of the core habitat area. This change would limit access in the core habitat area adjacent to the Upper Truckee River. The study area would continue to provide opportunities for dispersed recreation, and, a bridge, boardwalk, and trails would provide additional access over the river, providing a connection that was not previously available. Furthermore, amenities provided under Alternative 1—kiosks, parking, stabilized existing boat take-out, viewpoints, observation areas, improved trail and bicycle path surfaces and a boardwalk, bridges over Trout Creek and the Upper Truckee River, and interpretive signage—would increase the access of visitors to existing recreation opportunities in the study area. The recreation uses proposed for the study area are not expected to change from existing uses, which typically include hiking, biking, fishing, sunbathing, boating, swimming, picnicking, cross-country skiing, wildlife viewing, and dog walking. Additional recreation infrastructure includes clear directions to available facilities (signage), scenic viewpoints and observation areas, and interpretive opportunities to learn about sensitive wildlife and habitats. The bridge and boardwalk together are considered a public access feature, and this feature would provide new visual access to Barton Beach, the Upper Truckee River and Lake Tahoe for trail users. Therefore, under Alternative 1, the study area would continue to provide recreational opportunities and access to lakes, waterways, and public lands. As described in Impact 3.13-3 (Alt. 1) above, although disconnecting the Sailing Lagoon from the east channel of the Tahoe Keys could potentially affect boat traffic into and out of the marina, the effect on boat passage would not be substantial. This impact would be **less than significant**.

IMPACT 3.13-7 (Alt. 1) **Conflicts with Regional PAOT Allocations. (TRPA 1)** *Implementation of Alternative 1 would include bridges across the Upper Truckee River and Trout Creek, designated trails, bicycle paths, boardwalks, observation areas, and a fishing platform. As shown in Section 3.10, "Land Use," Table 3.10-8, summer day uses associated with Alternative 1 would require PAOT allocations. Because plan areas associated with the study area do not have available PAOTs, they would need to be obtained from the regional pool. Because Alternative 1 is an Environmental Improvement Program (EIP) project and uses would be consistent with the Regional Plan and Code of Ordinances, PAOTs could be allocated from the regional pool. This impact would be* ***less than significant****.*

Implementation of Alternative 1 would include bridges across the Upper Truckee River and Trout Creek, designated trails, bicycle paths, boardwalks, observation areas, and a fishing platform. As shown in Section 3.10, "Land Use," Table 3.10-8 summer day uses associated with Alternative 1 would require PAOT allocations. The summer day-use facilities proposed under Alternative 1 include the fishing platform, observation areas, and viewpoints. Because plan areas associated with the study area do not have available PAOTs, they would need to be obtained from the regional pool. Because Alternative 1 is an EIP and uses would be consistent with the Regional Plan and Code of Ordinances, PAOTs could be allocated from the regional pool. This impact would be **less than significant**.

ALTERNATIVE 2: NEW CHANNEL—WEST MEADOW (MINIMUM RECREATION INFRASTRUCTURE)

IMPACT 3.13-1 (Alt. 2) **Short-Term Increase in Use of Surrounding Neighborhood and Regional Parks and Recreation Facilities during Construction. (CEQA 1)** *Construction activities associated with Alternative 2 would require portions of the study area to be closed temporarily at various times during the four-year-long construction period. As described in Environmental Commitment 13, the Conservancy would prepare a Public Outreach Plan. The plan would identify strategies to inform the general public and partnering agencies of access restrictions and their anticipated timelines, alternate locations for passive recreation activities, and site access information. Recreation activities in portions of the study area would be temporarily disrupted as a result of construction. However, all of those recreation activities could be accommodated on the surrounding beaches, parks, and public open spaces without causing or accelerating any substantial physical deterioration of the existing facilities. Therefore, construction of Alternative 2 is not expected to increase the use of surrounding parks or other recreation facilities enough to either result in substantial physical deterioration of those facilities or accelerate such deterioration. This impact would be* ***less than significant.***

This impact is similar to, but less than, Impact 3.13-1 (Alt. 1) above. The types of construction activities and the duration of construction under Alternative 2 would be similar to those under Alternative 1 but less extensive outside of the corridor along the Upper Truckee River (e.g., no boardwalk, no bicycle paths, and only one vertical grade control). As described in EC 13 (Table 2-6), the Conservancy would prepare a Public Outreach Plan. The plan would identify strategies to inform the general public and partnering agencies of access restrictions and their anticipated timelines, alternate locations for passive recreation activities, and site access information. Because the Conservancy would provide outreach and recreation access information for the study area, and because alternate locations for dispersed recreation could support existing study area recreationists during construction, this impact would be **less than significant**.

IMPACT 3.13-2 (Alt. 2) **Short-Term Construction Impacts of Recreation Facilities That May Have an Adverse Physical Effect on the Environment. (CEQA 2)** *The short-term impacts of constructing the project's recreation facilities are analyzed in the various resource sections of this DEIR/DEIS/DEIS. Alternative 2 has short-term construction impacts on wildlife and water quality, as discussed in Section 3.4, "Biological Resources: Vegetation and Wildlife and Section 3.9, "Geomorphology and Water Quality." Therefore, the physical effect of constructing recreation facilities under Alternative 2 would be* ***significant and unavoidable****.*

This impact is similar to but less than Impact 3.13-2 (Alt. 1) above. Alternative 2 is a minimum recreation infrastructure alternative and has considerably fewer recreation facilities than Alternative 1 (maximum recreation).The short-term impacts of constructing the project's recreation facilities are analyzed in the various resource sections of this DEIR/DEIS/DEIS. Alternative 2 has short-term construction impacts on wildlife and water quality, as discussed in Section 3.4, "Biological Resources: Vegetation and Wildlife and Section 3.9, "Geomorphology and Water Quality."

Environmental Commitments (Table 2-6) and mitigation measures have been established to lessen these impacts to the extent feasible. These impacts would be **potentially significant**.

Beyond Environmental Commitments described in Table 2-6, the following mitigation measures for the relevant impacts would be implemented:

Mitigation Measure 3.4-8A (Alt. 2): Conduct Preconstruction Surveys for Nesting Special-Status Birds (Yellow Warbler, Willow Flycatcher, Waterfowl, and Long-Eared Owl), and Implement Buffers If Necessary.

Described in Section 3.4.

Mitigation Measure 3.4-8B (Alt. 2): Conduct Preconstruction Surveys for Special-Status Bats, Avoid Removal of Important Roosts, and Implement a Limited Operating Period If Necessary.

Described in Section 3.4.

Significance after Mitigation: With implementation of the measures described above the short term construction impacts of recreation facilities on the environment would be minimized, however, all impacts could not be fully mitigated, therefore the impact would be **significant and unavoidable.**

IMPACT 3.13-3 (Alt. 2) **Short-Term Decrease or Loss of Public Access and Recreation Opportunities within Lakes, Waterways, or Public Land during Construction. (CEQA 3; TRPA 2, 3)** *Closure of portions of the study area during construction would have a short-term effect on recreation opportunities and access to the Upper Truckee River and marsh in the study area. However, alternate opportunities for dispersed recreation are abundant in the project vicinity and elsewhere in the Tahoe Basin. Many opportunities are located near the marsh, such as at Regan Beach, at El Dorado Recreation Area, and on other public lands. The east channel of the Tahoe Keys Marina would be affected by removal of the Sailing Lagoon; however, as described in Environmental Commitments 13 and 14, the Conservancy would prepare a Public Outreach Plan and Waterway Traffic Control Plan to address boater and other recreation access conflicts. Because construction would be short-term, waterway conflicts would be managed, and multiple dispersed recreation facilities would be available in the vicinity, implementation of Alternative 2 is not expected to substantially reduce or preclude existing recreation opportunities or access to lakes, waterways, or public lands. This impact would be* ***less than significant.***

This impact is similar to but less than Impact 3.13-3 (Alt. 1) above. The types of construction activities and the duration of construction under Alternative 2 would be similar to those under Alternative 1, but recreation-related construction activities would be less extensive outside of the corridor along the Upper Truckee River. The east channel of the Tahoe Keys Marina would be affected by removal of the Sailing Lagoon, and river access to Lake Tahoe would not be available in the study area during construction. Construction phasing would be designed so that recreation access would be made available where and when safe access is available. As described in ECs 13 and 14 (Table 2-6), the Conservancy would prepare a Public Outreach Plan and Waterway Traffic Control Plan to address boater conflicts, trail closures, and other recreation opportunities. Because the Conservancy would provide traffic control for the marina, it would provide outreach and recreation access information for the study area, and alternate locations for dispersed recreation could support existing study area recreationists during construction, this impact would be **less than significant**.

IMPACT 3.13-4 (Alt. 2) **Long-Term Change in Use of Surrounding Neighborhood and Regional Parks and Recreation Facilities. (CEQA 1)** *Implementation of Alternative 2 is not expected to increase the use of existing parks or other recreation facilities enough to either result in substantial physical deterioration of the facility or accelerate such deterioration. The minimal recreation infrastructure of Alternative 2 would attract fewer new visitors to the study area as compared to Alternative 1 because Alternative 2 proposes fewer infrastructure improvements. The increase in use would primarily result from the redistribution of some visitors from existing facilities to the study area. The potential increase in use of the study area would not result in substantial physical deterioration of surrounding facilities because proposed facilities are intended to support those uses. Also, disconnecting the Sailing Lagoon from the east channel of the Tahoe Keys as proposed under Alternative 2 would not substantially affect the movement of boat traffic into and out of the Marina. This impact would be* ***less than significant.***

This impact is similar to but less than Impact 3.13-6 (Alt. 1). Recreation components of Alternative 2 include rerouting of an existing recreational trail over a new bulkhead at the Sailing Lagoon, construction of a fishing platform, viewpoints, and development of an interpretive program and signage. This minimal recreation infrastructure would attract few new visitors to the study area because the types of recreational opportunities would remain similar to existing conditions, and the elements of Alternative 2 would provide few attractions compared to existing facilities. The increase in use would primarily result from a small redistribution of recreational use from existing facilities to the study area, and thus, an increased use of existing neighborhood and

regional parks or recreation facilities is not a likely outcome. Also, as described for Alternative 1, disconnecting the Sailing Lagoon from the east channel of the Tahoe Keys would not substantially affect boat traffic into and out of the marina because the channel would not be narrowed by the new bulkhead, and options for a boat to idle and wait or to move out of the path of other boats would continue to exist in the absence of the Sailing Lagoon. This impact would be **less than significant**.

IMPACT 3.13-5 (Alt. 2) **Long-Term Operation and Expansion of Recreation Facilities That May Have an Adverse Physical Effect on the Environment. (CEQA 2)** *The recreation facilities associated with Alternative 2 are not expected to result in adverse physical effects on the environment. The recreation facilities associated with Alternative 2 are designed to preserve the natural resources in the study area while providing dispersed recreational opportunities. Public access and recreation infrastructure would reduce adverse physical effects on the environment by redirecting use from sensitive to less sensitive areas. This impact would be* ***less than significant.***

This effect is substantially less than the effect anticipated under Impact 3.13-5 (Alt. 1) above because Alternative 2 contains fewer public access and recreation infrastructure elements than Alternative 1. Specifically, the bridge and boardwalk are not proposed under Alternative 2; therefore, a new beach attraction would not be established. As described throughout this DEIR/DEIS/DEIS, all potential impacts associated with long-term use of the study area under Alternative 2 would be mitigated to a less-than-significant level. This effect would be **less than significant**.

IMPACT 3.13-6 (Alt. 2) **Long-Term Decrease or Loss of Public Access and Recreation Opportunities within Lakes, Waterways, or Public Lands. (CEQA 3; TRPA 2, 3)** *Under Alternative 2, some user-created trails would be decommissioned to redirect visitors out of the core habitat area. However, dispersed recreation opportunities would continue elsewhere within the study area. Furthermore, additional access to some types of dispersed recreation opportunities would result from the provision of designated facilities and recreation-related infrastructure. This impact would be* ***less than significant.***

For the same reasons as described for Impact 3.13-6 (Alt. 1), Alternative 2 would continue to provide dispersed recreation opportunities outside of the core habitat area and provide new access to some recreation opportunities relative to existing conditions. The infrastructure installed (which is related to the extent of the alternative's recreation infrastructure and public access elements) would be less than under Alternative 1. As described in Impact 3.13-4 (Alt. 2) above, disconnecting the Sailing Lagoon from the east channel of the Tahoe Keys would not substantially affect boat traffic into and out of the marina, and safe movement into and out of the marina would continue. Because dispersed recreation opportunities and access and safe movement of boats would continue under Alternative 2, this impact would be **less than significant**.

IMPACT 3.13-7 (Alt. 2) **Conflicts with Regional PAOT Allocations. (TRPA 1)** *Implementation of Alternative 2 would include designated trails, viewpoints, and a fishing platform. As shown in Section 3.10, "Land Use," Table 3.10-8, summer day uses associated with Alternative 2 would require PAOT allocations. Because plan areas associated with the study area do not have available PAOTs, they would need to be obtained from the regional pool. Because Alternative 2 is an EIP and uses would be consistent with the Regional Plan and Code of Ordinances, PAOTs could be allocated from the regional pool. This impact would be* ***less than significant****.*

Implementation of Alternative 2 would include designated trails, bicycle paths, boardwalks, viewpoints, and a fishing platform. As shown in Section 3.10, "Land Use," Table 3.10-8, summer day uses associated with Alternative 2 would require PAOT allocations. The fishing platform is the only summer day use associated with Alternative 2. Because plan areas associated with the study area do not have available PAOTs, they would need to be obtained from the regional pool. Because Alternative 2 is an EIP and uses would be consistent with the Regional Plan and Code of Ordinances, PAOTs could be allocated from the regional pool. This impact would be **less than significant**.

ALTERNATIVE 3: MIDDLE MARSH CORRIDOR (MODERATE RECREATION INFRASTRUCTURE)

IMPACT 3.13-1 (Alt. 3) **Short-Term Increase in Use of Surrounding Neighborhood and Regional Parks and Recreational Facilities during Construction. (CEQA 1)** *Construction activities associated with Alternative 3 would require portions of the study area to be closed temporarily at various times through the 4-year-long construction period. As described in Environmental Commitment 13, the Conservancy would prepare a Public Outreach Plan. The plan would identify strategies to inform the general public and partnering agencies of access restrictions and their anticipated timelines, alternate locations for passive recreation activities, and site access information. Recreation activities in portions of the study area would be temporarily disrupted as a result of construction. However, all of those recreation activities could be accommodated on the surrounding beaches, parks, and public open spaces without causing or accelerating any substantial physical deterioration of the existing facilities because the uses would be dispersed and not centrally located at one site. Because the Conservancy would provide outreach and recreation access information for the study area and because alternate locations for dispersed recreation could support existing study area recreationists during construction, this impact would be* ***less than significant.***

This impact is similar to, but less than, Impact 3.13-1 (Alt. 1) and greater than Impact 3.13-1 (Alt. 2). The types of construction activities and duration of construction would be similar to Alternatives 1 and 2. The extent of construction would be similar to Alternative 1, but unlike Alternative 1, Alternative 3 does not include construction of a bridge or boardwalk over the Upper Truckee River or a bridge across Trout Creek. As described in EC 13 (Table 2-6), the Conservancy would prepare a Public Outreach Plan. The plan would identify strategies to inform the general public and partnering agencies of access restrictions and their anticipated timelines, alternate locations for passive recreation activities, and site access information. Because the Conservancy would provide outreach and recreation access information for the study area and because alternate locations for dispersed recreation could support existing study area recreationists during construction, this impact would be **less than significant**.

IMPACT 3.13-2 (Alt. 3) **Short-Term Construction Impacts of Recreation Facilities That May Have an Adverse Physical Effect on the Environment. (CEQA 2)** *The short-term impacts of constructing the project's recreation facilities are analyzed in the various resource sections of this DEIR/DEIS/DEIS. Alternative 3 has short-term construction impacts on wildlife and water quality, as discussed in Section 3.4, "Biological Resources: Vegetation and Wildlife and Section 3.9, "Geomorphology and Water Quality." Therefore, the physical effect of constructing recreation facilities under Alternative 3 would be* ***potentially significant****.*

This impact is similar to but less than Impact 3.13-2 (Alt. 1) above. Alternative 3 is a moderate recreation infrastructure alternative and has fewer recreation facilities than Alternative 1 (maximum recreation) and more than Alternative 2.The short-term impacts of constructing the project's recreation facilities are analyzed in the various resource sections of this DEIR/DEIS/DEIS. Alternative 3 has short-term construction significant and unavoidable impacts on wildlife and water quality, as discussed in Section 3.4, "Biological Resources: Vegetation and Wildlife" and Section 3.9, "Geomorphology and Water Quality." Environmental Commitments (Table 2-6) and mitigation measures have been established to lessen these impacts to the extent feasible. These impacts would be **potentially significant**.

Beyond Environmental Commitments described in Table 2-6, the following mitigation measures for the relevant impacts would be implemented:

Mitigation Measure 3.4-8A (Alt. 3): Conduct Preconstruction Surveys for Nesting Special-Status Birds (Yellow Warbler, Willow Flycatcher, Waterfowl, and Long-Eared Owl), and Implement Buffers If Necessary.

Described in Section 3.4.

Mitigation Measure 3.4-8B (Alt. 3): Conduct Preconstruction Surveys for Special-Status Bats, Avoid Removal of Important Roosts, and Implement a Limited Operating Period If Necessary.

Described in Section 3.4.

Significance after Mitigation: With implementation of the measures described above the short term construction impacts of recreation facilities on the environment would be minimized, however, all impacts could not be fully mitigated, therefore the impact would be **significant and unavoidable.**

IMPACT 3.13-3 (Alt. 3) **Short-Term Decrease or Loss of Public Access and Recreation Opportunities within Lakes, Waterways, or Public Land during Construction. (CEQA 3; TRPA 2, 3)** *Closure of portions of the study area during construction would have a short-term effect on recreation opportunities and access to the Upper Truckee River and marsh in the study area. However, alternate opportunities for dispersed recreation are abundant in the project vicinity and elsewhere in the Tahoe Basin. Many opportunities are located near the marsh, such as at Regan Beach, at El Dorado Recreation Area, and on other public lands. The east channel of the Tahoe Keys Marina would be affected by removal of the Sailing Lagoon; however, as described in Environmental Commitments 13 and 14, the Conservancy would prepare a Public Outreach Plan and Waterway Traffic Control Plan to address boater and other recreation access conflicts. Because the Conservancy would provide outreach and recreation access information for the study area and because alternate locations for dispersed recreation could support existing study area recreationists during construction, this impact would be* ***less than significant****.*

This impact is similar to but less than Impact 3.13-3 (Alt. 1) and greater than Impact 3.13-3 (Alt. 2). The types of construction activities and the duration of construction for Alternative 3 would be similar to those for Alternatives 1 and 2. The extent of construction would be similar to that of Alternative 1 with closure of portions of the study area, including closure to boating of sections of the Upper Truckee River and restricted access in the east channel of the Tahoe Keys Marina at the Sailing Lagoon, but unlike Alternative 1, Alternative 3 does not include construction of a bridge or boardwalk over the Upper Truckee River or a bridge across Trout Creek. As described in ECs 13 and 14 (Table 2-6), the Conservancy would prepare a Public Outreach Plan and Water Traffic Control Plan to address safety, accessibility, and other recreation opportunities. Because the Conservancy would provide outreach and recreation access information for the study area and because alternate locations for dispersed recreation could support existing study area recreationists during construction, this impact would be **less than significant**.

IMPACT 3.13-4 (Alt. 3) **Long-Term Change in Use of Surrounding Neighborhood and Regional Parks and Recreation Facilities. (CEQA 1)** *Implementation of Alternative 3 is not expected to increase the use of existing parks or other recreation facilities enough to either result in substantial physical deterioration of the facility or accelerate such deterioration. Once the facilities are constructed under this alternative, there could be an increase in the number of visitors because Alternative 3 would provide additional recreation-related infrastructure that facilitates access. This increase would primarily result from a small redistribution of recreational use from existing facilities to the study area, and thus, an increased use of surrounding neighborhood, regional parks and recreation facilities is not a likely outcome. Furthermore, Alternative 3 would provide sufficient facilities for the anticipated volume of visitors to the study area. Thus, the potential increase in use would not result in substantial physical deterioration of existing facilities. Also, disconnecting the Sailing Lagoon from the east channel of the Tahoe Keys as proposed under Alternative 3 would not substantially affect the movement of boat traffic into and out of the marina because the channel would not be narrowed and options for a boat to stay out of the path of other boats would continue to exist. This impact would be* ***less than significant****.*

This impact is similar to, but less than, Impact 3.13-4 (Alt. 1), and greater than Impact 3.13-4 (Alt. 2). Recreation-related components of Alternative 3 would include a kiosk, pedestrian and bicycle paths, boardwalks, viewing platforms, an interpretive program, and signage. These components of Alternative 3 would attract some additional visitors to the study area by providing additional recreation-related infrastructure that facilitates access, providing

clear direction to available facilities, and opportunities to learn about sensitive wildlife and habitats. The recreation-related components of Alternative 3 are greater than those of Alternative 2 and less than those of Alternative 1; thus, the increase in visitors would also be greater than under Alternative 2 and less than under Alternative 1. This increase would result primarily from a redistribution of recreational use from existing facilities to the study area, and thus, an increased use of existing facilities outside of the study area is not a likely outcome. Furthermore, sufficient recreation facilities would exist in the study area to accommodate this increase in visitors to the area. Also, as described for Alternatives 1 and 2, disconnecting the Sailing Lagoon from the east channel of the Tahoe Keys would not substantially affect boat traffic into and out of the marina because the channel would not be narrowed by the new bulkhead and because options for boats to idle and wait or to move out of the path of other boats would continue to exist in the absence of the Sailing Lagoon. This impact would be **less than significant**.

IMPACT 3.13-5 (Alt. 3) **Long-Term Operation and Expansion of Recreation Facilities That May Have an Adverse Physical Effect on the Environment. (CEQA 2)** *The use of recreation facilities associated with Alternative 3 is not expected to result in long-term adverse physical effects on the environment. The recreation facilities associated with Alternative 3 are designed to preserve the natural resources in the study area while providing dispersed recreational opportunities and public access and recreation infrastructure intended to reduce adverse physical effects on the environment by redirecting use from sensitive to less sensitive areas. This effect would be* ***less than significant.***

This effect is similar to Impact 3.13-5 (Alt. 2) but less than under Alternative 1 because the impact is related to the amount of public access and recreation infrastructure are less. All potential long-term impacts associated with use of the study area under Alternative 3 would be mitigated to a less-than-significant level. For the same reasons as described for Alternative 2, this effect would be **less than significant**.

IMPACT 3.13-6 (Alt. 3) **Long-Term Decrease or Loss of Public Access and Recreation Opportunities within Lakes, Waterways, or Public Lands. (CEQA 3; TRPA 2, 3)** *Under Alternative 3, some user-created trails would be decommissioned to redirect visitors out of the core habitat area. This change would limit access in the core area adjacent to the Upper Truckee River; however, implementation of Alternative 3 would not preclude dispersed recreation opportunities in the long term relative to existing conditions. Additional recreation opportunities may result from the provision of designated facilities and recreation-related infrastructure that would move recreation opportunities more toward the developed end of the recreation opportunities spectrum. Access to the study area via nonmotorized water craft would change because of the new distributary channel design but would still be possible depending on hydrologic conditions. Furthermore, there are abundant nonmotorized boating opportunities in Lake Tahoe and along the Upper Truckee River outside of the study area. This impact would be* ***less than significant.***

For the same reasons as described for Impact 3.13-6 (Alt. 1), Alternative 3 would continue to provide dispersed recreation opportunities and access relative to existing conditions. The extent of the alternative's recreation infrastructure and public access elements would be less than under Alternative 1 but greater than under Alternative 2. Similar to Alternative 1, recreation opportunities would move toward the developed end of the spectrum, but not to the extent of a fully developed site (e.g., a marina or campground). Land-based recreation opportunities would not be precluded after project implementation. However, the ability for nonmotorized watercraft to travel into and through the study area would change because of the new distributary channel design. The intent and purpose of Alternative 3 are to take the flows of the Upper Truckee River and spread them over the entire study area. The dispersed flows would change the timing in which boats could access the study area. It is possible that this change would reduce the amount of time the study area could be accessed compared to existing conditions. Although the timing for boat access to the study area would change, boating would not be precluded. Furthermore, there are abundant nonmotorized boating opportunities within the Tahoe Basin and along the Upper Truckee River. This impact would be **less than significant**.

IMPACT 3.13-7 (Alt. 3) **Conflicts with Regional PAOT Allocations. (TRPA 1)** *Implementation of Alternative 3 would include designated trails, bicycle paths, boardwalks, viewpoints, observation areas, and a fishing platform. As shown in Section 3.10, "Land Use," Table 3.10-9, summer day uses associated with Alternative 3 would require PAOT allocations. Because plan areas associated with the study area do not have available PAOTs, they would need to be obtained from the regional pool. Because Alternative 3 is an EIP and uses would be consistent with the Regional Plan and Code of Ordinances, PAOTs could be allocated from the regional pool. This impact would be* ***less than significant****.*

Implementation of Alternative 3 would include designated trails, bicycle paths, boardwalks, viewpoints, observation areas, and a fishing platform. As shown in Section 3.10, "Land Use," Table 3.10-9, summer day uses associated with Alternative 3 would require PAOT allocations. Summer day uses associated with Alternative 3 include viewpoints, observation areas, and a fishing platform. Because plan areas associated with the study area do not have available PAOTs, they would need to be obtained from the regional pool. Because Alternative 2 is an EIP and uses would be consistent with the Regional Plan and Code of Ordinances, PAOTs could be allocated from the regional pool. This impact would be **less than significant**.

ALTERNATIVE 4: INSET FLOODPLAIN (MODERATE RECREATION INFRASTRUCTURE)

IMPACT 3.13-1 (Alt. 4) **Short-Term Increase in Use of Surrounding Neighborhood and Regional Parks and Recreation Facilities during Construction. (CEQA 1)** *Construction activities associated with Alternative 4 would require portions of the study area to be closed temporarily at various times during the 4-year-long construction period. As described in Environmental Commitment 13, the Conservancy would prepare a Public Outreach Plan. The plan would identify strategies to inform the general public and partnering agencies of access restrictions and their anticipated timelines, alternate locations for passive recreation activities, and site access information. Recreation activities in portions of the study area would be temporarily disrupted as a result of construction. However, all of those recreation activities could be accommodated on the surrounding beaches, parks, and public open spaces without causing or accelerating any substantial physical deterioration of the existing facilities because uses would be dispersed throughout various locations. Because the Conservancy would provide outreach and recreation access information for the study area and because alternate locations for dispersed recreation could support existing study area recreationists during construction, this impact would be* ***less than significant.***

This impact is similar to Impact 3.13-1 for Alternatives 1–3, but less than Impact 3.13-1 (Alt. 1), greater than Impact 3.13-1 (Alt. 2), and comparable to Impact 3.13-1 (Alt. 3) above. The types of construction activities and duration of construction would be similar to Alternatives 1–3. Less acreage would be disturbed along the Upper Truckee River than under Alternatives 1–3, but construction activities in the eastern portion of the study area would be greater than under Alternative 2. As described in EC 13 (Table 2-6), the Conservancy would prepare a Public Outreach Plan. The plan would identify strategies to inform the general public and partnering agencies of access restrictions and their anticipated timelines, alternate locations for passive recreation activities, and site access information. Because the Conservancy would provide outreach and recreation access information for the study area and because alternate locations for dispersed recreation could support existing study area recreationists during construction, this impact would be **less than significant**.

IMPACT 3.13-2 (Alt. 4) **Short-Term Construction Impacts of Recreation Facilities That May Have an Adverse Physical Effect on the Environment. (CEQA 2)** *The short-term impacts of constructing the project's recreation facilities are analyzed in the various resource sections of this DEIR/DEIS/DEIS. Alternative 4 has short-term construction impacts on wildlife and water quality, as discussed in Section 3.4, "Biological Resources: Vegetation and Wildlife" and Section 3.9, "Geomorphology and Water Quality." Therefore, the physical effect of constructing recreation facilities under Alternative 4 would be* ***potentially significant.****.*

This impact is similar to but less than Impact 3.13-2 (Alt. 1) above. Alternative 4 is a moderate recreation infrastructure alternative and has fewer recreation facilities than Alternative 1 (maximum recreation), more than

Alternative 2 and approximately the same as Alternative 3.The short-term impacts of constructing the project's recreation facilities are analyzed in the various resource sections of this DEIR/DEIS/DEIS. Alternative 4 has short-term construction significant and unavoidable impacts on wildlife and water quality, as discussed in Section 3.4, "Biological Resources: Vegetation and Wildlife" and Section 3.9, "Geomorphology and Water Quality."

Environmental Commitments (Table 2-6) and mitigation measures have been established to lessen these impacts to the extent feasible. These impacts would be **potentially significant**.

Beyond Environmental Commitments described in Table 2-6, the following mitigation measures for the relevant impacts would be implemented:

Mitigation Measure 3.4-8A (Alt. 4): Conduct Preconstruction Surveys for Nesting Special-Status Birds (Yellow Warbler, Willow Flycatcher, Waterfowl, and Long-Eared Owl), and Implement Buffers If Necessary.

Described in Section 3.4

Mitigation Measure 3.4-8B (Alt. 4): Conduct Preconstruction Surveys for Special-Status Bats, Avoid Removal of Important Roosts, and Implement a Limited Operating Period If Necessary.

Described in Section 3.4.

Significance after Mitigation: With implementation of the measures described above the short term construction impacts of recreation facilities on the environment would be minimized, however, all impacts could not be fully mitigated, therefore the impact would be **significant and unavoidable**.

IMPACT 3.13-3 (Alt. 4) **Short-Term Decrease or Loss of Public Access and Recreation Opportunities within Lakes, Waterways, or Public Land during Construction. (CEQA 3; TRPA 2, 3)** *Closure of portions of the study area during construction would have a short-term effect on recreation opportunities and access to the Upper Truckee River and marsh within the study area. However, alternate opportunities for dispersed recreation are abundant in the project vicinity and elsewhere in the Tahoe Basin. Many opportunities are located near the marsh, such as at Regan Beach, El Dorado Recreation Area, and other public lands. The east channel of the Tahoe Keys Marina would not be affected by Alternative 4. As described in Environmental Commitments 13 and 14, the Conservancy would prepare a Public Outreach Plan and Waterway Traffic Control Plan to address boater and other recreation access conflicts. Because the Conservancy would provide outreach and recreation access information for the study area and because alternate locations for dispersed recreation could support existing study area recreationists during construction, this impact would be* ***less than significant****.*

This impact is similar to Impact 3.13-3 for Alternatives 1–3, but less than Impact 3.13-3 (Alt. 1), greater than Impact 3.13-3 (Alt. 2), and comparable to Impact 3.13-3 (Alt. 3) above. Under all of the action alternatives, construction activities would be similar in type and duration, and construction would occur at Cove East Beach and be extensive along the Upper Truckee River. However, the extent of construction activities in other locations would differ among alternatives. Unlike Alternative 1, Alternative 4 would not include the bridges, boardwalks, or trails at the Lake Tahoe shoreline and would not include modifications to the Sailing Lagoon. Thus, construction activities would not disturb these areas. Construction activities would be more widely distributed than under Alternative 2 and thus would have a greater effect on recreation. For the same reasons as described for Alternative 1, this impact would be **less than significant**.

IMPACT 3.13-4 (Alt. 4) **Long-Term Change in Use of Surrounding Neighborhood and Regional Parks and Recreation Facilities. (CEQA 1)** *Implementation of Alternative 4 is not expected to increase the use of existing parks or other recreation facilities enough to either result in substantial physical deterioration of the facility or accelerate such deterioration. Once the facilities are constructed under this alternative, there would likely be an increase in the number of visitors to the study area because Alternative 4 would provide additional recreation-related infrastructure. This increase would primarily result from a small redistribution of recreational use from existing facilities to the study area, and thus, an increased use of existing facilities outside of the study area is not a likely outcome. Furthermore, Alternative 4 would provide sufficient facilities for the anticipated volume of visitors to prevent physical deterioration of surrounding facilities. This impact would be* ***less than significant.***

This impact is similar to Impact 3.13-4 (Alts. 1–3) above. Unlike Alternatives 1–3, however, Alternative 4 does not include modifications to the Sailing Lagoon and thus would have no effect on the east channel of the Tahoe Keys Marina. For the same reasons described above, this impact would be **less than significant**.

IMPACT 3.13-5 (Alt. 4) **Long-Term Operation and Expansion of Recreation Facilities That May Have an Adverse Physical Effect on the Environment. (CEQA 2)** *The recreation facilities associated with Alternative 4 are not expected to result in long-term adverse physical effects on the environment. The recreation facilities associated with Alternative 4 are designed to preserve the natural resources in the study area while providing recreational opportunities, and public access and recreation infrastructure would reduce adverse physical effects on the environment by redirecting use from sensitive to less sensitive areas. This effect would be* ***less than significant.***

This impact is similar to Impact 3.13-5 (Alts. 2–3), but less than under Alternative 2 or 3 because the impact is related to the amount of public access and recreation infrastructure. For the same reasons as described for Alternatives 2 and 3, this effect would be **less than significant**.

IMPACT 3.13-6 (Alt. 4) **Long-Term Decrease or Loss of Public Access and Recreation Opportunities within Lakes, Waterways, or Public Lands. (CEQA 3; TRPA 2, 3)** *Under Alternative 4, some user-created trails would be decommissioned to redirect visitors out of the core habitat area. However, dispersed recreation opportunities would continue elsewhere within the study area in the long term. Furthermore, some dispersed recreation opportunities and experiences would result from provision of designated facilities and recreation-related infrastructure, and some opportunities would be more developed, although not to the extent of a fully developed site (e.g., marina or campground). This impact would be* ***less than significant****.*

For the same reasons as described for Impact 3.13-6 (Alts. 1–2), Alternative 4 would continue to provide dispersed recreation opportunities and would improve public access relative to existing conditions. The extent of the alternative's recreation and public access infrastructure would be less than under Alternative 1, greater than under Alternative 2, and similar to but less than under Alternative 1. Recreation opportunities would be more developed, but not to the extent of a fully developed site (e.g., a marina or campground). This impact would be **less than significant**.

IMPACT 3.13-7 (Alt. 4) **Conflicts with Regional PAOT Allocations. (TRPA 1)** *Implementation of Alternative 4 would include designated trails, bicycle paths, boardwalks, viewpoints, observation areas, and a fishing platform. As shown in Section 3.10, "Land Use," Table 3.10-8, summer day uses associated with Alternative 4 would require PAOT allocations. Because plan areas associated with the study area do not have available PAOTs, they would need to be obtained from the regional pool. Because Alternative 4 is an EIP and uses would be consistent with the Regional Plan and Code of Ordinances, PAOTs could be allocated from the regional pool. This impact would be* ***less than significant****.*

Implementation of Alternative 4 would include designated trails, bicycle paths, boardwalks, viewpoints, observation areas, and a fishing platform. As shown in Section 3.10, "Land Use," Table 3.10-1, summer day uses associated with Alternative 4 would require PAOT allocations. Summer day uses associated with Alternative 4 include viewpoints, observation areas, and a fishing platform. Because plan areas associated with the study area do not have available PAOTs, they would need to be obtained from the regional pool. Because Alternative 4 is an EIP and uses would be consistent with the Regional Plan and Code of Ordinances, PAOTs could be allocated from the regional pool. This impact would be **less than significant**.

Alternative 5: No-Project/No-Action

IMPACT 3.13-1 (Alt. 5) **Short-Term Increase in Use of Surrounding Neighborhood and Regional Parks and Recreation Facilities during Construction. (CEQA 1)** *No construction would occur in the study area; therefore, Alternative 5 would not result in a construction-related increase in use of surrounding parks or other recreation facilities.* ***No impact*** *would occur.*

Under Alternative 5, the No-Project/No-Action Alternative, no new facilities would be constructed and no existing facilities would be altered, expanded, or demolished in the study area. Therefore, Alternative 5 would not result in a construction-related increase in use of surrounding neighborhood or regional parks, or recreation facilities. **No impact** would occur.

IMPACT 3.13-2 (Alt. 5) **Short-Term Construction Impacts of Recreation Facilities That May Have an Adverse Physical Effect on the Environment. (CEQA 2)** *No construction would occur in the study area; therefore, Alternative 5 would not result in construction or expansion of additional recreation facilities that may have an adverse physical effect on the environment.* ***No impact*** *would occur.*

Under Alternative 5, no new facilities would be constructed and no existing facilities would be altered, expanded, or demolished in the study area. Therefore, Alternative 5 would not result in construction or expansion of additional recreation facilities that may have an adverse physical effect on the environment. **No impact** would occur.

IMPACT 3.13-3 (Alt. 5) **Short-Term Decrease or Loss of Public Access and Recreation Opportunities within Lakes, Waterways, or Public Land during Construction. (CEQA 3; TRPA 2, 3)** *No construction would occur in the study area; therefore, Alternative 5 would not result in any construction-related reduction in recreation opportunities or access within lakes, waterways, or public lands.* ***No impact*** *would occur.*

Under Alternative 5, no new facilities would be constructed and no existing facilities would be altered, expanded, or demolished in the study area. Therefore, Alternative 5 would not result in any construction-related reduction in recreation opportunities. **No impact** would occur.

IMPACT 3.13-4 (Alt. 5) **Long-Term Change in Use of Surrounding Neighborhood and Regional Parks and Recreation Facilities. (CEQA 1)** *No project would be implemented under this alternative; therefore, Alternative 5 would not result in any increase in use of surrounding neighborhood or regional parks or recreation facilities.* ***No impact*** *would occur.*

Under Alternative 5, no new facilities would be constructed and no existing facilities would be altered, expanded, or demolished in the study area. Operation of other existing facilities also would not be altered. Therefore, Alternative 5 would not result in any increase in use of surrounding neighborhood or regional parks or recreation facilities. **No impact** would occur.

IMPACT 3.13-5 (Alt. 5) **Long-Term Operation and Expansion of Recreation Facilities That May Have an Adverse Physical Effect on the Environment. (CEQA 2)** *No project would be implemented under this alternative; therefore, Alternative 5 would not result in construction or expansion of recreation facilities that may have an adverse physical effect on the environment. However, the existing adverse conditions created by user-created trails into sensitive habitats would continue as under existing conditions. This impact would be* ***less than significant****.*

Under Alternative 5, no new facilities would be constructed and no existing facilities would be altered, expanded, or demolished in the study area. Operation of existing facilities also would not be altered. Therefore, Alternative 5 would not result in construction or expansion of recreation facilities that may have an adverse physical effect on the environment. However, the existing adverse conditions created by user-created trails into sensitive habitats would continue as under existing conditions. This impact would be **less than significant**.

IMPACT 3.13-6 (Alt. 5) **Long-Term Decrease or Loss of Public Access and Recreation Opportunities within Lakes, Waterways, or Public Lands. (CEQA 3; TRPA 2, 3)** *No project would be implemented under this alternative; therefore, Alternative 5 would not result in long-term preclusion of recreation opportunities or access to lakes, waterways, or public lands.* ***No impact*** *would occur.*

Under Alternative 5, no new facilities would be constructed and no existing facilities would be altered, expanded, or demolished in the study area. Operation of existing facilities also would not be altered. Therefore, Alternative 5 would not result in the preclusion of recreation opportunities or access to lakes, waterways, or public lands. **No impact** would occur.

IMPACT 3.13-7 (Alt. 5) **Conflicts with Regional PAOT Allocations. (TRPA 1)** *No project would be implemented under this alternative; therefore, Alternative 5 would not result in the need for PAOT allocation.* ***No impact*** *would occur.*

Under Alternative 5, no new facilities would be constructed and no existing facilities would be altered or expanded in the study area. Operation of existing facilities also would not be altered. Therefore, Alternative 5 would not result the need for PAOT allocation. **No impact** would occur.

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3.14 SCENIC RESOURCES

This section describes the visual setting and scenic resources of the study area, identifies impacts on scenic quality that would result from Alternatives 1–5, and recommends mitigation measures intended to preserve scenic quality. A small portion of the study area is visible from U.S. 50 (Roadway Travel Unit 35), which is designated as a state scenic highway. The study area is also visible from Lake Tahoe. Therefore, a TRPA scenic analysis involving views related to the lake is required for the proposed project. Consistency with TRPA goals and policies is presented in Section 3.10, "Land Use," Table 3.10-1. Cumulative scenic impacts are addressed in Section 3.18, "Cumulative Impacts." The project's effects on thresholds are described in Section 4.5, "Consequences for Environmental Threshold Carrying Capacities."

3.14.1 AFFECTED ENVIRONMENT

REGULATORY SETTING

Federal

No federal plans, policies, or regulations apply to scenic resources within the study area.

State

The following state program related to scenic resources is relevant to the proposed alternatives and is described in detail in Chapter 5, "Compliance, Consultation, and Coordination":

- California Scenic Highway Program

Tahoe Regional Planning Agency

Goals and Policies

The Goals and Policies document of the 1987 Regional Plan establishes an overall framework for development and environmental conservation in the Lake Tahoe region. Chapter IV (Conservation Element) of the Goals and Policies document considers ten subelements, including the Scenic subelement. The Scenic subelement states:

> Scenic quality is perhaps the most often identified natural resource of the Lake Tahoe Basin. The Basin affords views of a magnificent lake setting within a forested mountainous environment. The unique combination of visual elements provides for exceptionally high aesthetic values. The maintenance of the Basin's scenic quality largely depends on careful regulation of the type, location, and intensity of land uses.

The Scenic subelement contains a goal to maintain and restore the scenic qualities of the natural landscape of the Basin. It also contains policies that require all development to examine impacts on landscape views (i.e., roadways, bikeways, public recreation areas, Lake Tahoe), require development in areas identified for scenic restoration shall demonstrate effects on the 1982 travel route ratings, and consideration of factors or conditions that contribute to scenic degradation.

Code of Ordinances

The applicable provisions of the TRPA Code of Ordinances regarding scenic standards are summarized below.

Design Standards

Chapter 36 of the TRPA Code of Ordinances contains design standards, including standards for scenic quality. The TRPA Design Review Guidelines summarize the code requirements and guidelines and provide suggestions for attaining the standards (TRPA 1989b:30-5–30-6). The following standards in the Design Review Guidelines are particularly relevant:

- **(2) Lighting Levels.** Avoid consistent overall lighting and overly bright lighting. The location of lighting should respond to the anticipated use and should not exceed the amount of light actually required by users. Lighting for pedestrian movement should illuminate entrances, changes in grade, path intersections, and other areas along paths which, if left unlit, would cause the user to feel insecure. As a general rule of thumb, one foot candle per square foot over the entire project area is adequate.

- **(5) Lighting Height.** As a rule, the light source should be kept as low to the ground as possible while ensuring safe and functional levels of illumination. Area lighting should be directed downward with no splay of lighting directed offsite. The height of light fixtures or standards must meet the height limitations in Chapter 37 [of the TRPA Code of Ordinances]. Direct light downward in order to avoid sky lighting. Any light source over 10 feet high should incorporate a cut-off shield to prevent the light source from being directly visible from areas offsite. The height of luminaries should be in scale with the setting and generally should not exceed 10–12 feet.

Scenic Standards

Section 66.1, "Scenic Quality Standards," of the TRPA Code of Ordinances contains standards pertaining to scenic quality. Section 66.1 establishes a process for analyzing projects for scenic quality and defines those circumstances that require preparation of scenic assessments and/or other documents. It also requires a security deposit equal to the cost of scenic mitigation measures for projects visible from nonattainment areas, and a five-year review for continued presence and maintenance (described in more detail below). Sections 66.1.3, 66.1.4, and 66.1.5 describe scenic quality standards for roadway and shoreline units, and for public recreation areas and bicycle trails. Relevant subsections from Section 66.1 are listed below.

- **Section 66.1 Scenic Quality Standards**

  - **Subsection 66.1.2 Applicability:** All projects shall comply with the standards of this section.

  - **Subsection 66.1.3 Roadway and Shoreline Unit Scenic Quality:** The project shall not cause a decrease in the numerical ratings assigned to roadway or shoreline units, including the scenic quality rating of the individual resources within each unit, as recorded in the 1982 Scenic Resources Inventory and shown in Tables 13-3, 13-5, 13-8, and 13-9 of the *Study Report for the Establishment of Environmental Threshold Carrying Capacities*, October 1982. The criteria for rating scenic quality as identified in the study report cited herein shall be used to determine if a project will cause a decrease in the numerical rating.

  - **Subsection 66.3.2 Review Process:** The applicant shall complete a scenic assessment when applying for any activity requiring a TRPA permit. An applicant may apply for a scenic assessment at any time to document the baseline condition. Review and mitigation of scenic impacts shall be based on subsection 66.3.3 below.

    A. Scenic Assessment: A scenic assessment shall be required prior to submittal of a project application for Levels 3, 4, 5, and 6 projects. The scenic assessment will establish a baseline scenic condition for all following scenic impact analyses. The baseline shall be the existing condition at the time of the first scenic assessment, unless the site is the subject of an existing TRPA approval, by litigation settlement or otherwise, that contains a scenic analysis, in which case the approved scenic analysis

shall be the baseline. For purposes of this Section, unbuilt projects with an active permit shall be considered as existing.

1. Description of existing scenic conditions in the project area including, but not limited to, structure color and height, existing visible mass from the Lake, types and areas of materials of existing structures, and identification of needed scenic BMPs;

2. Identification of existing vegetation types and their location, size, and height; and

3. Photographic inventory of the project area from 300 feet and one quarter mile offshore, with at least one photo from center and perpendicular to the project area, and photos of onsite existing conditions.

- **Subsection 66.3.3 Levels of Scenic Mitigation:** There are six levels of mitigation provided in the Code of Ordinances. The proposed project falls under Level 6. This level consists of all projects involving new or existing structures in the shoreland that are visible from the Lake and that qualify as public health and safety projects or Environmental Improvement Program projects. The mitigation requirements for this level shall be established on a case-by-case basis. Projects whose primary purpose is implementation of water quality or scenic BMPs that do not increase the lake front façade and show an improvement in the contrast rating score are exempt from mitigation requirements.

Height Standards

Chapter 37 of the TRPA Code of Ordinances establishes height standards to ensure attractive and compatible development as required under Goal #2, Policy 1.B. of the Community Design Subelement, Land Use Element of the Goals and Policies. The relevant subsections from Chapter 37 are listed below.

- **Section 37.6 Height Standards for Structures Other than Buildings**

  - **37.6.1 Maximum Structure Height:** Except as provided for in subsection 37.6.2, no structure, other than a building, shall have a maximum height greater than 26 feet.

  - **37.6.2 Additional Height for Certain Structures:** The maximum height specified in subsection 37.6.1 may be increased for communication towers, antennas, utility poles, special features of public safety facilities, ski lift towers, and other similar projects, excluding buildings and signs, up to the minimum height necessary to feasibly implement such projects. Additional height may be approved under the provisions of this subsection if TRPA makes findings 4 and 7 as set forth in Section 37.7.

Plan Area Statements

The study area is located within six separate PASs: 99 (Al Tahoe), 100 (Truckee Marsh), 102 (Tahoe Keys), 103 (Sierra Tract Commercial), 104 (Highland Woods), and 111(Tahoe Island). Approximately 90 percent of the study area lies within PASs 100 and 102, including the portion of the study area within Shoreline Travel Unit 33 (PAS 100 and PAS 102) and Roadway Travel Unit 35 (PAS 100).

One special policy includes a reference to scenic quality. Special Policy 11 in PAS 100 (TRPA 1986) states:

11. No new uses should be approved that would degrade the high scenic quality of Shoreline Unit No. 33 or contribute to the further degradation of Roadway Unit No. 35.

Scenic Quality Improvement Program/Environmental Improvement Program

The SQIP was adopted to provide a program for implementing physical improvements to the built environment in the Tahoe Basin (TRPA 1989a:1). The SQIP is intended to contribute to the attainment of the scenic resources thresholds in the TRPA Goals and Policies (see above) and serves as an implementation guide for the Regional Plan. The SQIP is an overall action plan to specifically improve the scenic quality of 23 roadway and four shoreline travel routes that do not meet the scenic resources thresholds (TRPA 1989a:1).

The SQIP (TRPA 1989a:26) states:

> As a general rule, individual projects can be considered not to be contributing to threshold degradation when the project's individual design elements conform to or exceed adopted design standards, or the guidelines set forth in the Design Review Guidelines.

Design standards and design review guidelines are listed under the "Scenic Standards" and "Design Review Guidelines/Contrast Rating System" subsections, respectively, above.

The Environmental Improvement Program (EIP) adopted in 1998 incorporates elements of the SQIP. The EIP includes a list of specific projects throughout the basin that are needed to attain and maintain the thresholds (TRPA 1997). Although the study area does not contain any EIP-listed projects under scenic resources, EIP Project #99, which called for scenic improvements (e.g., building upgrades, visual screening) along a portion of Roadway Unit #35, runs through the southern tip of the study area.

City of South Lake Tahoe

The *City of South Lake Tahoe General Plan* (CSLT 1999) does not contain a section specific to scenic resources; however, the goals, objectives, and actions listed below, related to scenic resources and located within the Conservation, Open Space, and Land Use Elements, are relevant to the project.

Conservation

- **Goal 1:** Conserve and enhance the scenic and other natural resources within the boundaries of the City [of South Lake Tahoe].

Open Space

The following actions are associated with Goal 1, Objective 1:

- **Action 2:** In conjunction with the Land Use Action Plan to create a Scenic Plan for the edges of the City, those portions of A1 Tahoe Boulevard (outside of the Bijou/Al Tahoe Community Plan) and Pioneer Trail (southwest from the intersection of A1 Tahoe Boulevard to El Dorado County and northeast to approximately Ralph Drive) include in the PAS a minimum of 500 foot setback of the natural forest edge to maintain the rural scenic experience viewed from the roadways. No buildings or structures or signage shall be visible from these roadways.

- **Action 3:** Enhance the scenic quality of the meadow and SEZ [Stream Environment Zone] area (northwest of the A1 Tahoe/Pioneer Trail intersection) by opening it for view through the elimination of (or partial elimination by creating vistas through) the evergreen screen adjacent to the roadways.

Land Use

The following objective and actions are associated with Goal 1:

- **Objective 2:** The Scenic Quality of the built and natural environment be improved, enhanced and protected on a project by project basis.
  - **Action 1:** Implement the TRPA Scenic Quality Improvement Plan.
  - **Action 2:** Implement the City Design and the Community Plan Design Standards.
  - **Action 4:** Continue the long range public utility underground program in close coordination with the utility companies.
  - **Action 5:** Continue to maintain and enhance that portion of Highway 50/89 designated as a scenic corridor and further evaluate the designation of the remainder.
  - **Action 6:** Develop a Scenic Plan to enhance the entry ways into the urban portions of the city, to include U.S. 50/89, Lake Tahoe Boulevard (from El Dorado County), A1 Tahoe Boulevard (from Pioneer Trail) and Martin Avenue (from El Dorado County). This plan would include those areas within and outside of community plans and would include such improvements as native landscaping, fences, walks and other improvements to establish a "sense of community" for the City. This scenic plan may include the establishment of incentives to relocate incompatible land uses into PAS more appropriately suited for the use, For example, the relocation of the cement batch plant and contractors storage yard on U.S. 50 into the Wye industrial area.

ENVIRONMENTAL SETTING

Scenic Character of the Study Area

The study area is largely undeveloped and its scenic character is defined primarily by its adjacency to the lake, presence of the Upper Truckee River and Trout Creek in the landscape, and existing habitat features (willow scrub–wet meadow, montane meadow, and lodgepole pine forest). The river and creek provide perennial water features visible in the landscape, adding interest, variety, and vividness. Habitat areas include views of open wet meadow intermixed with low-lying shrubs over much of the middle of the study area and stands of large lodgepole and Jeffrey pines in the southeast and western portions of the study area. There are also areas of open water with aquatic vegetation in the middle of the study area, varying in extent depending on lake level and river flows.

The northern portion of the study area is characterized by sandy beach and views of the mouth of the Upper Truckee River draining into the lake. The western portion of the study area contains the Lower West Side Wetland Restoration Area and the Tahoe Keys Property Owners Association (TKPOA) Corporation Yard. The reaches of the Upper Truckee River that run through the study area are characterized by open water with eroding banks and some low-lying vegetation along the edges of the river. The study area also contains volunteer native surface trails that cross various portions of the property, existing corral structures are located in the middle, and fences that are visible from the edges of the study area. There are no sources of light and glare within the study area.

Views of the study area from the community are provided primarily at the ends of public, mostly residential streets that abut the property. The public visual access with the highest number of viewers is from the end of East Venice Drive near the trailhead into the Lower West Side Wetland Restoration Project. The area is also viewed by boaters from the lake in Shoreline Travel Unit 33. Only a very small portion of the study area along a short reach of the Upper Truckee River is visible from U.S. 50 (Roadway Travel Unit 35), looking north where it crosses the river.

The study area is in a unique location that provides views that are rarely all visible from one location within the Tahoe Basin. The study area provides 360-degree views of the Tahoe Basin with the closest mountain views to the south and west; direct views of Lake Tahoe to the north, including views of public beaches; and views of the Upper Truckee River corridor, Trout Creek, and open marsh from within the study area. The number and variety of scenic views provided by the study area contribute to the high visual quality of the area (Exhibit 3.14-1).

Visual Character of the Surrounding Environment

A map showing representative existing viewpoints with views of the study area is shown in Exhibit 3.14-1. Photographs from these viewpoints are shown in Exhibits 3.14-2 through 3.14-7 and are described below. These photographs are a representative subset of the viewpoints that provide views of the study area. For a complete index of viewpoints and associated photographs, see Appendix K.

North of the Study Area

Lake Tahoe is adjacent to and immediately north of the study area. Small craft can land at the study area, so boaters can gain close-up views of the beach and mouth of the Upper Truckee River. Views of the mouth of the Upper Truckee River from the lake are framed by four tall pine trees to the right and primarily meadow throughout the area, with a series of mountains framing background views (Exhibit 3.14-2). The picturesque waters of Lake Tahoe and the surrounding mountainsides north of the study area have a high visual quality. In fact, Shoreline Travel Unit 33 is the highest rated shoreline unit around the lake (at 14 of 15 points) because of the intactness and variety of the natural background view and the relative lack of visible structures as seen from the lake.

West of the Study Area

The Tahoe Keys Marina, Tahoe Keys subdivision, and Tahoe Island subdivision are west of the study area. These residential areas provide viewers who can look over the river and wetland from multiple private viewpoints along the western boundary of the study area. Views to the west are of approximately 200 single-family residences amid existing pine trees. Views from the west include low-lying marsh vegetation and distant views of forest and mountains.

Condominiums that border Lake Tahoe to the north and the outlet to the Tahoe Keys Marina to the east have elevated views of the study area. Views are broad and open across part of the study area with relatively sparse vegetation. Views of the study area are available from the parking area and many viewpoints within the marina.

Approximately 470 feet west of the East Venice Drive cul-de-sac, which is along the western border of the study area, three or four condominiums have distant views of the west side of the study area (Exhibit 3.14-3). The TKPOA Corporation Yard and the Tahoe Island subdivision have views of the Upper Truckee River and distant views of the open marsh and forest (Exhibit 3.14-4).

South of the Study Area

Views to the south include the northernmost row of several hundred single-family residences mixed among existing evergreen trees. While U.S. 50 is located southeast of the subdivision, it is only visible from a short reach of the river just north of the highway and is screened from view from the rest of the study area (Exhibit 3.14-5).

Most of the river and nearly all of the study area as a whole are not visible to passing motorists on U.S. 50.

Source: Adapted by EDAW (now AECOM) in 2008

Exhibit 3.14-1 **Photograph Viewpoints**

Source: Photograph taken by EDAW (now AECOM) in 2007

Exhibit 3.14-2 **View from Lake to the South at the Mouth of the Upper Truckee River, 300 Feet from the Shoreline (Viewpoint 1)**

Source: Photograph taken by EDAW (now AECOM) in 2007

Exhibit 3.14-3 **View to the East toward the Study Area (in Middle-Ground) from Condominiums along the Tahoe Keys Marina (Viewpoint 2)**

Source: Photograph taken by EDAW (now AECOM) in 2008

Exhibit 3.14-4 **View to the Southeast toward the Upper Truckee River from East of the Tahoe Island Subdivision (Viewpoint 3)**

Source: Photograph taken by EDAW (now AECOM) in 2008

Exhibit 3.14-5 **View to the Northwest of the Short Reach of the Upper Truckee River Visible from U.S. 50 (Viewpoint 4)**

Source: Photograph taken by EDAW (now AECOM) in 2008

Exhibit 3.14-6 **View to the West toward the Study Area and Trout Creek from Stanford Avenue (Viewpoint 5)**

Source: Photograph taken by EDAW (now AECOM) in 2008

Exhibit 3.14-7 **View to the West toward Barton Beach from East Barton Beach (Viewpoint 6)**

East and Northeast of the Study Area

Overall, the richly dense pine trees surrounding the consistent but visually varied residences east of the study area contribute to a high visual quality (Exhibit 3.14-6). East Barton Beach, which is a public beach, is also located to the northeast (Exhibit 3.14-7).

Scenic Ratings of the Study Area and Vicinity

Roadway Travel Unit Ratings

Roadway Travel Unit 35 includes the approximately 2.8-mile-long view corridor along U.S. 50 that extends less than 0.5 mile south of the U.S. 50/SR 89 intersection southwest of the study area, to less than 0.5 mile from the shores of Lake Tahoe east of the study area and the Al Tahoe subdivision. Views of the study area are available for approximately 0.6 mile of Roadway Travel Unit 35. This unit has a rating of 8 and is not currently in threshold attainment according to TRPA's *2006 Threshold Evaluation Report* (TRPA 2007). Restoration is recommended for roadway travel units rated at 15 or below. Table 3.14-1 shows the roadway travel unit ratings and the threshold criteria for Roadway Travel Unit 35.

Table 3.14-1
Travel Route Ratings: Adopted and Existing

Categories	Rating [1]				
	1982	1991	1996	2001	2006
Roadway Travel Unit 35					
Man-made Features	2	2.5	2.5	2.5	3
Roadway Distractions	1	1	1	1	1
Road Structure	1	1	1	1	1
Lake Views	1	1	1	1	1
Landscape Views	1	1	1	1	1
Variety	1	1	1	1	1
Roadway Unit Total [2]	**7**	**7.5**	**7.5**	**7.5**	**8**

Notes:
[1] Visual quality ratings: 1 = low, 3 = moderate, 5 = high
[2] Roadway units need a score of 15 to be in attainment.
Source: TRPA 2007

Shoreline Unit Ratings

TRPA's Shoreline Unit 33, Truckee Marsh, extends approximately 1.35 miles from the east channel entrance to the Tahoe Keys Resort just west of the study area to the shoreline on the eastern border of the study area. Views of this unit from Lake Tahoe include Freel and Job's Peaks in the background, with some lower ridges and bare summits along the panorama view. The view of the shoreline from the lake is distinctive in its variety of vegetation, such as willows in riparian corridors, wetland and meadow in the middle ground, and pine forest on the flanks and in the background. Very little development is visible in this shoreline unit. The scenic quality Upper Truckee Marsh has been degraded slightly by views of utility poles. This unit has a rating of 14 out of a possible 15 and is currently in threshold attainment according to the *2006 Threshold Evaluation Report* (TRPA 2007). This unit has the highest rating of any shoreline unit around the lake and has sustained this high rating since the initial evaluation in 1982. Restoration is recommended for shoreline units rated at 7 or below. Table 3.14-2 shows the shoreline unit ratings and the threshold criteria for Shoreline Unit 33.

Table 3.14-2 Shoreline Unit Ratings: Adopted and Existing				
Categories	Rating [1]			
	1982	1991	1996	2001[3]
Shoreline Unit 33				
Man-made Features	4	4	4	4
Background Views	5	5	5	5
Variety	5	5	5	5
Shoreline Unit Total [2]	**14**	**14**	**14**	**14**

Notes:
[1] Visual quality ratings: 1 = low, 3 = moderate, 5 = high
[2] Shoreline units need a score of 7 to be in attainment.
[3] 2006 ratings were not available for Shoreline Unit 33.
Source: TRPA 2007

Mapped Scenic Resources

Mapped scenic resources include Shoreline View 33-1 (view of low shore with distinctive vegetation) and Shoreline Visual Feature 33-2 (cluster of willows and pines that mark the river mouth). Both of these features have a scenic quality rating of 3, which is considered high scenic quality. Unique visual features of this shoreline unit include the river mouth and clusters of willows and pines marking its location. Additionally, a small portion of the project would be visible within Roadway Visual Feature 35-2 (Truckee River stream zone) and 35-4 (Front Creek stream zone). Both have a scenic rating of 2, which is considered moderate scenic quality.

Public Recreation Areas

TRPA's *1993 Lake Tahoe Scenic Resource Evaluation* did not identify any TRPA-designated public recreation areas with direct views of the study area (TRPA 1993).

3.14.2 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

For this analysis, significance criteria are based on the checklist presented in Appendix G of the State CEQA Guidelines; the TRPA Initial Environmental Checklist; factual or scientific information and data; and regulatory standards of Federal, State, and local agencies. These criteria also encompass the factors taken into account under NEPA to determine the significance of an action in terms of the context and intensity of its effects.

CEQA Criteria

Under CEQA, an alternative was determined to result in a significant effect related to scenic resources if it would:

- have a substantial adverse effect on a scenic vista (CEQA-1);
- substantially damage scenic resources, including but not limited to scenic waterways, trees, rock outcroppings, and historic buildings in a state scenic highway (CEQA-2);
- substantially degrade the existing visual character or quality of the site and its surroundings (CEQA-3); or

- create a new source of substantial light or glare that would adversely affect day or nighttime views in the area (CEQA-4).

NEPA Criteria

An environmental document prepared to comply with NEPA must consider the context and intensity of the environmental effects that would be caused by or result from the proposed action. Under NEPA, the significance of an effect is used solely to determine whether an EIS must be prepared. The factors that are taken into account under NEPA to determine the significance of an action in terms of the context and the intensity of its effects are encompassed by the CEQA criteria used for this analysis.

TRPA Criteria

Based on TRPA's Initial Environmental Checklist, an alternative was determined to result in a significant effect related to scenic resources if it would:

- reduce scenic quality from mapped resources (TRPA-1); or
- reduce threshold ratings from roadway or shoreline units (TRPA-2).

METHODS AND ASSUMPTIONS

The scenic quality of an area is determined through the variety and contrasts of the area's visual features, the character of those features, and the scope and scale of the scene. This analysis uses a qualitative descriptive method to characterize and evaluate the visual resources of the areas that could be affected by the project using the criteria listed above. Project features were considered to have a substantial effect on visual resources if they would be visually prominent, threaten the attainment of a TRPA threshold, or be incompatible with the natural landscape. The impact analysis is based on a qualitative evaluation of consistency with the CEQA and TRPA criteria above, and a quantitative analysis for views from the lake.

EFFECTS NOT DISCUSSED FURTHER IN THIS EIR/EIS/EIS

Effects related to all significance criteria listed above are discussed further in the EIR/EIS/EIS.

IMPACT ANALYSIS AND MITIGATION MEASURES

Alternative 1: Channel Aggradation and Narrowing (Maximum Recreation Infrastructure)

IMPACT 3.14-1 (Alt. 1) **Potential for Short-Term Degradation of the Scenic Quality of Shoreline Travel Unit 33, Roadway Travel Unit 35, or the Visual Character or Quality of the Study Area. (CEQA 1, 2, 3, TRPA 2)** *The study area is within Shoreline Travel Unit 33 and Roadway Travel Unit 35. Alternative 1 would include construction of restoration and recreation infrastructure that includes staging of construction equipment and materials (e.g., rock, vegetation, backhoes) that could be visible from these areas over a period of approximately four years. Construction activities could degrade the scenic quality of the shoreline travel unit, roadway travel unit, and within the study area; however, construction activities would be temporary and would not result in substantial changes. Therefore, this impact would be* ***less than significant****.*

During construction, heavy equipment and associated vehicles, construction workers, staging areas, and construction activities would be visible or partially visible from surrounding areas, primarily the southeast and northwest portions of the study area. Construction activities associated with placement of bank protection along the Upper Truckee River and construction of the kiosk would occur near U.S. 50.

The most extensive construction (excavation, grading, and hauling) would be performed along the Upper Truckee River near the west side of the study area. Most views of the construction by residents would generally be from several hundred feet away; for other viewers, such as employees of a boat-wrapping business who would have the most direct line of sight, the view would be across three rows of vehicle parking. Residents and recreationists near the storage/staging areas shown in Exhibit 2-5 in Chapter 2, "Project Alternatives," would also experience short-term changes to their views.

Although there would be changes in views associated with construction, these changes would be temporary and would not substantially degrade the visual character of the study area or reduce the threshold ratings from any shoreline or travel units. This impact would be **less than significant**.

IMPACT 3.14-2 (Alt. 1) **Potential for Long-Term Degradation of the Scenic Quality of Shoreline Travel Unit 33 and Mapped Scenic Resources Related to the Boardwalk and Observation Platforms. (CEQA 1, 2, 3; TRPA 1, 2)** *The study area is within Shoreline Travel Unit 33, a unit with a high scenic rating, including Shoreline View 33-1 and Shoreline Visual Feature 33-2. A boardwalk and two observation platforms would be placed behind the beach (as viewed from Lake Tahoe) under Alternative 1, but would be sufficiently low-lying that they would not be visible from the lake because of screening by the beach ridge and vegetation. Therefore, these features would not substantially degrade or reduce the threshold rating for Shoreline Travel Unit 33 or the mapped scenic resources. This impact would be* ***less than significant****.*

An observation platform is proposed for the northeast portion of the study area near East Barton Beach, and a second observation platform is also proposed west of the Upper Truckee River. A boardwalk would be constructed just south of the barrier beach. It would connect paths on the east side of the study area's marsh next to Al Tahoe with the existing trail on the west side of the marsh behind Cove East Beach (next to Tahoe Keys Marina). Under Alternative 1, the proposed observation platforms would introduce a 25-foot-long by 25-foot-wide deck with a wood and cable railing. The boardwalk would be elevated approximately two feet above existing grade and would be 12 feet wide with a three-foot-tall railing on the lake side. The boardwalk would be constructed of powder-coated metal or wood. As seen from the lake, the decks of the boardwalk and the observation platforms would be placed at an elevation that would be obscured behind the beach ridge, existing vegetation, and trees.

Nearby views currently encompass the undisturbed marsh, but also an existing pier extending out from the west edge of the condominium complex. Although the horizontal lines of the railing along the expanse of the shoreline would introduce a human-made feature to what is otherwise a natural view from Lake Tahoe, the wood-and-cable railing would be screened by vegetation or largely transparent, especially at the distance boaters are likely to view the shoreline (i.e., 300 feet, as required by TRPA scenic quality evaluation standards). The rails of the low-lying boardwalk and observation platforms would be very narrow features, using natural colors to blend into the background. The railings would be barely visible within the landscape, as seen from the lake and they would not introduce significantly contrasting elements to these views. Consequently, a visual contrast rating of the boardwalk and observation platforms is not necessary. Alternative 1 would not substantially degrade the visual quality of or reduce the threshold rating from Shoreline Travel Unit 33 or the mapped scenic resources within this travel unit. Therefore, this impact would be **less than significant**.

IMPACT 3.14-3 (Alt. 1) **Potential for Long-Term Degradation of the Scenic Quality of Shoreline Travel Unit 33 and Mapped Scenic Resources Related to the Upper Truckee River Bridge and Ramps. (CEQA 1, 2, 3; TRPA 1, 2)**

A bridge would be constructed over the Upper Truckee River approximately ten feet above the river as part of the pedestrian/bicycle path provided across the marsh. Ramps would connect the elevated bridge to the low-lying boardwalk. Both the bridge and ramps would be elevated sufficiently to be prominently visible from the lake. While color choices and vegetative screening would reduce visibility of the bridge and ramps, the additional structural façade in views from the lake would degrade the scenic quality of the shoreline travel unit. This impact would be ***significant****.*

The boardwalk path across the Upper Truckee Marsh proposed in Alternative 1 would include a bridge crossing of the Upper Truckee River. The proposed bridge would be approximately ten feet above the water line to allow room for paddling access to the river mouth beneath it. It would extend 225 feet across the river. To connect to the low-lying boardwalk, the bridge would include 62.5-foot-long ramps on either end. These project features are not expected to degrade views of mapped scenic resources and 33-1 and 33-2 because these features would not obstruct views of the pine trees at the mouth of the river or vegetation along the shoreline. Boaters would experience changes in views of the Upper Truckee Marsh with the addition of visible structure from the elevated, 225-foot span of pedestrian/bicycle bridge. Boaters would see the platform, support columns, and railings of the elevated bridge and ramps high enough above the existing shoreline vegetation to be prominent. Views of the proposed bridge and ramps from west of the mouth of the Upper Truckee River would be blocked by four tall pine trees and thick willow scrub, but the bridge and ramps to the bridge would be clearly visible from directly off shore in the lake.

As shown in Exhibit 3.14-2, boaters would have clear views of the proposed bridge from the lake (this view is 300 feet away, as required by TRPA scenic quality evaluation standards). Thus, a contrast rating and visual magnitude assessment has been prepared in accordance with Chapter 36 of the TRPA Code of Ordinances. A summary of the assessment results is described below.

TRPA Contrast Rating Analysis of the Bridge and Ramps

The following contrast rating analysis with the four primary parts (color score, glass score, perimeter score, and surface/texture score) was used to evaluate these project elements within the Lake Tahoe shoreline.

Color Score

The optimal color for the highest TRPA color score would typically be dark brown for a color score of 17. However, a color analysis for the bridge and ramps indicate the optimal bridge color appears to be more bluish gray with grayish tan support columns.

For the purposes of this analysis, bluish grey is considered equivalent to the optimal color score for the bridge and ramps because of its ability to blend in with the background. The grayish tan support columns would receive a score of 11, and the bridge and ramps would receive a 17. Assuming two façade planes for the bridge and ramps and support columns, these color values produce a color score of 16.7 out of a possible 17.

Glass Score

Because no glass is proposed for along the shoreline, this value does not apply.

Surface Plane and Texture Score

The surface plane and texture score is calculated by determining the number of visible planes and the texture of each of those planes. Two planes are assumed for the bridge and ramps and support columns and these features

would be constructed of metal, wood, and concrete, which would be considered a heavy texture. According to the Surface Plane and Texture matrix, features with two planes and heavy texture, would receive a texture rating of 5.

Perimeter Score

The perimeter score is derived from the percentage of façade perimeter that is visible with screening vegetation. The optimal score would be 10, where 0 to 10 percent of the perimeter would be visible. The total perimeter of the façade of the bridge, ramps, and support columns would be 780 feet, where 540 feet (or 69 percent) of that perimeter would be over water and could not be mitigated with screening vegetation. Based on the TRPA perimeter matrix, structures that have between 61 and 70 percent perimeter visible, would yield a score of 4 for the visible perimeter.

Composite Score

The composite score for the bridge, ramps, and support columns, which is calculated by summing the color and reflectance score, surface plane and texture score, and perimeter score, assuming optimal vegetative screening, would be 25. This score of 25 with vegetative screening on the ramps would not meet the normally required score of 28. Therefore, because Alternative 1 would reduce the threshold rating of Shoreline Travel Unit 33 and degrade the mapped scenic resources within this travel unit, this impact would be **significant**.

Mitigation: Because the composite score was calculated based on use of optimal colors and vegetative screening for the bridge, ramps, and support columns, no additional mitigation is feasible to further reduce the visual impact of these features.

Significance after Mitigation: Because no feasible mitigation exists, this impact would remain **significant and unavoidable**. According to a special policy for PAS 100, no new uses should be approved that would degrade the high scenic quality of Shoreline Unit No. 33. The proposed bridge would be in conflict with this policy.

IMPACT 3.14-4 (Alt. 1) **Potential for Long-Term Degradation of a Scenic Highway or the Scenic Quality of Roadway Travel Unit 35 and Mapped Scenic Resources. (CEQA 1, 2; TRPA 1, 2)** *The study area is within view from U.S. 50, which is not designated as a state scenic highway but is within Roadway Travel Unit 35, including Roadway Visual Features 35-2 and 35-4. The proposed kiosk in the southern portion of the study area is the only permanent facility that would be located near U.S. 50. Views of this facility from U.S. 50 would be obscured by other buildings and existing development. Because no scenic resources within a scenic highway would be damaged substantially and the threshold rating for the roadway travel unit would not be reduced including the mapped scenic resources, this impact would be* ***less than significant****.*

The study area is within view from U.S. 50; however, this section of the highway is not designated as a State scenic highway. U.S. 50 is also within Roadway Travel Unit 35, which is currently not in attainment. One of the proposed kiosks would be located in the southwest portion of the study area near U.S. 50; however, views of this kiosk would be obscured by existing buildings along U.S. 50. Because no scenic resources within a scenic highway would be damaged and the threshold rating for Travel Unit 35 or the mapped scenic resources would not be reduced, this impact would be **less than significant**.

IMPACT 3.14-5 (Alt. 1) **Potential for Long-Term Degradation in Existing Visual Character or Quality of the Study Area. (CEQA 3)** *Alternative 1 would include some elements that would be visible after construction. Nearby residents and recreationists could experience changes in views related to these project elements. However, few permanent facilities are proposed and the scenic quality of the study area would not be substantially degraded. Therefore, this impact would be* ***less than significant****.*

Alternative 1 would include two kiosks, stabilization of the existing river access for boat take-out, observation areas, boardwalks and pedestrian trails, and bicycle paths. Viewers that may have views of these project elements would be recreationists, residents in surrounding neighborhoods, and travelers on U.S. 50.

One kiosk is proposed near an existing regional bike trail near U.S. 50, in the southeastern portion of the study area and another is proposed adjacent to the parking lot near Tahoe Keys Marina. These features would introduce views of small scale human-made structures roughly five feet long by 12 feet wide and tall enough to provide protection for standing trail users. Natural materials and colors would also be used for the kiosks.

In addition to the kiosks, several residences and recreationists would have views of new bike paths that would be constructed or existing trails that would be paved under Alternative 1. Constructing new paths or paving existing native surface paths would introduce human-made features into the landscape; however, pedestrian trails and bike paths would be small-scale and dispersed throughout the study area. The paths would also be largely be screened by surrounding vegetation.

Views of the natural surroundings within the study area would also change to encompass a boardwalk elevated approximately two feet above the ground, with a ten-foot-wide powder-coated metal or wood surface and a three-foot-tall railing on the lake side. The change in views of the existing well-delineated gravel trail to views of pavement and a few hundred feet of new boardwalk would not be substantial because existing and future uses would be similar and views would remain largely natural. Natural materials and colors would be used for the boardwalk, and because it would be low-lying and small-scale, it would not become a dominant feature in the views of the study area.

Riparian vegetation surrounding the Upper Truckee River would effectively block views of the proposed observation platform from the west side of the study area and the platform would be constructed with natural materials and colors. Thus, the proposed observation platform would not substantially affect scenic vistas for viewers or substantially degrade the visual quality of the study area.

Introducing public access facilities and recreation infrastructure into approximately 633 acres of primarily natural meadows and riparian vegetation would add human-made elements into the study area landscape. However, because project elements would be small-scale, would use natural materials and colors, and the study area would remain largely undeveloped and natural in character, these changes would not substantially degrade the visual quality of the study area. This impact would be **less than significant**.

IMPACT 3.14-6 (Alt. 1) **Potential for Increases in Light or Glare. (CEQA 4)** *The project would introduce heavy construction vehicles and equipment that may create some glare over a period of approximately four years; however, construction would not take place during months that would require lighting to be used. A parking area near the west side of the study area would increase light and glare in the long term, but this increase in lighting would be minimal. This impact would be* ***less than significant****.*

The project would introduce heavy construction vehicles and equipment that may create some glare over a period of approximately four years, primarily during daylight hours and, during the grading season (May 1 through October 15). Even so, it is unlikely that construction would take place during months that would require lighting to be used because of inclement weather. In addition, light and glare impacts related to construction would be temporary and would not be substantial.

The parking area proposed for the west side of the study area would be the only permanent project element that would have lighting. According to the CSLT's exterior lighting standards, parking lot, walkway, and building lights shall be directed downward and shall not exceed 26 feet in height. Because the new lighting would be near an existing parking lot and lighting at the Tahoe Keys Marina to the immediate west, and because the proposed lighting would be minimal and would be consistent with the CSLT's lighting design criteria, the project would not create substantial light and glare impacts in the long term. Therefore, this impact would be **less than significant**.

Alternative 2: New Channel—West Meadow (Minimum Recreation Infrastructure)

IMPACT 3.14-1 (Alt. 2) **Potential for Short-Term Degradation of the Scenic Quality of Shoreline Travel Unit 33, Roadway Travel Unit 35, or the Visual Character or Quality of the Study Area. (CEQA 1, 2, 3, TRPA 2)** *Construction activities associated with Alternative 2 may be visible from viewpoints outside of the study area. Construction restoration and recreation infrastructure that includes staging of construction equipment and materials (e.g., rock, vegetation, backhoes) that would temporarily change views, primarily of and from the southeast and northwest portions of the study area, over a period of approximately four years. Construction activities could degrade the scenic quality of the shoreline travel unit, roadway travel unit, and within the study area; however, construction activities would be temporary and would not be substantial. This impact would be* ***less than significant****.*

This impact is similar to but less than Impact 3.14-1 (Alt. 1), which would be less than significant. Alternative 2 would not include kiosks, a bridge, boardwalk, or other public access/recreation facilities that are included under Alternative 1; thus, this alternative would result in less construction activity than Alternative 1. In addition, construction activities associated with Alternative 2 would be temporary and would not substantially degrade the visual character of the study area or reduce the threshold ratings from any shoreline or travel units. Therefore, this impact would be **less than significant**.

IMPACT 3.14-2 (Alt. 2) **Potential for Long-Term Degradation of the Scenic Quality of Shoreline Travel Unit 33 and Mapped Scenic Resources Related to the Boardwalk and Observation Platforms. (CEQA 1, 2, 3; TRPA 1, 2)** *Alternative 2 would not include the boardwalk or observation platforms that could be visible from this Shoreline Travel Unit 33 or the associated mapped resources. Thus, Alternative 2 would not substantially degrade the scenic quality or reduce the threshold rating of this shoreline travel unit or mapped scenic resources.* ***No impact*** *would occur.*

Because Alternative 2 would not include any facilities that would be visible from Lake Tahoe or Shoreline Travel Unit 33, no TRPA contrast rating analysis was prepared for this alternative. Alternative 2 would not include construction of facilities associated with the boardwalk or observation platforms that would be constructed as part of Alternative 1. Therefore, Alternative 2 would not substantially degrade the visual quality of or reduce the threshold rating from Shoreline Travel Unit 33 or the mapped scenic resources within this travel unit. **No impact** would occur.

IMPACT 3.14-3 (Alt. 2) **Potential for Long-Term Degradation of the Scenic Quality of Shoreline Travel Unit 33 and Mapped Scenic Resources Related to the Upper Truckee River Bridge and Ramps. (CEQA 1, 2, 3; TRPA 1, 2)** *Alternative 2 would not include the bridge over the Upper Truckee River that is proposed under Alternative 1. In addition, Alternative 2 would not include ramps to connect the elevated bridge to the low-lying boardwalk. Because Alternative 2 would not include any facilities that would be visible from Lake Tahoe or Shoreline Travel Unit 33,* ***no impact*** *would occur.*

Because Alternative 2 would not include any facilities that would be visible from Lake Tahoe or Shoreline Travel Unit 33, no TRPA contrast rating analysis was prepared for this alternative. Alternative 2 would not include construction the bridge or ramps that would be constructed as part of Alternative 1. Therefore, Alternative 2 would not substantially degrade the visual quality of or reduce the threshold rating from Shoreline Travel Unit 33 or the mapped scenic resources within this travel unit. **No impact** would occur.

IMPACT 3.14-4 (Alt. 2) **Potential for Long-Term Degradation of the Scenic Quality of a Scenic Highway or Roadway Travel Unit 35 and Mapped Scenic Resources. (CEQA 1, 2; TRPA 1, 2)** *Under Alternative 2, no permanent facilities would be located near U.S. 50; however, placement of bank protection along the Upper Truckee River may be visible from the highway. This would be a minor change in views; therefore, this impact would be* ***less than significant****.*

Placement of bank protection along the Upper Truckee River may be visible from U.S. 50; however, this would be a minimal change in views for travelers on U.S. 50. In addition, Alternative 2 would not include construction of the kiosk near U.S. 50 that is included under Alternative 1. No other facilities—temporary or permanent—would be constructed within the viewshed of U.S. 50. Because no scenic resources of a scenic highway would be damaged and the threshold rating for Travel Unit 35 and the mapped scenic resources within the travel unit would not be reduced, this impact would be **less than significant**.

IMPACT 3.14-5 (Alt. 2) **Potential for Long-Term Degradation in Existing Visual Character or Quality of the Study Area. (CEQA 3)** *Alternative 2 would include some elements in the southeast and northwest portions of the study area that would be visible after construction. Nearby residents and recreationists could experience changes in views related to these facilities. However, very few permanent facilities are proposed and the scenic quality of the study area would not be substantially degraded. Therefore, this impact would be* ***less than significant****.*

This impact is similar to Impact 3.14-5 (Alt. 1); however, fewer permanent facilities would be constructed under Alternative 2 than under Alternative 1, resulting in fewer changes to the existing visual character of the study area. Unlike Alternative 1, Alternative 2 would include a fishing platform within approximately 440 feet of a residence in the Tahoe Keys Marina. The fishing platform would be made of wood and metal and would be approximately 300 square feet. Because the proposed fishing platform would have a relatively low profile and would be constructed with natural materials and colors, visual impacts related to the fishing platform would not be substantial. Given that all other project elements in Alternative 2 are similar to those of Alternative 1 in their attributes but are fewer in number, Alternative 2 would create fewer visual changes than Alternative 1. Therefore, for this reason and the reasons given in the discussion of Impact 3.14-5 (Alt. 1), these features would not substantially degrade the visual quality of the study area. Therefore, this impact would be **less than significant**.

IMPACT 3.14-6 (Alt. 2) **Potential for Increases in Light or Glare. (CEQA 4)** *Alternative 2 would introduce heavy construction vehicles and equipment that may create some glare over a period of approximately four years; however, it is unlikely that construction would take place during months that would require lighting to be used, and this alternative would not include long-term sources of light or glare. Therefore, this impact would be* ***less than significant****.*

This impact is similar to but less than Impact 3.14-6 (Alt. 1), which would be less than significant. Short-term increases in light and glare under Alternative 2 would be the same as under Alternative 1. Alternative 2 would not include long-term sources of light or glare. Because there would be no substantial increases in light or glare, this impact would be **less than significant**.

Alternative 3: Middle Marsh Corridor (Moderate Recreation Infrastructure)

IMPACT 3.14-1 (Alt. 3) **Potential for Short-Term Degradation of the Scenic Quality of Shoreline Travel Unit 33, Roadway Travel Unit 35, or the Visual Character or Quality of the Study Area. (CEQA 1, 2, 3, TRPA 2)** *Construction activities may be visible from viewpoints outside of the study area. Construction of restoration and recreation infrastructure that includes staging of construction equipment and materials (e.g., rock, vegetation, backhoes) that would temporarily change views, primarily of and from the southeast and northwest portions of the study area, over a period of approximately four years. Construction activities could degrade the scenic quality of the shoreline travel unit, roadway travel unit, and within the study area; however, construction activities would be temporary and would not be substantial. This impact would be* ***less than significant****.*

This impact is similar to but less than Impact 3.14-1 (Alt. 1), which would be less than significant. Alternative 3 would not include the bridge included under Alternative 1, and would have one less observation platform and kiosk, and less extensive pedestrian trails and bike paths than Alternative 1; thus this alternative would result in less construction activity than Alternative 1, but more activity than Alternative 2. Construction activities associated with Alternative 3 would be temporary and would not substantially degrade the visual character of the study area or reduce the threshold ratings from any shoreline or travel units. Therefore, this impact would be **less than significant**.

IMPACT 3.14-2 (Alt. 3) **Potential for Long-Term Degradation of the Scenic Quality of Shoreline Travel Unit 33 and Mapped Scenic Resources Related to the Boardwalk and Observation Platforms. (CEQA 1, 2, 3; TRPA 1, 2)** *Alternative 3 would include a boardwalk; however, it would be sufficiently low-lying that it would not be visible from the lake because of screening by the beach ridge and vegetation. Therefore, this impact would be* ***less than significant.***

This impact is similar to but less than Impact 3.14-2 (Alt. 1), which would be less than significant. Alternative 3 would include a boardwalk near Shoreline Travel Unit 33 similar to Alternative 1; however, the boardwalk would be shorter (2,273 linear feet) than the boardwalk proposed under Alternative 1 (4,000 linear feet) and Alternative 3 would not include observation platforms near the shoreline. Alternative 3 would include a fishing platform made of wood or composite material and metal that would be approximately 500 square feet. As described under Impact 3.14-2 (Alt. 2), the visual changes associated with the fishing platform would not be substantial. Therefore, Alternative 3 would not substantially degrade the visual quality of or reduce the threshold rating from Shoreline Travel Unit 33 or the mapped scenic resources within the travel unit. This impact would be **less than significant**.

IMPACT 3.14-3 (Alt. 3) **Potential for Long-Term Degradation of the Scenic Quality of Shoreline Travel Unit 33 and Mapped Scenic Resources Related to the Upper Truckee River Bridge and Ramps. (CEQA 1, 2, 3; TRPA 1, 2)** *Because Alternative 3 would not include a bridge and ramps, or any other project element that would degrade the scenic quality of this shoreline travel unit,* ***no impact*** *would occur.*

Because Alternative 3 would not include a bridge and ramps, or any other element that would be visible from Lake Tahoe or Shoreline Travel Unit 33, no TRPA contrast rating analysis was prepared for this alternative. Therefore, Alternative 3 would not substantially degrade the visual quality of or reduce the threshold rating from Shoreline Travel Unit 33 or the mapped scenic resources within the travel unit. **No impact** would occur.

IMPACT 3.14-4 (Alt. 3) **Potential for Long-Term Degradation of the Scenic Quality of a Scenic Highway or Roadway Travel Unit 35 and Mapped Scenic Resources. (CEQA 1, 2; TRPA 1, 2)** *Under Alternative 3, no permanent facilities would be located near U.S. 50; however, placement of bank protection along the Upper Truckee River may be visible from the highway. This would be a minor change in views; therefore, this impact would be* ***less than significant****.*

This impact is identical to Impact 3.14-4 (Alt. 2), which would be **less than significant**.

IMPACT 3.14-5 (Alt. 3) **Potential for Long-Term Degradation in Existing Visual Character or Quality of the Study Area. (CEQA 3)** *Alternative 3 would include some elements in the southeast and northwest portions of the study area that would be visible after construction. Nearby residents and recreationists could experience changes in views related to these facilities; however, no officially designated scenic vistas would be affected. In addition, very few permanent facilities are proposed and the visual quality of the study area would not be substantially degraded. This impact would be* ***less than significant****.*

This impact is identical to Impact 3.14-5 (Alt. 2), which would be **less than significant**.

IMPACT 3.14-6 (Alt. 3) **Potential for Increases in Light or Glare. (CEQA 4)** *Alternative 3 would introduce heavy construction vehicles and equipment that may create some glare over a period of approximately 4 years; however, it is unlikely that construction would take place during months that would require lighting to be used. In addition, this alternative would not include long-term sources of light or glare. This impact would be* ***less than significant****.*

This impact is similar to but less than Impact 3.14-6 (Alt. 1). Alternative 3 would include fewer facilities and less construction than Alternative 1 and would therefore result in less short-term light and glare than Alternative 1. Alternative 3 would not include long-term sources of light or glare. Because there would not be a substantial increase in light or glare, this impact would be less **than significant**.

Alternative 4: Inset Floodplain (Moderate Recreation Infrastructure)

IMPACT 3.14-1 (Alt. 4) **Potential for Short-Term Degradation of the Scenic Quality of Shoreline Travel Unit 33, Roadway Travel Unit 35, or the Visual Character or Quality of the Study Area. (CEQA 1, 2, 3, TRPA 2)** *Construction of restoration and recreation infrastructure that includes staging of construction equipment and materials (e.g., rock, vegetation, backhoes) may be visible from viewpoints outside of the study area. Construction activities and the facilities themselves could degrade the scenic quality of the shoreline travel unit, roadway travel unit, and within the study area; however, construction activities would be temporary and would not be substantial. This impact would be* ***less than significant****.*

This impact is similar to but less than Impact 3.14-1 (Alt. 1), which would be less than significant. Although Alternative 4 would entail more extensive excavation along the Upper Truckee River, it would not include the bridge included under Alternative 1, and would have one less kiosk and a less extensive pedestrian and bike path system than under Alternative 1. Thus, this alternative would result in less visible construction activity than Alternative 1, but more than Alternative 2; visible construction activity would be comparable to Alternative 3. Construction activities associated with Alternative 4 would be temporary and would not substantially degrade the visual character of the study area or reduce the threshold ratings from any shoreline or travel units. Therefore, this impact would be **less than significant**.

IMPACT 3.14-2 (Alt. 4) **Potential for Long-Term Degradation of the Scenic Quality of Shoreline Travel Unit 33 and Mapped Scenic Resources Related to the Boardwalk and Observation Platforms. (CEQA 1, 2, 3; TRPA 1, 2)** *Alternative 4 would include a boardwalk; however, it would be sufficiently low-lying that it would not be visible from the lake, because of screening by the beach ridge and vegetation. Therefore, Alternative 4 would not substantially reduce the visual quality or threshold rating from a travel unit or mapped scenic resources. This impact would be* ***less than significant****.*

This impact is similar to but less than Impact 3.14-2 (Alt. 1), which would be less than significant. Alternative 4 would include a boardwalk near Shoreline Travel Unit 33 similar to Alternative 1; however, the boardwalk would be much shorter (1,040 linear feet) than the boardwalk proposed under Alternative 1 (4,000 linear feet), and Alternative 4 would not include observation platforms near the shoreline. Therefore, Alternative 4 would not substantially degrade the visual quality of or reduce the threshold rating from Shoreline Travel Unit 33 or the mapped scenic resources within this travel unit. This impact would be **less than significant**.

IMPACT 3.14-3 (Alt. 4) **Potential for Long-Term Degradation of the Scenic Quality of Shoreline Travel Unit 33 and Mapped Scenic Resources Related to the Bridge and Ramps. (CEQA 1, 2, 3; TRPA 1, 2)** *Because Alternative 4 would not include a bridge or ramps, or any other structure that would substantially degrade the scenic quality or reduce the threshold rating of this shoreline travel unit or mapped scenic resources,* ***no impact*** *would occur.*

Because Alternative 4 would not include any facilities that would be visible from Lake Tahoe or Shoreline Travel Unit 33, no TRPA contrast rating analysis was prepared for this alternative. Alternative 4 would not include construction of the facilities associated with the bridge or ramps that would be constructed as part of Alternative 1. Therefore, Alternative 4 would not substantially degrade the visual quality of or reduce the threshold rating from Shoreline Travel Unit 33 or the mapped scenic resources within the travel unit. **No impact** would occur.

IMPACT 3.14-4 (Alt. 4) **Potential for Long-Term Degradation of the Scenic Quality of a Scenic Highway or Roadway Travel Unit 35 and Mapped Scenic Resources. (CEQA 1, 2; TRPA 1, 2)** *Under Alternative 4, no permanent facilities would be located near U.S. 50; however, placement of bank protection along the Upper Truckee River may be visible from the highway. This would be a minor change in views and would not substantially damage a resource from a scenic highway or reduce the threshold rating of a travel unit or mapped scenic resources. Therefore, this impact would be* ***less than significant****.*

This impact is identical to Impact 3.14-4 (Alt. 2), which would be **less than significant**.

IMPACT 3.14-5 (Alt. 4) **Potential for Long-Term Degradation in Existing Visual Character or Quality of the Study Area. (CEQA 3)** *Alternative 4 would include some elements in the southeast and northwest portions of the study area that would be visible after construction. Nearby residents and recreationists could experience changes in views related to these elements. However, very few permanent facilities are proposed and the visual quality of the study area would not be substantially degraded. Therefore, this impact would be* ***less than significant****.*

This impact is similar to Impact 3.14-5 (Alt. 1); however, fewer permanent facilities would be constructed under Alternative 4 than under Alternative 1, resulting in fewer changes to the existing visual character of the study area. Because all other project elements in Alternative 4 would create similar or fewer visual changes than those in Alternative 1, and would not substantially degrade the visual character of the study area, this impact would be **less than significant**.

IMPACT 3.14-6 (Alt. 4) **Potential for Increase in Light or Glare. (CEQA 4)** *Alternative 4 would introduce heavy construction vehicles and equipment that may create some glare over a period of approximately four years; however, it is unlikely that construction would take place during months that would require lighting to be used. In addition, this alternative would not include any long-term sources of light or glare. This impact would be* ***less than significant****.*

This impact is similar to but less than Impact 3.14-6 (Alt. 1). Alternative 4 would include fewer facilities and less construction than Alternative 1 and would therefore result in less short-term light and glare than Alternative 1. Like Alternatives 2 and 3, Alternative 4 would not include long-term sources of light and glare. Because this alternative would not create any new substantial sources of light or glare, this impact would be **less than significant**.

Alternative 5: No-Project/No-Action

IMPACT 3.14-1 (Alt. 5) **Potential for Short-Term Degradation of the Scenic Quality of Shoreline Travel Unit 33, Roadway Travel Unit 35, or the Visual Character or Quality of the Study Area. (CEQA 1, 2, 3, TRPA 2)** *Alternative 5 would not include construction activities associated with construction of facilities proposed under the action alternatives. Therefore, there would be no changes in views from the shoreline travel unit, roadway travel unit, or other areas of the study area associated with construction that would degrade the visual character of the study area or reduce any threshold ratings.* ***No impact*** *would occur.*

Alternative 5 would not include construction of public access and recreation facilities that are proposed under the action alternatives; thus this alternative would not result in temporary changes in views associated with heavy equipment and construction activity that would degrade views of the study area or reduce threshold ratings from any shoreline or travel units. Therefore, **no impact** would occur.

IMPACT 3.14-2 (Alt. 5) **Potential for Long-Term Degradation of the Scenic Quality of Shoreline Travel Unit 33 and Mapped Scenic Resources Related to the Boardwalk and Observation Platforms. (CEQA 1, 2, 3; TRPA 1, 2)** *The study area is within Shoreline Travel Unit 33; however, Alternative 5 would not include a boardwalk or observation platforms that would be visible from this shoreline travel unit. Thus, Alternative 5 would not degrade the scenic quality or reduce the threshold rating of this shoreline travel unit or mapped scenic resources.* ***No impact*** *would occur.*

Because Alternative 5 would not include any facilities that would be visible from Lake Tahoe or Shoreline Travel Unit 33, no TRPA contrast rating analysis was prepared for this alternative. Alternative 5 would not include the boardwalk or observation platforms that would be constructed as part of Alternative 1 and would not include any construction activities in the study area. No change in views for boaters on the lake or from any surrounding view points would occur. Therefore, Alternative 5 would not degrade the visual quality of or reduce the threshold rating from Shoreline Travel Unit 33 or the mapped scenic resources within the travel unit. **No impact** would occur.

IMPACT 3.14-3 (Alt. 5) **Potential for Long-Term Degradation of the Scenic Quality of Shoreline Travel Unit 33 and Mapped Scenic Resources Related to the Upper Truckee River Bridge and Ramps. (CEQA 1, 2, 3; TRPA 1, 2)** *Alternative 5 would not include the bridge and associated ramps over the Upper Truckee River that is proposed under Alternative 1. Because Alternative 5 would not include a bridge or ramps, or any other facilities that would degrade the scenic quality or reduce the threshold rating of this shoreline travel unit or mapped scenic resources,* ***no impact*** *would occur.*

Because Alternative 5 would not include any facilities that would be visible from Lake Tahoe or Shoreline Travel Unit 33, no TRPA contrast rating analysis was prepared for this alternative. Alternative 5 would not include

construction activities or the facilities associated with the bridge or ramps that would be constructed as part of Alternative 1. Therefore, no change in views for boaters on the lake or from any surrounding viewpoints would occur, and Alternative 5 would not degrade the visual quality of or reduce the threshold rating from Shoreline Travel Unit 33 or the mapped scenic resources within the travel unit. **No impact** would occur.

IMPACT 3.14-4 (Alt. 5) **Potential for Long-Term Degradation of the Scenic Quality of a Scenic Highway or Roadway Travel Unit 35 and Mapped Scenic Resources. (CEQA 1, 2; TRPA 1, 2)** *No permanent facilities would be located near U.S. 50 that would damage a scenic resource of a highway or reduce the threshold rating of the travel unit or mapped scenic resources. Therefore,* ***no impact*** *would occur.*

There would be no temporary or permanent facilities constructed under Alternative 5 that would change views from U.S. 50 or Roadway Travel Unit 35. Because no scenic resources of a scenic highway would be damaged and the threshold rating for Travel Unit 35 and the mapped scenic resources within the travel unit would not be reduced, **no impact** would occur.

IMPACT 3.14-5 (Alt. 5) **Potential for Long-Term Degradation in Existing Visual Character or Quality of the Study Area. (CEQA 3)** *No permanent facilities are included under this alternative. Therefore, Alternative 5 would not result in degradation of the visual quality of the study area.* ***No impact*** *would occur.*

As the No-Project/No-Action Alternative, Alternative 5 would not involve any construction of any permanent facilities. Thus, the visual quality of the study area would not be degraded. **No impact** would occur.

IMPACT 3.14-6 (Alt. 5) **Potential for Increases in Light or Glare. (CEQA 4)** *No sources of light or glare would be introduced as part of Alternative 5.* ***No impact*** *would occur.*

As the No-Project/No-Action Alternative, Alternative 5 would not introduce any new long-term sources of light and glare. Thus, no new sources of light and glare would be created as a result of Alternative 5. **No impact** would occur.

3.15 SOCIOECONOMICS, POPULATION AND HOUSING, AND ENVIRONMENTAL JUSTICE

This section describes the demographic and socioeconomic characteristics of the City of South Lake Tahoe and El Dorado County. It analyzes the possibility of changes in population, housing, and employment that could result from implementation of the Upper Truckee River and Marsh Restoration Project, including those that could trigger adverse physical effects in the city or the region. Also, this section addresses environmental justice issues associated with the project's implementation.

3.15.1 AFFECTED ENVIRONMENT

REGULATORY SETTING

Federal

Socioeconomics

National Environmental Policy Act, Section 1502

Provisions in NEPA found in Section 1502.16(c) of the Code of Federal Regulations (40 CFR 1502.16[c]) require federal agencies to identify potential conflicts between a proposed action and the related plans and policies of federal, state, and local agencies and Indian tribes. This requirement helps federal agencies identify potential conflicts that may cause adverse effects on the social and economic environment of a study area because many agencies' and tribes' plans and policies are designed to protect the people residing within their jurisdictions and/or the local economy they depend upon for their economic livelihoods (CEQ 2008).

Council on Environmental Quality

The Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500–1508) provide guidance related to social and economic impact assessments by noting that the "human environment" assessed under NEPA is to be "interpreted comprehensively" to include "the natural and physical environment and the relationship of people with that environment" (40 CFR 1508.14). Furthermore, these regulations require agencies to assess "aesthetic, historic, cultural, economic, social, or health" effects, whether direct, indirect, or cumulative (40 CFR 1508.8).

Environmental Justice

In 1994, President Bill Clinton issued Executive Order (EO) 12898 regarding environmental justice. This order requires federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States. Two documents provide some measure of guidance to agencies required to implement this executive order: *Environmental Justice: Guidance under the National Environmental Policy Act* (CEQ 1997) and *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analysis* (EPA 1998). Both serve as guides for incorporating environmental justice goals into preparation of environmental impact statements under NEPA. These documents provide specific guidelines for determining whether there are any environmental justice issues associated with a proposed federal project.

State

The California Environmental Protection Agency (Cal/EPA) adopted an environmental justice policy in 2004 (Cal/EPA 2004). Pursuant to California Public Resources Code Sections 71110–71113, Cal/EPA developed this policy to provide guidance to its resource boards, departments, and offices. The policy is intended to support the

State's goal of "achieving fair treatment of people of all races, cultures and incomes with respect to the development, adoption, implementation and enforcement of environmental laws and policies."

Tahoe Regional Planning Agency

TRPA recognizes a relationship between the health of the natural environment and the social and economic health of the region. The following declaration from the TRPA Compact (1980) states:

> **Article 1, Finding 6:** Maintenance of the social and economic health of the region depends on maintaining the significant scenic, recreational, educational, scientific, natural public health values provided by the Lake Tahoe Basin.

Goals and Policies

The following policy regarding socioeconomics from TRPA's Regional Plan (1987), listed under Goal 1 of the Land Use Element, is applicable to the project:

- **Policy 3:** The Regional Plan shall seek to maintain a balance between economic health and the environment.

ENVIRONMENTAL SETTING

Population

Population Growth

The City of South Lake Tahoe experienced its most dramatic population growth between 1970 and 1980, when its population grew from 12,921 to 20,681, or 4.82 percent per year. From 1990 to 2000, the population increased from 21,586 to 23,609, or 0.94 percent per year (CSLT 2008a:3-2). The city's year-round population reached a peak in 2002, and declined slightly between 2002 and 2006. As of January 1, 2008, the California Department of Finance (DOF) estimated that South Lake Tahoe's population was approximately 23,725 (DOF 2008a).

Approximately 15 percent of El Dorado County's population lives in South Lake Tahoe. The remaining population of the county resides in the incorporated city of Placerville (10,237 or 6 percent of the county's population) and unincorporated areas, including El Dorado Hills, Cameron Park, Shingle Springs, Meyers, and Pollock Pines (DOF 2008a).

El Dorado County has experienced a higher rate of population growth than South Lake Tahoe, primarily in the western part of the county. Although the city's population increased approximately 4.82 percent per year between 1970 and 1980, the county's population increased approximately 6.95 percent per year during the same period (CSLT 2008a:3-3). From 1990 to 2000, the population of El Dorado County increased from 125,955 to 156,299, or an average annual growth rate of 2.18 percent per year (CSLT 2008a:3-3). As of January 2008, DOF estimated that the county's population was 179,722 (DOF 2008a).

Racial Composition and Poverty Status

Table 3.15-1 shows the racial composition of the populations of South Lake Tahoe and El Dorado County. The city's population is shown to be predominantly white, accounting for 85.7 percent of the population in 1990, and 75.7 percent in 2000. However, the city has a proportionally smaller white population than the county. El Dorado County's white population accounted for 94.5 percent of the total population in 1990, and 89.7 percent in 2000. The white population increased in the county between 1990 and 2000, but South Lake Tahoe's white population decreased by 3.3 percent in the same period.

Table 3.15-1
Population Distribution by Race and Ethnicity for the City of South Lake Tahoe and El Dorado County

Race/Ethnicity [1]	1990		2000		Percent of Change 1990–2000
	Population	Percent of Total	Population	Percent of Total	
City of South Lake Tahoe					
White	18,496	85.7	17,878	75.7	-3.3
Black or African American	223	1.0	178	0.8	-20.2
American Indian or Alaskan Native	226	1.0	228	1.0	0.9
Asian	1,367	6.3	1,419	6.0	3.8
Hispanic or Latino [2]	4,003	18.5	6,294	26.7	57.2
Total Population [3]	21,586	NA	23,609	NA	9.4
El Dorado County					
White	119,118	94.5	140,209	89.7	17.7
Black or African American	606	0.5	813	0.5	34.2
American Indian or Alaskan Native	1,351	1.1	1,566	1.0	15.9
Asian	2,456	1.9	3,328	2.1	35.5
Hispanic or Latino [2]	8,777	7.0	14,566	9.3	66.0
Total Population [3]	125,995	NA	156,299	NA	24.1

Notes:

[1] The "other" and "two or more races" categories are not included in the table because of changes in descriptive measures between the 1990 and 2000 U.S. Census.

[2] The U.S. Census Bureau considers Hispanic and Latino as an ethnicity, not a race. Consequently, a person of Hispanic or Latino descent could identify racially as White, Black/African American, Native American, Asian, or other.

[3] As a result of the circumstances identified in footnotes 1 and 2, the column data do not add to the total populations, and the percentages do not add to 100 (and the latter is therefore noted as "NA," or not applicable).

Sources: U.S. Census Bureau 2000, CSLT 2008a:3-8

The Black/African American population in South Lake Tahoe decreased 20.2 percent between 1990 and 2000. El Dorado County had a larger population of Black/African American residents than South Lake Tahoe, and its Black/African American population increased by 34.2 percent during the same period.

For both the city and county, the American Indian/Alaskan Native population generally remained the same between 1990 and 2000, comprising 1 percent of the total population in each location.

The Asian population in South Lake Tahoe increased by 3.8 percent between 1990 and 2000, accounting for 6 percent of the total population in 2000. In comparison, El Dorado County's Asian population increased by 35. percent between 1990 and 2000.

South Lake Tahoe's Hispanic/Latino population grew significantly between 1990 and 2000, increasing by 57.2 percent and accounting for more than a quarter of the city's total population in 2000. Between 1990 and 2000, E Dorado County also experienced significant growth in the number of its Hispanic/Latino residents, which increased by 66 percent. (Please note that the U.S. Census considers Hispanic/Latino individuals to be an ethnicity, rather than a race, so they are "double counted" in other racial categories.)

Table 3.15-2 shows the 1999 median household income, per capita income, and the percent of persons below poverty level in South Lake Tahoe and El Dorado County. The city's median household income and per capita income were lower than those of the county. The city's median income was $34,707 and its per capita income was $18,452, compared to a median income of $51,484 and a per capita income of $25,560 for the county. Approximately 12.5 percent of city residents were below poverty level, and 7.1 percent of county residents were below poverty level. This difference can be accounted for, in part, because South Lake Tahoe had a relatively high cost of living. In addition, people employed in the seasonal service industry and retail workforce generally worked in lower-wage jobs as casino workers, ski instructors, and restaurant workers.

Table 3.15-2
1999 Median Income, Per Capita Income, and Below Poverty Level Residents for City of South Lake Tahoe and El Dorado County

	Median Income	Per Capita Income [1]	Percent of Persons Below Poverty Level
South Lake Tahoe	$34,707	$18,452	12.5
El Dorado County	$51,484	$25,560	7.1

Note:
[1] Per capita income is the mean income computed for every man, woman, and child residing in South Lake Tahoe and El Dorado County, respectively.
Sources: U.S. Census Bureau 2000, CSLT 2008a:3-13, 3-16

Housing

The number of housing units in South Lake Tahoe decreased from 14,066 in 1990, to 14,005 in 2000, a decrease of less than 0.01 percent (CSLT 2008b:4-17). Although the housing statistics do not show a net increase in housing units, the city has seen an increase in residential development in recent years. Some of this housing development has occurred in places where existing units were demolished or rehabilitated, thus they are not reflected in the net housing growth (CSLT 2008b:4-18). The number of housing units, as of January 1, 2008, was estimated to be 14,355 (DOF 2008b). Median home prices in South Lake Tahoe declined by 6.2 percent during a one-year period (November 2006 to November 2007), from $453,000 to $425,000 (CSLT 2008b:4-52).

Vacancy trends in housing are analyzed using a vacancy rate to establish the relationship between housing supply and demand. If the demand for housing units is greater than the available supply, then the vacancy rate is low and the price of housing will most likely increase. According to the California Department of Housing and Community Development (HCD), a housing vacancy rate of 5 percent is considered normal (HCD 2000). Vacancy rates below 5 percent indicate a housing shortage in a community. The city had a vacancy rate of 2.0 percent for owner-occupied units and 8.3 percent for rental units in 2000 (CSLT 2008b:4-28).

As in any tourist destination, a large portion of the housing units in South Lake Tahoe are seasonal, second homes. Because the U.S. Census is collected in April during the city's low tourist season, most of these units are measured as vacant. Of the 14,005 housing units in the city in 2000, 4,595 housing units (32.8 percent) were reported to be vacant at the time of the U.S. Census (U.S. Census Bureau 2000). The majority of these vacant units (26.3 percent of the total housing stock) were for seasonal, recreational, or occasional use (CSLT 2008a:3-11).

Employment

The Lake Tahoe region, including South Lake Tahoe, has a primarily tourist-based economy. The impact of visitors to Lake Tahoe on the economy of the Lake Tahoe region was studied in the *2001 Threshold Evaluation* (TRPA 2002). Estimates generated by the report indicated that visitors to the region spent more than $1.5 billion on travel-related goods and services in 2000. Businesses that depend primarily on travel and tourism, such as

lodging establishments, gaming, restaurants, and recreation services, provide a major source of employment and payroll in the Lake Tahoe region (TRPA 2002).

Table 3.15-3 shows the total number of those employed by major industries who resided in the South Lake Tahoe in 2005. Employed citizens totaled 14,559. Of these, approximately 8,089 (55.6 percent) worked in the services industry, including 3,889 hotel and lodging workers, 648 entertainment and recreation workers, and 1,221 health and medical services workers. Retail trade was the second largest industry, with 3,833 workers (26.3 percent), including 1,139 restaurant workers. Many companies in the service industry and retail trade employ a seasonal workforce that is often composed of younger or college-aged workers (CSLT 2008b:4-24).

Table 3.15-3
2005 Employment by Major Industry

	Total	Percent
Agricultural, Forestry, Fishing	190	1.3
Mining	3	0.0
Construction	306	2.1
Manufacturing	60	0.4
Transportation and Communications	475	3.3
Wholesale Trade	171	1.2
Retail Trade	3,833	26.3
Finance, Insurance, and Real Estate	692	4.8
Services	8,089	55.6
Public Administration	740	5.1
Total	**14,559**	**100**

Source: CSLT 2008b:4-25

3.15.2 Environmental Consequences and Mitigation Measures

Significance Criteria

For this analysis, significance criteria are based on the checklist presented in Appendix G of the State CEQA Guidelines; the TRPA Initial Environmental Checklist; factual or scientific information and data; and regulatory standards of federal, state, and local agencies. Additional criteria related to socioeconomics (and presented as NEPA criteria) are based on other recent environmental documents prepared by Reclamation in Northern California (Reclamation 2008). Together these CEQA, TRPA, and additional NEPA criteria encompass factors taken into account under NEPA to determine the significance of an action in terms of the context and intensity of its effects. Under NEPA, the significance of an effect is used solely to determine whether an EIS must be prepared.

Because socioeconomic topics are organized differently in NEPA, CEQA, and TRPA environmental provisions, the criteria are presented in a combined list, unlike other sections of the environmental document.

An alternative was determined to result in a significant effect related to socioeconomics or population and housing if it would:

- induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure) (CEQA 1);
- generate a substantial demand for new housing, the construction of which could cause significant environmental impacts (CEQA 2);
- displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere (CEQA 3);
- alter the location, distribution, density, or growth rate of the human population planned for the Lake Tahoe region (TRPA 1);
- include or result in the temporary or permanent displacement of residents (TRPA 2);
- result in the loss of affordable housing (TRPA 3);
- affect existing housing, or create a demand for additional housing (TRPA 4);
- require numbers of new workers in a particular industrial sector from outside the local area during construction or operation for effective implementation (NEPA 1);
- cause a substantial decrease in the number of opportunities for short-term or long-term direct employment (NEPA 2);
- displace, relocate, or increase area businesses associated with an increase in recreational users (NEPA 3);
- compete with established industries for workers within the labor force or associated resources to the extent that there would be a shortage of workers available to related businesses (NEPA 4);
- cause a substantial decrease in the number of opportunities for temporary or long-term increases in personal and/or disposable incomes (NEPA 5); or
- considerably decrease the sales and/or incomes of businesses (NEPA 6).

DISPROPORTIONATELY HIGH AND ADVERSE CRITERIA

Based on CEQ and EPA guidelines (CEQ 1997, EPA 1998), an alternative was determined to result in an environmental justice issue if the project would cause impacts to low-income or minority populations that are disproportionately high and adverse, either directly, indirectly, or cumulatively. To make a finding that disproportionately high and adverse impacts would likely fall on a minority or low-income population, all three of the following conditions must be met:

- a minority or low-income population must reside in the affected area,
- a substantial and adverse impact must exist, and
- the impact on the minority or low-income population must be disproportionately high and adverse.

The CEQ guidance indicates that, when determining whether the effects are high and adverse, agencies are to consider whether the risks or rates of impact are significant (as defined by NEPA) or above generally accepted norms.

No TRPA significance criteria are applicable to the socioeconomic or environmental justice impacts of the project.

METHODS AND ASSUMPTIONS

The examination of demographic and socioeconomic characteristics in this section is based on information obtained from review of existing conditions and available projections, including those in the *City of Lake Tahoe General Plan Update Background Report* (CSLT 2008a) the draft Housing Element of the *City of Lake Tahoe General Plan* (CSLT 2008b), and projections made by the U.S. Census Bureau (2000), DOF (2008a, 2008b), and other sources.

According to CEQ and EPA guidelines, a minority population is present in an affected area if the minority population of the affected area exceeds 50 percent, or if the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. Under the same guidelines, a low-income population exists if the affected area is composed of 50 percent or more people living below the poverty threshold, as defined by the U.S. Census Bureau, or if the percentage of people living below the poverty threshold in the area is significantly greater than the poverty percentage of the general population or other appropriate unit of geographic analysis. For the purposes of an environmental justice screening, race, ethnic origin, and poverty status were obtained for South Lake Tahoe and El Dorado County. The city and county boundaries represent an area that is appropriate for consideration of environmental justice issues pursuant to EPA guidelines.

Implementation of Alternatives 1–4 would involve construction activities and associated employment opportunities, housing demand, and commercial activity. The estimated number of workers required for these activities are summarized in Appendix D, "Construction Workers and Equipment for Action Alternatives." For this analysis, it was assumed that each year the total number of construction workers would not exceed the sum of the workers estimated for all activities that year.

IMPACTS NOT DISCUSSED FURTHER IN THIS EIR/EIS/EIS

Socioeconomics, Populations, and Housing

Displace substantial numbers of people or existing housing (CEQA 3; TRPA 2, 3)—No residences are located in the project's study area. Therefore, the project would not directly displace substantial numbers of people or existing housing.

Decrease opportunities for employment or income increases, or considerably decrease the sales and/or incomes of businesses (NEPA 2, 5, 6)—No businesses are located within the study area and minimal commercial activity occurs in the study area. Furthermore, both construction of any project alternative and subsequent increases in recreational visitors to the study area would increase opportunities for employment or income increase, and sales and/or incomes of businesses. Therefore, the project would not decrease opportunities for employment or income increases, or sales and/or incomes of businesses.

Environmental Justice Issues

As discussed above and shown in Tables 3.15-1 and 3.15-2, no minority and low-income populations exceed 50 percent in South Lake Tahoe or El Dorado County. The city's slightly higher poverty rate is not meaningfully greater than the county's rate, and both the city and county poverty rates are proportionally less than the statewide rate of 18.6 percent. Therefore, no disproportionately high and adverse impacts on minority or low-income populations would occur and this topic is not discussed further.

Alternative 1: Channel Aggradation and Narrowing (Maximum Recreation Infrastructure)

IMPACT 3.15-1 (Alt. 1) **Short-Term Increase in Population and Housing Demand Resulting from Construction-Related Activities. (NEPA 1, 4; CEQA 1, 2; TRPA 1, 4)** *Alternative 1 would generate a temporary increase in employment in South Lake Tahoe from construction-related activities. However, the number of existing construction workers in the city and region is considered sufficient to meet the demands associated with Alternative 1; therefore, this temporary increase in employment is not expected to generate any substantial population growth in the study area or generate the need for additional housing for construction workers. This impact would be* ***less than significant****.*

Project construction would occur over a four-year period, and the number of construction jobs would vary by year. Construction activities would require up to an estimated 41 construction workers during both Year 1 and Year 2, 84 construction workers during Year 3, and 12 construction workers during Year 4. Compared to the other alternatives, Alternative 1 would require a similar number of workers during Years 1 and 2 (Alternatives 2–4 would require 34–46 workers during Years 1–2). During Year 3, Alternative 1 would require a similar number of workers to Alternative 2, somewhat more than Alternative 3, and more than Alternative 4 during Year 3 (Alternatives 2–4 would require 85, 68, and 35 workers, respectively, during Year 3). During Year 4, this alternative would require the same number of workers as Alternatives 2–4.

According to the latest labor data available from the U.S. Census Bureau (2000), 306 city residents are employed in the construction industry (Table 3.15-3). This number would likely be sufficient to meet the demands associated with Alternative 1. It is also possible that construction workers may come from nearby communities such as Sacramento, Carson City, and Reno. Because of the short-term nature of the construction season in the Tahoe Basin, it is common for workers to commute from these nearby communities. Consequently, neither substantial population growth nor an increase in housing demand in the region is anticipated. Therefore, the project would not be expected to generate the need for substantial additional housing in South Lake Tahoe during construction. Because of these conditions, the impact of a temporary increase in population growth and housing demand associated with project construction would be **less than significant**.

IMPACT 3.15-2 (Alt. 1) **Potential Long-Term Effect on Sales or Incomes of Local Businesses Resulting from Additional Visitors to the Study Area. (NEPA 3)** *Alternative 1 includes improved recreation facilities that could attract additional visitors to the study area, potentially increasing commercial activity at local businesses in South Lake Tahoe. However, minimal commercial activity would be associated with this increase in use because it would primarily result from residents of adjacent neighborhoods responding to greater connectivity between the Tahoe Keys and Al Tahoe neighborhoods, and these residents already use local businesses. Therefore, Alternative 1 would not negatively affect sales or incomes of local businesses. This impact would be* ***less than significant****.*

Alternative 1 would modify or add recreation facilities to the study area that could attract visitors, potentially increasing commercial activity at local businesses in South Lake Tahoe. These facilities would include kiosks, bicycle paths and pedestrian trails, two boardwalks, observation platforms and viewpoints, and a boardwalk and bridge across the Upper Truckee River. The proposed bridge and boardwalk over the Upper Truckee River would be a new public access element in the study area.

However, based on observations of recreation use of the study area, the improved recreation infrastructure is expected, in large part, to serve the existing residents of neighborhoods adjacent to the study area who already use local businesses. (Potential effects on recreational use of the study area are described in detail in Section 3.13, "Recreation.") Thus, any increase in commercial activity from the attraction of additional visitors would be minimal. Also, minimal commercial activity would be directly associated with the use of facilities constructed and

operated under this alternative. Therefore, Alternative 1 would not adversely affect sales or incomes of local businesses, and the long-term impact would be **less than significant**.

Alternative 2: New Channel—West Meadow (Minimum Recreation Infrastructure)

IMPACT 3.15-1 (Alt. 2) **Short-Term Increase in Population and Housing Demand Resulting from Construction-Related Activities. (NEPA 1, 4; CEQA 1, 2; TRPA 1, 4)** *Alternative 2 would generate a temporary increase in employment in South Lake Tahoe from construction-related activities. However, the number of existing construction workers in the city and region is considered sufficient to meet the demands associated with Alternative 2; therefore, this temporary increase in employment is not expected to generate any substantial population growth in the study area or generate the need for additional housing for construction workers. This impact would be* ***less than significant.***

This impact is similar to Impact 3.15-1 (Alt. 1). Construction activities would require up to an estimated 35 construction workers during both Year 1 and Year 2, 85 construction workers during Year 3, and 12 construction workers during Year 4. Compared to the other alternatives, Alternative 1 would require a similar number of workers during Years 1 and 2 (Alternatives 1, 3, and 4 would require 34–46 workers during Years 1–2). During Year 3, Alternative 2 would require a similar number of workers to Alternative 1 and more than Alternatives 3 and 4 (Alternatives 1, 3 and 4 would require 84, 68, and 35 workers, respectively, during Year 3). During Year 4, this alternative would require the same number of workers as Alternatives 1, 3, and 4.

Alternative 2 would generate a temporary increase in employment in South Lake Tahoe from construction-related activities. The present number of construction workers in the city and surrounding region is considered sufficient to meet the demands associated with Alternative 2; therefore, this temporary increase in employment is not expected to generate any substantial population growth in the study area or generate the need for additional housing for construction workers. This impact would be **less than significant**.

IMPACT 3.15-2 (Alt. 2) **Potential Long-Term Effect on Sales or Incomes of Local Businesses Resulting from Additional Visitors to the Study Area. (NEPA 3)** *Alternative 2 includes improved recreation facilities that could attract additional visitors to the study area. However, the additional recreational facilities would be limited, and the increase in use would be expected to be primarily by residents of adjacent neighborhoods. Therefore, Alternative 2 would not substantially increase the number of visitors, and thus would not considerably affect the sales or incomes of local businesses. This impact would be* ***less than significant****.*

Of all of the alternatives, Alternative 2 would modify or create the least public access and recreation infrastructure (but would include a fishing platform, a pedestrian trail, and viewpoints). (Potential effects on recreational use of the study area are described in detail in Section 3.13, "Recreation.")

Because these few additional features would be related to existing recreational activities in the study area, it is expected that users would be primarily from adjacent neighborhoods, as occurs under existing conditions. Alternative 2 would not likely attract a substantial number of additional visitors. Thus, any increase in commercial activity from the attraction of additional visitors would be minimal. Also, minimal commercial activity would be directly associated with the use of facilities constructed and operated under this alternative. Therefore, Alternative 2 would not considerably affect the sales or incomes of local businesses. This impact would be **less than significant**.

Alternative 3: Middle Marsh Corridor (Moderate Recreation Infrastructure)

IMPACT 3.15-1 (Alt. 3) **Temporary Increase in Population and Housing Demand Resulting from Construction-Related Activities. (NEPA 1, 4; CEQA 1, 2; TRPA 1, 4)** *Alternative 3 would generate a temporary increase in employment in South Lake Tahoe from construction-related activities. However, the number of existing construction workers in the city and region is considered sufficient to meet the demands associated with Alternative 3; therefore, this temporary increase in employment is not expected to generate any substantial population growth in the study area or generate the need for additional housing for construction workers. This impact would be* ***less than significant****.*

This impact is similar to Impact 3.15-1 (Alt. 1). Construction activities would require up to an estimated 38 construction workers during Year 1, 46 construction workers during Year 2, 68 construction workers in Year 3, and 12 construction workers in Year 4. Compared to the other alternatives, Alternative 3 would require a similar number of workers during Years 1 and 2 (Alternatives 1, 2, and 4 would require 34–41 workers during Years 1–2). During Year 3, Alternative 3 would require fewer workers than Alternatives 1 and 2, but more than Alternative 4 (Alternatives 1, 2, and 4 would require 84, 85, and 35 workers, respectively, during Year 3). During Year 4, this alternative would require the same number of workers as Alternatives 1, 2, and 4.

Alternative 3 would generate a temporary increase in employment in South Lake Tahoe from construction-related activities. However, the present number of construction workers in the city and region is considered sufficient to meet the demands associated with Alternative 3; therefore, this temporary increase in employment is not expected to generate any substantial population growth in the study area or generate the need for additional housing for construction workers. This impact would be **less than significant**.

IMPACT 3.15-2 (Alt. 3) **Potential Long-Term Effect on Sales or Incomes of Local Businesses Resulting from Additional Visitors to the Study Area. (NEPA 3)** *Alternative 3 includes improved recreation facilities that could attract additional visitors to the study area, potentially increasing commercial activity at local businesses in South Lake Tahoe. However, this increase in use is expected to be primarily by residents of adjacent neighborhoods who already use local businesses. Overall, the number of additional visitors would not be substantial, and minimal commercial activity would be associated with this alternative. Therefore, Alternative 3 would not considerably affect the sales or incomes of local businesses. This impact would be* ***less than significant****.*

Relative to the other alternatives, Alternative 3 would modify or create an intermediate level of public access and recreation infrastructure (including a kiosk, pedestrian trails, fishing access, viewpoints, and an observation platform). These features could attract additional visitors to the study area, which could increase commercial activity at local businesses. (Potential effects on recreational use of the study area are described in detail in Section 3.13, "Recreation.")

Because additional features are limited and would be related to existing recreational activities in the study area, it is expected that users would be primarily from adjacent neighborhoods, as occurs under existing conditions. Thus, Alternative 3 would not likely cause a substantial number of additional visitors. Thus, any increase in commercial activity from the attraction of additional visitors would be minimal. Also, minimal commercial activity would be directly associated with the use of facilities constructed and operated under this alternative. Therefore, Alternative 3 would not considerably affect the sales or incomes of local businesses. This impact would be **less than significant**.

Alternative 4: Inset Floodplain (Moderate Recreation Infrastructure)

IMPACT 3.15-1 (Alt. 4) **Temporary Increase in Population and Housing Demand Resulting from Construction-Related Activities. (NEPA 1, 4; CEQA 1, 2; TRPA 1, 4)** *Alternative 4 would generate a temporary increase in employment in South Lake Tahoe from construction-related activities. The number of existing construction workers in the city and region is considered sufficient to meet demands associated with Alternative 4; therefore, this temporary increase in employment is not expected to generate any substantial population growth in the study area or generate the need for additional housing for construction workers. This impact would be* ***less than significant****.*

This impact is similar to Impact 3.15-1 (Alt. 1). Construction activities would require up to an estimated 34 construction workers during Year 1, 41 construction workers during Year 2, 35 construction workers during Year 3, and 12 construction workers during Year 4. Compared to the other alternatives, Alternative 4 would require a similar number of workers during Years 1 and 2 (Alternatives 1–3 would require 35–46 workers during Years 1–2). During Year 3, Alternative 4 would require fewer workers than Alternatives 1–3 (Alternatives 1–3 would require 84, 85, and 68 workers, respectively, during Year 3). During Year 4, this alternative would require the same number of workers as Alternatives 1–3.

Alternative 4 would generate a temporary increase in employment in South Lake Tahoe from construction-related activities. However, the present number of construction personnel in the city and region is considered sufficient to meet the demands associated with Alternative 4; therefore, this temporary increase in employment is not expected to generate any substantial population growth in the study area or generate the need for additional housing for construction workers. This impact would be **less than significant**.

IMPACT 3.15-2 (Alt. 4) **Potential Long-Term Effect on Sales or Incomes of Local Businesses Resulting from Additional Visitors to the Study Area. (NEPA 3)** *Alternative 4 includes improved recreation facilities that could attract additional visitors to the study area, potentially increasing commercial activity at local businesses in South Lake Tahoe. However, this increase in use is expected to be primarily by residents of adjacent neighborhoods who already use local businesses. Overall, the number of additional visitors would not be substantial, and minimal commercial activity would be associated with this alternative. Therefore, Alternative 4 would not considerably affect the sales or incomes of local businesses. This impact would be* ***less than significant****.*

Relative to the other alternatives, Alternative 4 would modify or create an intermediate level of public access and recreation infrastructure (including a kiosk, pedestrian trails, viewpoints, and observation platforms). These features could attract additional visitors to the study area, which could increase commercial activity at local businesses. (Potential effects on recreational use of the study area are described in detail in Section 3.13, "Recreation.")

Because additional features are limited and would be related to existing recreational activities in the study area, it is expected that users would be primarily from adjacent neighborhoods, as occurs under existing conditions. Thus, Alternative 4 would not likely cause a substantial number of additional visitors. Thus, any increase in commercial activity from the attraction of additional visitors would be minimal. Also, minimal commercial activity would be directly associated with the use of facilities constructed and operated under this alternative. Therefore, Alternative 4 would not considerably affect the sales or incomes of local businesses. This impact would be **less than significant**.

Alternative 5: No-Project/No-Action

IMPACT 3.15-1 (Alt. 5) **Temporary Increase in Population and Housing Demand Resulting from Construction-Related Activities. (NEPA 1, 4; CEQA 1, 2; TRPA 1, 4)** *Alternative 5 would not include any construction activities; therefore, it would not cause a temporary increase in population and housing demand resulting from construction-related activities.* ***No impact*** *would occur.*

As the No-Project/No-Action Alternative, Alternative 5 would not include any construction activities. No construction workers would be employed to build recreation facilities or other elements of the project. Therefore, this alternative would not cause a temporary increase in population and housing demand resulting from construction-related activities. **No impact** would occur.

IMPACT 3.15-2 (Alt. 5) **Potential Long-Term Effect on Sales or Incomes of Local Businesses Resulting from Additional Visitors to the Study Area. (NEPA 3)** *No additional recreation facilities would be constructed, and existing facilities would not be expanded. Therefore, Alternative 5 would not result in additional visitors to the study area, and thus would not affect sales or incomes of local businesses.* ***No impact*** *would occur.*

Under Alternative 5, no additional recreation facilities would be constructed, and existing facilities would not be expanded. Levels of recreation use would be expected to remain similar to current levels. Because Alternative 5 would not result in additional visitors to the study area, it would not affect sales levels or incomes of local businesses. **No impact** would occur.

3.16 TRANSPORTATION, PARKING, AND CIRCULATION

This section describes the regulations related to transportation, parking, and circulation, along with the existing transportation infrastructure in the study area; identifies significance criteria for potential impacts on transportation facilities; and evaluates the significance of potential impacts associated with implementing the project alternatives, including possible effects on parking capacity and traffic circulation. Section 3.12, "Public Services," discusses effects resulting from roadway obstruction during construction and associated mitigation.

3.16.1 AFFECTED ENVIRONMENT

REGULATORY SETTING

This section describes the federal, state, and regional and local transportation-related standards and criteria that may apply to the project.

Federal

A number of statutes and regulations exist that include provisions specific to the interstate system in California and transportation projects in general. Title 23 of the U.S. Code (USC) and Title 23 of the Code of Federal Regulations (CFR) are the laws governing highways, and 23 USC and CFR 49 are the laws governing transportation.

The following federal legislative statutes also may apply to surface transportation and other transportation aspects of the project:

- Federal Clean Air Act;
- Federal Transit Act;
- Americans with Disabilities Act;
- Civil Rights Act; and
- Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users.

Federal statutes specify the procedures that the U.S. Department of Transportation must follow in setting policy regarding the placement of utility facilities within the rights-of-way of roadways that received federal funding. These include expressways, most state highways, and certain local roads. Federal Highway Administration (FHWA) regulations require that each state develop its own policy regarding the accommodation of utility facilities within the rights-of-way of such roads. After FHWA has approved a state's policy, the state can approve any proposed utility installation without referral to FHWA, unless utility installation does not conform to the policy.

Federal law does not directly control how states accommodate utilities within highway rights-of-way; however, in determining whether a right-of-way on a federally-funded highway should be used for accommodating a utility facility, the Secretary of Transportation must (1) ascertain the effect that accommodating utilities would have on highway and traffic safety because no use may be authorized or permitted that would adversely affect safety, (2) evaluate the direct and indirect environmental and economic effects of any loss of productive agricultural land or any impairment of its productivity that would result from disapproving accommodation of the utility facility, and (3) consider the environmental and economic effects together with any interference with or impairment of the use of the highway that would result from accommodation of the utility facility (23 USC Section 109[l]). In addition, 23 USC Section 116 requires state highway agencies to ensure proper maintenance of highway facilities, which implies adequate control over nonhighway facilities, such as utility facilities. Finally, 23 USC Section 123 specifies when federal funds can be used to pay for the costs of relocating utility facilities in connection with highway construction projects (McCarthy 2004).

State

The California Department of Transportation (Caltrans) plans, designs, constructs, and maintains state-owned roadways. Under agreement with the federal government, Caltrans sites, designs, constructs, and maintains federal highways, including the highways in the Interstate Highway System. Caltrans's Standard Specifications (Caltrans 2006) establish uniform design and construction procedures for California and federal highways. The specifications are used by local departments of transportation for local roads. The highway design criteria and policies in the Standard Specifications ensure minimum design, contract, and construction standards for road projects. U.S. Highway 50 (U.S. 50), a portion of which is located in the study area, is maintained by Caltrans District 3, headquartered in Marysville, California.

Tahoe Regional Planning Agency

Standards and performance targets identified by the Tahoe Regional Planning Agency (TRPA) are presented in the Transportation Element of the *Regional Plan for the Lake Tahoe Basin: Goals and Policies* (TRPA 2006), the TRPA threshold evaluation reports (TRPA 2002, 2007), and *Lake Tahoe Regional Transportation Plan – Mobility 2030* (RTP) (Tahoe Metropolitan Planning Organization and TRPA 2008). Table 3.16-1 summarizes the applicable standards or criteria of each of the plans and policies. TRPA policies and standards related to bicycle and pedestrian pathway facilities are described in Section 3.13, "Recreation."

Table 3.16-1
Transportation and Circulation Standards

Plan/Policy	Standard/Criteria
Tahoe Regional Planning Compact (1980)	Transportation planning in the region is required (1) to reduce dependency on the automobile by making more effective use of existing transportation modes and of public transit to move people and goods in the region and (2) to reduce to the extent feasible air pollution caused by motor vehicles.
TRPA thresholds (2007)	The thresholds that involve transportation issues are intended to reduce air quality problems as follows: *Air Quality: Subregional Visibility & Nitrate Deposition* Reduce Vehicle Miles of Travel in the basin by 10% of the 1981 base year values.
TRPA Regional Plan Goals and Policies (2006)	The Transportation Element of the Goals and Policies establishes general goals to be further defined by the RTP. This section sets the following level of service standards: LOS D for urban roads and LOS D, with brief periods (no more than four hours) of LOS E, for signalized intersections. There are no standards for unsignalized intersections.
Lake Tahoe Regional Transportation Plan (2008)	*Desired Condition 2: Environmental Impacts*: The transportation system is integrated with environmental goals in conjunction with the TRPA threshold areas as part of the TRPA RTP. Environmental performance indicators are vehicle miles traveled and traffic volumes.
TRPA Air Quality Plan (1995)	The TRPA Air Quality Plan provides more detail than the RTP on strategies required to meet the air quality–related goals.
TRPA Code of Ordinances (adopted 2011, effective 2012)	Adherence to Section 12.4.3.B requirements for traffic considerations, including vehicle trip reduction targets, and Section 65.2.4.B requirements for traffic analyses; the code sections require reducing significant impacts to a less-than-significant level.

Notes: LOS = level of service; RTP = Lake Tahoe Regional Transportation Plan; TRPA = Tahoe Regional Planning Agency.
Source: Data provided by KD Anderson & Associates and compiled by AECOM in 2009.

Regional Plan Goals and Policies

The formulation of regional transportation goals and policies is a fundamental step in the transportation planning process. The Goals and Policies reflect the consideration of environmental, social, and economic factors in making transportation-related decisions.

Regional Transportation Goals

1. It is the goal of the Regional Transportation Plan to attain and maintain the Environmental Threshold Carrying Capacities and federal, state, and local transportation standards.

2. It is the goal of the Regional Transportation Plan to establish a safe, efficient, and integrated transportation system which reduces reliance on the private automobile, provides for alternative modes of transportation, and serves the basic transportation needs of the citizens of the Tahoe Region, supports the economic base of the Region in the movement of goods and people, and minimizes adverse impacts on man and the environment.

Regional Transportation Policies and Objectives

1. Plan for and promote land use changes and development patterns which will encourage the use of alternative transportation modes and minimize impacts on the existing transportation system.

    A. Community Plans shall promote land use development patterns and designs which will increase the ability to use public transportation, waterborne, bicycle and pedestrian facilities.

    B. New, expanded or revised developments and land uses shall fully mitigate their regional and cumulative traffic impacts.

    C. Parking for non-residential uses shall be the minimum/maximum required to meet the demand for parking generated by the use, except as may be offset by reducing parking demand through parking management and trip reduction programs.

    D. Driveways shall be designed and sited to minimize impacts on public transportation, adjacent roadways and intersections, bicycle and pedestrian facilities.

2. Develop and encourage the use of pedestrian and bicycle facilities as a safe and viable alternative to automobile use.

    A. Pedestrian and bicycle facilities shall be constructed, or upgraded, and maintained along major travel routes.

    B. Bicycle and pedestrian facilities in urbanized areas and along transportation routes used for commuting should be maintained to allow year-around use of the facilities.

3. Transportation System Management (TSM) measures shall be used to improve the efficiency of the existing transportation system.

    A. Traffic conflicts should be reduced by limiting or controlling access to major regional travel routes and major local road ways.

    B. Intersection improvements required to upgrade existing levels of service including lane restriping, turn lanes, channelization and traffic signals should be implemented when warranted.

C. Roadway designs shall accommodate bicycle lanes and transit stops and reduce conflicts between vehicles and bicycle and pedestrians.

D. Left-turn lanes and right-turn lanes shall be provided to reduce turning conflicts along major travel routes.

4. Limit improvements to the regional highway system to those necessary to meet the Goals and Policies of the Regional Plan.

   Level of service (LOS) criteria for the Region's highway system and signalized intersections during peak periods shall be:

   - Level of service "C" on rural recreational/scenic roads.
   - Level of service "D" on rural developed area roads.
   - Level of service "D" on urban developed area roads.
   - Level of service "D" for signalized intersections.
   - Level of service "E" may be acceptable during peak periods in urban areas, not to exceed four hours per day.

Lake Tahoe Regional Transportation Plan—Mobility 2030 (Goals and Policies, Action Element)

Of the plans summarized in Table 3.16-1, the RTP provides the most detailed direction for transportation program development in the study area. The Tahoe Regional Planning Compact (the Compact) states that the goals of transportation planning shall be to reduce to the extent feasible air pollution caused by motor vehicles and to reduce dependency on the automobile by making more effective use of existing transportation modes and public transit to move people and goods in the region. The purpose of the RTP is to attain and maintain the environmental threshold carrying capacities (thresholds) established by TRPA in 1982 and all applicable federal, state, and local standards established for transportation and air quality.

The TRPA transportation thresholds address carbon monoxide, ozone, regional and subregional visibility, and nitrate deposition. There are numerical standards for each of these parameters, in addition to management standards that are intended to assist in attaining the thresholds. The management standards include the reduction of wood smoke, maintenance of oxides of nitrogen levels, reduction of U.S. 50 traffic volumes, and reduction of vehicle miles traveled (VMT). The Compact also states that the RTP shall provide for attaining and maintaining federal, state, or local air quality standards, whichever are strictest, in the respective portions of the region for which the standards are applicable.

The RTP establishes goals, policies, and actions that would be implemented over the planning horizon (i.e., up to 2030). Environmental indicators of reduced VMT and traffic delays would be achieved through land use and transportation decision making. The plan does not apply to short-term construction-related effects. The goal most applicable to the project is to "[d]esign an atmosphere that encourages bicycle and pedestrian usage as a viable and significant mode of transportation at Lake Tahoe." The following policies to achieve this goal are applicable to the project:

A. The RTP and Lake Tahoe Region Bicycle and Pedestrian Master Plan (Bike/Ped Plan) shall contain a list of existing and proposed bicycle and pedestrian facilities and policies for the development of any new bicycle/pedestrian facilities in the Lake Tahoe Region.

B. Pedestrian and bicycle facilities consistent with the RTP and Bike/Ped Plan shall be constructed, upgraded and maintained.

C. There shall be a high priority on constructing pedestrian and bicycle facilities in urbanized areas and in areas that increase connectivity of the bicycle network.

G. Projects funded all or in part with TMPO [Tahoe Metropolitan Planning Organization] administered funding shall include the accommodation of bicycle and pedestrian facilities in the earliest stages of project development. The TMPO shall not release funds for projects that do not show accommodation of bicycle and pedestrian needs.

H. Bicycle and pedestrian linkages shall be provided between residential and non-residential areas.

I. Maintenance policies for bicycle and pedestrian facilities should reflect usage and consider maintaining routes to allow for year-round use of the facilities where appropriate.

K. Safety awareness signage, road markings and educational programs, as well as programs that encourage bicycling and walking, shall be implemented where appropriate.

ENVIRONMENTAL SETTING

This section identifies the existing transportation facilities and describes traffic conditions for the roadway network in the study area. Exhibit 3.16-1 presents the roadway network in the study area.

Roadway System

The major internal road system in the study area includes the following roadways.

U.S. 50, the first California highway, is the primary route providing access to and through the city of South Lake Tahoe. U.S. 50 connects the city with Sacramento, California, to the west via Echo Summit and with Carson City, Nevada, to the east via Spooner Summit. From the signalized U.S. 50/State Route (SR) 89 intersection with Lake Tahoe Boulevard (the "Y"), SR 89 continues north/northwest and is also designated as Emerald Bay Road. Southeast and northeast of the Y, U.S. 50 is designated as Lake Tahoe Boulevard as it heads east through the city toward Stateline, Nevada, and south into the county area.

The physical characteristics of U.S. 50 vary in the Tahoe Basin. As the highway enters the Tahoe Basin from the south, U.S. 50 is a two-lane roadway. The posted speed along the two-lane segment ranges from 40 to 50 miles per hour (mph). At approximately F Street in the city of South Lake Tahoe, U.S. 50 becomes a four-lane highway with a continuous center left-turn lane and a posted speed of 50 mph (although the speed limit drops from 50 to 40 mph at H Street and to 35 mph near D Street). U.S. 50 continues east through the city as a four-lane roadway with a continuous center turn lane and a speed limit of 35 mph.

SR 89 merges with U.S. 50 in the community of Meyers, south of the city of South Lake Tahoe. From the Y, SR 89/Emerald Bay Road diverges from U.S. 50 and continues north/northwest. SR 89 is a two-lane road in the basin, except for a four-lane segment between F Street and West Way. Speed limits on SR 89 range from 40–50 mph south of the city to 35 mph in town. SR 89 continues north around the west shore of Lake Tahoe to Tahoe City, then heads northwest to the Town of Truckee, Interstate 80, and beyond to the north/northwest of Truckee.

Tahoe Keys Boulevard provides access to the west side of the study area via East Venice Drive (see below) from a signalized T-intersection at Lake Tahoe Boulevard (U.S. 50). Tahoe Keys Boulevard is a two-lane road with a posted speed of 30 mph. As it enters the Tahoe Keys development (Tahoe Keys), it has a landscaped center median and striped on-street bicycle lanes. Tahoe Keys Boulevard terminates in Tahoe Keys in a cul-de-sac adjacent to the lake.

East Venice Drive is a two-lane road that provides direct access to the west side of the study area and to the Tahoe Keys Marina, east of Tahoe Keys Boulevard. It becomes Venice Drive where it crosses Tahoe Keys Boulevard, and it extends through a portion of Tahoe Keys. The speed limit on Venice Drive and East Venice Drive is 25 mph.

Source: Data provided by KD Anderson & Associates in 2007

Exhibit 3.16-1 **Project Area Location and Roadway Map**

Fifteenth Street is a two-lane local street that links Venice Drive with SR 89 at the west end of Tahoe Keys. The posted speed limit on Fifteenth Street is 25 mph.

Rubicon Trail is one of several two-lane roads that provide access to the Highland Woods neighborhood, which abuts the southeast end of the study area. Rubicon Trail originates at a signalized intersection at U.S. 50 and continues north to Springwood Drive. The posted speed limit on Rubicon Trail is 25 mph.

Springwood Drive is a two-lane roadway that provides direct access to the homes adjacent to a portion of the southern boundary of the study area. The posted speed limit on Springwood Drive is 25 mph.

Silver Dollar Avenue is a local two-lane roadway that extends generally north from an unsignalized intersection on U.S. 50 to Springwood Drive. The posted speed limit on Silver Dollar Avenue is 25 mph.

Lodi Avenue is a two-lane roadway that extends north and south from an unsignalized intersection on U.S. 50. It provides access to the study area via Ponderosa Street and Conestoga Street. There are no speed limit signs on this section of Lodi Avenue.

Lakeview Avenue is a two-lane roadway that is one of numerous routes that link the Al Tahoe neighborhood, which is adjacent to the east side of the study area, with U.S. 50. It extends for more than 0.5 mile from the project boundary to a signalized intersection on U.S. 50. The posted speed limit on Lakeview Avenue is 25 mph.

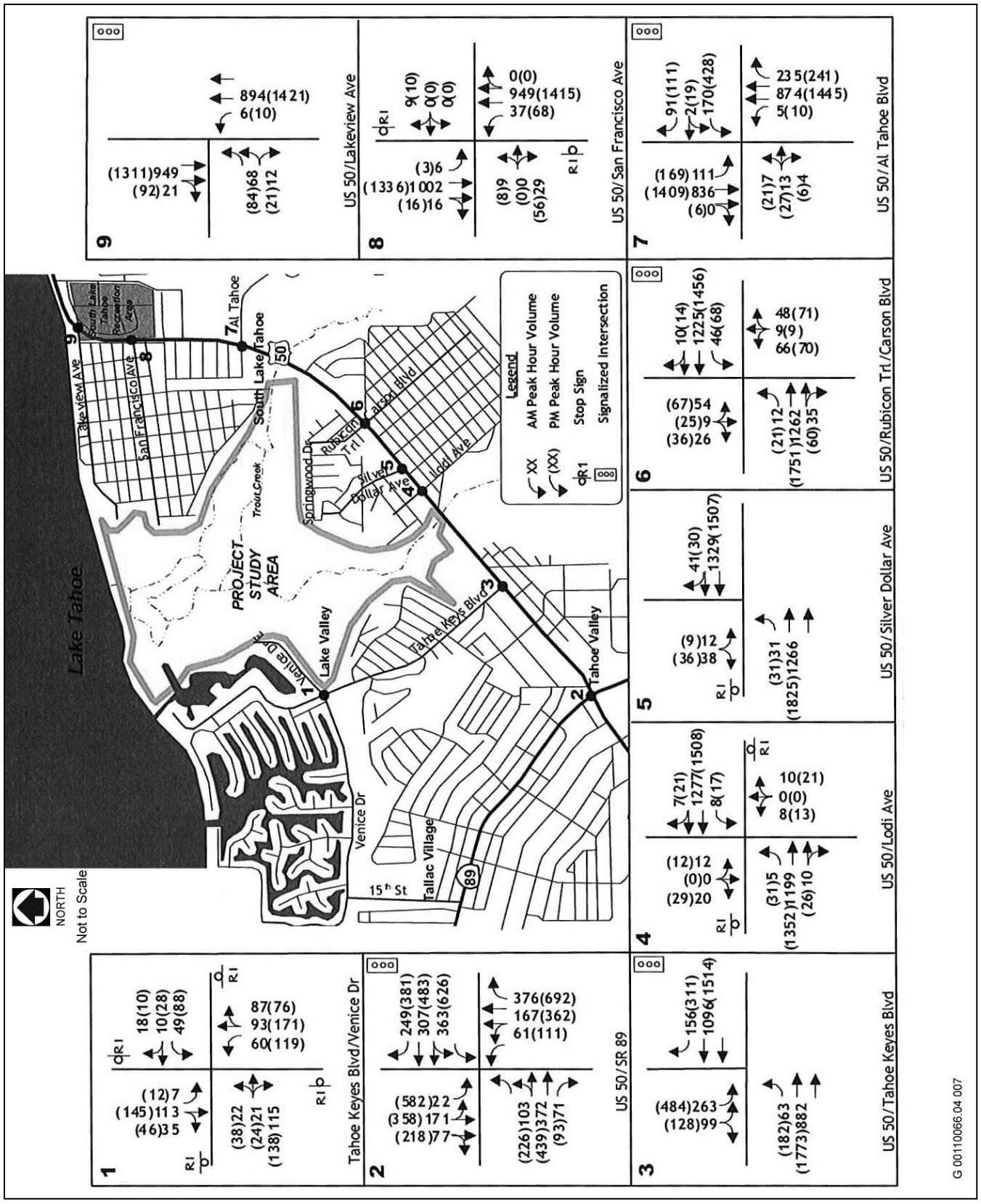
San Francisco Avenue is a two-lane roadway that extends from the eastern boundary of the study area to an unsignalized intersection on U.S. 50. There are no speed limit signs on this section of San Francisco Avenue.

Existing Traffic Volumes

Weekday peak-hour turning movement counts were performed by KD Anderson & Associates, Inc. in September 2007 (from 7 to 9 a.m. and from 4 to 6 p.m.) at key intersections to supplement 1999 data assembled for the Lower West Side Wetland Restoration Project and traffic counts conducted in August 2000 by CSS Planning and Engineering. The intersections selected for analysis are critical intersections for existing traffic. Some or all of these intersections are expected to incur the highest volume of project-related construction traffic, depending on the alternative being evaluated. The September 2007 counts were factored to peak month (August) values based on seasonal factors provided by TRPA. Counts were conducted at the following intersections:

- Tahoe Keys Boulevard/East Venice Drive,
- SR 89/U.S. 50 (the Y),
- U.S. 50/Tahoe Keys Boulevard,
- U.S. 50/Lodi Avenue,
- U.S. 50/Rubicon Trail,
- U.S. 50/Al Tahoe Boulevard,
- U.S. 50/San Francisco Avenue, and
- U.S. 50/Lakeview Avenue.

The lane configurations, existing turning movement counts, and traffic control devices are illustrated in Exhibit 3.16-2. To provide additional perspective on current traffic conditions, 24-hour traffic volume counts were conducted in September 2007 on roadways that could provide access, including construction access, to the study area. These counts were also factored to weekday peak-month levels based on seasonal factors provided by TRPA. The seasonal factors were calibrated by TMPO (Tahoe Metropolitan Planning Organization) using a graphic information system (GIS)–based traffic model package (TransCAD) developed by Parsons Brinckerhoff Quade & Douglas Inc. Additional information concerning the TransCAD model development and calibration efforts are referenced in Lake Tahoe Resident and Visitor Model; Model Description and Final Results; Parsons Brinckerhoff Quade & Douglas Inc., August 2007. Table 3.16-2 shows actual daily counts and estimated weekday peak-month levels.



Source: Data provided by KD Anderson & Associates in 2007

Exhibit 3.16-2 **Existing Traffic Volumes and Lane Configurations**

Table 3.16-2
Existing Daily Traffic Volumes

Location			Daily Volume	
Road/Street	From	To	September 2007	Peak Month*
San Francisco Avenue	Riverside Avenue	U.S. 50	877	1,000
Lakeview Avenue	Riverside Avenue	U.S. 50	1,795	2,100
East Venice Drive	Tahoe Keys Boulevard	Terminal End (near Tahoe Keys Marina)	1,304	1,500
Silver Dollar Avenue	Ponderosa Street	U.S. 50	1,079	1,250
Sunset Drive	Ponderosa Street	Conestoga Street	74	85

Notes: U.S. 50 = U.S. Highway 50
*Peak month numbers are estimated from September 2007 counts based on seasonal factors modeled using TransCAD.
Source: KD Anderson and Associates 2007

Intersection Level of Service

Intersections are evaluated in terms of level of service (LOS), which is a measure of driving conditions and vehicle delay. LOS ranges from A (best) to F (poorest) (Table 3.16-3). LOS A, B, or C indicates conditions where traffic can move relatively freely. LOS D describes conditions where delay is more noticeable. LOS E describes conditions where traffic volumes are at or close to capacity, resulting in significant delays and average speeds that are one-third the uncongested speed or lower. LOS F characterizes conditions where traffic demand exceeds available capacity, with very slow speeds (stop-and-go traffic) and long delays (more than a minute) and queuing at signalized intersections.

Table 3.16-3
Level of Service Definitions

Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
A	Uncongested operations, all queues clear in a single-signal cycle. Delay $\leq$ 10.0 sec	Little or no delay. Delay $\leq$ 10.0 sec/veh	Completely free flow.
B	Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and $\leq$ 20.0 sec	Short traffic delays. Delay > 10 sec/veh and $\leq$ 15 sec/veh	Free flow, presence of other vehicles noticeable.
C	Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and $\leq$ 35.0 sec	Average traffic delays. Delay > 15 sec/veh and $\leq$ 25 sec/veh	Ability to maneuver and select operating speed affected.
D	Significant congestions of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35.0 sec and $\leq$ 55.0 sec	Long traffic delays. Delay > 25 sec/veh and $\leq$ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
E	Severe congestion with some long-standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay > 55.0 sec and $\leq$ 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and $\leq$ 50 sec/veh	At or near capacity, flow quite unstable.
F	Total breakdown, stop-and-go operation. Delay > 60.0 sec	Intersection blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.

Notes: sec = seconds; sec/veh = seconds per vehicle.
Sources: TRB 1994, 2000

Signalized intersections are evaluated consistent with the operations method from the *2000 Highway Capacity Manual* using TRAFFIX software (TRB 2000). This method is used to evaluate the amount of green signal time available to each traffic approach and the total intersection capacity used by the traffic demand, and to assign a level of service based on the average delay that drivers would experience at the intersection during the peak hour.

The unsignalized intersections were evaluated using the methodology from Chapter 9 of the *Highway Capacity Manual* (TRB 2000). At these intersections, each turning movement that yields to an opposing movement is evaluated separately and assigned a level of service based on the relative ability of turning traffic to find adequate gaps in conflicting traffic flows.

Existing levels of service were calculated for each study intersection (Table 3.16-4). All the signalized study intersections operate at LOS A, B, or C with relatively free-flowing movement. Motorists attempting to enter U.S. 50 (Lake Tahoe Boulevard) at unsignalized intersections experience delays that are generally indicative of LOS D or better conditions, except at the U.S. 50/Lodi Avenue intersection. At that intersection, motorists experience delays that are representative of LOS E and F conditions in the p.m. peak hour.

Table 3.16-4
Existing Weekday Peak-Hour Levels of Service

Location	Control	Weekday Peak-Hour Levels of Service			
		A.M. Peak Hour		P.M. Peak Hour	
		Average Delay (seconds)	LOS	Average Delay (seconds)	LOS
Tahoe Keys Boulevard/East Venice Drive	All-way stop	9.8	A	11.6	B
SR 89/U.S. 50 (the Y)	Signal	26.9	C	33.8	C
U.S. 50/Tahoe Keys Boulevard	Signal	14.0	B	30.5	C
U.S. 50/Lodi Avenue	NB/SB stop				
(Overall)[1]		(0.6)	(A)	(1.3)	(A)
EB left turn		12.7	B	14.7	B
WB left turn		12.2	B	18.3	C
NB left+through+right turn		26.8	D	72.0	F
SB left+through+right turn		28.5	D	38.8	E
U.S. 50/Silver Dollar Avenue					
(Overall)		(0.6)	(A)	(0.5)	(A)
EB left turn		14.0	B	14.8	B
SB left+right turn		24.3	C	25.9	D
U.S. 50/Rubicon Trail	Signal	11.4	B	14.4	B
U.S. 50/Al Tahoe Boulevard	Signal	13.2	B	20.8	C
U.S. 50/San Francisco Avenue	EB/WB stop				
(Overall)		(0.6)	(A)	(0.9)	(A)
NB left turn		11.3	B	13.9	B
SB left turn		10.5	B	13.1	B
EB left+through+right turn		18.6	C	22.9	C
WB left+through+right turn		12.4	B	15.4	C
U.S. 50/Lakeview Avenue	Signal	4.3	A	4.6	A

Notes: EB = eastbound; LOS = level of service; NB = northbound; SB = southbound; WB = westbound; SR = State Route; U.S. 50 = U.S. Highway 50.

[1] Values in parentheses are the "overall" level of service for the intersection.

Source: KD Anderson & Associates 2007

Parking Facilities

No formal parking facilities are designated for use by visitors to the study area. Parking is permitted on the public road rights-of-way. TRPA and the CSLT approved additional Tahoe Keys Marina parking in 2009 and 2010, respectively, but a final agreement has not been completed. This final long-term lease agreement would create more than 100 spaces and would provide additional parking for visitors to the marina and study area alike.

The present demand for study area visitor parking was estimated using information from recreation and access surveys conducted by the Conservancy in 2004 and 2005 (Conservancy 2005). The information reported in the formal surveys was combined with observations of public use made by the Conservancy's land stewards during 2003, 2004, 2005, and 2007 (Rozance 2007a, 2007b). This information was compared with the size of parking facilities at other comparable destinations around Lake Tahoe. Reference sites included Baldwin Beach west and east lots, Cave Rock, Rabe Meadow, Kiva Beach, Logan Shoals, Mt. Tallac Trailhead, Pope Beach, Secline Beach, and Skunk Harbor.

Access data were collected by the Conservancy at East Venice Drive, the primary point of access, during 2004 and 2005 (Conservancy 2005). Some visitors also access the study area from adjacent neighborhoods; these visitors are primarily residents of those neighborhoods, and thus, generate relatively little parking demand. Access data collected at East Venice Drive indicate that on summer weekends and holidays, for portions of the day, the number of visitors accessing the study area at East Venice Drive exceeded 20 per hour and once exceeded 40 per hour (Table 3.16-5). On fall, winter, and spring weekends, the number of visitors accessing the study area frequently exceeded ten per hour for an hour or more but did not exceed 20 visitors per hour. Overall, the data collected during 2004 and 2005 show that people visit the study area mostly mid-day during the summer with parking demand peaking on weekends and holidays.

Table 3.16-5
Visitors Accessing Conservancy Property from East Venice Drive on Monitored Days during 2004–2005

Date and Day of Week	Time											
	0700–0800	0800–0900	0900–1000	1000–1100	1100–1200	1200–1300	1300–1400	1400–-1500	1500–1600	1600–1700	1700–1800	1800–1900
8/21/04, Saturday	11	21	14	20	19	20	28	20	17	12	8	10
8/24/04, Tuesday	3	5	3	2	7	3	10	2	4	8	16	5
9/06/04, Labor Day	6	14	19	10	12	17	14	15	13	9	2	0
10/24/04, Sunday	ND	ND	ND	8	9	9	9	10	ND	ND	ND	ND
11/28/04, Sunday	1	0	0	1	0	ND	ND	ND	ND	ND	ND	ND
12/12/04, Sunday	2	0	3	1	4	12	12	1	ND	ND	ND	ND
1/29/05, Saturday	3	2	5	0	0	0	1	3	ND	ND	ND	ND
4/24/05, Sunday	0	2	7	10	7	11	4	2	ND	ND	ND	ND
5/30/05, Memorial Day	8	13	10	14	15	10	5	15	12	20	15	9
7/04/05, Fourth of July	22	23	25	22	29	47	27	22	13	26	11	21
7/24/05, Sunday	6	11	11	10	20	30	25	12	0	0	0	
8/28/05, Sunday	2	7	12	20	23	12	4	8	14	9	9	15
8/30/05, Tuesday	3	2	0	8	9	8	9	10	7	3	8	2

Note: ND = no data.
Source: Conservancy 2005

Data on recreational uses of the study area from 2004–2005 (Conservancy 2005) and land steward observations during 2003–2007 (Rozance 2007a, 2007b) indicate that a substantial portion of users likely traveled to the study area alone and that some users walked or bicycled to the study area, particularly from adjacent neighborhoods, and thus did not contribute to demand for parking. Walking/running has been the most frequent user activity across all years and months. Bicycle riding has also been a popular activity across most years and months. It is likely that most of the runners and walkers travel to the study area alone and that most remain in the study area for only relatively short periods. However, on average, runners and walkers are likely to be in the study area for at least a half-hour, in part because of the distance from East Venice Drive to Cove East Beach (a primary destination of users). Runners, walkers, and bicyclists from the Tahoe Islands subdivision on the east side of the marsh have numerous access locations from the south and east of the study area. Although there is no quantified data, it is expected that visitors from the adjacent subdivision would access the study area via the southern and eastern access points. Therefore, these visitors likely do not substantially contribute to parking demand on East Venice Drive on the west side of the study area.

Other common recreational activities include beach use, picnicking, wildlife viewing, and fishing. Users engaged in these activities likely remain in the study area for longer periods than walkers/runners and bicyclists. In addition, they drive to the study area more often and are less likely to drive to the study area alone. Among months and years, the number of visitors performing these activities varies more than walking/running and bicycling, but combined, these activities typically accounted for 20–40 percent of observed users.

Assuming a range of likely values for average visit duration (0.75 to 1.25 hours), number of visitors per car (1.25 to 1.75), and the portion of visitors who do not drive to the study area (10–20 percent), the estimated number of 20 visitors per hour corresponds to a demand for seven to 18 parking spaces, 25 visitors per hour corresponds to nine to 23 parking spaces, and 30 visitors per hour corresponds to 10–27 parking spaces. (Assumptions were applied by subtracting the portion of users not driving to the study area, dividing the remaining number of visitors per hour by the number of visitors per car, and multiplying the number by the average duration of a visit.)

Bicycle and Pedestrian Facilities

No designated Class I (pedestrian and bicycle shared-use paths), Class II (bicycle lanes), or Class III (bicycle routes) bicycle and pedestrian facilities are located in the study area. Class I facilities are physically separated from automotive traffic. Class II facilities are not physically separated from traffic, but the bicycle lane is designated with striping. Class III facilities do not have striping, but signs are posted to alert drivers that they are sharing the traveling width with a bicycle route. Class designations are determined based on traffic, lane configurations, and available rights-of-way. A Class II–designated bicycle facility exists on Tahoe Keys Boulevard, providing bicycle access to the west side of the study area from U.S. 50. U.S. 50, along the study area boundary on the south, has bicycle facilities that alternate between Class III and Class I designations. North from U.S. 50 and on the east side of the study area, El Dorado Avenue and Bellevue Avenue have Class III bicycle facilities. From its intersection with Bellevue Avenue heading east away from the study area, Lakeview Avenue has Class II bicycle facilities. Exhibits 2-1through 2-4 show the existing bicycle and pedestrian facilities in the study area.

Ground Transit Facilities

BlueGO, a service provided by Tahoe Transportation District, provides fixed-route, demand-response service, ski shuttles, seasonal trolley service, and commuter express routes on the south shore of Lake Tahoe and to the Carson Valley. BlueGO is a coordinated public/private transportation system for the South Lake Tahoe and South Shore region of Lake Tahoe that combines the resources of previously offered services under one management. Buses on Route 52 provide service to Al Tahoe, east of the study area, and buses on Route 55 serve the Tahoe Keys Marina, west of the study area (Tahoe Transportation District 2012).

Waterborne Transit Facilities

No public ferries or water taxis operate on Lake Tahoe. In 2005, U.S. Congress approved $8,000,000 for a ferry project on Lake Tahoe, and the ferry was identified in the RTP. TRPA is heading the project in cooperation with the Tahoe Transportation District, which comprises local transportation districts, Caltrans, and the Nevada Department of Transportation. Caltrans funded a site selection study that considered South Lake Tahoe as a potential service hub (Fox 2006). A private company has been providing amphibious-vehicle tours from Heavenly Village in South Lake Tahoe since 2009.

Airport Facilities

Lake Tahoe Airport is the airport closest to the study area. The north approach of the airport is located approximately 1.15 miles (6,060 feet) south of the U.S. 50 crossing over the Upper Truckee River in South Lake Tahoe. The north approach is located approximately 1.90 miles south of the entrance to the Tahoe Keys Marina.

3.16.2 Environmental Consequences and Mitigation Measures

Significance Criteria

For this analysis, significance criteria are based on the checklist presented in Appendix G of the State CEQA Guidelines; the TRPA Initial Environmental Checklist; factual information; scientific data; and regulatory standards of federal, state, and local agencies. In development of mitigation measures for significant impacts of the project, effects on environmental thresholds of the Tahoe Regional Planning Compact were considered. The project's effects on thresholds are further described in Section 4.5, "Consequences for Environmental Threshold Carrying Capacities."

CEQA Criteria

Under CEQA, an alternative was determined to result in a significant effect related to transportation, parking, or circulation if it would:

- conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and nonmotorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit (CEQA 1);
- conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways (CEQA 2);
- result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks (CEQA 3);
- substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) (CEQA 4);
- result in inadequate emergency access (CEQA 5); or
- conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities (CEQA 6).

NEPA Criteria

An environmental document prepared to comply with NEPA must consider the context and intensity of the environmental effects that would be caused by or result from the proposed action. Under NEPA, the significance of an effect is used solely to determine whether an EIS must be prepared. The factors that are taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its effects are encompassed by the CEQA criteria used for this analysis.

TRPA Criteria

Based on TRPA's Initial Environmental Checklist, an alternative would result in a significant impact on transportation, parking, or circulation if it would:

- generate 100 or more new Daily Vehicle Trip Ends (DVTE) (TRPA 1);
- result in changes to existing parking facilities or demand for new parking (TRPA 2);
- substantially affect existing transportation systems, including highway, transit, bicycle, or pedestrian facilities (TRPA 3);
- alter present patterns of circulation or movement of people and/or goods (TRPA 4);
- alter waterborne, rail, or air traffic (TRPA 5); or
- increase traffic hazards to motor vehicles, bicyclists, or pedestrians (TRPA 6).

METHODS AND ASSUMPTIONS

The relative impact of implementing the project has been determined by estimating the amount of traffic associated with construction activities in the study area and superimposing that traffic onto current traffic volume levels. For this evaluation, a maximum-intensity approach was taken that assumes maximum probable concurrent employment in the study area, as well as maximum concurrent truck activity.

Construction Employee Traffic

For each project alternative, it was assumed that each construction worker would drive a personal vehicle to the construction site. In reality, it is more likely that some employees in individual trade groups would carpool to the job site. As a result, this assumption yields a maximum-intensity view of site trip generation. It has also been assumed that all the on-site construction workers would arrive at the study area during the a.m. peak hour and that all would depart during the p.m. peak hour. It is more likely that some employees would arrive and depart during periods outside of peak commute hours. Therefore, this DEIR/DEIS/DEIS evaluates the potential impacts of a maximum-intensity scenario for peak-hour construction employee traffic.

Haul Truck Traffic

Haul trucks would travel to and from the study area during construction of each of the alternatives. Most construction truck activity would be related to hauling surplus material (including excavated soil for certain alternatives) from the study area to the designated regional disposal area and hauling materials to the study area for construction of bicycle paths. The amount of truck activity has been estimated based on a review of preliminary construction quantities for each alternative. The number of truck loads needed to accommodate identified quantities was estimated over the construction season and spread throughout the typical construction day to forecast hourly truck traffic.

Localized truck traffic could result as materials are hauled to specific work zones. For example, construction of bicycle paths along the east side of the study area would require importing decomposed granite and aggregate base materials that would be hauled by truck. The amount of material would depend on the length of bicycle trail planned under each alternative.

From the standpoint of traffic impacts, large trucks have a disproportionate impact on operating level of service and on roadway structures. The length and acceleration/deceleration characteristics of large trucks exceed those of regular passenger vehicles. Standard engineering practice is to convert each truck to a number of passenger car equivalents (PCEs) and to use that adjusted volume in LOS calculations. PCE factors range from 2.0 to 4.0. For the evaluation of each alternative, a PCE of 4.0 has been assumed for each truck.

Regional Trip Distribution

The relative regional distribution of the project's employee and truck traffic would differ because employee traffic would be oriented to residential centers throughout the Lake Tahoe/western Nevada area, whereas truck traffic would be oriented to the sources of imported materials or the disposal sites for exported materials.

The relative assumptions made regarding employee and truck distribution are identified in Table 3.16-6. The primary route for truck traffic would be to the east on U.S. 50 because this is the route to the Ormsby Landfill. Employee traffic could originate in areas surrounding the study area but would also be heaviest to the east.

Table 3.16-6
Project Trip Distribution

Direction	Route	Percentage of Total Traffic	
		Trucks	Employees
East	U.S. 50	100%	55%
East	Al Tahoe Boulevard	0%	10%
West	Lake Tahoe Boulevard	0%	10%
North	SR 89	0%	10%
South	U.S. 50/SR 89	0%	15%
	Total	**100%**	**100%**

Notes: SR = State Route; U.S. 50 = U.S. Highway 50
Source: KD Anderson & Associates 2007

Trip Assignment

Over the course of the construction schedule, various roads can be expected to be used to access individual work zones and staging areas. The primary staging area would be located off East Venice Drive, and this analysis assumes that employee commute traffic would be destined for that location. Therefore, Tahoe Keys Boulevard will be the primary route for construction-related traffic.

Although trucks may be noticeable briefly on these routes at various times over the construction period, they would not represent an appreciable volume measured on a daily or peak-hour basis. Therefore, for this evaluation, 100 percent of the site traffic for each alternative has been assumed to be directed to the staging area off East Venice Drive.

Operational Traffic after Construction

The facilities created under the project alternatives could be used by persons who would be attracted to the study area to use trails or take advantage of scenic vistas. Because of the project's location, most users would be expected to be existing residents living near the study area. Table 3.16-5 indicates that the number of visitors to the site has averaged 100 to 110 per day during peak visitation (i.e., summer weekends and holidays); on the busiest weekend days, the number of visitors to the project site has exceeded 200 only on rare occasions. As discussed in Section 3.1, potential increases of the number of visitors would range from slight (Alternative 2 Minimal Recreation Infrastructure) to small (Alternative 1 Maximum Recreation Infrastructure) with alternatives 3 and 4 (moderate recreation infrastructure) falling between Alternatives 1 and 2. The number of new visitor trips to the site is expected to be limited based on the following reasons:

(1) The recreation and public access elements of the alternatives are related to the existing use of the study area for dispersed recreation, not to support new uses. Most of these elements are intended to replace existing user-created features (e.g., trails) and/or reduce the impacts of existing dispersed recreation. For example, proposed trails follow the routes of or are intended to replace existing user-created trails.

(2) The most popular recreational uses of the study area are walking and running, beach use, wildlife viewing, and fishing. The Basin has an abundance of locations where people can engage in these activities, and thus, there is not a substantial unmet need for such recreational opportunities.

(3) Adjacent neighborhoods account for a substantial portion of visitors to the study area and the project would not alter the number of residents in adjacent neighborhoods nor substantially alter access from adjacent neighborhoods to the study area.

TRPA requires an evaluation of traffic impacts from the operation of a project, if the project would generate 100 or more new trips per day. Therefore, if implementation of any of the alternatives would double the number of visitors to the project site, then a traffic impact analysis would be required. None of the alternatives are expected to generate more than additional 10 to 20 additional trips per day, for the reasons listed above. A traffic impact analysis was determined to be not required.

Parking Demand

The relative impact of implementing the project on parking demand has been determined by estimating the number of people using the study area and for what purpose and comparing those numbers with similarly sized and purposed sites throughout the Lake Tahoe area that have existing parking facilities. During construction, workers would be required to park in designated parking areas in the construction staging areas.

IMPACTS NOT DISCUSSED FURTHER IN THIS EIR/EIS/EIS

Operational Traffic after Construction (CEQA 1 and 2, in part; TRPA 1, and 4 in part)—Based on the reasons given in the methods and assumptions, implementation of any of the alternatives would generate less than 100 new trips per day to the project site (between 10 and 20 new trips per day). Therefore, potential impacts on traffic and circulation would be minimal, and thus less than significant, and are not discussed further in this section.

Air Traffic and Airport Hazards (CEQA 3, TRPA 5 in part)—None of the proposed alternatives would alter air traffic patterns because the proposed improvements would be expected to be of interest to local people; a substantial number of people would not be expected to fly to visit the study area. The potential increase in air traffic hazards that could result from improving bird and bat habitat in the study area (i.e., increased possibility of bird and bat strikes on aircraft) is evaluated in Section 3.7, "Human Health/Risk of Upset." Therefore, potential impacts on air traffic are not discussed further in this section.

Hazards from Facility Design or Land Use (CEQA 4, TRPA 6)—None of the action alternatives would involve modifications to existing transportation infrastructure, and there would be no change in the uses of the study area. Therefore, none of the alternatives would result in a hazard related to design features or land use. This potential impact is not discussed further in this section.

Emergency Access (CEQA 5)—Potential impacts on emergency access during construction are evaluated in Section 3.7, "Human Health/Risk of Upset," and are not discussed further in this section.

Adopted Policies, Plans, or Programs Supporting Alternative Transportation (CEQA 6 and TRPA 5 in part)—None of the proposed alternatives would result in modifications to Tahoe Keys Marina; therefore, no alternative would affect the evaluation of South Lake Tahoe for a possible ferry terminal. None of the alternatives would result in road closures; therefore, no alternative would affect bus services to the study area. None of the alternatives involve adding or removing bicycle racks; therefore, no alternative would affect access to bicycle racks. For these reasons, none of the alternatives would interfere with the implementation of adopted policies, plans, or programs supporting alternative transportation. These topics are not discussed further in this DEIR/DEIS/DEIS. Effects related to construction traffic management are discussed below.

IMPACT ANALYSIS AND MITIGATION MEASURES

Alternative 1: Channel Aggradation and Narrowing (Maximum Recreation Infrastructure)

IMPACT 3.16-1 (Alt. 1) **Increased Traffic on Regional Circulation System during Construction. (CEQA 1, 2; TRPA 4)**
Construction of Alternative 1 would add traffic to major roads in the area of the project, but no appreciable change to current operating levels of service would result during construction. This impact would be ***less than significant****.*

The amount of automobile and truck traffic associated with implementing Alternative 1 would vary throughout the construction season as different activities occur. Overall, construction activities would require an average of four truckloads per day. Over the construction period, the truckloads would be hauled on roads through the A1 Tahoe and Highland Woods subdivisions (as shown in Exhibit 2-5). In the Al Tahoe subdivision, trucks would travel on Lakeview Drive to the Lily Avenue access point, San Francisco Avenue to its access point, and Los Angeles Avenue to the Bellevue Avenue access point. In the Highland Woods subdivision, trucks would travel on Rubicon Trail to its access point.

Table 3.16-7 summarizes the traffic characteristics of Alternative 1 regarding construction activities. Table 3.16-8 summarizes peak-hour and daily trip generation for Alternative 1 on both a vehicle and a PCE basis.

Table 3.16-9 identifies peak-hour levels of service at study area intersections during the a.m. and p.m. peak hours during construction activities under Alternative 1. As indicated, overall levels of service forecast under this alternative are the same as those occurring under the baseline "existing" condition. Additive construction traffic compared to existing 24-hour traffic volume counts is shown in Table 3.16-10.

Adopted standards identify LOS D as the minimum acceptable level of service at intersections in developed urban areas. All the study intersections currently operate at an "overall" level of service of LOS A–LOS C. None of the study intersections operate at an overall level of service of LOS D–LOS F. The construction-related traffic operational analysis conducted for this alternative estimates that 84 PCEs would be added during the a.m. and p.m. peak hours (see Table 3.16-8). The addition of this automobile and truck traffic would not cause any intersections currently operating at an overall level of service of LOS A–LOS C to operate at an overall level of service of LOS D–LOS F. At the intersections controlled by side street stop signs, the addition of through traffic on U.S. 50 resulting from project construction would incrementally increase the length of delays experienced by motorists waiting to enter the state highway, but project traffic would not change acceptable LOS conditions to unacceptable conditions. This impact would be **less than significant**.

Table 3.16-7 Construction Traffic Characteristics of Alternative 1	
Cut/Fill	
Total cubic yards over the life of the project	129,256
Total import/export over the life of the project	5,256 (cut)
Total external truckloads over the life of the project @ 20 cubic yards per truck	263
Annual external truckloads (cut/fill) in highest year	263
Bicycle Trail Material (DG/AB)	
Total cubic yards of DG and AB under the bicycle trail over the life of the project	2,312
Total external truckloads @ 15 cubic yards per truck	154
Annual truckloads in highest year (DG and AB)	154
Total annual truckloads	**417**
Duration of haul	120 days
Average daily truckloads	4
Highest hourly truck trips (10-hour day)	1 in, 1 out
Maximum on-site employment	76
Highest hourly employee traffic	a.m. 76 inbound p.m. 76 outbound
Total daily vehicular traffic[1]	176

Notes: cut = graded material exported from the study area; AB = aggregate base; DG = decomposed granite.

[1] Includes an additional 10 percent of highest hourly employee traffic to account for miscellaneous employee traffic during non-peak hours and daily external truck trips.

Source: KD Anderson & Associates 2007

Table 3.16-8 Peak-Hour Construction-Related Trip Generation Estimates for Alternative 1		
Description	**Alternative 1**	
	In	**Out**
a.m. truck trips	1	1
a.m. employee trips	76	0
Total a.m. trips	77	1
Total a.m. PCEs	80	4
p.m. truck trips	1	1
p.m. employee trips	0	76
Total p.m. trips	1	77
Total p.m. PCEs	4	80
Total daily vehicles [1]	88	88
Total daily PCEs	100	100

Note: PCE = passenger car equivalent.

[1] Includes an additional 10 percent of highest hourly employee traffic to account for miscellaneous employee traffic during non-peak hours and daily external truck trips.

Source: KD Anderson & Associates 2007

Table 3.16-9
Existing Plus Alternative 1 (Construction Activities) Weekday Peak-Hour Levels of Service

Location	Control	Weekday a.m. Peak-Hour Levels of Service				Weekday p.m. Peak-Hour Levels of Service			
		Existing		Alternative 1		Existing		Alternative 1	
		Average Delay (seconds)	LOS	Average Delay (seconds)	LOS	Average Delay (seconds)	LOS	Average Delay (seconds)	LOS
Tahoe Keys Boulevard/East Venice Drive	All-way stop	9.8	A	10.4	B	11.6	B	12.6	B
SR 89/U.S. 50 (Lake Tahoe Boulevard)	Signal	26.9	C	27.0	C	33.8	C	33.9	C
U.S. 50/Tahoe Keys Boulevard	Signal	14.0	B	15.2	B	30.5	B	37.0	B
U.S. 50/Lodi Avenue									
(Overall)[1]	NB/SB stop	(0.6)	(A)	(0.6)	(A)	(1.3)	(A)	(1.4)	(A)
EB left turn		12.7	B	13.1	B	14.7	B	14.8	B
WB left turn		12.2	B	12.2	B	18.3	C	19.1	B
NB left+through+right turn		26.8	D	27.3	D	72.0	F	80.5	D
SB left+through+right turn		28.5	D	30.4	D	38.3	E	39.8	D
U.S. 50/Silver Dollar Avenue									
(Overall)		(0.6)	(A)	(0.6)	(A)	(0.5)	(A)	(0.5)	(A)
EB left turn		14.0	B	14.6	B	14.8	B	14.9	B
SB left+right turn		24.3	C	25.8	D	25.9	D	26.2	D
U.S. 50/Rubicon Trail	Signal	11.4	B	10.8	B	14.4	B	14.7	B
U.S. 50/Al Tahoe Boulevard	Signal	13.2	B	13.2	B	20.8	C	21.2	C
U.S. 50/San Francisco Avenue									
(Overall)	EB/WB stop	(0.6)	(A)	(0.6)	(A)	(0.9)	(A)	(0.9)	(A)
NB left turn		11.3	B	11.6	B	13.9	B	14.0	B
SB left turn		10.5	B	10.6	B	13.1	B	13.5	B
EB left+through+right turn		18.6	C	19.5	C	22.9	C	23.1	C
WB left+through+right turn		12.4	B	12.4	B	15.4	C	15.8	C
U.S. 50/Lakeview Avenue	Signal	4.3	A	4.2	A	4.6	A	4.2	A

Notes: EB = eastbound; LOS = level of service; NB = northbound; SB = southbound; WB = westbound; SR = State Route; U.S. 50 = U.S. Highway 50.

[1] Values in parentheses are the "overall" level of service for the intersection.

Source: KD Anderson & Associates 2007

Table 3.16-10
Existing Plus Alternative 1 Daily Construction Traffic Volumes

Location			Daily Volume			
Road/Street	From	To	Current		Construction (Alternative 1)	
			September	Peak Month	Regular (PCEs)	Random (PCEs)
San Francisco Avenue	Riverside Avenue	U.S. 50	877	1,000	0	20
Lakeview Avenue	Riverside Avenue	U.S. 50	1,795	2,100	0	20
East Venice Drive	Tahoe Keys Boulevard	Marina	1,304	1,500	200	200
Silver Dollar Avenue	Ponderosa Street	U.S. 50	1,079	1,250	0	10
Sunset Drive	Ponderosa Street	Conestoga Street	74	85	0	10

Note: PCE = passenger car equivalent; U.S. 50 = U.S. Highway 50.
Source: KD Anderson & Associates 2007

IMPACT 3.16-2 (Alt. 1) **Increased Parking Demand. (TRPA 2)** *Operation of Alternative 1 would increase demand for parking. The construction-related increase in parking demand would be met by employees parking in designated project staging areas, and thus would not increase demand for parking during construction. An increase in demand for parking could result from operation of Alternative 1 because of increased recreation activity. Alternative 1 would provide additional parking at the end of East Venice Drive. With no reduction to current on-street parking availability and additional parking included in Alternative 1, sufficient parking would be available to accommodate peak visitation to the study area. This impact would be* ***less than significant****.*

Construction employees would be required to park in the designated project staging areas (shown in Exhibit 2-5), which are sized to accommodate the estimated maximum of 76 employees. As a result, there would be no increase in on-street parking demand during construction.

Based on the assumptions and calculation described above, the existing peak visitation rate of 25–30 visitors per hour corresponds to a demand for nine to 27 parking spaces, which is currently provided by on-street parking. As described above in "Methods and Assumptions," Alternative 1 involves constructing additional public access and recreational facilities, and thus, implementing Alternative 1 would likely result in an increase in the number of visitors to the study area and in demand for parking.

The additional demand for parking would be primarily near the western boundary of the study area because the additional public access and recreation facilities would be primarily in the western portion of the study area, west of the Upper Truckee River. Alternative 1 would provide additional parking in the western portion of the study area. Also, the supply of parking would likely be increased near the western boundary of the study area as part of the joint-use agreement between the Conservancy and the Tahoe Keys Marina. This agreement would allow visitors to the study area to park in an expanded parking lot at the Tahoe Keys Marina, which would be sufficient to accommodate the increased peak combined visitation to the study area and the Tahoe Keys Marina.

Although Alternative 1 would construct trails, a viewpoint, and a kiosk near the southern boundary of the study area, the kiosk would be along an existing bicycle path, and the new trails and viewpoint would be designed to provide habitat protection. Furthermore, Alternative 1 proposes to remove existing user-created trails from the core habitat area, thus not substantially increasing overall trails near the southern boundary of the study area. Therefore, near the southern boundary of the study area, parking demand would remain similar to existing demand.

The bridge over the Upper Truckee River and the boardwalk along the Lake Tahoe shoreline would connect the eastern portion of the study area to the western portion, and thus, could potentially affect demand for on-street parking near the study area's eastern boundary. However, it is expected that much of the use would be by residents of the Al Tahoe, Highland Woods, and Tahoe Keys neighborhoods and others who currently use the study area because most of the area is not directly connected with regional transit and is not located along the primary thoroughfare (U.S. 50). Therefore, near the eastern boundary of the study area, parking demand would remain similar to existing demand.

In summary, although Alternative 1 would likely increase the number of visitors to the study area, any increase in parking demand would not be substantial. First, a large portion of visitors would continue to be residents of adjacent neighborhoods who do not drive to the study area. Second, on-street parking would remain available, as under existing conditions, to accommodate a large portion of the parking demand. Third, Alternative 1 would include a small parking lot providing additional parking. Also, because Alternative 1 proposes a paved bike path, a greater portion of visitors using the area are expected to travel by bicycle, (not automobile) than under existing conditions. Therefore, this impact would be **less than significant**.

IMPACT 3.16-3 (Alt. 1) **Potential for Conflicts between Construction Traffic, Local Traffic, Pedestrians, and Bicycles (CEQA 6; TRPA 5).** *Construction under Alternative 1 would add short-term truck traffic on local roads in the project vicinity. This traffic has the potential to create conflicts with local traffic, pedestrians, and bicyclists. However, as described in Environmental Commitment 12, the Conservancy would prepare and implement traffic control plans to ensure the safety of local traffic, pedestrians, and bicycles during construction. Therefore, this impact would be* ***less than significant****.*

Under Alternative 1, approximately 27 paved parking spaces and regular automobile parking/circulation and parking access would be added near East Venice Drive. The proposed parking is not expected to create conflicts between cyclists and automobiles. Local access to the lot would be provided in an area where parking currently occurs, and signage would be included to direct visitors to parking and trails.

Under Alternative 1, large trucks would be required to travel on local streets between the study area and U.S. 50, and would need to make several turns. The construction access to the site includes the designated haul routes as shown in Exhibit 2-5. Other automobiles, pedestrians, or bicyclists present along those streets and at the local intersections could encounter conflicts with construction trucks. "Conflicts" in this context mean changes to normal travel behavior in response to encountering construction traffic, such as traveling outside designated lanes, stopping more quickly than normal, or otherwise maneuvering to avoid a hazard. Along these routes the potential for conflicts between pedestrians, bicyclists, and trucks would be most acute when large trucks would be involved. Regular "bobtail" dump trucks would not be expected to create substantial conflicts, but the turning requirements of large five-axle truck/trailer combinations could create conflicts. Traffic, bicycle, and pedestrian safety would be at risk where there would be a potential for such conflicts.

As described in Environmental Commitment (EC) 12 (Table 2-6), the Conservancy would prepare traffic control plans to ensure the safety of local traffic, pedestrians, and bicyclists during construction. The plans would be prepared sufficiently in advance of project construction to allow adequate review, comment, and concurrence by the City of South Lake Tahoe public service providers. They could include advance public advisories, construction-period signage, flag personnel, and other special traffic-control actions as necessary. The following specific measures could be included in the plans:

- Distribute or mail flyers to residents in the nearby Al Tahoe, Highland Woods, and Tahoe Keys subdivisions before the beginning of construction, advising them about the upcoming construction traffic.
- Place advisory signs along construction routes in advance of construction to alert motorists, pedestrians, and bicyclists about the upcoming construction traffic.

- Install signage on designated haul routes in the construction area to inform the public of the presence of trucks.
- Provide flag personnel at when truck activity is heavy (i.e., more than ten trucks per hour).
- Provide information to all truck drivers identifying haul routes, speed limits, locations of flaggers, and any other pertinent public safety information.
- Monitor truck and traffic conditions to identify traffic congestion and safety concerns related to truck, vehicle, and pedestrian and bicycle conflicts, and adjust the management approach as needed.

Because construction traffic controls implemented through the plans would minimize the potential conflicts, this impact would be **less than significant**.

Alternative 2: New Channel—West Meadow (Minimum Recreation Infrastructure)

IMPACT 3.16-1 (Alt. 2) **Increased Traffic on Regional Circulation System during Construction. (CEQA 1, 2; TRPA 4)**

Construction of Alternative 2 would add traffic to major roads in the area of the project, but no appreciable change to current operating levels of service would result from construction. This direct impact would be ***less than significant****.*

The amount of automobile and truck traffic associated with implementation of Alternative 2 would vary throughout the construction season as different activities occur. No bicycle path would be constructed for Alternative 2, but habitat restoration would require cut and fill of more material than under Alternative 1. As a result, Alternative 2 would result in a greater number of external truckloads than under Alternative 1: ten truckloads per day versus four truckloads per day under Alternative 1 (see Tables 3.16-11 and 3.16-7, respectively). During the construction period, the truckloads would be hauled on roads through the Al Tahoe and Highland Woods subdivisions (as shown in Exhibit 2-6). In the Al Tahoe subdivision, trucks would travel on Lakeview Drive to the Lily Avenue access point, San Francisco Avenue to its access point, and Los Angeles Avenue to the Bellevue Avenue access point. In the Highland Woods subdivision, trucks would travel on Rubicon Trail to its access point.

Table 3.16-11 summarizes the traffic characteristics of Alternative 2 regarding construction activities. Table 3.16-12 summarizes peak-hour and daily trip generation for Alternative 2 on both a vehicle and a PCE basis.

Table 3.16-13 identifies peak-hour levels of service at study area intersections during the a.m. and p.m. peak hours during construction activities under Alternative 2. Additive traffic compared to existing 24-hour traffic volume counts is shown in Table 3.16-14.

Adopted standards identify LOS D as the minimum acceptable level of service at intersections in developed urban areas. All the study intersections currently operate at an overall level of service of LOS A–LOS C. None of the study intersections operate at an overall level of service of LOS D–LOS F. The construction-related traffic operational analysis conducted for this alternative estimates that 86 PCEs would be added during the a.m. and p.m. peak hours (see Table 3.16-12). The addition of this automobile and truck traffic would not cause any intersections currently operating at an overall level of service of LOS A–LOS C to operate at an overall level of service of LOS D–LOS F. At the intersection controlled by side street stop signs, the addition of through traffic on U.S. 50 resulting from project construction would incrementally increase the length of delays experienced by motorists waiting to enter the state highway, but project traffic would not change acceptable LOS conditions to unacceptable conditions. This impact would be **less than significant**.

Table 3.16-11 Construction Traffic Characteristics of Alternative 2	
Cut/Fill	
Total cubic yards over the life of the project	189,800
Total import/export over the life of the project	23,800 (fill)
Total external truckloads over the life of the project @ 20 cubic yards per truck	1,190
Annual external truckloads (cut/fill) in highest year	1,190
Bicycle Trail Material (DG and AB)	
Total cubic yards of DG and AB under the bicycle trail over the life of the project	**0**
Total external truckloads @ 15 cubic yards per truck	**0**
Annual truckloads in highest year (DG and AB)	**0**
Total annual truckloads	**1,190**
Duration of haul	120 days
Average daily truckloads	10
Highest hourly truck trips (10-hour day)	1 in, 1 out
Maximum on-site employment	77
Highest hourly employee traffic	a.m. 77 inbound p.m. 77 outbound
Total daily vehicular traffic [1]	192

Notes: Fill is material imported into the study area.

[1] Includes an additional 10 percent of highest hourly employee traffic to account for miscellaneous employee traffic during non-peak hours and daily external truck trips.

Source: KD Anderson & Associates 2007

Table 3.16-12 Peak-Hour Construction-Related Trip Generation Estimates for Alternative 2		
Description	**Trips**	
	In	**Out**
a.m. truck trips	1	1
a.m. employee trips	77	0
Total a.m. trips	78	1
Total a.m. PCEs	82	4
p.m. truck trips	1	1
p.m. employee trips	0	77
Total p.m. trips	1	78
Total p.m. PCEs	4	82
Total daily vehicles [1]	**96**	**96**
Total daily PCEs	**126**	**126**

Note: PCE = passenger car equivalent.

[1] Includes an additional 10 percent of highest hourly employee traffic to account for miscellaneous employee traffic during non-peak hours and daily external truck trips.

Source: KD Anderson & Associates 2007

Table 3.16-13
Existing Plus Alternative 2 (Construction Activities) Weekday Peak-Hour Levels of Service

Location	Control	Weekday a.m. Peak-Hour Levels of Service				Weekday p.m. Peak-Hour Levels of Service			
		Existing		Alternative 2		Existing		Alternative 2	
		Average Delay (seconds)	LOS	Average Delay (seconds)	LOS	Average Delay (seconds)	LOS	Average Delay (seconds)	LOS
Tahoe Keys Boulevard/East Venice Drive	All-way stop	9.8	A	10.4	B	11.6	B	12.6	B
SR 89/U.S. 50 (Lake Tahoe Boulevard)	Signal	26.9	C	27.0	C	33.8	C	33.9	C
U.S. 50/Tahoe Keys Boulevard	Signal	14.0	B	15.2	B	30.5	B	37.0	B
U.S. 50/Lodi Avenue									
(Overall) [1]	NB/SB stop	(0.6)	(A)	(0.6)	(A)	(1.3)	(A)	(1.4)	(A)
EB left turn		12.7	B	13.1	B	14.7	B	14.8	B
WB left turn		12.2	B	12.2	B	18.3	C	19.1	B
NB left+through+right turn		26.8	D	27.3	D	72.0	F	80.7	D
SB left+through+right turn		28.5	D	30.4	D	38.3	E	39.8	D
U.S. 50/Silver Dollar Avenue									
(Overall)		(0.6)	(A)	(0.6)	(A)	(0.5)	(A)	(0.5)	(A)
EB left turn		14.0	B	14.6	B	14.8	B	14.9	B
SB left+right turn		24.3	C	25.9	D	25.9	D	26.2	D
U.S. 50/Rubicon Trail	Signal	11.4	B	10.8	B	14.4	B	14.7	B
U.S. 50/Al Tahoe Boulevard	Signal	13.2	B	13.2	B	20.8	C	21.2	C
U.S. 50/San Francisco Avenue									
(Overall)	EB/WB stop	(0.6)	(A)	(0.6)	(A)	(0.9)	(A)	(0.9)	(A)
NB left turn		11.3	B	11.6	B	13.9	B	14.0	B
SB left turn		10.5	B	10.6	B	13.1	B	13.5	B
EB left+through+right turn		18.6	C	19.5	C	22.9	C	23.1	C
WB left+through+right turn		12.4	B	12.4	B	15.4	C	15.8	C
U.S. 50/Lakeview Avenue	Signal	4.3	A	4.2	A	4.6	A	4.6	A

Notes: EB = eastbound; LOS = level of service; NB = northbound; SB = southbound; WB = westbound; SR = State Route; U.S. 50 = U.S. Highway 50.

[1] Values in parentheses are the "overall" level of service for the intersection.

Source: KD Anderson & Associates 2007

Table 3.16-14
Existing Plus Alternative 2 Daily Construction Traffic Volumes

Location			Daily Volume			
			Current		Construction (Alternative 2)	
Road/Street	From	To	September	Peak Month	Regular (PCEs)	Random (PCEs)
San Francisco Avenue	Riverside Avenue	U.S. 50	877	1,000	0	10
Lakeview Avenue	Riverside Avenue	U.S. 50	1,795	2,100	0	10
East Venice Drive	Tahoe Keys Boulevard	Marina	1,304	1,500	252	252
Silver Dollar Avenue	Ponderosa Street	U.S. 50	1,079	1,250	0	10
Sunset Drive	Ponderosa Street	Conestoga Street	74	85	0	10

Notes: PCE = passenger car equivalent; U.S. 50 = U.S. Highway 50.
Source: KD Anderson & Associates 2007

IMPACT 3.16-2 (Alt. 2) **Increased Parking Demand. (TRPA 2)** *Operational parking demand would be expected to be similar to existing demand because the increase in recreation infrastructure would be minimal. Construction-related parking demand would be met by employees parking in designated project staging areas, and thus would not increase demand for parking during construction. A small increase in demand for parking near the western boundary of the study area could result from operation of Alternative 2. However, no reduction to current on-street parking availability would occur and additional public parking may also be provided by the joint-use agreement between the Conservancy and the Tahoe Keys Marina. Because existing parking would be sufficient to accommodate peak visitation to the study area under Alternative 2, this impact would be* ***less than significant****.*

Construction employees would be required to park in the designated project staging areas (shown in Exhibit 2-6), which are sized to accommodate the estimated maximum of 77 employee trips. As a result, there would be no increase in on-street parking demand during construction.

Based on the assumptions and calculation described above, the existing peak visitation rate of 25–30 visitors per hour corresponds to a demand for nine to 27 parking spaces, which is currently provided by on-street parking. Because Alternative 2 involves constructing fewer public access and recreational facilities, implementation would likely result in less demand for additional parking spaces than other alternatives. The additional demand for parking would be near the western boundary of the study area because the additional public access and recreation facilities would be in the western portion of the study area, west of the Upper Truckee River. On-street parking would remain available to accommodate parking demand under Alternative 2. Also, the supply of parking would likely be increased through a joint-use agreement between the Conservancy and the Tahoe Keys Marina, which would expand marina parking. Because Alternative 2 would involve only small changes in recreation opportunities, existing on-street parking would be sufficient to accommodate peak combined visitation to the study area. Thus, this impact would be **less than significant**.

IMPACT 3.16-3 (Alt. 2) **Potential for Conflicts between Construction Traffic, Local Traffic, Pedestrians, and Bicycles. (CEQA 6; TRPA 5)** *Construction under Alternative 2 would add short-term truck traffic on local roads in the project vicinity. This traffic has the potential to create conflicts with local traffic, pedestrians, and bicyclists. However, as described in Environmental Commitment 12, the Conservancy would prepare and implement traffic control plans to ensure the safety of local traffic, pedestrians, and bicycles during construction. Therefore, this impact would be* ***less than significant****.*

Under Alternative 2, large trucks would be required to travel on local streets between the study area and U.S. 50, including the need to make several turns. The construction access to the site includes the designated haul routes as shown in Exhibit 2-6. As under Alternative 1, other automobiles, pedestrians, or bicyclists present along those streets and at the local intersections could encounter potential conflicts with construction trucks. This potential would be greater under Alternative 2 than Alternative 1, because the number of truck trips (Table 3.16-11) would be nearly three times more than under Alternative 1. As described in EC 12 (Table 2-6), the Conservancy would prepare traffic control plans to ensure the safety of local traffic, pedestrians, and bicyclists during construction. The plans would be prepared sufficiently in advance of project construction to allow adequate review, comment, and concurrence by the City of South Lake Tahoe public service providers. Because construction traffic controls implemented through the plans would minimize the potential conflicts, this impact would be **less than significant**.

Alternative 3: Middle Marsh Corridor (Moderate Recreation Infrastructure)

IMPACT 3.16-1 (Alt. 3) **Increased Traffic on Regional Circulation System during Construction. (CEQA 1, 2; TRPA 4)** *Construction of Alternative 3 would add traffic to major roads in the area of the project, but no appreciable change to current operating levels of service would result from construction. This impact would be* ***less than significant****.*

The amount of automobile and truck traffic associated with construction of Alternative 3 would vary throughout the construction season as different activities occur. Overall, construction activities would require an average of four truckloads per day of material hauling (see Table 3.16-15), which would be comparable to Alternative 1 and less than Alternative 2. During the construction period, the truckloads would be hauled on roads through the Al Tahoe and Highland Woods subdivisions (as shown in Exhibit 2-7). In the Al Tahoe subdivision, trucks would travel on Lakeview Drive to the Lily Avenue access point, San Francisco Avenue to its access point, and Los Angeles Avenue to the Bellevue Avenue access point. In the Highland Woods subdivision, trucks would travel on Rubicon Trail to its access point.

Table 3.16-15 summarizes the traffic characteristics of Alternative 3 regarding construction activities. Table 3.16-16 summarizes peak-hour and daily trip generation for Alternative 3 on both a vehicle and a PCE basis.

Table 3.16-17 identifies peak-hour levels of service at study area intersections during the a.m. and p.m. peak hours during construction activities under Alternative 3. Additive traffic compared to existing 24-hour traffic volume counts is shown in Table 3.16-18.

Adopted standards identify LOS D as the minimum acceptable level of service at intersections in developed urban areas. All the study intersections currently operate at an overall level of service of LOS A–LOS C. None of the study intersections operate at an overall level of service of LOS D–LOS F. The construction-related traffic operational analysis conducted for this alternative estimates that 76 PCEs would be added during the a.m. and p.m. peak hours (see Table 3.16-16). The addition of this automobile and truck traffic would not cause any intersections currently operating at an overall level of service of LOS A–LOS C to operate at an overall level of service of LOS D–LOS F. At the intersection controlled by side street stop signs, the addition of through traffic on

Table 3.16-15 Construction Traffic Characteristics of Alternative 3	
Cut/Fill	
Total cubic yards over the life of the project	116,800
Total import/export over the life of the project	6,800 (cut)
Total external truckloads over the life of the project @ 20 cubic yards per truck	340
Annual external truckloads (cut/fill) in highest year	340
Bicycle Trail Material (DG/AB)	
Total cubic yards of DG and AB under bicycle trail over the life of the project	500
Total external truckloads @ 15 cubic yards per truck	34
Annual truckloads in highest year (DG and AB)	34
Total annual truckloads	**374**
Duration of haul	120 days
Average daily truckloads	4
Highest hourly truck trips (10-hour day)	1 in, 1 out
Maximum on-site employment	68
Highest hourly employee traffic	a.m. 68 inbound p.m. 68 outbound
Total daily vehicular traffic[1]	158

Notes: cut = graded material exported from the study area; AB = aggregate base; DG = decomposed granite.

[1] Includes an additional 10 percent of highest hourly employee traffic to account for miscellaneous employee traffic during non-peak hours and daily external truck trips.

Source: KD Anderson & Associates 2007

Table 3.16-16 Peak-Hour Construction-Related Trip Generation Estimates for Alternative 3		
Description	**Trips**	
	In	**Out**
a.m. truck trips	1	1
a.m. employee trips	68	0
Total a.m. trips	69	1
Total a.m. PCEs	72	4
p.m. truck trips	1	1
p.m. employee trips	0	68
Total p.m. trips	1	69
Total p.m. PCEs	4	72
Total daily vehicles[1]	**79**	**79**
Total daily PCEs	**92**	**92**

Note: PCE = passenger car equivalent.

[1] Includes an additional 10 percent of highest hourly employee traffic to account for miscellaneous employee traffic during non-peak hours and daily external truck trips.

Source: KD Anderson & Associates 2007

Table 3.16-17
Existing Plus Alternative 3 (Construction Activities) Weekday Peak-Hour Levels of Service

Location	Control	Weekday a.m. Peak-Hour Levels of Service				Weekday p.m. Peak-Hour Levels of Service			
		Existing		Alternative 3		Existing		Alternative 3	
		Average Delay (seconds)	LOS	Average Delay (seconds)	LOS	Average Delay (seconds)	LOS	Average Delay (seconds)	LOS
Tahoe Keys Boulevard/East Venice Drive	All-way stop	9.8	A	10.4	B	11.6	B	12.5	B
SR 89/U.S. 50 (Lake Tahoe Boulevard)	Signal	26.9	C	27.0	C	33.8	C	33.9	C
U.S. 50/Tahoe Keys Boulevard	Signal	14.0	B	15.1	B	30.5	B	36.2	B
U.S. 50/Lodi Avenue	NB/SB stop								
(Overall)[1]		(0.6)	(A)	(0.6)	(A)	(1.3)	(A)	(1.4)	(A)
EB left turn		12.7	B	13.1	B	14.7	B	14.8	B
WB left turn		12.2	B	12.2	B	18.3	C	19.1	B
NB left+through+right turn		26.8	D	27.2	D	72.0	F	79.6	D
SB left+through+right turn		28.5	D	30.2	D	38.3	E	39.7	D
U.S. 50/Silver Dollar Avenue									
(Overall)		(0.6)	(A)	(0.6)	(A)	(0.5)	(A)	(0.5)	(A)
EB left turn		14.0	B	14.6	B	14.8	B	14.9	B
SB left+right turn		24.3	C	25.7	D	25.9	D	26.2	D
U.S. 50/Rubicon Trail	Signal	11.4	B	10.8	B	14.4	B	14.7	B
U.S. 50/Al Tahoe Boulevard	Signal	13.2	B	13.2	B	20.8	C	21.1	C
U.S. 50/San Francisco Avenue	EB/WB stop								
(Overall)		(0.6)	(A)	(0.6)	(A)	(0.9)	(A)	(0.9)	(A)
NB left turn		11.3	B	11.6	B	13.9	B	14.0	B
SB left turn		10.5	B	10.6	B	13.1	B	13.4	B
EB left+through+right turn		18.6	C	19.4	C	22.9	C	23.1	C
WB left+through+right turn		12.4	B	12.4	B	15.4	C	15.8	C
U.S. 50/Lakeview Avenue	Signal	4.3	A	4.2	A	4.6	A	4.6	A

Notes: EB = eastbound; LOS = level of service; NB = northbound; SB = southbound; WB = westbound; SR = State Route; U.S. 50 = U.S. Highway 50.

[1] Values in parentheses are the "overall" level of service for the intersection.

Source: KD Anderson & Associates 2007

Table 3.16-18
Existing Plus Alternative 3 Daily Construction Traffic Volumes

Location			Daily Volume			
Road/Street	From	To	Current		Construction (Alternative 3)	
			September	Peak Month	Regular (PCEs)	Random (PCEs)
San Francisco Avenue	Riverside Avenue	U.S. 50	877	1,000	0	10
Lakeview Avenue	Riverside Avenue	U.S. 50	1,795	2,100	0	10
East Venice Drive	Tahoe Keys Boulevard	Marina	1,304	1,500	184	184
Silver Dollar Avenue	Ponderosa Street	U.S. 50	1,079	1,250	0	10
Sunset Drive	Ponderosa Street	Conestoga Street	74	85	0	10

Notes: PCE = passenger car equivalent; U.S. 50 = U.S. Highway 50
Source: KD Anderson & Associates 2007

U.S. 50 resulting from project construction would incrementally increase the length of delays experienced by motorists waiting to enter the state highway, but project traffic would not change acceptable LOS conditions to unacceptable conditions. This impact would be **less than significant**.

IMPACT 3.16-2 (Alt. 3) **Increased Parking Demand. (TRPA 2)** *Operation of Alternative 3 would increase demand for parking, but the increase would be less under this alternative than under Alternative 1. Construction employees would park in designated project staging areas, and thus would not increase demand for parking during construction. A small increase in demand for parking could result from operation of Alternative 3, near the western boundary of the study area. However, no reduction to current on-street parking availability would occur, and on-street parking would continue to be sufficient to accommodate peak visitation to the study area. Also, additional public parking would likely be provided by a joint-use agreement between the Conservancy and the Tahoe Keys Marina. This impact would be* ***less than significant****.*

Construction employees would be required to park in the designated project staging areas (shown in Exhibit 2-7), which are sized to accommodate the estimated maximum of 68 employees. As a result, there would be no increase in on-street parking demand during construction.

Based on the assumptions and calculation described above, the existing peak visitation rate of 25–30 visitors per hour corresponds to a demand for nine to 27 parking spaces. Because Alternative 3 (moderate recreation) involves constructing less public access and recreational facilities than Alternative 1 and more than Alternative 2, implementation would likely result in an increase in demand for parking spaces intermediate between Alternative 1 (maximum recreation) and Alternative 2 (minimum recreation).

The additional demand for parking would be primarily near the western boundary of the study area because the additional public access and recreation facilities would be in the western portion of the study area, west of the Upper Truckee River. Although Alternative 3 would construct trails and viewpoints near the southern and eastern boundaries of the study area, these features have been designed to provide core habitat protection and Alternative 3 also would eliminate existing user-created trails within the core habitat; furthermore, it is expected that most of the use from this area would be localized from within the Al Tahoe, Highland Woods, and Tahoe Keys neighborhoods because the area is not connected with regional transit and is not located along primary thoroughfare. Thus, near the southern and eastern boundaries of the study area, parking demand would remain similar to existing conditions.

On-street parking would remain available, as under existing conditions, to accommodate the demand for parking. Also, near the western boundary of the study area, the supply of parking would likely be increased, because of the joint-use agreement between the Conservancy and the Tahoe Keys Marina. This agreement would allow visitors to the study area to park in an expanded parking lot at the Tahoe Keys Marina, which would be sufficient to accommodate peak combined visitation to the study area and the Tahoe Keys Marina. This impact would be **less than significant**.

IMPACT 3.16-3 (Alt. 3) **Potential for Conflicts between Construction Traffic, Local Traffic, Pedestrians, and Bicycles. (CEQA 6; TRPA 5)** *Construction under Alternative 3 would add short-term truck traffic on local roads in the project vicinity. This traffic has the potential to create conflicts with local traffic, pedestrians, and bicyclists. However, as described in Environmental Commitment 12, the Conservancy would prepare and implement traffic control plans to ensure the safety of local traffic, pedestrians, and bicycles during construction. Therefore, this impact would be* ***less than significant****.*

Under Alternative 3, large trucks would be required to travel on local streets between the study area and U.S. 50, and would need to make several turns. The construction access to the site includes the designated haul routes as shown in Exhibit 2-7. As under Alternatives 1 and 2, other automobiles, pedestrians, or bicyclists present along those streets and at the local intersections could encounter conflicts with construction trucks. Under Alternative 3, the potential for such conflicts would be similar to Alternative 1 and less than Alternative 2 because the number of truck trips (Table 3.16-15) would be similar to Alternative 1 and less than under Alternative 2. As described in EC 12 (Table 2-6), the Conservancy would prepare traffic control plans to ensure the safety of local traffic, pedestrians, and bicyclists during construction. The plans would be prepared sufficiently in advance of project construction to allow adequate review, comment, and concurrence by the City of South Lake Tahoe public service providers. Because construction traffic controls implemented through the plans would minimize the potential conflicts, this impact would be **less than significant**.

Alternative 4: Inset Floodplain (Moderate Recreation Infrastructure)

IMPACT 3.16-1 (Alt. 4) **Increased Traffic on Regional Circulation System during Construction. (CEQA 1, 2; TRPA 4)** *Construction of Alternative 4 would add traffic to major roads in the area of the project, but no appreciable change to current operating levels of service would result from construction. This impact would be* ***less than significant****.*

The amount of automobile and truck traffic associated with implementation of Alternative 4 would vary throughout the construction season as different activities occur. Overall, construction activities would require an average of 106 truckloads per day of material hauling, which is substantially more than Alternatives 1–3. Over the construction period, the truckloads would be hauled on roads through the Al Tahoe and Highland Woods subdivisions (as shown in Exhibit 2-8). In the Al Tahoe subdivision, trucks would travel on Lakeview Drive to the Lily Avenue access point, San Francisco Avenue to its access point, and Los Angeles Avenue to the Bellevue Avenue access point. In the Highland Woods subdivision, trucks would travel on Rubicon Trail to its access point. Table 3.16-19 summarizes the traffic characteristics of Alternative 4 regarding construction activities. Table 3.16-20 summarizes peak-hour and daily trip generation for Alternative 4 on both a vehicle and a PCE basis. Table 3.16-21 identifies peak-hour levels of service at study area intersections during the a.m. and p.m. peak hours during construction activities under Alternative 4. Additive traffic compared to existing 24-hour traffic volume counts is shown in Table 3.16-22.

Adopted standards identify LOS D as the minimum acceptable level of service at intersections in developed urban areas. All the study intersections currently operate at an overall level of service of LOS A–LOS C. None of the study intersections operate at an overall level of service of LOS D–LOS F. The construction-related traffic operational analysis conducted for this alternative estimates that 121 PCEs would be added during the a.m. and p.m. peak hours (see Table 3.16-20). The addition of this automobile and truck traffic would not cause any

Table 3.16-19 Construction Traffic Characteristics of Alternative 4	
Cut/Fill	
Total cubic yards over the life of the project	294,644
Total import/export over the life of the project	280,644 (cut)
Total external truckloads over the life of the project @ 20 cubic yards per truck	14,032
Annual external truckloads (cut/fill) in highest year	12,632
Bicycle Trail Material (DG/AB)	
Total cubic yards of DG and AB under bicycle trail over the life of the project	386
Total external truckloads @ 15 cubic yards per truck	26
Annual truckloads in highest year (DG and AB)	26
Total annual truckloads	**12,658**
Duration of haul	120 days
Average daily truckloads	106
Highest hourly truck trips (10-hour day)	11 in, 11 out
Maximum on-site employment	33
Highest hourly employee traffic	a.m. 33 inbound p.m. 33 outbound
Total daily vehicular traffic[1]	306

Notes: cut = graded material exported from the study area; AB = aggregate base; DG = decomposed granite.

[1] Includes an additional 10 percent of highest hourly employee traffic to account for miscellaneous employee traffic during non-peak hours and daily external truck trips.

Source: KD Anderson & Associates 2007

Table 3.16-20 Peak-Hour Construction-Related Trip Generation Estimates for Alternative 4		
Description	**Trips**	
	In	**Out**
a.m. truck trips	11	11
a.m. employee trips	33	0
Total a.m. trips	44	11
Total a.m. PCEs	77	44
p.m. truck trips	11	11
p.m. employee trips	0	33
Total p.m. trips	11	44
Total p.m. PCEs	44	77
Total daily vehicles[1]	**153**	**153**
Total daily PCEs	**503**	**503**

Notes: PCE = passenger car equivalent.

[1] Includes an additional 10 percent of highest hourly employee traffic to account for miscellaneous employee traffic during non-peak hours and daily external truck trips.

Source: KD Anderson & Associates 2007

intersections currently operating at an overall level of service of LOS A–LOS C to operate at an overall level of service of LOS D–LOS F. At the intersection controlled by side-street stop signs, the addition of through traffic on U.S. 50 resulting from project construction would incrementally increase the length of delays experienced by motorists waiting to enter the state highway, but project traffic would not change acceptable LOS conditions to unacceptable conditions. This impact would be **less than significant**.

IMPACT 3.16-2 (Alt. 4) **Increased Parking Demand. (TRPA 2)** *Operation of Alternative 4 would increase demand for parking. Construction employees would park in designated project staging areas, and thus would not increase demand for parking during construction. A small increase in demand for parking could result from operation of Alternative 4, near the western boundary of the study area. However, no reduction to current on-street parking availability would occur, and existing parking would be sufficient to accommodate peak visitation to the study area. Also, additional public parking would likely be provided by a joint-use agreement between the Conservancy and the Tahoe Keys Marina. This impact would be* ***less than significant.***

Construction employees would be required to park in the designated project staging areas (shown in Exhibit 2-8), which are sized to accommodate the estimated maximum of 33 employees. As a result, there would be no increase in on-street parking demand during construction.

Based on the assumptions and calculation described above, the existing peak visitation rate of 25–30 visitors per hour corresponds to a demand for nine to 27 parking spaces. Because Alternative 4, like Alternative 3, involves constructing an amount of public access and recreation features intermediate between Alternatives 1 and 2, implementation of Alternative 4 would likely result in a similar increase in demand for parking. The additional demand for parking would be primarily near the western boundary of the study area because the additional public access and recreation facilities would be in the western portion of the study area, west of the Upper Truckee River. Although Alternative 4 would construct two trails, viewpoints, and an observation area near the southern and eastern boundaries of the study area, these features would be designed to provide habitat protection and existing user-created trails would be eliminated from these same areas; furthermore, it is expected that most of the use from this area would be localized from within the Al Tahoe, Highland Woods, and Tahoe Keys neighborhoods because the area is not connected with regional transit and is not located along primary thoroughfare. Thus, near the southern and eastern boundaries of the study area, parking demand would remain similar to existing conditions.

On-street parking would remain available, as under existing conditions, to accommodate the demand for parking. Also, near the western boundary of the study area, the supply of parking would likely be increased, because of the joint-use agreement between the Conservancy and the Tahoe Keys Marina. This agreement would allow visitors to the study area to park in an expanded parking lot at the Tahoe Keys Marina that would be sufficient to accommodate peak combined visitation to the study area and the Tahoe Keys Marina. This impact would be **less than significant**.

IMPACT 3.16-3 (Alt. 4) **Potential for Conflicts between Construction Traffic, Local Traffic, Pedestrians, and Bicycles (CEQA 6; TRPA 5).** *Construction under Alternative 4 would add short-term truck traffic on local roads in the project vicinity. This traffic has the potential to create conflicts with local traffic, pedestrians, and bicyclists. However, as described in Environmental Commitment 12, the Conservancy would prepare and implement traffic control plans to ensure the safety of local traffic, pedestrians, and bicycles during construction. Therefore, this impact would be* ***less than significant****.*

Table 3.16-21
Existing Plus Alternative 4 (Construction Activities) Weekday Peak-Hour Levels of Service

Location	Control	Weekday a.m. Peak-Hour Levels of Service				Weekday p.m. Peak-Hour Levels of Service			
		Existing		Alternative 4		Existing		Alternative 4	
		Average Delay (seconds)	LOS	Average Delay (seconds)	LOS	Average Delay (seconds)	LOS	Average Delay (seconds)	LOS
Tahoe Keys Boulevard/East Venice Drive	All-way stop	9.8	A	10.8	B	11.6	B	13.1	B
SR 89/U.S. 50 (Lake Tahoe Boulevard)	Signal	26.9	C	26.9	C	33.8	C	33.8	C
U.S. 50/Tahoe Keys Boulevard	Signal	14.0	B	15.6	B	30.5	B	37.9	B
U.S. 50/Lodi Avenue									
(Overall)[1]	NB/SB stop	(0.6)	(A)	(0.6)	(A)	(1.3)	(A)	(1.5)	(A)
EB left turn		12.7	B	13.2	B	14.7	B	15.3	B
WB left turn		12.2	B	12.5	B	18.3	C	19.3	B
NB left+through+right turn		26.8	D	28.5	D	72.0	F	83.7	D
SB left+through+right turn		28.5	D	31.0	D	38.3	E	42.3	D
U.S. 50/Silver Dollar Avenue									
(Overall)		(0.6)	(A)	(0.6)	(A)	(0.5)	(A)	(0.5)	(A)
EB left turn		14.0	B	14.8	B	14.8	B	15.4	B
SB left+right turn		24.3	C	26.3	D	25.9	D	27.4	D
U.S. 50/Rubicon Trail	Signal	11.4	B	11.4	B	14.4	B	14.8	B
U.S. 50/Al Tahoe Boulevard	Signal	13.2	B	13.0	B	20.8	C	21.3	C
U.S. 50/San Francisco Avenue									
(Overall)	EB/WB stop	(0.6)	(A)	(0.6)	(A)	(0.9)	(A)	(0.9)	(A)
NB left turn		11.3	B	11.8	B	13.9	B	14.4	B
SB left turn		10.5	B	10.8	B	13.1	B	13.6	B
EB left+through+right turn		18.6	C	20.0	C	22.9	C	24.1	C
WB left+through+right turn		12.4	B	12.7	B	15.4	C	16.0	C
U.S. 50/Lakeview Avenue	Signal	4.3	A	4.1	A	4.6	A	4.6	A

Notes: EB = eastbound; LOS = level of service; NB = northbound; SB = southbound; WB = westbound; SR = State Route; U.S. 50 = U.S. Highway 50.

[1] Values in parentheses are the "overall" level of service for the intersection.

Source: KD Anderson & Associates 2007

Table 3.16-22
Existing Plus Alternative 4 Daily Construction Traffic Volumes

Location			Daily Volume			
			Current		Construction (Alternative 4)	
Road/Street	From	To	September	Peak Month	Regular (PCEs)	Random (PCEs)
San Francisco Avenue	Riverside Avenue	U.S. 50	877	1,000	0	10
Lakeview Avenue	Riverside Avenue	U.S. 50	1,795	2,100	0	10
East Venice Drive	Tahoe Keys Boulevard	Marina	1,304	1,500	1,006	1,006
Silver Dollar Avenue	Ponderosa Street	U.S. 50	1,079	1,250	0	10
Sunset Drive	Ponderosa Street	Conestoga Street	74	85	0	10

Notes: PCE = passenger car equivalent; U.S. 50 = U.S. Highway 50
Source: KD Anderson & Associates 2007

Under Alternative 4, large trucks would be required to travel on local streets between the study area and U.S. 50, and would need to make several turns. The construction access to the site includes the designated haul routes as shown in Exhibit 2-7. As under Alternatives 1–3, other automobiles, pedestrians, or bicyclists present along those streets and at the local intersections could encounter conflicts with construction trucks. The potential for such conflicts would be greater under Alternative 4 than under Alternatives 1–3 because of the much greater number of truck trips (Table 3.16-19). As described in EC 12 (Table 2-6), the Conservancy would prepare traffic control plans to ensure the safety of local traffic, pedestrians, and bicyclists during construction. The plans would be prepared sufficiently in advance of project construction to allow adequate review, comment, and concurrence by the City of South Lake Tahoe public service providers. Because construction traffic controls implemented through the plans would minimize the potential conflicts, this impact would be **less than significant**.

Alternative 5: No-Project/No-Action

IMPACT 3.16-1 (Alt. 5) **Increased Traffic on Regional Circulation System during Construction. (CEQA 1, 2; TRPA 4)** *No construction or changes to the study area would occur with Alternative 5; therefore, no traffic would be added to major roads in the area of the project. No change to current operating levels of service would result. Therefore, **no impact** would occur.*

Under Alternative 5, LOS standards would not be exceeded because existing activities would continue at the same level into the future and no project construction would occur. No on-site construction would be needed for the No-Project/No-Action Alternative, because river and marsh restoration and recreation facilities would not be implemented. Existing levels of incidental recreational visits would continue as they do currently; therefore, LOS would remain comparable to current conditions. **No impact** would occur.

IMPACT 3.16-2 (Alt. 5) **Increased Parking Demand. (TRPA 2)** *No construction or changes to the study area would occur with Alternative 5; therefore, there would be no increase in demand for parking. Therefore, **no impact** would occur.*

Under Alternative 5, demand for parking would not change because existing activities would continue at the same level into the future and no project construction would occur. No on-site construction would be needed for the No-Project/No-Action Alternative, because river and marsh restoration and recreation facilities would not be implemented. Existing levels of incidental recreational visits would continue as they do currently; therefore, parking demand would remain comparable to current conditions. **No impact** would occur.

IMPACT 3.16-3 (Alt. 5) **Potential for Conflicts between Construction Traffic, Local Traffic, Pedestrians, and Bicycles (CEQA 6; TRPA 5).** *No construction or changes to the study area would occur with Alternative 5; therefore, there would be no conflicts between construction and local traffic, pedestrians, and bicycles. Therefore,* ***no impact*** *would occur.*

Under Alternative 5, traffic conflicts would not change because existing activities would continue at the same level into the future and no project construction would occur. Existing levels of incidental recreational visits would continue as they do currently; therefore, traffic conflicts would remain comparable to current conditions. **No impact** would occur.

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3.17 UTILITIES

This section describes existing public utilities, presents an analysis of potential impacts resulting from Alternatives 1–5, and identifies mitigation measures for those impacts determined to be significant. Specifically, it addresses potential project impacts on water supply, wastewater, solid waste, electricity, natural gas, and telecommunications (telephone and cable television). Analysis provided in this section is based on review of agency documents, as well as consultation with local public services providers.

3.17.1 AFFECTED ENVIRONMENT

REGULATORY SETTING

Federal

The Safe Drinking Water Act is relevant to the proposed alternatives and described in detail in Chapter 5, "Compliance, Consultation, and Coordination."

State

The Porter-Cologne Water Quality Control Act is relevant to the proposed alternatives and described in detail in Chapter 5, "Compliance, Consultation, and Coordination."

Tahoe Regional Planning Agency

1987 Regional Plan

TRPA implements its authority to regulate growth and development in the Lake Tahoe region through the *Regional Plan for the Lake Tahoe Basin* (Regional Plan). TRPA's Regional Plan, adopted in 1987, consists of several documents: Goals and Policies, Code of Ordinances, Water Quality Management Plan, Regional Transportation Plan—Air Quality Plan, Plan Area Statements, and Scenic Quality Improvement Plan. The Regional Plan Update was adopted on December 12, 2012.

Goals and Policies

The following goals and policies in Chapter VI (Public Services and Facilities Element) of TRPA's Goals and Policies (TRPA 2004) related to utilities are applicable to this analysis:

- **Goal #2:** Consider the existence of adequate and reliable public services and facilities in approving new development under the Plan.

  Goal #2 is supported by the following pertinent policies:

  - **Policy 1:** No additional development requiring water should be allowed in any area unless it can be demonstrated that there is adequate water supply within an existing water right.

  - **Policy 3:** No additional development requiring water should be allowed in any area unless there exists adequate storage and distribution systems to deliver an adequate quantity and quality of water for domestic consumption and fire protection.

- **Goal #3:** Prevent liquid and solid wastes from degrading Lake Tahoe and surface and groundwaters of the region.

Goal #3 is supported by the following pertinent policy:

- **Policy 3:** Garbage pick-up service shall be mandatory throughout the region, and will be so structured as to encourage clean-ups and recycling.

Code of Ordinances

Regulations in the TRPA Code of Ordinances are applicable to the analysis of utilities provided to the study area:

- **Chapter 32**, "Basic Services," establishes requirements for projects to be served by paved roads and water, electrical, and wastewater treatment services and establishes standards to implement those requirements.

- **Section 60.3**, "Source Water Protection," sets regulations pertaining to recognition of source water, prevention of contamination to source water, and protection of public health related to drinking water. It strengthens provisions of the TRPA Goals and Policies that address groundwater protection, and implements elements of the TRPA Source Water Protection Program.

City of South Lake Tahoe

The CSLT maintains storm drain facilities in the study area. The CSLT's Community Development Department administers the land use policies, which include planning, building, and environmental regulations. The Planning Division of the Community Development Department also administers various land use regulations through its code enforcement staff. The CSLT Municipal Code (2012) (City Code) establishes the minimum standards applicable throughout the city. The City Code includes policies that regulate utilities including electrical, stormwater, potable water, and wastewater facilities and services. The City Code prohibits illicit connections and discharges to the stormwater drainage system.

On January 1, 1990, the California Integrated Waste Management Act of 1989 (Public Resources Code Section 40000 et seq.), also known as Assembly Bill 939 (AB 939), became law, mandating that every local agency (i.e., city or county) divert at least 50 percent of its waste from landfills by the year 2000 or face fines up to $10,000 per day. Since August 2007, South Tahoe Refuse Company has been contracted by the CSLT to provide solid waste pickup and disposal services for both residential and commercial customers. As of January 2013, South Lake Tahoe is diverting 66 percent of its waste from landfill (STRR 2013).

The study area lies entirely within the South Tahoe Public Utility District (STPUD) service area for water and sewer service. STPUD, a public agency formed in 1950, provides wastewater collection, treatment, and recycling and drinking water to the community of South Lake Tahoe. STPUD has more than 14,000 residential water connections and 17,000 sewer connections, and operates a treatment plant that has a capacity of 7.7 million gallons per day and treats 1.8 billion gallons annually (STPUD 2013).

ENVIRONMENTAL SETTING

Existing utility services and their corresponding provider are as follows:

- Potable water, provided by STPUD
- Sanitary sewer, provided by STPUD
- Solid-waste collection, provided by South Tahoe Refuse and Recycling Company
- Electricity, provided by Liberty Energy
- Natural gas, provided by Southwest Gas Corporation
- Telephone, provided by AT&T
- Cable television, provided by Charter Communications

Each of these utility services is described below.

Water Lines

Several potable-water lines exist around the periphery of the study area near the Tahoe Island, Highland Woods, and Al Tahoe subdivisions. No potable-water lines cross the study area except a water main that is attached to the north side of the U.S. 50 bridge. Typical coverage over existing buried potable-water lines is four feet.

Sewer System

Several sanitary-sewer lines and manholes exist around the periphery of the study area near the Tahoe Island, Highland Woods, and Al Tahoe subdivisions. There are two sanitary-sewer crossings in the study area: one on Trout Creek near River Station 8+00, and one on the Upper Truckee River at approximately River Station 5+00.

The Trout Creek crossing is an active eight-inch-diameter gravity sewer main that serves the Al Tahoe Lift Station. The Upper Truckee River crossing is an eight-inch-diameter line that was abandoned in place more than five years ago. The manholes in the floodplain connected to this line are also abandoned.

All of these crossings are below the thalweg (the line connecting the deepest points along a stream) of their respective alignments. Typical coverage over the existing sanitary sewer lines is six feet in the residential neighborhoods and three feet within waterway alignments and Stream Environment Zones.

Storm Drain Lines

One existing storm drain line is located within the study area. This line runs from a sump pump located on Colorado Avenue within the Tahoe Island subdivision, to its outfall along the Upper Truckee River at approximately River Station 45+50. This pump and line is maintained by the CSLT and is used to relieve stormwater flooding from Colorado Avenue. Typical coverage over existing storm drain lines is two feet. Existing storm drain drainage inlets are located on both the north and south sides of the U.S. 50 bridge. These drainage inlets collect flows from the curb and gutter and discharge directly into the Upper Truckee River from the bridge. The drainage inlets are surface-mounted grates and incorporated into the bridge structure.

Refuse and Landfills

There are two known locations within the study area where refuse is collected: one at the LWS Restoration Area, and one at the end of Bellevue Avenue in the Al Tahoe subdivision. Both of these locations have trailhead trash cans. These trash cans are serviced by the Clean Tahoe Program. The trash cans are serviced an average of three times per week from May through October, and one time per week during the rest of the year (Lear, pers. comm., 2008). To comply with state law, refuse generated in the South Lake Tahoe area is taken to a materials recovery facility located at 2140 Ruth Avenue in South Lake Tahoe, where it is sorted into recyclable components before disposal. Nonrecyclable, nonhazardous refuse is taken to the Lockwood Regional Landfill, located in Sparks, Nevada.

South Tahoe Refuse and Recycling Company is permitted to receive 370 tons of waste per day. The current waste stream is approximately 250 tons per day (Lear, pers. comm., 2008). The Lockwood Regional Landfill is a 21,736-acre, unlined landfill that serves all of northern Nevada and much of northern California (Clements, Harmon, and Young 2007). It is permitted to accept only nonhazardous, municipal (household) waste (NSBDC 2011). This landfill currently has ten years left on its permit life, and is in the process of seeking an expansion with the Washoe County Health Department, which is responsible for permitting of the landfill (Lear, pers. comm., 2008).

Electrical, Telephone, and Cable Television Lines

Numerous overhead power, telephone, and cable television lines exist around the periphery of the study area near the Tahoe Keys, Tahoe Island, Highland Woods, and Al Tahoe subdivisions. These overhead utilities are typical

for the Tahoe Basin. No overhead utility line crossings and poles exist within the study area except lines that run on both sides of U.S. 50.

Natural Gas Lines

Several natural gas lines exist around the periphery of the study area near the Tahoe Island, Highland Woods, and Al Tahoe subdivisions. Natural gas lines cross within the study area, and a gas main is attached to the south side of the U.S. 50 bridge. Typical coverage over existing buried natural gas lines is three feet.

3.17.2 ENVIRONMENTAL CONSEQUENCES

SIGNIFICANCE CRITERIA

Below are outlined the significance criteria for CEQA, NEPA and TRPA. Each agency assigns significance to their criteria in different ways. For this document, an impact is considered to be a physical change in the environment and is considered significant under TRPA and CEQA and adverse under NEPA, if the following occur:

CEQA Criteria

Under CEQA, an alternative was determined to result in a significant effect related to utilities if it would:

- exceed wastewater treatment requirements of the applicable regional water quality control board (CEQA 1);
- require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects (CEQA 2);
- require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects (CEQA 3);
- have insufficient water supplies available to serve the Project from existing entitlements and resources, or require new or expanded water supply resources or entitlements (CEQA 4);
- result in a determination by the wastewater treatment provider which serves or may serve the Project that it has inadequate capacity to serve the Project's projected demand in addition to the provider's existing commitments (CEQA 5);
- require solid waste disposal services from a landfill with insufficient permitted capacity to accommodate the Project's expected solid waste disposal needs (CEQA 6); or
- be out of compliance with Federal, state, and local statutes and regulations related to solid waste (CEQA 7).

NEPA Criteria

An environmental document prepared to comply with NEPA must consider the context and intensity of the environmental effects that would be caused by or result from the proposed action. Under NEPA, the significance of an effect is used solely to determine whether an EIS must be prepared. The factors that are taken into account under NEPA to determine the significance of an action in terms of the context and the intensity of its effects are encompassed by the CEQA criteria used for this analysis.

TRPA Criteria

Based on TRPA's Initial Environmental Checklist, an alternative would result in a significant impact for utilities if it would result in any of the following:

- Except for planned improvements, will the proposal result in a need for:
  - Power or natural gas (TRPA 1);
  - Communication systems (TRPA 2);
  - Utilize additional water which amount will exceed the maximum permitted capacity of the service provider (TRPA 3);
  - Utilize additional sewage treatment capacity which amount will exceed the maximum permitted capacity of the sewage treatment provider (TRPA 4);
  - Storm water drainage(TRPA 5); or
  - Solid waste and disposal (TRPA 6).

METHODS AND ASSUMPTIONS

Utilities and services data for the study area, the City of South Lake Tahoe, and other cities in the region were obtained from comprehensive plans and associated environmental documents, urban water management plans, capital improvement plans, and the service providers. The locations and conditions of local water supply, storm drainage, sanitary sewer, and solid waste were identified.

EFFECTS NOT DISCUSSED FURTHER IN THIS EIR/EIS/EIS

Exceed wastewater treatment requirements (CEQA 1; TRPA 4) – None of the alternatives would include development of any facilities which would generate wastewater which would be sent to the public wastewater system. Any sanitary facilities required during or after construction would be portable toilets or bathrooms with vaults. Sanitary waste would be periodically removed by a private waste hauler.

Require or result in the construction of new or expanded water or wastewater treatment facilities (CEQA 2, 5; TRPA 4) – No alternatives would require permanent use of public water supplies or wastewater facilities. Therefore, there is no potential to cause construction of new or expanded facilities.

Require or result in the construction of new stormwater drainage facilities (CEQA 3, TRPA 5) – Alternatives 1–4 would include restoration elements to improve ecosystem functions within the study area, including hydrologic processes. The proposed public access and recreation infrastructure elements are designed to appropriately manage any increased surface runoff through infiltration (i.e., not requiring the construction of any new public stormwater collection or treatment facilities). Alternatives 2 and 3 also provide available area for the development of stormwater treatment areas. These areas are not proposed to manage stormwater generated by the project but provide a benefit for the treatment of stormwater generated outside the project area.

Have insufficient available water supplies (CEQA 4, TRPA 3) – The project would not, under any of the alternatives, result in the demand for a permanent water supply. No water would be supplied to proposed recreational facilities. During construction, periodic temporary use of public water supplies may be required (i.e., use of fire hydrants) and would be arranged under agreements with STPUD.

Result in the need for power or gas during construction (TRPA 1 in part) – The project would require temporary use of power during construction. For Alternatives 1, 2, 3, and 4, the use of electricity (provided by Liberty Energy) would be limited to power necessary for a construction trailer and security lighting. This use would not be significant. No use of natural gas is expected.

Result in the need for communications during construction (TRPA 2) – The primary communication system would likely be cell phones. It is possible that the project could require a temporary phone line for the construction trailer. This use would be short term and have a negligible effect on existing communication systems.

IMPACT ANALYSIS AND MITIGATION MEASURES

Alternative 1: Channel Aggradation and Narrowing (Maximum Recreation Infrastructure)

IMPACT 3.17-1 (Alt. 1) **Increased Waste Disposal Requirements Resulting from Construction and Operations (CEQA 6, TRPA 6).** *Implementing Alternative 1 would entail construction activities and operations that would generate solid waste. The quantity of solid waste would be very small relative to the existing solid waste generation from the population in the City of South Lake Tahoe and nearby communities, and the facility providing waste disposal services has sufficient capacity. Therefore, this impact would be* ***less than significant****.*

During construction, any trees or other vegetation removed would be reused (either replanted or mulched) within the study area. However, construction activities could potentially contribute to a temporary or short-term increase in solid waste generation. For any of these alternatives, the increased demand on solid waste generation resulting from construction would be small relative to the existing waste generation from the population in the City of South Lake Tahoe and nearby communities. Lockwood Landfill provides waste disposal services for the community and has adequate capacity. Thus, the construction-related effects of implementing Alternative 1 would be insubstantial.

During operation, Alternative 1 would result in a small increase in solid waste generation resulting from an increase in recreational use. Currently, South Tahoe Refuse collects solid waste from the site. To comply with state law, all recyclable waste is recycled and only non-recyclable waste is taken to the Lockwood Landfill, which has adequate capacity. (It currently has 10 years left on its permit life, and has been seeking an expansion with the Washoe County Health Department, which is responsible for permitting of the landfill [Lear, pers. comm., 2008].) Increased solid waste generation resulting from operation of Alternative 1 would be small relative to the existing waste generation from the population in the City of South Lake Tahoe and nearby communities, and would have similar recycling and waste diversion requirements. The increase in solid waste from operation of Alternative 1 would not have a substantial effect. Because the temporary, short-term, and long-term effects of implementing Alternative 1 would be very small and the landfill providing waste disposal services has adequate capacity, this impact would be **less than significant**.

IMPACT 3.17-2 (Alt. 1) **Increased Use of Electrical Power (TRPA 1).** *Implementing Alternative 1 would include construction of a parking lot, which would require permanent lighting. The use of power could be considerable if the lighting system is not properly designed and maintained. Because the final design of the alternative would include a low-energy parking lot lighting system, this impact would be* ***less than significant****.*

Alternative 1 includes the construction of a permanent parking lot off of East Venice Drive. For safety, the lot would have a permanent lighting system. Lighting parking areas can require significant use of electricity. At the current level of design, the lighting system has not been specified. Conventional street lighting systems can draw up to 500 to 1,000 watts per hour. The final design of the alternative will include a low-energy parking lot lighting system and include low wattage lights such as light emitting diode (LED) lamps and, if feasible, be solar-powered. This impact would be **less than significant**.

Alternative 2: New Channel—West Meadow (Minimum Recreation Infrastructure)

IMPACT 3.17-1 (Alt. 2) **Increased Waste Disposal Requirements Resulting from Construction and Operations (CEQA 6, TRPA 6).** *Implementing Alternative 2 would entail construction activities and operations that would generate solid waste. The quantity of solid waste would be very small relative to the existing solid waste generation from the population in the City of South Lake Tahoe and nearby communities, and the facility providing waste disposal services has sufficient capacity. Therefore, this impact would be* ***less than significant****.*

This impact is identical to Impact 3.17-1 (Alt. 1) above. For the same reasons as described for Alternative 1, this impact would be **less than significant**.

IMPACT 3.17-2 (Alt. 2) **Increased Use of Electrical Power (TRPA 1).** *Implementing Alternative 2 would not include any elements requiring electrical power to operate.* ***No impact*** *would occur.*

Alternative 2 would not include any elements requiring electrical power to operate. Therefore, additional electrical power would not be consumed. **No impact** would occur.

Alternative 3: Middle Marsh Corridor (Moderate Recreation Infrastructure)

IMPACT 3.17-1 (Alt. 3) **Increased Waste Disposal Requirements Resulting from Construction and Operations (CEQA 6, TRPA 6).** *Implementing Alternative 3 would entail construction activities and operations that would generate solid waste. The quantity of solid waste would be very small relative to the existing solid waste generation from the population in the City of South Lake Tahoe and nearby communities, and the facility providing waste disposal services has sufficient capacity. Therefore, this impact would be* ***less than significant****.*

This impact is identical to Impact 3.17-1 (Alt. 1) above. For the same reasons as described for Alternative 1, this impact would be **less than significant**.

IMPACT 3.17-2 (Alt. 3) **Increased Use of Electrical Power (TRPA 1).** *Implementing Alternative 3 would not include any elements requiring electrical power to operate.* ***No impact*** *would occur.*

Alternative 3 would not include any elements requiring electrical power to operate. Therefore, additional electrical power would not be consumed. **No impact** would occur.

Alternative 4: Inset Floodplain (Moderate Recreation Infrastructure)

IMPACT 3.17-1 (Alt. 4) **Increased Waste Disposal Requirements Resulting from Construction and Operations (CEQA 6, TRPA 6).** *Implementing Alternative 4 would entail construction activities and operations that would generate solid waste. The quantity of solid waste would be very small relative to the existing solid waste generation from the population in the City of South Lake Tahoe and nearby communities, and the facility providing waste disposal services has sufficient capacity. Therefore, this impact would be* ***less than significant****.*

This impact is identical to Impact 3.17-1 (Alt. 1) above. For the same reasons as described for Alternative 1, this impact would be **less than significant**.

IMPACT 3.17-2 (Alt. 4) **Increased Use of Electrical Power (TRPA 1).** *Implementing Alternative 4 would not include any elements requiring electrical power to operate.* ***No impact*** *would occur.*

Alternative 4 would not include any elements requiring electrical power to operate. Therefore, additional electrical power would not be consumed. **No impact** would occur.

Alternative 5: No-Project/No-Action

IMPACT 3.17-1 (Alt. 5) **Increased Waste Disposal Requirements Resulting from Construction and Operations (CEQA 6, TRPA 6).** *Under Alternative 5, no construction activities would occur and operations would continue as under existing conditions. Therefore, additional solid waste would not be generated.* ***No impact*** *would occur.*

Under Alternative 5, no construction activities would occur and operations would continue as under existing conditions. Therefore, additional solid waste would not be generated. **No impact** would occur.

IMPACT 3.17-2 (Alt. 5) **Increased Use of Electrical Power (TRPA 1).** *Under Alternative 5, no construction activities would occur and operations would continue as under existing conditions.* ***No impact*** *would occur.*

Under Alternative 5, no construction activities would occur and operations would continue as under existing conditions. Therefore, additional electrical power would not be consumed. **No impact** would occur.

3.18 CUMULATIVE IMPACTS

This section analyzes the overall cumulative impacts of the project alternatives and the No-Project/No-Action Alternative, taken together with other past, present, and reasonably foreseeable future projects producing related impacts, as required by the State CEQA Guidelines (14 California Code of Regulations [CCR] Section 15130) and NEPA implementing regulations (40 Code of Federal Regulations [CFR] 1508.7).

This analysis follows applicable guidance provided by the Council on Environmental Quality (CEQ) in *Considering Cumulative Effects under the National Environmental Policy Act* (CEQ 1997) and *Guidance on the Consideration of Past Actions in Cumulative Effects Analysis* (CEQ 2005). The analysis also follows applicable guidance and directives provided by Reclamation in the public review draft of Reclamation's *NEPA Handbook* (2000). The latter guidance is used informally in this analysis because the *NEPA Handbook* is currently being revised.

3.18.1 DEFINITIONS OF CUMULATIVE IMPACTS

NEPA DEFINITION OF CUMULATIVE IMPACTS

The CEQ regulations that implement provisions of NEPA define cumulative impacts as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).

Cumulative effects can result from individually minor, but collectively significant, actions over time and differ from indirect impacts (40 CFR 1508.8). They are caused by the incremental increase in total environmental effects when the evaluated project is added to other past, present, and reasonably foreseeable future actions. Thus, cumulative impacts can arise from causes that are totally unrelated to the project being evaluated, and the analysis of cumulative impacts looks at the life cycle of the effects, not the project at issue. These impacts can be either adverse or beneficial.

For this analysis, adverse cumulative impacts are analyzed separately from beneficial cumulative impacts, and significance conclusions are made only for adverse cumulative impacts.

TRPA DEFINITION OF CUMULATIVE IMPACTS

TRPA has not established a definition of cumulative impacts. Rather, TRPA applies NEPA and CEQA definitions of cumulative impacts to its impact assessments.

CEQA DEFINITION OF CUMULATIVE IMPACTS

Cumulative impacts are defined in the State CEQA Guidelines (CCR Section 15355) as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." A cumulative impact occurs from "the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (CCR Section 15355(b)).

Consistent with the State CEQA Guidelines (CCR Section 15130(a)), the discussion of cumulative impacts in this section focuses on significant and potentially significant cumulative impacts. The State CEQA Guidelines (CCR Section 15130(b)) state that:

The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.

3.18.2 APPROACH TO THE CUMULATIVE IMPACT ANALYSIS

GEOGRAPHIC SCOPE OF EFFECTS OF THE PROJECT

Table 3.18-1 defines the geographic scope of the effects of the proposed action and alternatives for each of the resource topics addressed in this DEIR/DEIS/DEIS.

Table 3.18-1
Geographic Areas That Would Be Affected by the Project

Resource Area	Geographic Area
Air Quality and Climate Change	*Air Quality:* Lake Tahoe Air Basin *Climate Change:* Upper Truckee River watershed for related projects, although cumulative consequence issues can be global
Archaeological and Historical Resources	Study area, with regional implications
Biological Resources: Vegetation and Wildlife	Project vicinity and watershed of the Upper Truckee River, with regional implications
Fisheries	Watersheds of Trout Creek and the Upper Truckee River, with regional implications
Geology and Soils, Mineral Resources, and Land Capability and Coverage	Study area
Human Health/Risk of Upset	Study area
Hydrology and Flooding	Project vicinity and watershed of the Upper Truckee River
Geomorphology and Water Quality	Project vicinity and watershed of the Upper Truckee River, with implications for Lake Tahoe
Land Use	Project vicinity
Noise	Project vicinity
Public Services	South shore of Lake Tahoe
Recreation	South shore of Lake Tahoe
Scenic Resources	Project vicinity
Socioeconomics, Population and Housing, and Environmental Justice	*Socioeconomics and Population and Housing:* South shore of Lake Tahoe *Environmental Justice:* Project vicinity
Transportation, Parking, and Circulation	South shore of Lake Tahoe
Utilities	South shore of Lake Tahoe

Source: Data compiled by AECOM in 2012

METHODS AND ASSUMPTIONS OF ANALYSIS

NEPA guidelines do not provide specific guidance on how to conduct a cumulative impact analysis; however, Reclamation's draft *NEPA Handbook* states that an EIS should identify associated actions (past, present, or future) that, when viewed with the proposed or alternative actions, may have significant cumulative impacts. Cumulative impacts should not be speculative, but should be based on known long-range plans, regulations, or operating agreements.

The State CEQA Guidelines identify two basic methods for establishing the cumulative environment in which the project is to be considered: the use of a list of past, present, and probable future projects (the "list approach") or the use of adopted projections from a general plan, other regional planning document, or certified EIR for such a planning document (the "plan approach"). For this cumulative impact analysis, the list approach has been followed to generate the most reliable future projections possible. To analyze the cumulative impacts of the Upper Truckee River and Marsh Restoration Project's action alternatives, a list of related past, present, and reasonably foreseeable future projects was compiled, and the combined effects of these projects and each action alternative were evaluated by resource topic.

Significance Criteria

When considering cumulative impacts of the Upper Truckee River and Marsh Restoration Project, the environmental consequences of project-related actions were evaluated, using the criteria in Appendix G of the CEQA checklist, to determine whether implementing such actions would make a cumulatively considerable contribution to a significant cumulative impact. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other projects, and the effects of probable future projects (State CEQA Guidelines, Section 15065[a][3]). Thus, the effects of project actions were evaluated in combination with the effects of other past, present, and reasonably foreseeable future actions to determine whether (1) the overall cumulative impact would be significant and (2) the actions would considerably contribute to that overall cumulative impact. Both circumstances must exist to conclude that an environmental consequence would be cumulatively significant. Cumulatively significant effects would do any of the following:

- cause a significant adverse impact on a resource (using the criteria for significance described in Chapter 3, "Affected Environment and Environmental Consequences");
- make a considerable contribution to an already degraded or declining resource that has experienced substantial adverse effects from other past, present, or reasonably foreseeable future projects; or
- cause an effect that was initially not significant by itself, but that would be part of a cumulatively degrading or declining future trend resulting from other reasonably foreseeable future actions.

A project's potential cumulative impacts that would be significant based on the criteria above may be reduced to a less-than-significant level if the project would comply with the requirements of an approved plan or mitigation program designed to reduce the project's potential incremental contribution to a cumulative effect to a level that is not cumulatively considerable. The approved plan or mitigation program must contain specific requirements that, if implemented, would avoid or substantially lessen the cumulative problem within the geographic area where the project would occur.

Short-Term and Long-Term Cumulative Impacts

Because the project involves restoring natural functions and values to a river and marsh through construction activity, short-term impacts may result from construction-related disturbance. Therefore, the analysis needs to examine whether short-term cumulative impacts may be caused by implementation of a combination of the Upper

Truckee River and Marsh Restoration Project and other past, present, and reasonably foreseeable future projects in the watershed.

Short-term impacts include both effects that would be transient and are related to construction activities (e.g., noise) and effects that would last for three to five years and are related to the restoration that would occur after completion of construction. The restoration period is a transitional time after construction when plant growth and other natural processes revegetate exposed soils, reestablish wildlife habitats or develop them for the first time, and stabilize river channels. The relevant time period for the analysis of short-term cumulative impacts, therefore, is the duration of the project's construction phase and up to five years thereafter.

In this cumulative impact analysis, short-term impacts are addressed separately from long-term impacts. Typically, such transitory effects do not result in a cumulatively significant impact, because they do not add to the effects of other actions. However, the construction and transitional periods of the Upper Truckee River and Marsh Restoration Project could be concurrent with the construction and transitional periods of several other restoration and erosion control actions in the Upper Truckee River watershed (Table 3.18-2). Thus, the combined short-term effects of these restoration and related actions (including the Upper Truckee River and Marsh Restoration Project) could be cumulatively significant for certain resources (e.g., water quality), and therefore are discussed in this section. Also, the short-term effects on a resource could be adverse, while long-term effects on the same resource would be beneficial. (For example, the short-term risk of construction-period sedimentation could be adverse, even though the project would fulfill its purpose of creating long-term benefits to water quality.) For these reasons, short-term cumulative impacts are distinguished from long-term impacts in the cumulative impact analysis and conclusions.

Long-term cumulative impacts are the more common subject of cumulative impact analysis. Adverse effects typically accumulate over time as a combination of projects is implemented. Because this DEIR/DEIS/DEIS examines a proposed restoration project, long-term cumulative environmental effects could be either adverse or beneficial; both types of effects are considered in this analysis. Long-term cumulative impacts are discussed for each resource after short-term cumulative impacts, if both apply.

Mitigation Measures for Cumulative Impacts

Where a considerable contribution to a significant cumulative adverse effect is identified, mitigation measures are presented, where feasible. If mitigation for project-related impacts described in Sections 3.2 through 3.17 would also resolve cumulative impacts, it is cross-referenced in the discussion below. If a new mitigation measure is needed for the cumulative impact, it is described in its entirety in the following discussion.

RELATED PROJECTS CONSIDERED IN THE CUMULATIVE IMPACT ANALYSIS

Past Projects

The Upper Truckee River, its watershed, and surrounding areas have been substantially altered by land use practices during the past 150 years. The opening of the Comstock silver mining boom in Nevada in mid-1859 prompted a surge in timber harvesting, and agricultural and developed land uses also increased. From the 1900s to the present, developed land uses have continued to increase, particularly since 1960. For example, the population of the city of South Lake Tahoe has increased five-fold since 1960 (CSLT 2003).

As a result of these changes in land use, the Upper Truckee River watershed has experienced ecosystem degradation that is typical of what has occurred elsewhere in the Tahoe Basin (Murphy and Knopp 2000). The river has been modified from its original conditions by human activities such as logging, livestock grazing, and road construction, and by residential, commercial, and industrial developments (including the Lake Tahoe Airport and U.S. 50 bridge). Many of these past actions continue to affect resources in the project vicinity and Upper

Truckee River watershed, and along the south shore of Lake Tahoe. These major past actions include the following:

- *Historic Timber Harvests.* Most forests within the watershed of the Upper Truckee River have been grazed and logged during the past 150 years, and an associated network of skid trails, flumes, logging roads, and railroads has been constructed during that time (Murphy and Knopp 2000). This extensive grazing, logging, and road construction altered biologic, hydrologic, geomorphic, and other resources in the Upper Truckee River watershed, including the project vicinity. Some logging occurred in the study area, and the study area was grazed for more than 100 years beginning in the 1860s (Lindström 1995, 1996). Both this grazing and the network of water impounding and diverting dams, gates, and miscellaneous earthen works affected resources in the study area and adjacent areas.

- *Fire Suppression.* Before the late 1800s, fires were frequent in the Tahoe Basin, and were mostly of low to moderate intensity. Since that time, changes in land use and fire management have altered the frequency and intensity of fires. In particular, since about the 1920s, fire suppression has resulted in a several-fold increase in tree density and fuel loads in most forests in the Tahoe Basin (Barbour et al. 2002:461–462). These changes in forest structure have altered biological habitats and increased the frequency of high-intensity fires and the vulnerability of trees to insect outbreaks.

- *Species Introductions.* Nonnative species have been accidentally or deliberately introduced into the aquatic and terrestrial ecosystems of the Tahoe Basin. Species that have become particularly abundant and are present in the project vicinity include cowbird (*Molothrus ater*), beaver (*Castor canadensis*), brown trout (*Salmo trutta*), brown bullhead catfish (*Ictalurus nebulosus*), cheatgrass (*Bromus tectorum*), and Eurasian milfoil (*Myriophyllum spicatum*) (Conservancy and DGS 2003). These species have been altering the resources of the project vicinity, the Upper Truckee River watershed, and the south shore of Lake Tahoe.

- *Urban Development.* During the past 150 years, a portion of the watershed of the Upper Truckee River has been converted to developed land uses. Based on a review of land cover within the watershed (using geographic information system [GIS] data layers from CAL FIRE 2002 and California Interagency Watershed Mapping Committee 2004), this portion is about 9 percent, concentrated in the lower elevation areas of the watershed, and includes much of the project vicinity. Urban development has been altering hydrologic, geomorphic, and other resources within the Upper Truckee River watershed, including the project vicinity. Several development projects along the Upper Truckee River have adversely affected geomorphic processes, water quality, and habitats: the golf course at the Lake Valley State Recreation Area (SRA), the South Lake Tahoe Airport, U.S. 50, and the Tahoe Keys Marina and residential area. (In particular, construction of the Tahoe Keys Marina and Tahoe Keys residential area has substantially affected resources in the project vicinity, as described separately below.)

- *Newlands Project—Tahoe City Dam.* Since 1870, a dam has been operated at Tahoe City to regulate the flow of water from Lake Tahoe into the Lower Truckee River. After enactment of the Reclamation Act of 1902, the Secretary of the Interior authorized construction of the Newlands Project, and during 1909–1913, the dam at Tahoe City was reconstructed to its present configuration. This dam controls the top 6.1 feet of storage at Lake Tahoe as a federal reservoir. The Truckee River Operating Agreement governs the operation of this dam, and consequently the surface elevation of Lake Tahoe (Reclamation 2008), which has a substantial effect on the resources of the study area.

- *Tahoe Keys Marina and Tahoe Keys Residential Area.* From the late 1950s into the 1970s, construction of the Tahoe Keys Marina and the Tahoe Keys residential area substantially altered the Upper Truckee Marsh and the downstream reach of the Upper Truckee River. During this time, approximately 500 acres in the center of the marsh was excavated to create canals and the Tahoe Keys Marina, and fill was placed to create the housing pads of the Tahoe Keys residential area. This project fragmented the marsh into what is now known as Pope Marsh on the west and the Upper Truckee Marsh on the east. In addition, by 1965, the adjacent

portion of the Upper Truckee River was channelized, which effectively disconnected it from its former floodplain (Conservancy and DGS 2003).

- *Heavenly Mountain Resort Master Plan* This plan by Vail Resorts, Inc. guided improvement, expansion, and management of facilities and uses at Heavenly Mountain Resort, including areas within the Cold Creek watershed (which is within the Trout Creek watershed) (Vail Resorts 2007). Phase I projects included replacing ski lifts and regrading ski trails; constructing a 1,000-seat restaurant, a bridge for skiers, and new ski trails; and constructing other facilities. The project involved construction activities (e.g., installing trail, road, and pipeline crossings) in the channel of perennial waterways.

- *Lower West Side Wetland Restoration Project.* During the summers of 2001 and 2002, approximately 12 acres of former wetland that was filled during Tahoe Keys construction was excavated three to five feet, and subsequently restored as wetland and reconnected to the Upper Truckee River as part of the active floodplain. The Lower West Side Wetland Restoration Project area is located next to Tahoe Keys Marina behind Cove East Beach, west of the river.

- *Angora Creek Restoration Projects.* Two restoration projects were completed by the California Department of Parks and Recreation (DPR) on Angora Creek, in 1997 and 2002:

    - A reach of Angora Creek that flows through the study area was restored in 1997. That reach was channelized and diverted to dry the meadow for grazing. The Lake Tahoe Golf Course was later built over part of this meadow and abandoned channel. Both reaches were restored, building a new, more sinuous channel reconnected to the meadow floodplain. The objective of both projects was to decrease erosion, enhance wetland and riparian habitat, and improve water quality by restoring the stream channel to a geomorphically functioning condition. Restoring the bed elevation and sinuosity of the stream restored access to the meadow floodplain, raised groundwater elevations, increased sediment deposition and nutrient removal, and improved meadow health.

    - In 2002, DPR restored a second reach of Angora Creek, as well as the adjacent meadow. A section of Angora Creek once meandered through a wet meadow, but the stream was captured by the South Tahoe Public Utility District's sewer alignment in the 1960s. The stream deviated from its original winding path over the sewer, giving the stream more power and causing an increase in erosive forces. The channel had down-cut, scouring the bed of the stream to two feet below its original elevation. This in turn caused the meadow to dry out and degraded critical habitat.

- *Angora Fisheries and Water Quality Project.* This project, completed in 2010 by the Conservancy, El Dorado County, and Reclamation, is located in the watershed of the Upper Truckee River at the Angora Creek crossing of Lake Tahoe Boulevard (El Dorado County DOT 2006). The project involved modifying Angora Creek near the culverts under Lake Tahoe Boulevard to improve fish passage. As part of these modifications, fill was removed in the Stream Environment Zone (SEZ) and the existing culverts were replaced. Angora Creek was dewatered and isolated while the culverts were replaced.

- *Upper Truckee Middle Reaches 3 and 4 Restoration Project.* This project was implemented by the CSLT with funding from the Conservancy and Reclamation and completed in 2011. The project is located along the Upper Truckee River from roughly 0.5 mile northeast of the northern runway limit of the Lake Tahoe Airport to approximately the midpoint of the runway (Reclamation, CSLT, and TRPA 2008). The objectives were to restore natural river and floodplain processes by increasing overbank flow and depositing sediment onto the floodplain, and to improve habitat for terrestrial and aquatic wildlife. To accomplish these objectives, a new channel (approximately 4,000 feet long) was constructed and revegetated and the abandoned channel was backfilled and revegetated. A new floodplain was constructed by removing existing fill. Construction of this new channel and floodplain entailed constructing a temporary river crossing, removing and stockpiling approximately 52,000 cubic yards of soil, and removing and stockpiling a large amount of plant materials.

Additionally, three fish barriers were removed and three in-channel habitat structures were constructed. The total area of disturbance associated with this project was approximately 28 acres.

- *Trout Creek Restoration Project.* Trout Creek is a tributary to the Upper Truckee River, reaching the confluence within the study area. Geomorphic problems with Trout Creek stem from channelization of the lower portions of this stream during construction of a 19th-century railroad route. The straightened channel produced an incised and eroded bed, sand and sediment deposition, and degraded aquatic and riparian habitat conditions. As a part of efforts to control sediment delivery into Lake Tahoe and stabilize stream channels in the watershed, a restoration project began on Trout Creek to reconstruct natural channel sinuosity, pool-riffle sequences, substrate composition, bank stability, and hydrologic function. The project site was located on lower Trout Creek meadows, above and below the confluence with Cold Creek. Restoration of the upper channelized section of stream (above Cold Creek) to control erosion and stabilize the channel involved completely replacing this upstream reach with an adjacent reconstructed sinuous channel. The channel and bank of the downstream reach (below Cold Creek) was only partly reconfigured, interspersed with existing channel forms where natural sinuosity occurred. The reconstruction project was completed during 2000–2001, with flow of the creek redirected into the new channels in summer 2001 (Herbst 2009:2–3).

- *Lake Tahoe Airport Runway Restoration Project.* This project by the CSLT was located at the South Lake Tahoe Airport adjacent to the Upper Truckee River. Along the existing runway, the CSLT removed a 25-foot-wide by 1,300-foot-long area of impervious surface and replaced a portion of this area with pervious concrete. Fill within the SEZ of the Upper Truckee River was removed and the area revegetated. The project did not involve activities within the channel of the Upper Truckee River or any perennial tributaries of the river. The project was completed in 2010.

- *Multi-Agency Erosion Control Projects.* Multiple agencies have completed erosion control projects throughout the Upper Truckee River watershed and elsewhere in the Tahoe Basin to restore the clarity of Lake Tahoe. Most projects addressed erosion control and source runoff improvements, as well as the implementation of best management practices (BMPs) to capture fine sediment and other pollutants before they reach the lake. Erosion control projects and advance treatment methods are implemented to reduce both the volume of water running off roadways and the amount of fine sediment, nitrogen, and phosphorus discharging into Lake Tahoe. El Dorado County, the Conservancy, TRPA, Caltrans, CSLT, and the U.S. Forest Service (USFS) have implemented erosion control measures along Angora Creek, U.S. 50, North Upper Truckee Road, Al Tahoe neighborhood, and other roadways, including forest roads and trails. Measures include redesign and replacement of inadequately sized culverts, inlets, and outfalls; revegetation and other source control measures on eroding slopes; and installation of curbs and gutters, rock bowls at culvert outlets, vegetated swales, and sediment traps and other BMPs. Specific project examples in the Upper Truckee River watershed include El Dorado SR 89, Segment 1–Luther Pass to Meyers Water Quality Improvement Project, Apalachee 3B–Water Quality Project, and U.S. 50 Caltrans Water Quality Projects.

- *Sawmill 1B Bike Trail Project—Air Quality and Recreation Access.* This project by El Dorado County, with funding from the Conservancy and TRPA, is located along U.S. 50 from the entrance to the Lake Tahoe Golf Course to Sawmill Road (Ferry, pers. comm., 2007). It provides a bike trail across the project area. This project involved some construction activities in the channel of waterways (e.g., footings and abutments of crossings). Construction was completed in 2010.

- *Riparian Hardwoods Restoration and Enhancement Description.* This project by DPR was completed in 2011 in selected areas of DPR properties, including Washoe Meadows State Park and Lake Valley State Recreation Area. It involved removing lodgepole pines from areas of aspen, willow, and alder along the maintenance road adjacent to the Upper Truckee River upstream of the golf course (DPR and Reclamation 2007). The project did not involve construction activities in the channel of a perennial waterway.

Present and Reasonably Foreseeable Projects

Present and reasonably foreseeable, probable future projects are those projects that are currently under construction, approved for construction, or in various stages of formal planning. Some of these projects are planned to be under construction during the period when this project is expected to be constructed (2015–2018).

The present or reasonably foreseeable, probable future projects considered in this cumulative analysis are those projects that are located within the Upper Truckee River watershed and the south shore area of the Tahoe Basin and that have been identified as potentially affecting resources that also may be affected by the Upper Truckee River and Marsh Restoration Project. Table 3.18-2 lists these related projects. A preliminary list of projects was compiled by reviewing available information regarding planned projects (including agency Web sites), and by contacting staff members from the CSLT, the Conservancy, El Dorado County, Lake Valley Fire Protection District, DPR, TRPA, and USFS. Projects were then reviewed for inclusion in the cumulative impact analysis based on three criteria:

(1) The project is reasonably foreseeable because it has an identified sponsor and has initiated CEQA, TRPA, and/or NEPA environmental review or other regulatory procedures.

(2) Available information defines the project in sufficient detail to allow meaningful analysis.

(3) The project could affect resources potentially affected by the Upper Truckee River and Marsh Restoration Project.

Identified projects that satisfied these three criteria have been organized into the following three categories:

(1) river and stream restoration,

(2) water quality and erosion control, and

(3) other projects.

The projects within each of these categories are listed in Table 3.18-2.

Table 3.18-2
List of Related Projects in the Upper Truckee River Watershed and the South Shore Area

Name	Description and Status
River and Stream Restoration Projects	
Sunset Stables Restoration Project	**Description:** This project proposed by the Conservancy and the USFS would be located in a 739-acre Management Planning Area in the vicinity of the South Lake Tahoe Airport, and adjacent to and directly south of the Upper Truckee Middle Reaches 3 and 4 Restoration Project (Conservancy and DGS 2008a). Its goals include restoring a more naturally functioning river and floodplain, improving water quality by restoring floodplain processes, and reducing erosion from bank failure. The project would restore, enhance, and protect aquatic and terrestrial habitat diversity and quality and provide for appropriate and compatible public access. To accomplish these goals, it would restore a portion of the 2.6-mile-long reach of the Upper Truckee River that is in the Management Planning Area. This new channel would start east of the U.S. 50 bridge and would be designed around existing sewer and water pipelines to the extent possible. Lateral grade controls would be installed where the new channel crosses the old channel, and vertical grade controls would be installed where the new channel transitions to existing channel. Implementation would entail excavating new channels, and after the new channels have been revegetated, diverting the river's flow into the new channel(s) and filling and revegetating the abandoned channel.

Table 3.18-2
List of Related Projects in the Upper Truckee River Watershed and the South Shore Area

Name	Description and Status
	Status: Environmental review (IS/MND and EA/FONSI) is complete and construction of the first phase (Reach 5) began in 2012 and will be complete in 2016. Construction of the second phase (Reach 6) has not secured construction funding and would begin construction in 2015 at the earliest and last for four years.
Upper Truckee River Middle Reaches 1 and 2 Stream Restoration Project	**Description:** This project led by the Conservancy and the USFS would be located from U.S. 50 upstream to the vicinity of the South Lake Tahoe Airport, and just downstream of the Upper Truckee Middle Reaches 3 and 4 Restoration Project. The objectives of the Upper Truckee Middle Reaches 1 and 2 Stream Restoration Project are to (1) eliminate a gully that is eroding along the river at this site, and (2) enhance aquatic and adjacent terrestrial habitat along the Upper Truckee River. To accomplish these objectives, the gully channel would be filled and revegetated, and portions of the channel banks of the Upper Truckee River would be recontoured and revegetated. Some riparian enhancements, bank stabilization, and aquatic habitat structures are also being considered (Carroll, pers. comm., 2008). **Status:** Currently the project is on hold while the USFS proceeds through the federal land acquisition process with the intention of acquiring the property by 2013. The environmental document (IS/MND and EA/FONSI) is being developed. Construction could begin in 2014 and would last for 1 season, with only irrigation anticipated in subsequent seasons.
Upper Truckee River Restoration and Golf Course Reconfiguration Project	**Description:** This DPR, TRPA, and Reclamation project would occur in the Upper Truckee River watershed at Washoe Meadows SP and Lake Valley SRA. The purpose of the project is to improve geomorphic processes, ecological functions, and habitat values of a 1.5-mile reach of the Upper Truckee River, helping to reduce the river's discharge of nutrients and sediment that diminish Lake Tahoe's clarity while providing access to public recreation opportunities in Washoe Meadows SP and Lake Valley SRA. Four alternative approaches to implementing the proposed project are being considered, along with the No-Project/No-Action Alternative. Depending on which alternative is selected, the proposed restoration project may include continuing existing golf course use, removing the entire Lake Tahoe Golf Course, or reconfiguring the golf course to allow for restoration of the river, reduce the area of SEZ occupied by the golf course, and allow for establishment of a buffer area between the golf course and the river. The four action alternatives (Alternatives 2–5) and the No-Project/No-Action Alternative (Alternative 1) are analyzed in the draft EIR/EIS/EIS. Under the No-Project/No-Action Alternative, Alternative 1, the river restoration and changes to the golf course would not be implemented. This alternative represents a projection of reasonably foreseeable future conditions that could occur if no project actions were implemented. Alternative 2 would involve restoring the Upper Truckee River and providing a reconfigured 18-hole regulation golf course. Alternative 3 would involve restoring the river and providing a reduced-play golf course. Alternative 4 would use a combination of hard and soft stabilization to keep the river in its present configuration and would involve only minor changes to the existing golf course. Alternative 5 would involve decommissioning and removing the 18-hole regulation golf course to restore all or a portion of the golf course landscape to meadow and riparian habitat. **Status:** An EIR/EIS/EIS is currently being prepared for the project. Construction could begin in 2014, and would last for three to four years (with most in-channel work occurring during one season).
High Meadows Forest Plan Designation; Ecosystem Restoration; and Access Travel Management Project	**Description:** This project by USFS would be located on 1,790 acres in the upper Cold Creek watershed, which is part of the Trout Creek watershed (USFS 2008a). Its purpose includes guiding management of the property, restoring the channel of Cold Creek through the High Meadow Complex to increase water and sediment storage and to allow it to function as a wet meadow ecosystem, and to provide for current and future recreation needs and reduce the impacts associated with recreation. The project could include creation of approximately 8,700 feet of new channels and associated floodplain on the mainstem, East Fork, and North Fork of Cold Creek; removal and fill of diversion ditches; removal of lodgepole pines; rerouting and decommissioning of roads and trails; and redesign of stream crossings by roads and trails to reduce effects on aquatic ecosystems. **Status:** The project is to be completed in 2012.

Table 3.18-2
List of Related Projects in the Upper Truckee River Watershed and the South Shore Area

Name	Description and Status
Erosion Control and Water Quality Projects	
Sierra Tract Erosion Control Project	**Description:** This project, proposed by the CSLT with funding from the Conservancy and USFS, is located in the Sierra Tract subdivision in the Trout Creek watershed in South Lake Tahoe. It entails constructing a stormwater conveyance and treatment system and stabilizing roadsides with vegetation. This project has been structured into five phases. The project does not include activities in the channel of a perennial waterway. **Status:** Phases 1 and 2 have been completed, except for a small Phase 1c that is on hold. (USFS 2007). Phase 3 is being planned and designed and may be constructed in 2012. Phases 4 and 5 are future projects whose schedule is dependent on the availability of funding.
Montgomery Estates Phases 1, 2, and 3 Water Quality Project	**Description:** This project proposed by El Dorado County, with funding from the Conservancy and USFS, would be located in the watershed of Trout Creek in the El Dorado County. It would implement various slope stabilization, infiltration, sediment trapping, and channel or road source treatment BMPs to reduce the amount of sediment discharging into Cold Creek and Trout Creek. **Status:** Environmental review is complete, Phase 1 is scheduled to be completed in 2012. Phase 2 is scheduled for 2013 and Phase 3 is scheduled for 2014 contingent on funding.
Christmas Valley Phase 2 Water Quality and Recreation Access	**Description:** This project by El Dorado County, with funding from the Conservancy and USFS, would be located in the watershed of the Upper Truckee River along SR 89 from the intersection with U.S. 50 to Portal Drive (Ferry, pers. comm., 2007). It would reduce both peak discharge of stormwater during large storm events and the quantity of fine and coarse sediment entering the Upper Truckee River from the project area. The project would not involve activities in the channel of a perennial waterway. **Status:** Construction is scheduled to be completed in 2012
Sawmill 2 Bike Path and Erosion Control Project	**Description:** This project by El Dorado County, with funding from the Conservancy and USFS, would be located in the watershed of the Upper Truckee River along Sawmill Road from Lake Tahoe Boulevard to U.S. 50 (Ferry, pers. comm., 2007). It would provide a bike trail through the project area, and it would install appropriate BMPs to reduce erosion and nutrient loading and increase treatment of stormwater runoff from existing impervious surfaces in the project area. This project would include construction activities in the channel of perennial waterways, which would be dewatered during construction. **Status:** Environmental review is complete and Phase 1 was completed in 2012 and Phase 2 is scheduled to be completed in 2013.
Other Projects	
US50/Stateline Corridor Project	The USFS partnering with the Federal Highway Administration, CSLT, TRPA, Nevada Department of Transportation, and California Department of Transportation are evaluating alternatives for the US50/Stateline Corridor Project. As identified in TRPA Environmental Improvement Program (EIP), recommended alternatives include water quality, intersection, roadway, pedestrian, bicycle, air, and scenic improvements. Several other projects identified in the EIP will be implemented as a packaged project. US-50 is the principal highway into South Lake Tahoe. Entering the Basin west of Echo Summit, it continues through the South Shore, crosses Stateline, continues to the East Shore, and exits the Basin at Spooner Summit. A major portion of traffic enters the Lake Tahoe Basin through this route, and traffic volumes are predicted to increase 27% over the next 20 years. Traffic delay has a major effect on the Lake environment including impacts to air quality, and pedestrian, bicycle, transit, and vehicle travel. **Status:** The Draft EIR/EIS is currently being prepared.

Table 3.18-2
List of Related Projects in the Upper Truckee River Watershed and the South Shore Area

Name	Description and Status
Edgewood Lodge and Golf Course Improvement Project	**Description:** The approximately 231-acre project site is located within the Edgewood Tahoe Golf Course and includes a small area to the east across U.S. 50. The Edgewood Lodge and Golf Course Improvement Project would include construction of a new lodge complex with associated parking, and other improvements. The project would include construction of a 194-unit lodge complex, including accessory uses; expansion of the South Room at the Edgewood clubhouse; relocation of two existing lakefront residential lots; construction of a new public beach, lakefront recreation facilities, and pedestrian path; pier removal, relocation, and reconstruction; golf course and cart path modifications; and implementation of five threshold improvement projects. **Status:** The final EIR was completed and the project approved. Construction could begin in 2014.
Greenway Bike Trail Project	**Description:** This project by the Conservancy would be located between the intersection of Pioneer Trail and U.S. 50 in Meyers, California, and Van Sickle Bi-State Park at Stateline, Nevada. A portion of this project site is in the watershed of the Upper Truckee River and a portion is in the Trout Creek watershed. The project would also include restoration actions and fuel reduction actions along the trail route. The project would cross waterways on bridges or raised platforms, and the construction of these crossings would require some in-channel construction activities. **Status:** Phase 1 (Sierra Blvd to Van Sickle Bi-State Park) has completed environmental review and permitting (IS/MND and FONSI/EA) and pending funding and easement acquisition could be constructed in 2014 at the earliest. Future phases of the trail would need to complete environmental review and obtain construction funding. The schedule is unknown.
Lake Tahoe Boulevard Enhancement Project	**Description:** This project by the Conservancy, El Dorado County, and USFS would be located in the watershed of the Upper Truckee River in a corridor along Lake Tahoe Boulevard from Tahoe Mountain Road to the CSLT. It would involve constructing a 2-mile-long bike trail along the road and implementing erosion control measures. The project would not involve construction activities in the channel of a perennial waterway. **Status:** Environmental review is in process. Construction could begin in 2014 and could continue for two years.
Multi-Agency Fuel Reduction Plan	**Description:** This plan is a multiagency strategy for coordinating implementation of fuel reduction treatments in the Tahoe Basin (USFS et al. 2007). Treatment types (i.e., general prescriptions) include community defensible space–wildland urban interface, urban core, defense zone, and general forest prescriptions. All of these prescriptions reduce surface and ladder fuels, and tree density, to reduce flame lengths and the likelihood of crown fire. Treatment methodologies include thinning, pruning, prescribed burning, and masticating and chipping. The strategy identifies a substantial portion of the Upper Truckee River watershed as priority areas for treatment. These treatments would not involve construction activities in the channel of perennial waterways. **Status:** Fuel reduction treatments are ongoing and the plan identifies priority areas for treatment during the next five and ten years.
Angora Fire Restoration and Redevelopment	**Description:** Much of the Tahoe Mountain/North Upper Truckee neighborhood is being redeveloped after the Angora Fire in the summer of 2007 destroyed 254 structures. Current rules allow for property owners to pursue the replacement of previously existing development. Provisions allow for an expedited permitting process for landowners and for granting of fee waivers and allocation requirements. Coverage that was preexisting, including coverage located within SEZs and on steep slopes, may be redeveloped. Various agencies including the Conservancy, El Dorado County, and USFS have implemented erosion control techniques and provided assistance with removal of hazardous trees in the area. These agencies are proposing additional restoration activities including channel reconstruction and meadow and wetland complex restoration in the burn area. **Status:** Angora Fire restoration and redevelopment is ongoing. It is expected that additional restoration and redevelopment will continue for the next five to ten years.

Table 3.18-2
List of Related Projects in the Upper Truckee River Watershed and the South Shore Area

Name	Description and Status
Additional Urban Development	**Description:** This urban development would consist of numerous small residential, commercial, industrial, and infrastructure projects in the project vicinity and elsewhere in the watershed of the Upper Truckee River and south shore of Lake Tahoe. These projects might include some construction activities in the channel of perennial or intermittent waterways (e.g., at road and utility crossings). Based on current land use planning and projected changes in population, additional urban development in the project vicinity, the Upper Truckee River watershed, and the south shore of Lake Tahoe is likely. Based on a review of land cover and general plan land use designations within the watershed (using the GIS data layers from CAL FIRE 2002, and California Interagency Watershed Mapping Committee 2004), approximately 8 percent of the watershed is in natural vegetation within areas zoned for developed land uses, and thus a portion of this natural vegetation could be converted to developed land uses in the foreseeable future. However, zoning does not necessarily guarantee development as most of the Basin is fully developed and most improvements are within existing developed land uses. Most development in the area consists of numerous small residential, commercial, industrial, and infrastructure projects. These projects might include some construction activities in the channel of perennial or intermittent waterways (e.g., at road and utility crossings). **Status:** Additional urban development is ongoing, and anticipated to be ongoing throughout implementation of the Upper Truckee River and Marsh Project.

Notes: BMP = best management practice; CAL FIRE = California Department of Forestry and Fire Protection; Caltrans = California Department of Transportation; Conservancy = California Tahoe Conservancy; CSLT = City of South Lake Tahoe; EA = environmental assessment; EIR = environmental impact report; EIS = environmental impact statement; FHWA = Federal Highway Administration; FONSI = finding of no significant impact; GIS = geographic information system; IS = initial study; ND = negative declaration; Reclamation = U.S. Department of the Interior, Bureau of Reclamation; SEZ = Stream Environment Zone; SP = (California) State Park; SR = State Route; SRA = State Recreation Area; DPR = California Department of Parks and Recreation; TRPA = Tahoe Regional Planning Agency; U.S. 50 = U.S. Highway 50; USFS = U.S. Forest Service.

Source: Data compiled by EDAW (now AECOM) in 2010.

3.18.3 CUMULATIVE IMPACT ANALYSIS

AIR QUALITY

IMPACT 3.18-C1 (Alts. 1–5) **Cumulative Air Quality—Short-Term Emissions of Criteria Air Pollutants and Precursors during Construction.** *Without Environmental Commitment 1, emissions of oxides of nitrogen (NO_X) from constructing any of the action alternatives (Alternatives 1–4) and simultaneous construction projects in the Lake Tahoe Air Basin could result in an air quality violation, contribute substantially to an existing or projected air quality violation, and/or expose sensitive receptors to substantial pollutant concentrations. However, the project proponents would implement several measures to reduce construction-generated emissions of reactive organic gases (ROG), NO_X, and respirable particulate matter less than or equal to 10 microns in diameter (PM_{10}). Proponents of other projects in the air basin would be required to implement similar measures and be evaluated using similar thresholds of significance. These required measures and thresholds of significance have been designed to ensure that cumulatively significant impacts on air quality would not result if the applicable measures (as discussed in Section 3.2, "Air Quality") were implemented by future projects and thresholds of significance are not exceeded. These measures would be implemented and associated criteria would be attained under Alternatives 1–4. In addition, Alternatives 1–4 would not exceed the El Dorado County Air Quality Management District's (EDCAQMD) short-term significance thresholds of 82 pounds per day of ROG or NO_X. Therefore, implementing Alternatives 1–4 would not result in a considerable contribution to the cumulative effect on air quality related to construction-generated emissions of ROG, NO_X, or PM_{10}. The contribution of*

*Alternatives 1–4 to this cumulative impact would be **less than significant**. Implementing the No-Project/No-Action Alternative (Alternative 5) would not result in construction-related emissions of criteria air pollutants and precursors in the study area; therefore Alternative 5 would make no contribution and would have **no impact**.*

Implementing any of the action alternatives (Alternatives 1–4) would emit criteria air pollutants and precursors during construction. (These emissions would be greater under Alternative 4 than under Alternatives 1–3.) As discussed in Impact 3.2-1 (Alts. 1–4), emissions of pollutants generated during construction are short term in nature but can contribute substantially to air quality violations and nonattainment conditions. Emissions are associated primarily with operation of heavy-duty construction equipment and fugitive emissions from ground disturbance and earth-moving activities. With implementation of Environmental Commitment (EC) 1, "Reduce the Generation of Construction-Related Emissions of ROG, NO_X, and PM_{10}," described in Table 2-6, emissions associated with Alternatives 1–4 would not be expected to exceed the applicable significance thresholds (82 lb/day of ROG or NO_X). Even though EC 1 could reduce emissions below the applicable significance threshold for most of the alternatives, when taken together, project-generated emissions combined with emissions from other projects undergoing simultaneous construction could result in violations of or substantial contributions to ambient air quality standards. This can be especially pronounced in the Tahoe Basin because of strict seasonal restrictions on construction activities that cause many projects to be under construction at the same time.

Implementation of EC 1 (planned as part of the alternatives) would reduce the project's potential effects substantially. Project construction would comply with all applicable TRPA, Bureau of Air Quality Planning, and Bureau of Air Pollution Control codes—specifically, TRPA Code of Ordinances Section 33.3 (Grading Standards), Section 60.4 (Best Management Practice Requirements), and Section 65.1 (Air Quality Control). The project proponents would also implement all required measures to feasibly reduce construction-generated emissions of ROG, NO_X, and PM_{10}. EC 1, planned as part of Alternatives 1–4, includes the following: (1) obtaining all necessary TRPA permits and approvals and following all required codes and procedures with respect to BMPs, grading and excavation for the project, and all construction-related and emissions-generating activities; (2) obtaining all necessary El Dorado County permits and approvals and following all required county laws and procedures with respect to BMPs, grading and excavation for the project, and all other construction-related and emissions-generating activities; and (3) implementing dust control measures for any grading activity creating substantial quantities of dust in compliance with the provisions of Section 33.3.3 of the TRPA Code of Ordinances. Implementing these measures would substantially reduce the project's potential effects, and all associated criteria would be attained under Alternatives 1–4. Furthermore, proponents of other reasonably foreseeable projects in the Tahoe Basin would implement similar measures to reduce their emissions of ROG, NO_X, and PM_{10}. With EC 1, implementing Alternatives 1–4 individually would not make a considerable contribution to impacts related to emissions of ROG, NO_X, or PM_{10}. Therefore, the contribution of Alternatives 1–4 to a cumulative impact on air quality because of construction-generated emissions of NO_X would be **less than significant**.

No construction would occur under the No-Project/No-Action Alternative (Alternative 5), so implementing that alternative would not result in construction-related emissions of criteria air pollutants and precursors in the study area; therefore, Alternative 5 would make no contribution and would have **no impact**.

IMPACT 3.18-C2 (Alts. 1–5) **Cumulative Air Quality—Long-Term Operational (Regional) Emissions of Criteria Air Pollutants and Precursors.** *Long-term project operation under Alternatives 1–4 would not result in regional daily emissions that would exceed any of the applicable standards, which have been developed to ensure that present and future projects do not result in cumulatively significant impacts on air quality. Therefore, implementing any of the action alternatives would not result in a cumulatively considerable contribution to effects on regional emissions of criteria air pollutants or precursors; this cumulative impact would be **less than significant**. Alternative 5 would make no contribution and therefore would have **no impact**.*

The action alternatives (Alternatives 1—4) would generate minimal long-term emissions from additional mobile sources used by recreational visitors (discussed below in Impact 3.18-C3); however, no alternatives propose pollutant-generating facilities.

For the action alternatives, associated regional emissions of ROG, NO_X, PM_{10}, carbon monoxide (CO), and oxides of sulfur (SO_X) from stationary, area, and mobile sources were estimated using the URBEMIS 2007 Version 9.2.4 computer program, as described in Section 3.2, "Air Quality." Based on this modeling, operation of the project would result in daily emissions of up to approximately 1.31 lb/day of ROG, 1.90 lb/day of NO_X, 0.07 lb/day of PM_{10}, 14.75 lb/day of CO, and 0.01 lb/day of SO_X, which would not exceed any of the applicable standards. While the original modeling used an operational year (i.e., 2014) earlier than the currently anticipated construction year of 2015, it continues to represent a conservative estimate of operational emissions. Trips during 2015 and later are not anticipated to increase over those estimates included in the original modeling , and emission factors for motor vehicles and area sources are anticipated to decrease in future years (e.g., 2030) due to rules and regulations adopted by EPA, ARB and TRPA. Therefore, the originally modeled emissions represent the highest daily level of emissions associated with the proposed project. All future emissions would continue to decrease as a result of equal vehicle trips and lower emissions from mobile and area sources.

In addition, because Alternatives 1-4 would not include the construction or operation of any major sources of stationary emissions, project implementation would not conflict with any air quality planning efforts. Thus, generation of long-term operational emissions from the project under Alternatives 1-4 would not violate an air quality standard, expose sensitive receptors to substantial pollutant concentrations, or conflict with or obstruct implementation of the applicable air quality plan. Thus, implementing Alternatives 1-4 would not make a cumulatively considerable contribution to regional emissions of criteria air pollutants or precursors; this impact would be **less than significant**. Implementing the No-Project/No-Action Alternative (Alternative 5) would not result in a project-related increase in emissions of criteria air pollutants and precursors; therefore, Alternative 5 would make no contribution and would have **no impact**.

IMPACT 3.18-C3 (Alts. 1–5) **Cumulative Air Quality—Long-Term Operational (Local) Emissions of Carbon Monoxide by Mobile Sources.** *Although any of the action alternatives (Alternatives 1–4) would generate additional motor vehicle trips during operation, the level of service (LOS) at intersections in the project vicinity would not be reduced to levels that would violate the applicable air quality standard for local mobile-source emissions of CO (i.e., the 8-hour TRPA standard of 6 parts per million [ppm]). Therefore, when viewed in connection with the effects of other projects, implementing any of the action alternatives would not make a cumulatively considerable contribution to effects on local mobile-source CO emissions; this cumulative impact would be* ***less than significant****. Alternative 5 would make no contribution and therefore would have* ***no impact****.*

Implementing any of the action alternatives (Alternatives 1-4) would increase vehicle trips (< 20 additional trips per day) by recreational visitors in the long term, thus generating long-term emissions of CO. Among the action alternatives, Alternative 1 would involve construction of the most public access facilities and would result in the most additional visitor trips, followed by Alternatives 3 and 4. Alternative 2, with the fewest public access facilities, would result in the fewest additional visitor trips.

If these additional trips, in combination with other reasonably foreseeable projects, would change the LOS at signalized intersections to LOS E or F, an air quality standard for local mobile-source emissions of CO (i.e., the 8-hour TRPA standard of 6 ppm) would be violated and sensitive receptors would be exposed to substantial pollutant concentrations, which would be a cumulatively significant impact. However, according to the transportation analysis (Section 3.16, "Transportation, Parking, and Circulation"), LOS at signalized intersections is at acceptable levels. Implementing any of the action alternatives (Alternatives 1-4) would not reduce the LOS at any signalized intersection to an unacceptable level during any time of the day; nor would it substantially worsen an already existing LOS of concern at any signalized intersection. Furthermore, reasonably foreseeable projects would not reduce LOS at intersections affected by the Upper Truckee River and Marsh Restoration Project. Thus,

implementing Alternatives 1-4 would not make a cumulatively considerable contribution to effects on local mobile-source CO emissions; this cumulative impact would be **less than significant**. Implementing the No-Project/No-Action Alternative (Alternative 5) would not result in a project-related increase in mobile-source CO emissions; therefore, Alternative 5 would make no contribution and would have **no impact**.

IMPACT 3.18-C4 (Alts. 1–5) **Cumulative Air Quality—Exposure of Sensitive Receptors to Odors.** *Long-term project operation under any of the action alternatives (Alternatives 1–4) would not result in the generation of odors in the study area or its vicinity, nor would implementation of other known related projects. Construction under any action alternative and construction of other projects would generate diesel exhaust. However, these emissions would be short term and intermittent, and would dissipate rapidly. Therefore, when viewed in connection with the effects of other projects, implementing any of the action alternatives would not make a cumulatively considerable contribution to objectionable odors affecting a substantial number of people; this cumulative impact would be* ***less than significant****. Alternative 5 would make no contribution and therefore would have* ***no impact****.*

Neither Alternatives 1–5 nor other projects would result in any long-term, major sources of odor in the study area or its vicinity. In addition, the project's proposed land use type is not one of the types commonly known to generate odors (e.g., landfill, coffee roaster, wastewater treatment plant). However, for both the action alternatives (Alternatives 1-4) and for some other projects in the vicinity of the study area, construction would entail using on-site equipment that would emit diesel exhaust. These emissions would be intermittent and short term, and the exhaust would dissipate rapidly from the source. Therefore, when viewed in connection with the effects of other known projects, construction and operation under Alternative 1, 2, 3, or 4 would not make a cumulatively considerable contribution to objectionable odors affecting a substantial number of people; this cumulative impact would be **less than significant**. Alternative 5 would make no contribution and therefore would have **no impact**.

IMPACT 3.18-C5 (Alts. 1–5) **Cumulative Air Quality—Exposure of Sensitive Receptors to Emissions of Hazardous Air Pollutants.** *No major sources of hazardous air pollutants (HAPs) (toxic air contaminants [TACs]) exist in the study area or its vicinity, nor would long-term operation under any of the action alternatives (Alternatives 1–4) or other known projects result in a major source of HAPs. However, construction for any action alternative and for reasonably foreseeable projects would result in short-term emission of HAPs in diesel exhaust. Because these emissions would be short term and diesel exhaust is highly dispersive, sensitive receptors would not be exposed to substantial quantities of HAPs. Therefore, when viewed in connection with the effects of other projects, implementing any of the action alternatives would not make in a cumulatively considerable contribution to the exposure of sensitive receptors to HAPs; this cumulative impact would be* ***less than significant****. Alternative 5 would make no contribution and therefore would have* ***no impact****.*

No major sources of HAPs (known in state parlance as TACs) exist in the study area or its vicinity. Reasonably foreseeable projects also would not create a long-term source of HAPs in the study area or its vicinity, but some short-term emissions of HAPs could occur when such projects are constructed in the vicinity of the study area. Similarly, the project's action alternatives (Alternatives 1-4) would not create a long-term source of HAPs in the study area or its vicinity, but on-site heavy-duty equipment would emit HAPs in diesel exhaust during construction. (These emissions would be greater under Alternative 4 than under Alternatives 1-3.) Because off-road heavy-duty diesel equipment would be used only temporarily, and because of the highly dispersive properties of diesel PM (Zhu et al. 2002), construction of Alternatives 1-4 and of other projects would not expose sensitive receptors to substantial emissions of HAPs. Thus, implementing Alternative 1, 2, 3, or 4 would not expose sensitive receptors to substantial emissions of HAPs, either individually or in combination with other projects. As a result, implementing any of the action alternatives would not result in a considerable incremental contribution to a cumulatively significant exposure of sensitive receptors to emissions of HAPs; this cumulative impact would be **less than significant**. Alternative 5 would make no contribution and therefore would have **no impact**.

IMPACT 3.18-C6 (Alts. 1–5) **Cumulative Air Quality—Generation of Greenhouse Gases.** *Implementation of any of the action alternatives (Alternatives 1–4) would not result in the generation of substantial short-term construction or long-term operation-related emissions of greenhouse gases (GHGs). When considered in conjunction with other projects throughout the region, the project's emissions would not affect GHG reduction planning efforts. Therefore, implementing the project would not result in a considerable contribution to cumulative effects on generation of GHGs; this cumulative impact would be l**ess than significant**. No construction or operational activities would occur in the study area under the No-Project/No-Action Alternative (Alternative 5); therefore, Alternative 5 would make no contribution and would have **no impact.***

Construction-related GHG emissions were estimated for each alternative using URBEMIS 2007, Version 9.2.4. Operation-related emissions, including direct (e.g., maintenance) and indirect (e.g., vehicle trips) emissions were also calculated using URBEMIS 2007. A complete project-level GHG analysis is provided in Section 3.2, "Air Quality and Climate Change."

Construction-Generated Greenhouse Gas Emissions

Activities associated with constructing any of the action alternatives (Alternatives 1-4) would occur during a period of approximately four years. During this time, construction-related GHG emissions would be associated with engine exhaust from heavy-duty construction equipment, material transport trucks, and worker commute trips. Although any increase in GHG emissions would add to the quantity of emissions that contribute to global climate change, emissions associated with construction of the project would occur over a limited period. Following completion of the project, all construction emissions would cease. Despite the intensity and duration of construction activities and the lack of available mitigation measures to abate GHG emissions from heavy-duty construction equipment and on-road hauling emissions, the incremental contribution to climate change by the project's construction emissions would be short term and minimal and would not be a considerable contribution to the cumulative condition.

To establish additional context in which to consider the magnitude of project-generated construction-related GHG emissions, it may be noted that facilities (i.e., stationary, continuous sources of GHG emissions) in California that generate greater than 25,000 metric tons of CO_2 per year are mandated to report their GHG emissions to ARB pursuant to Assembly Bill (AB) 32. As shown in Table 3.18-7, estimated GHG emissions associated with constructing the project would be a maximum of 449 metric tons of CO_2 per year under the conditions for the highest emitting alternative (Year 3 of Alternative 4).

The project would generate substantially less emissions than the ARB reporting level of 25,000 metric tons of CO_2 per year and the cap-and-trade level of 10,000 metric tons of CO_2 per year set by AB 32. This information is presented for informational purposes only, and it is not the intention of the Conservancy to adopt 25,000 or 10,000 metric tons of CO_2 per year as a numeric threshold. Rather, the intention is to put project-generated GHG emissions in the appropriate context to evaluate whether the project's contribution to the global impact of climate change is considered substantial. Because construction-related emissions under all alternatives would be short term, minimal, and finite in nature (i.e., would not be continuing) and would not approach emissions levels of concern to agencies that have established emission reporting levels, the project's construction-related GHG emissions would not be a considerable contribution to the cumulative condition; this cumulative impact would be **less than significant**. No construction activities would occur under the No-Project/No-Action Alternative (Alternative 5); therefore, Alternative 5 would make no contribution and would have **no impact**.

Operation-Related GHG Emissions

Operation-related GHG emissions would be generated by area and mobile sources during the life of the project. Area-source GHG emissions would be associated with maintenance largely related to maintaining public access infrastructure, waste disposal, and other miscellaneous activities. Existing maintenance programs would continue as they do today. The largest increase in emissions would occur under Alternative 1, which would entail the most

Table 3.18-7
Summary of Modeled Construction-Generated Emissions of Greenhouse Gases under the Conditions for the Highest Emitting Alternative (Alternative 4) [1]

Source	Total Mass CO_2 Emissions (metric tons)[1]
Construction Emissions [2]	
Year 1	297
Year 2	296
Year 3	449
Year 4	297
Total Construction Emissions (Years 1–4)	**1,338**

Notes; CO_2 = carbon dioxide.

Values may not appear to add exactly due to rounding.

[1] The values presented do not include the full life cycle of GHG emissions that occur over the production/transport of materials used during construction of the project, solid waste that occurs over the life of the project, and the end-of-life of the materials and processes that indirectly result from the project. Estimation of the GHG emissions associated with these processes would be speculative, would require analysis beyond the current state of the art in impact assessment, and may lead to a false or misleading level of precision in reporting of project-related GHG emissions.

[2] Construction emissions were modeled with the URBEMIS 2007 computer model. The URBEMIS 2007 model does not account for CO_2 emissions associated with the production of concrete or other building materials used in project construction. It also does not estimate emissions for GHGs other than CO_2, such as CH_4 and N_2O, because the emission levels of these other GHGs are expected to be nominal in comparison to the estimated CO_2 levels despite their higher global warming potential.

See Appendix F, "Air Quality Modeling Results," for detailed model input, assumptions, and threshold calculations.

Source: Modeling conducted by EDAW (now AECOM) in 2012.

public access facilities in the study area. No alternative would involve municipal water use; therefore, implementing the project would not generate off-site GHG emissions associated with water conveyance, treatment, and consumption. Quantification of sequestration of carbon by vegetation is not feasible without an accurate inventory of vegetation types and sequestration rates. Nonetheless, it was assumed that carbon sequestration would remain similar to existing conditions because the site would remain in natural vegetation, and although some changes in vegetation type would likely reduce sequestration rates in small areas (e.g., where Jeffrey pine forest would be replaced with other vegetation), other changes in vegetation type in large areas would likely increase carbon sequestration rates (e.g., conversion of montane meadow to willow-scrub). Mobile-source GHG emissions would be generated by the slight increase in project-related vehicle trips associated with the improvements to public access infrastructure in the study area attracting some additional visitors. Table 3.18-8 presents the operation-related GHG emissions associated with Alternative 1, the highest emitting alternative. Estimates of mobile-source GHG emissions are based on the traffic analysis prepared for the project, which estimates fewer than 100 additional trips per day under Alternative 1, compared to existing conditions, which are associated with an increase in recreational users.

While the original modeling used an operational year (i.e., 2014) earlier than the currently anticipated construction year of 2015, it continues to represent a conservative estimate of operational emissions. Trips during 2015 and later are not anticipated to increase over those estimates included in the original modeling , and emission factors for motor vehicles and area sources are anticipated to decrease in future years (e.g., 2030) due to rules and regulations adopted by EPA, ARB and TRPA. Therefore, the originally modeled emissions represent the highest daily level of emissions associated with the proposed project. All future emissions would continue to decrease as a result of equal vehicle trips and lower emissions from mobile and area sources.

Table 3.18-8
Summary of Modeled Operation-Related Emissions of Greenhouse Gases under the Conditions for the Highest Emitting Alternative (Alternative 1) [1]

Source	Annual Mass CO_2 Emissions (metric tons/year)
Operation-Related Emissions of Alternative 1 (Year 5)	
Area Sources [1]	0.2
Mobile Sources [1,2]	111.1
Electricity Consumption [3]	0
Municipal Water Use [4]	0
Total Operation-Related Emissions	**111.3**

[1] Direct operation-related emissions (i.e., area and mobile sources) were modeled using the URBEMIS 2007 computer model, based on trip generation rates obtained from the traffic analysis, as well as the other assumptions and input parameters used to estimate criteria air pollutant emissions. Mobile source emissions assume nine trips per day above existing conditions. Year 2018 is the earliest year when completion of the project would likely occur. URBEMIS does not estimate emissions for GHGs other than CO_2, such as CH_4 and NO_2, because the emission levels of these other GHGs are expected to be nominal in comparison to the estimated CO_2 levels despite their higher global warming potential.

[2] Estimation of mobile-source emissions is based on the traffic study, which assumes 100 additional trips).

[3] No additional substantial electricity consumption is expected under all alternatives.

[4] No additional substantial water consumption is expected under all alternatives.

See Appendix F, "Air Quality Modeling Results," for detailed model input, assumptions, and threshold calculations.

Source: Modeling conducted by EDAW (now AECOM) in 2008

For context (as with construction emissions), projects that generate more than 25,000 metric tons of CO_2 per year are mandated to report GHG emissions to ARB pursuant to AB 32. As shown in Table 3.18-8, the estimated increase in GHG emissions associated with operation of Alternative 1 would be approximately 111 metric tons of CO_2 per year. Again, implementing any of the action alternatives would generate substantially fewer emissions than the above-referenced threshold levels of 25,000 and 10,000 metric tons of CO_2 per year. Because operation-related emissions would not approach the recommended thresholds of ARB and legislation that have established screening levels, the project's GHG emissions would not be a considerable contribution to the cumulative condition. The project's contribution to this cumulative impact would be **less than significant**. No operational activities would occur under the No-Project/No-Action Alternative (Alternative 5); therefore, Alternative 5 would make no contribution and would have **no impact**.

ARCHAEOLOGICAL AND HISTORICAL RESOURCES

IMPACT 3.18-C7 (Alts. 1–5) **Cumulative Archaeological and Historical Resources—Damage to or Destruction of Potentially Significant Cultural Resources or Human Remains.** *In the Tahoe Basin, past and ongoing development and natural forces, such as erosion and weathering, have been reducing the information potential and cultural value of prehistoric- and ethnographic-period cultural resources and human remains. Significant, undocumented, buried archaeological materials or human remains may be present that could be damaged or destroyed by grading or excavation associated with Alternatives 1–4. However, implementation of Environmental Commitments 2 and 3 would ensure that project-related activities would not make a considerable contribution to cumulative effects on important undocumented cultural resources. This cumulative impact would be* ***less than significant****. No construction activities would occur in the study area under Alternative 5. For this reason, Alternative 5 would make no contribution to a cumulative impact; however, natural forces would continue to affect information potential and cultural value of cultural resources within the study area and throughout the Tahoe Basin. This impact would be* ***less than significant****.*

Research conducted for the project indicates that the study area contains one prehistoric cultural resource that is considered significant as defined by CEQA, Section 106, and TRPA criteria. Undiscovered cultural resources may also be present in the study area. However, as described in Environmental Commitments EC 2, "Prepare and Implement a Cultural Resources Protection Plan," and EC 3, "Stop Work within an Appropriate Radius around the Discovered Human Remains, Notify the El Dorado County Coroner and the Most Likely Descendants, and Treat Remains in Accordance with State and Federal Law" would reduce impacts on prehistoric and historic-era resources and human interments to a less-than-significant level under all action alternatives (Alternatives 1-4). The Conservancy would prepare a cultural resources protection plan that would include oversight of grading in areas that could have the potential to find significant resources in the vicinity of CA-ELD-26/H. Additionally, project construction personnel would be trained on the possibility of encountering potentially significant resources and human remains; if encountered, proper measures would be taken to protect them. Furthermore, final design of the bike path will completely avoid the CA-ELD-26/H site. Therefore, the action alternatives would comply with CEQA, Section 106, and TRPA guidance and would not incrementally contribute to any significant cumulative impacts on important cultural resources in the project vicinity.

Cumulatively considerable effects on cultural resources would be avoided by implementing ECs 2 and 3, planned as part of the alternatives, which would reduce or eliminate impacts on site CA-Eld-26, presently undocumented cultural resources, and human remains. If project-related destruction or disturbance of these resources is reduced or eliminated, the integrity of these resources would be maintained, and, except for natural degradation, these sites would remain as they are for an extensive period, providing future cultural information opportunities and serving as traces of traditional lifeways and industries once common in the Tahoe Basin. Therefore, implementing ECs 2 and 3 would ensure that project-related activities would not make a considerable contribution to cumulative effects on important undocumented cultural resources or human remains.

The contribution to cumulative impacts to undocumented cultural resources or human remains would be **less than significant** for Alternatives 1–4. Under Alternative 5 (No-Project/No-Action), no construction activities would occur, so no undocumented, potentially significant cultural resources would be damaged or destroyed. Therefore, Alternative 5 would make no contribution to a cumulative impact; however, natural forces would continue to affect information potential and cultural value of cultural resources within the study area and throughout the Tahoe Basin. This impact would be **less than significant**.

BIOLOGICAL RESOURCES: VEGETATION AND WILDLIFE

IMPACT 3.18-C8 (Alts. 1–5)

Cumulative Biological Resources: Vegetation and Wildlife—Introduction and Spread of Invasive Plants. *Despite the implementation of minimization measures, reasonably foreseeable projects could contribute to the introduction and spread of invasive plants in the vicinity of the study area. Under the action alternatives (Alternatives 1–4), construction activities could introduce or spread invasive plants, and recreational use could increase in portions of the study area, which in turn could increase the introduction and spread of invasive plants. However, Environmental Commitment 4, planned as part of the alternatives, would substantially reduce the potential for construction activities to introduce and spread invasive species. Furthermore, each action alternative removes user-created trails, which would reduce human disturbance in the core habitat area. Therefore, in connection with other projects, none of the alternatives would make a considerable contribution to this cumulative effect; this cumulative impact would be* ***less than significant****. Under the No-Project/No-Action Alternative (Alternative 5), ongoing management by the Conservancy would continue to control the introduction and spread of invasive plants in the study area, and best management practices implemented by others would limit the introduction and spread of invasive plants in the watershed. This impact would be* ***less than significant****.*

Past actions have introduced and contributed to the spread of a number of invasive plant species in the watershed of the Upper Truckee River and Trout Creek. Under the action alternatives (Alternatives 1-4), construction activities could introduce or spread invasive plants, and recreational use could increase in portions of the study area, which in turn could increase the introduction and spread of invasive plants. The potential for causing these

effects differs among the action alternatives. Ground disturbance is a major factor affecting the introduction and spread of invasive species and differs among alternatives. Implementing Alternative 2 or 4 would disturb the greatest and least acreage, respectively, and implementing Alternative 1 or 3 would disturb comparable, intermediate acreages. However, for all the action alternatives, the duration of construction activities would be the same, and ground disturbance would be dispersed over a comparable area; these are the two most important factors affecting the potential of construction activities to introduce and spread invasive plants. Alternative 1 would have the greatest and Alternative 2 the least potential for increasing recreational use of the study area; Alternatives 3 and 4 would have intermediate effects on recreation use. This increase in use provides the opportunity to introduce and spread invasives through accidental transport by humans (e.g., attached to shoes, tires, and dogs).

EC 4, "Prepare and Implement Invasive Species Management Plan," was planned as part of the alternatives to reduce the potential for introducing and spreading invasive plants. This environmental commitment involves cleaning construction machinery, using seed and other erosion control materials free of invasive plant seed, conducting preconstruction and postconstruction monitoring, and removing invasive plants. These measures would substantially reduce the potential for construction activities to introduce and spread invasive species.

Each alternative also involves removing user-created trails in the core habitat area, which would reduce human disturbance, and the introduction and spread of invasive plants, over the long term in the core habitat area. The Conservancy would also continue to incorporate best management practices throughout the study area to control introduction and spread of invasive weeds related to recreation activities under all alternatives.

Best management practices would also continue to be implemented by others in the basin (e.g., USFS, California Conservation Corps, California DPR) to control the introduction and spread of invasive species.

Because none of the action alternatives would make a considerable contribution to this cumulative effect, their contribution would be **less than significant**.

Under the No-Project/No-Action Alternative (Alternative 5), the Conservancy would continue to limit the introduction and spread of invasive plants in the study area. Similarly, in the rest of the watershed, reasonably foreseeable projects would incorporate best management practices as required by TRPA and Lahontan Regional Water Quality Control Board to limit the introduction and spread of invasives. Therefore, under Alternative 5, a cumulatively considerable contribution to the introduction and spread of invasive plants would not occur. This impact would be **less than significant**.

IMPACT 3.18-C9 (Alts. 1–5) **Cumulative Biological Resources: Vegetation and Wildlife—Construction-Related Effects on Special-Status Plants and Sensitive Habitats (Jurisdictional Wetlands, Riparian Vegetation, and SEZs).** *Reasonably foreseeable projects would involve construction activities that would cause short-term disturbances that could affect special-status plants and sensitive habitats in the Upper Truckee River–Trout Creek watershed. These effects would be reduced by implementing avoidance and minimization measures. The action alternatives (Alternatives 1–4) could affect Tahoe yellow cress and would affect sensitive habitats. Regarding Tahoe yellow cress, implementing Mitigation Measure 3.4-3 would fully mitigate this potential effect. Therefore, the cumulative impact to special-status plants would be* ***less than significant****. Regarding sensitive habitats, Alternatives 1–4 would reduce construction-related effects by implementing Environmental Commitments 5 and 6. Nonetheless, Alternatives 1–4 would entail short-term disturbance of some sensitive habitats within the study area. After implementation of all feasible mitigation measures, these short-term effects would remain significant and would make a considerable contribution to the overall significant cumulative effect on sensitive habitats in the watershed. Therefore, the contribution of any of the action alternatives to this cumulative impact would be* ***significant****. No construction would occur under the No-Project/No-Action Alternative (Alternative 5); therefore, Alternative 5 would make no contribution to construction-related effects on special status plants and sensitive habitats and would have* ***no impact****.*

Past actions have converted land to developed uses and substantially altered the hydrologic, geomorphic, and habitat conditions of most natural vegetation in the study area. As a result of these alterations, the ecological functions of some habitats have been impaired, and a number of plant species have been substantially adversely affected. In addition, reasonably foreseeable projects would involve construction activities that would cause short-term disturbances that could affect special-status plants and sensitive habitats in the Upper Truckee River–Trout Creek watershed. These projects would incorporate measures to avoid or minimize these effects, but some residual effects would likely contribute to the significant overall cumulative impact on the watershed's sensitive habitats and potentially to the overall cumulative effect on special-status plant species.

Implementing Alternative 1, 2, or 3 would entail construction activities that could affect Tahoe yellow cress. However, Mitigation Measure 3.4-3, which is planned as part of the alternatives, would require protocol-level surveys for Tahoe yellow cress and avoidance and minimization measures that would fully mitigate construction-related effects on any occupied habitat. Therefore, the construction-related effects of Alternatives 1-3 would not contribute to the overall cumulative effect on Tahoe yellow cress. Alternative 4 does not propose construction in the vicinity of Tahoe yellow cress and therefore would have no effect.

Implementing any of the action alternatives would entail short-term disturbance of some sensitive habitats (e.g., jurisdictional wetlands, riparian vegetation, and SEZs). This short-term disturbance would likely affect the greatest acreage under Alternative 2, would be least under Alternatives 1 and 4 that would have comparable effects, and the effect of Alternative 3 would be intermediate.

Construction-related disturbance of sensitive communities and the potential effects of that disturbance on related ecosystem functions would be substantially reduced by implementing EC 5, "Prepare and Implement Effective Construction Site Management Plans to Minimize Risks of Water Quality Degradation and Impacts to Vegetation," and EC 6, "Obtain and Comply with Federal, State, Regional, and Local Permits." Nonetheless, considerable short-term disturbance of sensitive communities would be unavoidable because such disturbance is integral to the river, floodplain, and other restoration elements of the action alternatives. This impact on sensitive habitats would be significant and would make a considerable contribution to the overall cumulative impact on the watershed's sensitive habitats. Thus, the short-term contribution of any of the action alternatives to this cumulative impact would be **significant**.

All feasible measures to avoid or further reduce the short-term, construction-related impacts of Alternatives 1–4 on special-status plants and sensitive communities have been incorporated into the design of the alternatives. Additional feasible mitigation is not available to reduce this impact to less than significant, so the residual impact would be **significant and unavoidable**.

No construction would occur under the No-Project/No-Action Alternative (Alternative 5); therefore, it would make no contribution and would have **no impact**.

IMPACT 3.18-C10 (Alts. 1–5) **Cumulative Biological Resources: Vegetation and Wildlife—Long-Term Effects on Special-Status Plants and Sensitive Habitats (Jurisdictional Wetlands, Riparian Vegetation, and SEZs).** *The combined long-term effect of reasonably foreseeable projects on some sensitive habitats (jurisdictional wetlands, riparian vegetation, and SEZs) would be beneficial because restoration projects would be implemented and other projects would avoid or minimize their effects on sensitive habitats; for other sensitive habitats (e.g., beach), conditions would remain similar to existing conditions. Under the action alternatives (Alternatives 1–4), the long-term result would be an increase in the acreage and quality of sensitive habitats because additional habitat would be created, geomorphic and hydrologic conditions improved, and human disturbance limited. Although the magnitude of these effects would be different for each action alternative, combining the effects of any of the action alternatives with those of other ongoing and future river restoration projects in the Tahoe Basin would result in an increase in acreage and quality of some sensitive habitats. This contribution to a cumulative effect would be* ***beneficial****. As a result of reasonably foreseeable projects, conditions for special-status plants, except for Tahoe yellow cress, would*

remain similar to existing conditions or would be improved. Tahoe yellow cress could be adversely affected by several reasonably foreseeable projects. Under Alternative 2, there would be a long-term increase in special-status plant habitats, and this contribution to a cumulative effect would also be ***beneficial****. Under Alternatives 3 and 4, the extent of special-status plant habitat and the long-term effects of human activities on special-status plants would remain comparable to existing conditions. This cumulative impact would be* ***less than significant****. Alternative 1, however, would negatively affect Tahoe yellow cress by creating additional recreation features (the bridge and boardwalk) in the vicinity of occupied habitat that would create the opportunity for damage by recreationists. Alternative 1 would contribute to a cumulative effect from habitat loss and human activities on Tahoe yellow cress. This impact would be* ***significant****. Under the No-Project/No-Action Alternative (Alternative 5), the Conservancy would continue to provide an exclosure for Tahoe yellow cress and other sensitive plants and existing sensitive habitats would remain. This impact would be* ***less than significant****.*

In the Upper Truckee River–Trout Creek watershed, reasonably foreseeable projects would have a cumulatively beneficial effect on some sensitive habitats (e.g., jurisdictional wetlands, riparian vegetation, and SEZs) because restoration projects would be implemented and other projects would be required to avoid or minimize effects on sensitive habitats.

Implementing any of the action alternatives (Alternatives 1-4) would increase the extent and quality of other sensitive habitats (e.g., jurisdictional wetlands, riparian vegetation, and SEZs). These beneficial effects would result from restoring habitat through habitat creation and improving geomorphic and hydrologic conditions (e.g., increasing the frequency, duration, and extent of overbank flows). Alternatives 2 and 3 would create the greatest acreages of sensitive habitats, and Alternative 1 would create the least; Alternative 4 would create an intermediate acreage. Each action alternative would limit human disturbance in a core habitat area. The acreage of this core habitat area would be greatest under Alternatives 2 and 4, and smallest under Alternative 3; Alternative 1 would have an intermediate sized acreage of core habitat. For the action alternatives, this contribution to a cumulative effect would be **beneficial**.

As a result of reasonably foreseeable projects, conditions for special-status plants, except for Tahoe yellow cress, would be improved or remain similar to existing conditions. In the Upper Truckee River–Trout Creek watershed, the combined long-term effect of reasonably foreseeable projects on some special-status plants could be beneficial because restoration projects would be implemented and other projects would avoid or minimize their effects on special-status plants; for other special-status plants and sensitive habitats, conditions would remain similar to existing conditions. Reasonably foreseeable projects are not expected to affect American mannagrass.

Tahoe yellow cress could be adversely affected by construction and recreation activities resulting from reasonably foreseeable projects (e.g., Edgewood Lodge and Golf Course Improvement Project). Also, as discussed in Impact 3.18-C30 (Alts. 1–5), "Cumulative Geomorphology and Water Quality—Long-Term Modifications in Upper Truckee River Coarse Sediment Transport and Delivery Downstream," depending on the alternatives implemented by upstream restoration projects and depending on the effects of climate change, the delivery of sands and gravel to Tahoe yellow cress habitat at the study area's beaches could be affected. Potential effects of the action alternatives (particularly Alternatives 1-3) could combine with effects of other actions on transport and delivery of coarse sediment; however, the incremental or combined effects on beach erosion are not predictable because climate change influences are highly uncertain. Conditions could range from worse than the existing degraded condition to a possible improvement regardless of changes in coarse sediment delivery. After thorough investigation, the cumulative effect on delivery of coarse sediment to the study area's beaches remains speculative.

The action alternatives differ in their effects on special-status plants. Under Alternative 2, lagoon restoration would increase the extent of potential habitat for American mannagrass, and the restoration and increased inundation of willow scrub-wet meadow under this alternative could also increase the extent of habitat. However, both of these effects are uncertain and may not alter the extent of suitable habitat for American mannagrass.

Under Alternative 2, beach and dune restoration could, and new river mouth construction likely would, increase the extent of habitat suitable for Tahoe yellow cress. Therefore, this contribution to a cumulative effect would be **beneficial**.

Under Alternatives 3 and 4, the extent of habitat for special-status plants and the long-term effects of human activities on those habitats would remain largely unaltered. Thus, the contribution of these alternatives to the overall cumulative impact on special-status plants would be **less than significant**.

Although it includes lagoon restoration that could benefit American mannagrass, Alternative 1 could potentially negatively affect Tahoe yellow cress by creating additional recreation features (the bridge and boardwalk) in the vicinity of occupied habitat that would create the opportunity for damage by recreationists. This contribution to the overall cumulative effect on Tahoe yellow cress of habitat loss and damage from human activities would be **significant**. Additional feasible mitigation is not available to reduce this impact to less than significant, so the residual impact would be **significant and unavoidable**.

Under the No-Project/No-Action Alternative (Alternative 5), the Conservancy would continue to provide exclosures for Tahoe yellow cress and existing habitat for sensitive plant species would remain comparable to existing conditions. This impact would be **less than significant**.

IMPACT 3.18-C11 (Alts. 1–5) **Cumulative Biological Resources: Vegetation and Wildlife—Short-Term Effects on Common or Special-Status Wildlife Resources and Wildlife Movement Corridors.** *Reasonably foreseeable projects would involve construction activities that would cause short-term disturbances that could disrupt common and special-status wildlife use of habitats, including as movement corridors. Measures would be implemented to avoid or minimize these construction-related effects. Nonetheless, some effects on common and special-status species could occur. Implementing any of the action alternatives would cause construction-related disturbance that could potentially affect use of the study area by special-status wildlife species (e.g., willow fly catcher, yellow warbler) and would affect use of the study area by common wildlife species. Mitigation planned as part of the alternatives would avoid effects on most special-status wildlife species, but not on waterfowl. When viewed in connection with other projects, the contribution of any of the action alternatives to effects on common wildlife species would not be cumulatively considerable because construction-related effects on common wildlife species would be short term, would occur at non-contiguous locations and not be concurrent, and would affect only a small portion of available habitat. The contribution of any of the action alternatives to this cumulative impact would be **less than significant**. For these same reasons, the contribution of any of the action alternatives to short-term effects on wildlife movement corridors would not be cumulatively considerable, and this cumulative impact would be **less than significant**. However, the effects to special-status species, specifically waterfowl, could not be avoided by implementing environmental commitments or mitigation measures, and the contribution of any of the action alternatives to this cumulative impact would be **significant**. Alternative 5 would make no contribution and therefore would have **no impact**.*

Past actions have converted land to developed uses and substantially altered hydrologic, geomorphic, and habitat conditions of most natural vegetation in the study area. As a result of these alterations, the ecological functions of some habitats have been impaired, and a number of wildlife species have been substantially adversely affected. In the Upper Truckee River–Trout Creek watershed, reasonably foreseeable projects would involve construction activities that would cause short-term disturbances that could disrupt wildlife use of habitats, including as movement corridors. Some projects could potentially affect special-status wildlife species, but measures would be implemented to avoid or minimize construction-related effects. Nonetheless, some effects on common and special-status species could occur.

Under the action alternatives (Alternatives 1-4), without mitigation, construction-related disturbance could potentially affect use of the study area by special-status wildlife species (e.g., yellow warbler) and would affect use of the study area by common wildlife species, including use of the study area as a movement corridor. This

short-term disturbance would likely be greatest under Alternative 4 and least under Alternative 1; Alternatives 2 and 3 would have comparable, intermediate effects.

Because construction-related effects of the action alternatives and other projects on common wildlife species and wildlife movement corridors would be short term, would occur at non-contiguous locations and not be concurrent, and would affect only a small portion of available habitat, there would not be a substantial cumulative effect on common wildlife species or on wildlife movement corridors. Thus, when viewed in connection with the effects of other projects, the effects of any of the action alternatives would not be cumulatively considerable, and thus, the contribution of any of the action alternatives to this cumulative impact would be **less than significant**.

Effects on special-status wildlife would be avoided or reduced by mitigation planned as part of these alternatives (Mitigation Measures 3.4-8A and 3.4-8B [Alts. 1–4]). This mitigation includes conducting preconstruction surveys for special-status wildlife and, if necessary, using buffers and/or limiting operation periods, which would avoid the loss of individuals, nests, or roost sites of special-status wildlife species, except for effects on waterfowl nesting. Because of this effect on waterfowl, any of the action alternatives would make a considerable contribution to cumulative effects on special-status wildlife resources. This contribution would be a **significant** impact.

Because waterfowl likely nest near the river mouth, Sailing Lagoon, Trout Creek Lagoon, and elsewhere within the study area for a considerable portion of the construction season, implementing buffers or a limited operation period that would avoid substantial effects on waterfowl nesting would not be feasible. Feasible mitigation is not available to reduce this impact to less than significant, so the residual impact would be **significant and unavoidable**.

Under the No-Project/No-Action Alternative (Alternative 5), conditions in the study area would remain similar to existing conditions. Alternative 5 would make no contribution and therefore would have **no impact**.

IMPACT 3.18-C12 (Alts. 1–5) **Cumulative Biological Resources: Vegetation and Wildlife—Long-Term Effects on Common or Special-Status Wildlife Resources and Wildlife Movement Corridors.** *Because reasonably foreseeable projects include several restoration projects in the Upper Truckee River–Trout Creek watershed, the effects on at least some wildlife resources would be beneficial. For other wildlife resources, future conditions would remain similar to existing conditions. Under the action alternatives (Alternatives 1–4), the long-term ecosystem response to restoring the river and floodplain, enhancing forest habitat, and limiting human disturbance would be substantially improved habitat quality and functions for riparian and aquatic wildlife, including special-status species, such as yellow warbler, willow flycatcher, and waterfowl. River and floodplain restoration would also increase the size and enhance the functions of TRPA-designated wildlife habitats of special significance (i.e., wetlands, meadows, and riparian areas). When viewed in connection with the effects of other projects, which include several ongoing and future river restoration projects, implementing any of the action alternatives would not contribute to a cumulative adverse impact on common and special-status wildlife species associated with riparian, wetland, and aquatic habitat and with forest wildlife habitats. Rather, this effect would be **beneficial**. By increasing habitat quality, connectivity of native vegetation, and corridor width, the beneficial effect of the action alternatives on wildlife habitats would also improve the SEZ's wildlife corridor function. This effect would be **beneficial**. Alternative 5 would make no contribution and therefore would have **no impact**.*

In the Upper Truckee River–Trout Creek watershed, reasonably foreseeable projects would have a cumulatively beneficial long-term effect on some sensitive habitats (e.g., jurisdictional wetlands, riparian vegetation, and SEZs) because several restoration projects would be implemented and other projects would be required to avoid or minimize effects on these sensitive habitats.

Implementing any of the action alternatives (Alternatives 1-4) would increase the extent and quality of habitat for special-status and common wildlife species. These beneficial effects would result from restoring habitat (through

habitat creation), improving geomorphic and hydrologic conditions (e.g., increasing the frequency, duration, and extent of overbank flows), enhancing forest habitat, and constructing features to reduce the effects of human disturbance on habitat.

The action alternatives include long-term restoration and enhancement of forest, riparian, lagoon, and beach habitats. Alternatives 1 and 2 include lagoon and beach restoration that would benefit a variety of species, including shorebirds and waterfowl. All the action alternatives involve restoring and enhancing wetlands, riparian vegetation, and SEZs by creating additional acreage, improving geomorphic and hydrologic conditions, and limiting human disturbance. (The public access elements of the alternatives include features to limit human disturbance.) Alternatives 2-4 involve creating (and improving the geomorphic and hydrologic conditions of) more acres of these sensitive habitats than would be created and improved under Alternative 1. Human disturbance of sensitive habitats would be limited in a larger core area under Alternative 2 or 4 than under Alternative 1 or 3 (with Alternative 3 having the smallest core area).

Under the action alternatives (Alternatives 1-4), the long-term ecosystem response to river and floodplain restoration and enhancement and to other restoration and enhancement features of the alternatives would be substantially improved habitat quality and functions, particularly for riparian and aquatic wildlife, including special-status species, such as yellow warbler, willow flycatcher, and waterfowl. River and floodplain restoration would also increase the size and enhance the functions of TRPA-designated wildlife habitats of special significance (i.e., wetlands, meadows, and riparian areas).

In summary, implementing any of the action alternatives would restore, enhance, and protect common and special-status wildlife species associated with riparian, wetland, and aquatic habitat and TRPA-designated wildlife habitats of special significance. Thus, none of the action alternatives would make a considerable contribution to a cumulatively significant adverse effect; rather, this effect would be **beneficial**.

By increasing habitat quality, connectivity of native vegetation, and corridor width, the beneficial effect of the action alternatives on wildlife habitats would also improve the SEZ's wildlife corridor function. This effect would be **beneficial**.

Alternative 5 would make no contribution and therefore would have **no impact**.

FISHERIES

IMPACT 3.18-C13 (Alts. 1–5) **Cumulative Fisheries—Short-Term Disruption of Aquatic Habitat and Movement Corridors for Fish.** *Construction activities associated with the action alternatives (Alternatives 1–4) would temporarily affect the lowest reach of the Upper Truckee River. The Marsh Reach is the downstream connection between the Upper Truckee River and Lake Tahoe and therefore is an important link between the lake and river for such species as Lahontan cutthroat trout, rainbow trout, mountain whitefish, Tahoe sucker, and Lahontan redside. Aquatic habitat supporting trout and native fishes would be temporarily eliminated during the time the channel is dewatered. During the period that water is pumped around a dewatered reach, fish movement within the Upper Truckee River would be restricted. A summer disruption would have little to no effect on species which migrate into the river and spawn in the spring or fall (e.g. rainbow trout, Lahontan cutthroat trout, and mountain whitefish). A short-term disruption of localized aquatic habitat and access would not impair the ability of river dwelling fish (e.g. Lahontan redside, Tahoe sucker) to persist in the river. Most spawning of these species occurs upstream of the Marsh Reach. Therefore, when viewed in connection with the effects of other projects, implementing any of the action alternatives would not result in a cumulatively considerable contribution to this impact; this cumulative impact would be **less than significant**. Implementing the No-Project/No-Action Alternative (Alternative 5) would not cause any construction-related impacts and therefore would not contribute to any short-term cumulative disruption of aquatic habitat supporting fishes in the Upper Truckee River; **no impact** would occur.*

Implementing any of the action alternatives (Alternatives 1-4) would result in channel improvements that could temporarily disrupt migration corridors and the availability of habitat during the summer construction period. Most lake dwelling, river spawning fish (e.g. Lahontan cutthroat trout, rainbow trout) migrate into the Upper Truckee River during spring and fall to access spawning habitat in the Upper Truckee River and Trout Creek. Restoration project implementation would disrupt river flow continuity during summer and into early fall, when restored channel segments are activated. Projects in the Upper Truckee River could also potentially affect river dwelling fish species (e.g. Lahontan redside, Tahoe sucker, and Paiute sculpin). However, the scope of restoration projects is limited by the amount of work that can be accomplished in a single season. Sufficient unaffected habitat would be available to support the spawning and rearing needs of these fish in the Upper Truckee River.

Mountain suckers are a state species of special concern. They spawn in mountain streams during the early summer months (Moyle 2002) and may make short migrations before, during, or following the spawning season. Mountain suckers have been documented in the Upper Truckee River (Conservancy and DGS 2007a). Restoration actions could overlap with the spawning period for mountain suckers. However, mountain suckers are a river dwelling - river spawning species and restoration projects would not restrict habitat in multiple reaches of the river in any given construction year. Unaffected reaches of the Upper Truckee River would continue to provide sufficient habitat for mountain sucker movement and spawning.

In-channel construction and other restoration work would occur in different years for the various projects planned for the Upper Truckee River. The first restoration project was constructed in summer 2008 on Reaches 3 and 4 (Table 3.18-3) and required diverting water around dewatered sections in late summer. Summer dewatering in the Upper Truckee River could occur in one or more reaches during summer from 2015 through 2018. The cumulative impact of these future activities is unlikely to directly affect access to spawning habitat normally available in the Upper Truckee River for lake dwelling, river spawning fish or for river dwelling species because the timing of flow discontinuity would occur outside the spawning and migration season, or for river dwelling species that spawn during summer, it would not affect local sites used for migration and spawning opportunities.

Table 3.18-3
Active Construction Years for Restoration Projects on the Upper Truckee River

Reach (in upstream order)	Construction Start (year)	Construction End (year)
Upper Truckee Marsh	2015	2018
Reaches 1 and 2	2014	2014
Reaches 3 and 4	2008	2011
Reaches 5 and 6	2012	2015
Lake Valley SRA	2015	2018

Note: Active construction includes any disturbance on the floodplain or in the active channel requiring dewatering, diverting water around a channel segment, or connecting up newly constructed channels to the existing channel.

Implementing any of the action alternatives would not disrupt spawning because the project would occur outside of the migration and spawning period. The area contains low-gradient habitat conditions that do not support spawning habitat. It is unlikely that any single project would substantially reduce habitat availability and access to spawning habitat in the Upper Truckee River because the flow discontinuity would occur late in the year, after or before the species that inhabit the river would have spawned. Therefore, the contribution of any of the action alternatives to this cumulative impact would be **less than significant**.

Implementing the No-Project/No-Action Alternative (Alternative 5) would not result in project-related short-term disruption of aquatic habitat, rearing or migration or summer spawning activity of fish in the Upper Truckee River because under this alternative, the stream channel would not be disturbed. However, reasonably foreseeable river

restoration projects could affect the spawning activity of mountain sucker in upstream reaches. Alternative 5 would make no contribution and therefore would have **no impact**.

IMPACT 3.18-C14 (Alts. 1–5) **Cumulative Fisheries—Short-Term Disruption of Spawning Migration, Rearing, and Holding Activity of Lahontan Cutthroat Trout**. *The action alternatives (Alternatives 1–4) include construction activities that would affect the lowest reach of the Upper Truckee River. Lahontan cutthroat trout occur in the Upper Truckee River, although hatchery fish were recently sighted near the mouth of the river. Lahontan cutthroat trout have been reintroduced in the upper watershed, near Meiss Meadows, as part of an active Lahontan cutthroat trout restoration program. Under any of the action alternatives, Lahontan cutthroat trout might be present in the project area and could be stranded during construction in dewatered areas. Implementing Environmental Commitment 7, planned as part of the action alternatives, would ensure that an aquatic species rescue and relocation plan was implemented. Therefore, when viewed in connection with the effects of other projects, none of the action alternatives would result in a cumulatively considerable contribution to effects on rearing and holding activity of Lahontan cutthroat trout. The contribution of any of the action alternatives to this cumulative impact would be* ***less than significant****. Implementing the No-Project/No-Action Alternative (Alternative 5) would not create any construction-related impacts and therefore would not contribute to any short-term cumulative disruption of spawning migration, rearing, or holding activity of Lahontan cutthroat trout in the Upper Truckee River;* ***no impact*** *would occur.*

Implementing any of the action alternatives would result in channel improvements that could disrupt river flow continuity during summer and into early fall. Lahontan cutthroat trout were recently observed in Lake Tahoe and the Upper Truckee River (following a June 2011 release of hatchery fish into Lake Tahoe by the Nevada Department of Wildlife). However, it is uncertain whether these fish will persist. Lahontan cutthroat trout were previously reintroduced to the headwaters (near Meiss Meadows) by the LTBMU, but natural migration barriers exist between the headwaters and reaches undergoing stream restoration projects. As a result of construction-season restrictions, the restoration projects' disruption of flow continuity would typically occur after Lahontan cutthroat trout have spawned. Because the species would not be restricted to any one restoration project reach and because river flow interruptions for any of the construction seasons would occur late in the summer or early fall, none of the action alternatives would disrupt spawning activity. In-channel restoration activities for the various projects would occur in different years and different subreaches along the Upper Truckee River. The cumulative impact of future activities could result in the short-term disruption of access to spawning habitat for Lahontan cutthroat trout, depending on fish presence and the timing of flow disruption. However, it is unlikely that any single project would substantially reduce access to spawning migration for Lahontan cutthroat trout in the Upper Truckee River because the construction-season flow discontinuity would occur late in the year, after their migration season.

Under any of the action alternatives, adult or juvenile Lahontan cutthroat trout that might be present in the study area could potentially be stranded during construction in dewatered areas. However, implementing EC 7, "Prepare and Implement an Aquatic Species Rescue and Relocation Plan," would ensure that an aquatic species rescue and relocation plan that identifies protocols and procedures specific to Lahontan cutthroat trout and approved by USFWS was prepared in accordance with applicable regulations and implemented by the project proponent. Other restoration projects planned for the Upper Truckee River would occur during future years and could have different regulatory requirements, but it is assumed that all projects would comply with federal protections to limit potential take. Therefore, implementing any of the action alternatives would not result in a cumulative effect on spawning migration, rearing, or holding activities of Lahontan cutthroat trout in the Upper Truckee River. The contribution of any of the action alternatives to this cumulative impact would be **less than significant**.

Implementing the No-Project/No-Action Alternative (Alternative 5) would not result in project-related short-term disruption of spawning migration, rearing, or holding activity for Lahontan cutthroat trout in the Upper Truckee River. Under this alternative, the stream channel would not be disturbed, so spawning migration, rearing, and holding activity by the species would not be disrupted. However, reasonably foreseeable river restoration projects

could affect potential spawning migration, rearing, and holding activity of Lahontan cutthroat trout if the fish are present. Alternative 5 would make no contribution and therefore would have **no impact**.

IMPACT 3.18-C15 (Alts. 1–5) **Cumulative Fisheries—Short-Term Localized Impacts on Fish Abundance and Distribution Related to Rescue and Relocation.** *The action alternatives (Alternatives 1–4) include construction activities that would affect the lowest reach of the Upper Truckee River and result in localized effects on fish abundance and distribution. Implementing Environmental Commitment 7 would minimize the potential for fish mortality but could result in short-term changes in fish abundance and distribution. With implementation of fish rescue and relocation actions, the action alternatives would not considerably contribute to effects on population levels for any fish species and thus would not result in a cumulatively considerable contribution to effects on fish populations; therefore, this cumulative impact would be* ***less than significant****. Implementing the No-Project/No-Action Alternative (Alternative 5) would not create any construction-related impacts and therefore would not contribute to any short-term cumulative localized impacts on fish abundance and distribution related to fish rescue and relocation in the Upper Truckee River;* ***no impact*** *would occur.*

Implementing any of the action alternatives (Alternatives 1-4) would result in channel improvements that would involve disrupting aquatic habitat, dewatering channel reaches, and rescuing and relocating fish in the Upper Truckee River. However, because fish are highly mobile, they would redistribute themselves throughout the river segments after restoration work is completed and streamflow is restored. There would be no considerable contribution to long-term population level impacts on introduced trout or native fish populations and therefore no considerable contribution to a cumulatively significant effect from implementing the action alternatives.

Under the proposed restoration actions, fish species known to occur in the Tahoe Basin would be expected to occur in the Upper Truckee River and would be present in the channel segments or lagoons of the project area. During dewatering for construction, EC 7, "Prepare and Implement an Aquatic Species Rescue and Relocation Plan," would be implemented, and fish would be rescued before complete dewatering. Fish rescue and relocation for several proposed restoration actions may occur sequentially or concurrently during summer construction periods from 2013 to 2018. Some fish mortality would occur as a result of capture and handling, but it would be minor relative to the number rescued and would not result in effects on population levels. Multiple season and/or concurrent rescue and relocation efforts would lead to short-term changes in the distribution of fish in the Upper Truckee River. However, fish are highly mobile and would quickly recolonize restored habitats. Following the completion of proposed future restoration actions, the fish community would gradually return to a more natural condition with all species present relative to existing conditions. Therefore, implementing any of the action alternatives would not result in a considerable contribution to effects on fish populations in the Upper Truckee River. The contribution of any of the action alternatives to this cumulative impact would be **less than significant**.

Implementing the No-Project/No-Action Alternative (Alternative 5) would not result in cumulative effects on fish abundance and distribution related to rescue and relocation in the Upper Truckee River. Under this alternative, the stream channel would not be disturbed, so there would be no reason to rescue and relocate fish from this reach of the Upper Truckee River. However, reasonably foreseeable restoration projects would entail construction activities that could result in localized effects on fish abundance and distribution. Alternative 5 would make no contribution and therefore would have **no impact**.

IMPACT 3.18-C16 (Alts. 1–5) **Cumulative Fisheries—Long-Term Increase in Upper Truckee River Habitat Quality.** *Action Alternatives 1, 2 and 4 include construction activities that would improve long-term habitat quality in the study area and therefore support the activities of other projects designed to improve conditions for aquatic biological resources in the Upper Truckee River. Therefore, when viewed in connection with other projects, implementing action alternatives 1, 2 and 4 would result in a contribution to* ***beneficial*** *effects on Upper Truckee River habitat quality. Alternative 3 will improve long-term habitat quality in the study area, but its design approach (i.e., natural formation of channels downstream of the constructed "pilot channel")*

allows for potential disruption of upstream migrations and downstream dispersal. Fish passage through the study area would not be certain in all years over the long term so fish access to improved habitat throughout the river system might be impaired and Alternative 3 would not effectively support the cumulative benefit, therefore, the impact is less than significant. Implementing the No-Project/No-Action Alternative (Alternative 5) would not involve any activities to improve habitat quality and therefore would not contribute to any long-term improvements for aquatic biological resources in Upper Truckee River; ***no impact*** *would occur.*

Implementing action alternatives 1, 2 and 4 would result in channel improvements that would provide long-term improvements to aquatic habitat conditions in the study area and would provide cumulative improvements to habitat quality in the Upper Truckee River. Uncertainty regarding the time period required for formation of a channel suitable for upstream fish passage and downstream dispersal exists under Alternative 3. Although cumulative improvements to habitat quality in the study area and throughout the Upper Truckee River may still occur, there is no guarantee of fish passage through the study area (particularly for mountain whitefish due to their migration season) to access upstream habitats in the Upper Truckee River during low-flow periods.

Under existing conditions, aquatic habitat is of a marginal quality and continues to be impaired by the effects of channel incision and widening, including increased deposition of fine sediment; low depth of flow, which results in poor rearing habitat conditions during summer and limited passage in fall; poor substrate suitability, limited stream margin or shallow water habitat during high flows; and increased turbidity during high-flow events. Increased deposition of fine sediment and limited or poor substrate suitability affect habitat for most fish species in the Upper Truckee River, as well as habitat for invertebrates (i.e., western pearlshell mussel) and macroinvertebrates (e.g., mayflies, stoneflies, caddisflies). The project's restoration actions, particularly Alternatives 1, 2 and 4, would be beneficial to aquatic habitat for fish, invertebrates, and macroinvertebrates in the Upper Truckee Marsh and would contribute to the following specific cumulative beneficial impacts:

- Reduced bank erosion—Channel restoration would provide improved long-term stability of the channel, reducing the processes of channel incision and bank failure as a source of fine sediment loading of the Upper Truckee River. This would result in improvements in substrate conditions supporting fish, mussels, and macroinvertebrates.

- Decreased bed shear stress—Restoration actions would reduce bankfull channel capacity by raising the bed of the existing channel or by constructing a new channel with a higher bed elevation relative to the existing channel. The result would be decreased shear stress on the bed, which would improve habitat for aquatic macroinvertebrates and fish by promoting a more geomorphically diverse bed.

- Increased summer depth of flow—Restoration actions would result in improvements to the existing channel or mostly new channels or channel segments that would have a bed elevation higher compared to the existing channel. For Alternative 2, the restored channel would have greater depth of flow and improved fish access from the lake into the river system. With a higher water level in the channel, more of the adjacent groundwater supply would remain and be available to support stream flows later into summer. Under Alternative 3, which relies on the natural formation of channels downstream of the proposed "pilot channel," the depth of flow advantage is uncertain in the marsh reach of the river where uncontrolled flow could result in multiple smaller and shallower distributary channels.

- Improved water quality (turbidity, temperature flux)—Reduction of suspended sediment sources would reduce the level and/or duration of turbidity events and would improve habitat conditions in the bed of the river, thereby improving macroinvertebrate, invertebrate, and fish habitats and therefore the populations that can be supported in the study area. A narrower channel with increased depth of flow would also reduce the diurnal thermal flux (gain and loss of heat) during the long, warm summer days or freezing winter nights by providing more stable temperature conditions that would benefit fish and macroinvertebrates. Raised

groundwater levels could result in groundwater inflow into the channel later into summer and increased base flow conditions. The added influx of cool groundwater would also serve to moderate temperatures.

- Improved spawning habitat (decrease in fines, improved gravel resources)—The proposed restoration actions would use gravel substrate in restored reaches that is designed to be of suitable size distribution for trout spawning invertebrate production, and reintroduction of Lahontan Cutthroat Trout.

- Improved lagoon and floodplain rearing habitat (floodplain inundation, summer base flow)—The proposed restoration actions would improve floodplain connectivity and greatly increase the amount of shallow water edge habitat under high-flow conditions compared to existing conditions. The proposed restoration actions would restore the river-fed shallow lagoon areas. The expansion of shallow water habitats through proposed restoration actions would assist in providing a basis for beneficial systemwide effects on the rearing success of juvenile trout and native fishes. Such habitat improvements could benefit Lahontan cutthroat trout reintroduction efforts if they occur in the future, consistent with TRPA objectives.

Because implementing any of the action alternatives would improve food production in the Upper Truckee River, it could make a positive contribution to food resources available to fish using the Upper Truckee River. This effect would be **beneficial**.

As mentioned above, given the design of Alternative 3 (i.e. natural formation of channels downstream of the proposed "pilot channel") there is the potential for disruption of upstream migrations and downstream dispersal and guaranteed fish passage would not be possible in the long term. The spawning migration of at least one species, mountain whitefish, could be adversely affected during low fall flows. Implementing the No-Project/No-Action Alternative (Alternative 5) would not result in a project-related long-term increase in Upper Truckee River habitat quality. Under this alternative, habitat in the study area would not be improved, and no additional habitat function is expected. Reasonably foreseeable restoration projects would improve habitat in some upstream reaches of the Upper Truckee River. Therefore Alternative 5 would not contribute to cumulative effects on aquatic habitat. Alternative 5 would make no contribution and therefore would have **no impact**.

IMPACT 3.18-C17 (Alts. 1–5) **Cumulative Fisheries—Long-Term Population Level Impacts on Western Pearlshell Mussels.** *The action alternatives (Alternatives 1–4) include construction activities that would affect the lowest reach of the Upper Truckee River; however, the substrate conditions in this reach of the river are unsuitable for western pearlshell mussels, which likely are not present or are present in only low numbers in this reach. In addition, Environmental Commitment 7 would be implemented to address this species if it is present. Therefore, none of the action alternatives would have a long-term effect on the population level of western pearlshell mussels in this reach and thus would not contribute to a cumulative effect on the western pearlshell mussel in the Upper Truckee River; this cumulative impact would be* ***less than significant****. Implementing Alternative 5 would not result in any construction-related impacts and therefore would not contribute to any long-term cumulative population level impacts on western pearlshell mussels in the Upper Truckee River;* ***no impact*** *would occur.*

The action alternatives (Alternatives 1-4) would result in channel improvements that would disrupt substrate and potential mussel habitat in the Upper Truckee River. However, because the substrate in this part of the Upper Truckee River is unsuitable for western pearlshell mussels, there would likely not be any individuals present during construction. EC 7, "Prepare and Implement an Aquatic Species Rescue and Relocation Plan," would be implemented to detect and address this species if it is found. Even if present, they would likely be in very low numbers and would therefore not contribute to a long-term population level impacts on western pearlshell mussels and therefore no cumulatively significant adverse effects from the action alternatives.

The restoration actions associated with the Upper Truckee River and Marsh Restoration Project would result in improved habitat conditions consisting of a better diversity of substrates suitable for mussels and decreased bed shear stress (Howard and Cuffey 2003, Strayer et al. 2004) within the project reach. Western pearlshell musse occur

in the Upper Truckee River (Conservancy and DGS 2007b). They are a large riverine mussel that was once common to many of the larger salmon and trout streams throughout the northwest (Nedeau et al. 2005). In the Upper Truckee River, the main population of western pearlshell mussels is located in Reaches 3–6; however, they are also found in Reach 2 and may be present upstream in Lake Valley SRA. Mussels may be very patchy in their distribution, with most of the population in relatively few, very dense beds (defined as more than 300 mussels in one gravel bar or riffle). Dense beds have been documented in Reaches 3–6 of the Upper Truckee River. Abundance in other reaches appears much lower. They have not been documented in the study area, but a standardized riverwide survey of the western pearlshell mussel has not been conducted in the Upper Truckee River. The mussel is not a federal or state special-status species, so there is no mandate to protect it.

Western pearlshell mussels are locally mobile and capable of recolonizing in suitable habitat (Conservancy and DGS 2007b). They reproduce and grow extremely slow, so it would probably take many decades for mussels to fully recolonize restored habitats on their own. Implementing any of the action alternatives could affect individual mussels, but this action would not adversely affect the population because it would not affect individuals upstream of the Upper Truckee Marsh. Based on the very low abundance in the project area, the preconstruction survey and relocation efforts to be conducted under EC 7, "Prepare and Implement an Aquatic Species Rescue and Relocation Plan," and the potential long-term beneficial effects on local habitat for this species, none of the action alternatives would make a considerable contribution to an effect on long-term population levels. Reasonably foreseeable restoration projects in Reaches 3 to 6 of the Upper Truckee River could place the core mussel populations for the Upper Truckee River at risk. However, although implementing these projects would cause short-term disturbance, each project has (Reaches 3 and 4) would (Reaches 5 and 6) implement well-designed relocation programs (the project in Reaches 3 and 4 has been completed and mussels were successfully rescued and relocated); and they would result in long-term improvements to aquatic habitats for western pearlshell mussels. Therefore, this impact would be **less than significant**.

Implementing the No-Project/No-Action Alternative (Alternative 5) would not result in long-term, project-related impacts on population levels of western pearlshell mussels in the Upper Truckee River. Under this alternative, the stream channel and associated substrate would not be disturbed. Already completed projects that rescued and relocated Western pearlshell mussels and reasonably foreseeable restoration projects in Reaches 3 to 6 of the Upper Truckee River could place the core populations for the Upper Truckee River at risk. However, although implementing these projects would cause short-term disturbance, each project has (Reaches 3 and 4) and would (Reaches 5 and 6) implement well-designed relocation programs; and they would result in long-term improvements to aquatic habitats for western pearlshell mussels. Alternative 5 would make no contribution a cumulative impact; however channel substrate would not be improved and therefore this impact would be **less than significant**.

IMPACT 3.18-C18 (Alts. 1–5)

Cumulative Fisheries—Long-Term Impacts of Aquatic Invasive Species to Aquatic Habitat in the Upper Truckee River. *The action alternatives (Alternatives 1–4) include construction activities that would affect the lowest reach of the Upper Truckee River and potentially introduce or spread invasive aquatic plant and animal species (i.e., Eurasian watermilfoil, introduced sunfish, Asian clams, and bull frogs) into or throughout the river channels in the Upper Truckee Marsh, including the Upper Truckee River and Trout Creek. The Eurasian watermilfoil is of particular concern and is present in the project area and the Tahoe Keys and has spread to other marinas or popular anchoring areas around Lake Tahoe by plant pieces becoming fouled in boat ground tackle and establishing new colonies after anchors are re-set at new locations. Construction activities could provide opportunities for invasive aquatic species to be moved on boats, construction equipment, sampling gear, and personal equipment. Implementing Environmental Commitment 4 would minimize the risk of spreading invasive plant and animal species, such as Eurasian watermilfoil. Given these protection measures, this cumulative impact would be* ***less than significant****. Implementing the No Project/No Action Alternative (Alternative 5) would involve no construction and therefore not introduce construction related vectors that could spread invasive aquatic species. However, other vectors to spread aquatic invasive species already occur in the Lake and associated water ways and would continue to affect the spread of aquatic invasive species. Therefore, this impact would be* ***less than significant****.*

Implementing any of the action alternatives (Alternatives 1-4) would involve construction in the vicinity of existing water bodies (i.e., creek and river channel, sailing lagoon) where aquatic invasive species are present. Implementation of EC 4, "Prepare and Implement and Invasive Species Management Plan," would address aquatic invasive species in the project area. This plan would involve taking measures to eliminate the adverse effects of nonnative introduced and/or invasive aquatic plant and animal species (i.e., nonnative plants, nonnative warm-water fish, and other invasive species) during project construction.

The objective of project activities linked to the aquatic invasive species management plan is to reduce threats to native aquatic fauna and flora within the project area. The plan would be developed to be consistent with the State of California's *Aquatic Species Management Plan* (CDFG 2008), and would be completed, reviewed, and approved by CDFG and TRPA prior to initiation of construction. A preconstruction survey would determine whether any populations of invasive aquatic plants or animals are present in the project area. Aquatic habitat within construction sites would be isolated prior to in-channel work. A qualified biologist(s), with expertise in Tahoe basin aquatic plant and animal species, would be present during construction and would supervise the removal and disposal of nonnative invasive species from the project area. All biologists working on this program would be qualified to conduct nonnative aquatic species removal/disposal in a manner that would avoid and/or minimize all potential risks to native aquatic species, particularly any special-status species potentially encountered. Biologists would be on-site when work sites are isolated and/or dewatered, if necessary, in order to capture, handle, and safely remove or dispose of any nonnative aquatic invasive species encountered. All equipment entering the study area from areas suspected of harboring infestations by invasive aquatic plants or areas of unknown infestation status would be cleaned of all attached substrate plant parts before being allowed into the study area. All equipment used for in-channel work would be thoroughly cleaned prior to use on the project and then be cleaned before leaving the site. This includes construction equipment, boats, kayaks, canoes, fish nets and other fish sampling equipment, all water quality sampling and monitoring equipment, waders, wading boots, and any other equipment that comes into contact with water or that may come in contact with aquatic vegetation during project implementation.

This program would be closely coordinated with the Aquatic Species Rescue and Relocation Program, prepared and implemented as EC 7, which is aimed at reducing the direct loss of native fish and desired sport fish (i.e., trout) and native mussels from impacts associated with construction of the project. Implementing EC 7 would minimize stranding and mortality of these desirable species in the project area through rescue and relocation. Reasonably foreseeable restoration projects would entail construction activities that could affect aquatic invasives introduction or control on other reaches of the Upper Truckee River, but would be expected to implement invasive species control and eradication measures. Existing nonconstruction-related vectors that result in the establishment or spread of aquatic invasive species throughout the Upper Truckee River would continue. It is possible that measures to eradicate and control invasives at the construction sites could provide a beneficial effect where aquatic species have previously established. Therefore, implementing any of the action alternatives would not result in a considerable contribution to effects on aquatic invasive species in the Upper Truckee River. The contribution of any of the action alternatives to this cumulative impact would be **less than significant**.

Implementing the No-Project/No-Action Alternative (Alternative 5) would not result in cumulative effects on aquatic invasive species in the Upper Truckee River. Under this alternative, the water bodies within the project reach would not be disturbed, so there would be no construction-related mobilization of invasive species. Reasonably foreseeable restoration projects would entail construction activities that could affect aquatic invasive species introduction or control on other reaches of the Upper Truckee River, but would be expected to implement invasive species control and eradication measures. Existing and continuing non-construction related vectors that result in aquatic invasive species' establishment or spread throughout the Upper Truckee River would continue in the absence of the project. Therefore, this impact would be **less than significant**.

IMPACT 3.18-C19 (Alts. 1–5) **Cumulative Geology and Soils, Mineral Resources, and Land Capability and Coverage—Construction-Related, Short-Term Increases in Soil Erosion, Sedimentation, and Loss of Topsoil.** *Past actions that have disturbed natural vegetation or converted it to developed land uses have resulted in erosion, sedimentation, and loss of topsoil. Implementing reasonably foreseeable projects and any of the action alternatives could temporarily result in additional erosion, sedimentation, and loss of topsoil. However, implementing Environmental Commitments 5, 6, and 8, planned as part of the action alternatives, would minimize this short-term effect by implementing effective construction management plans. Other reasonably foreseeable projects also would be required to implement BMPs and minimize soil erosion, sedimentation, and loss of topsoil. Furthermore, many effects of the action alternatives and reasonably foreseeable projects on erosion, sedimentation, or loss of topsoil (even in the event of BMP failures) would be localized in their extent and unlikely to combine with the effects of other projects. Therefore, when viewed in connection with the effects of other projects, the effects of the action alternatives on soil erosion, sedimentation, and loss of topsoil would not be cumulatively considerable; this cumulative impact would be* ***less than significant****. No construction would occur under the No-Project/No-Action Alternative (Alternative 5); however, erosion, sedimentation, and loss of topsoil would continue. Therefore, the contribution of Alternative 5 to a cumulative impact would be* ***less than significant****.*

Past actions that have converted natural vegetation to developed land uses or that have disturbed natural vegetation have resulted in substantial erosion, sedimentation, and loss of topsoil in the watershed of the Upper Truckee River. Reasonably foreseeable projects include erosion control projects that would reduce erosion, sedimentation, and loss of topsoil but also include development and other projects that potentially could increase these effects, at least temporarily during construction. For example, river restoration projects could temporarily increase erosion, sedimentation, and topsoil loss during their construction.

Similarly, implementing any of the action alternatives of the Upper Truckee River and Marsh Restoration Project could temporarily increase erosion, sedimentation, and loss of topsoil during construction. All four action alternatives (Alternatives 1-4) would require construction in active stream channels and adjacent floodplains of the study area. The extent of construction would depend on the restoration approach. Alternative 2 would disturb the greatest acreage and Alternative 4 the least; Alternatives 1 and 3 would disturb comparable, intermediate acreages.

As discussed in EC 5, "Prepare and Implement Effective Construction Site Management Plans to Minimize Risks of Water Quality Degradation and Impacts to Vegetation," EC 6, "Obtain and Comply with Federal, State, Regional, and Local Permits," and EC 8, "Prepare a Final Geotechnical Engineering Report, and Implement All Applicable Recommendations," all the action alternatives would incorporate construction site management plans and vegetation protection and planting measures. These plans include many specific measures to be implemented by the Conservancy and their contractors, including restricted disturbance areas and duration, BMPs that are effective up to the 20-year precipitation event and 50-year streamflow event, discrete measures for subdrainage areas, construction equipment and vehicle restrictions, specific winterization guidelines, protection for transported and stored materials and debris, revegetation measures, topsoil salvaging, custom dewatering/bypassing plans, rewetting requirements, and monitoring requirements regarding BMP performance and remedial action requirements. These measures would limit the likelihood and magnitude of potential effects on erosion, sedimentation, and loss of topsoil. Reasonably foreseeable projects would also be required to implement comparable BMPs. Nonetheless, erosion, sedimentation, and loss of topsoil could occur during construction, particularly in the event of BMP failures.

Reasonably foreseeable projects in the vicinity of the study area, including stream restoration projects along the Upper Truckee River, could have active construction during overlapping periods and thus exposure to the same large storm events, high flows, or both during intervening winters. The performance standards for BMPs on other projects would be expected to be the same or similar as those planned for the action alternatives, but it is possible

that the BMPs could fail, particularly if unusual runoff conditions occur that exceed the BMP design capacity. However, it is very unlikely that a BMP failure at one project site could combine with effects on erosion, sedimentation, or loss of topsoil at other project sites because these failures would be localized in their extent. Therefore, when viewed in connection with the effects of other projects, none of the action alternatives would make a considerable contribution to the existing cumulative effect on erosion, sedimentation, and loss of topsoil; this impact would be **less than significant**. No construction would occur under the No-Project/No-Action Alternative (Alternative 5); however, erosion, sedimentation, and loss of topsoil would continue. Therefore, Alternative 5 contribution to a cumulative impact would be **less than significant.**

IMPACT 3.18-C20 (Alts. 1–5) **Cumulative Geology and Soils, Mineral Resources, and Land Capability and Coverage—Land Coverage Changes.** *Past actions have converted natural vegetation to developed uses, and increased the coverage by impervious surfaces (land coverage) in the Upper Truckee River–Trout Creek watershed. These changes have substantially altered geomorphic and hydrologic conditions of the most sensitive lands in the lower portion of these watersheds. Reasonably foreseeable projects in the vicinity of the study area would have individually varied effects on land coverage, but either these effects would be beneficial or the projects would include mitigation to offset their adverse effects. Implementing any of the action alternatives (Alternatives 1–4) would decrease land coverage in the study area and in the sensitive lands (LCD 1b) adjacent to the Upper Truckee River. In LCD 7, alternatives either would increase coverage but not exceed allowable coverage or would reduce coverage. Therefore, none of the alternatives would contribute to the existing cumulatively significant effect on land coverage; this impact would be* ***less than significant****. No new development would occur under the No-Project/No-Action Alternative (Alternative 5); therefore, Alternative 5 would make no contribution and would have* ***no impact****.*

In the past 150 years, some of the Upper Truckee River watershed has been converted to developed land uses containing impervious surfaces (land coverage). Based on a review of land cover in the watershed (using the CAL FIRE 2002 and California Interagency Watershed Mapping Committee 2004 GIS data layers), this portion is about 9 percent, concentrated in the lower elevation areas of the watershed, and includes much of the project vicinity. The land coverage associated with this urban development has substantially altered hydrologic, geomorphic, and habitat conditions in the SEZs of the Upper Truckee River and Trout Creek watershed. Past projects that increased land coverage include the Lake Tahoe Golf Course, South Lake Tahoe Airport, U.S. 50, and the Tahoe Keys Marina and residential and commercial areas in the watershed (e.g., Tahoe Keys, Al Tahoe, or Highland Woods).

Reasonably foreseeable projects would have individually varied effects on coverage. Some projects may potentially increase the amount of impervious surfaces (e.g., bike trails or development projects), others may potentially decrease the amount of impervious surfaces (e.g., Elks Club, the Lake Tahoe Airport Runway Restoration), and others may include no coverage changes (e.g., some restoration projects). Projects that would increase the amount of impervious surfaces would also be required to incorporate mitigation to limit their incremental contribution to the cumulative effect on coverage.

Implementing any of the action alternatives would be less than the allowable coverage on the Dillingham settlement parcels and the other parcels in the study area regulated by Bailey's land classification system. Because the action alternatives would reduce land coverage in LCD 1b and coverage would be consistent with allowable coverage throughout the study area, the project would not make a considerable contribution to the cumulative impact on land coverage; this impact would be **less than significant**. No new development would occur under the No-Project/No-Action Alternative (Alternative 5); therefore, Alternative 5 would make no contribution and would have **no impact**.

HUMAN HEALTH/RISK OF UPSET

IMPACT 3.18-C21 (Alts. 1–5) **Cumulative Human Health/Risk of Upset—Potential Hazards to the Public from Use of Hazardous Materials or Exposure to Existing On-Site Hazardous Materials.** *None of the action alternatives would have a long-term effect on human health hazards from exposure to hazardous materials because following project implementation, the land uses of the study area would be similar to current conditions. Mitigation planned as part of Alternatives 1–3 include oversight, transport, and disposal procedures related to encountering potential hazardous materials located at the TKPOA yard. There would be no change from current conditions in the transport, use, release, or disposal of hazardous materials related to Alternative 4 and 5. Additionally, Environmental Commitment 9, planned as part of the alternatives, would further reduce potential human health hazards through preparation of a health and safety plan and appropriate noticing requirements, reducing this effect to a less-than-significant level. However, this would not eliminate the risk of construction workers being exposed to hazardous materials. The remaining risk would not contribute to a greater overall cumulative impact because other reasonably foreseeable construction activities would not occur in the same place or at the same time and would be unlikely to concurrently involve the same workers. Therefore, when viewed in connection with other projects, none of the action alternatives would make a considerable contribution to potential hazards to the public from use of or exposure to hazardous materials; this cumulative impact would be* ***less than significant****. No construction would occur and land uses would be unchanged under the No-Project/No-Action Alternative (Alternative 5); therefore, Alternative 5 would make no contribution and would have* ***no impact****.*

The action alternatives (Alternatives 1-4) would have no short-term or long-term effect on human health hazards from exposure to hazardous materials because following project implementation, the land uses of the study area would be similar to current conditions, and there would be no change from current conditions in the transport, use, release, or disposal of hazardous materials.

Mitigation Measures 3.7-2a and 3.7-2b planned as part of Alternatives 1-3 include oversight, transport, and disposal procedures related to encountering potential hazardous materials located at the TKPOA yard. There would be no change from current conditions in the transport, use, release, or disposal of hazardous materials related to Alternatives 4 and 5. Additionally, EC 9, "Develop and Implement a Construction Management Program" (Table 2-6), planned as part of the alternatives, would further reduce potential human health hazards through preparation of a health and safety plan and appropriate noticing requirements reducing this effect to a less-than-significant level. However, this would not eliminate the risk of construction workers being exposed to hazardous materials. The Conservancy would review existing information on hazardous materials during design development and implement avoidance and/or remediation measures, including preparing a site plan for each construction phase that identifies any necessary remediation activities and notifying the appropriate agencies if evidence of previously undiscovered soil or groundwater contamination is discovered. These measures would reduce this effect to a less-than-significant level but would not eliminate the risk that construction workers would be exposed to hazardous materials. However, the remaining risk would not contribute to a greater overall cumulative impact because other reasonably foreseeable construction activities would not occur in the same place or at the same time and would be unlikely to concurrently involve the same workers. Thus, in connection with other projects, the action alternatives would not result in a considerable contribution to human health hazards from exposure to hazardous materials; this cumulative impact would be **less than significant**.

Under the No-Project/No-Action Alternative (Alternative 5), there would be no short-term or long-term effect on human health hazards from exposure to hazardous materials. Construction activities that could potentially expose workers to hazardous materials would not occur; the land uses of the study area would be similar to current conditions; and there would be no change in the transport, use, release, or disposal of hazardous materials. Alternative 5 would make no contribution and therefore would have **no impact**.

IMPACT 3.18-C22 (Alts. 1–5) **Cumulative Human Health/Risk of Upset—Potential Increase in Public Health Hazards from Mosquitoes Resulting from Increased Floodplain Inundation.** *Implementing any of the action alternatives would result in more extensive floodplain inundation that could result in a greater abundance of mosquitoes and thus a greater potential for exposing people to mosquito-borne viruses. However, implementing Environmental Commitment 10, planned as part of the action alternatives, would limit mosquito production in the study area to an amount comparable to or less than preproject (baseline) conditions. Therefore, the action alternatives would not make a cumulatively considerable contribution to effects on mosquito vector control and thus would not result in a cumulatively significant effect. This impact would be* ***less than significant****. Under the No-Project/No-Action Alternative (Alternative 5), the quality and extent of mosquito habitat in the study area would remain similar to baseline conditions; therefore, Alternative 5 would make no contribution to a cumulative impact; however, mosquito production would continue in the study area. This impact would be* ***less than significant.***

In the short term, implementing any of the action alternatives (Alternatives 1-4) would not increase the quality or extent of mosquito breeding habitat and would not reduce the effectiveness of mosquito control efforts because areas disturbed by construction activities would provide less suitable habitat for mosquito breeding than the river channels, willow scrub-wet meadow, and other natural vegetation that currently exist at those sites.

Other restoration actions on the Upper Truckee River could contribute to a cumulative adverse effect on mosquito vector control that could be additive with the effects of the project. However, in the long term, , implementing EC 10, "Establish and Implement a Management Agreement with the El Dorado County Vector Control District" (Table 2-6), would limit mosquito production in the study area to an amount comparable to or less than preproject (baseline) conditions. Therefore, implementing any of the action alternatives would not contribute to effects on mosquito vector control; this impact would be **less than significant**.

Under the No-Project/No-Action Alternative (Alternative 5), it is anticipated that the quality and extent of mosquito habitat in the study area would remain similar to baseline conditions and that the El Dorado County Vector Control District would continue its control efforts in the study area. Therefore, Alternative 5 would not contribute to a cumulative impact, however, mosquito production would continue in the study area. This impact would be **less than significant.**

IMPACT 3.18-C23 (Alts. 1–5) **Cumulative Human Health/Risk of Upset—Potential for Airspace Safety Hazards Associated with Restoration and Enhancement of Habitat for Hazardous Wildlife.** *Although extensive habitat that attracts hazardous wildlife already exists in the study area and elsewhere in the vicinity of the Lake Tahoe Airport, bird-aircraft collisions have not been occurring at the airport. Implementing reasonably foreseeable projects would result in changes to a small amount of this habitat that would not attract additional wildlife into the Critical Zone of the Lake Tahoe Airport. Under any of the action alternatives, additional habitat for hazardous wildlife would be restored or enhanced in and near the approach/departure zone of the Lake Tahoe Airport. This increase would be very small relative to the total amount of habitat. Also, the Comprehensive Land Use Plan identifies restoration as a compatible land use for the approach/departure zone. Therefore, the restoration and enhancement features of any of the action alternatives, in combination with other reasonably foreseeable projects, would not attract significant additional wildlife into the Critical Zone of the Lake Tahoe Airport. Implementing any of the action alternatives therefore would not result in a considerable contribution to a cumulatively significant impact; this cumulative impact would be* ***less than significant****. Under the No-Project/No-Action Alternative (Alternative 5), restoration and enhancement of habitat would not occur. Alternative 5 would make no contribution to a cumulative impact; however, reasonably foreseeable projects may enhance some existing habitat for hazardous wildlife, and therefore, this impact would be* ***less than significant****.*

The Critical Zone of the Lake Tahoe Airport encompasses the area within 10,000 feet of the airport operations area, and a portion of the study area is located in this Critical Zone. The attraction of hazardous wildlife into the Critical Zone can create airspace safety hazards because of the potential for bird-aircraft collisions. However, bird-aircraft collisions have not been occurring at the Lake Tahoe Airport; therefore, there is not an existing safety hazard.

In the short-term, the noise and construction activity associated with implementing any of the action alternatives (Alternatives 1-4) would reduce attraction of hazardous wildlife to the study area because of the commotion of construction activity. Therefore, no contribution to cumulative wildlife hazards to aviation would occur.

The long-term cumulative impact issue is whether the contributions of the project and other foreseeable restoration projects would increase wildlife hazards to aviation to a cumulatively significant level. In the Federal Aviation Administration National Wildlife Strike Database and according to airport staff members, there are no records of bird strikes (i.e., bird-aircraft collisions) at the Lake Tahoe Airport (CDM 2007). In addition, habitat management, open space, recreational uses, and SEZ restoration are considered compatible land uses in the airport Comprehensive Land Use Plan (CSLT 2007).

Several reasonably foreseeable river restoration projects would be located in or southwest of the Critical Zone, including the Upper Truckee River Middle Reaches 1 and 2 SEZ and Wildlife Enhancement, Upper Truckee Middle Reaches 3 and 4, Sunset Stables Restoration, and Upper Truckee River Restoration and Golf Course Reconfiguration projects. These projects would generally include land cover types that provide habitat for hazardous wildlife under existing conditions and would continue to provide habitat post-project. Other reasonably foreseeable projects either would not affect habitat for hazardous wildlife or would cause small reductions in that habitat. Therefore, reasonably foreseeable projects would not measurably increase the number of hazardous wildlife attracted to the area.

In the long term, implementing Alternative 1, 2, or 3 could cause a small increase in habitat amount (and potentially quality) by connecting the existing Sailing Lagoon to the Upper Truckee River. This restoration feature would increase the area of the lagoon water surface during low lake levels and would increase breeding habitat for waterfowl and other marsh-associated birds. In addition, Alternatives 1 and 2 also include the removal of fill behind East Barton Beach to recreate lagoon and wet meadow conditions, which would also increase habitat values for hazardous wildlife. These restoration features represent very small increases in the amount of habitat available to hazardous wildlife in the vicinity of the Lake Tahoe Airport. Although a small portion of the study area is located in the Critical Zone, the floodplain and lagoon restoration features identified for this area would be located north of the Critical Zone. Restoring these features would not result in a detectable increase in the numbers of wildlife moving through the Critical Zone.

Therefore, implementing any of the action alternatives in combination with other reasonably foreseeable projects would not result in a cumulatively significant impact on aviation hazards; this cumulative impact would be **less than significant**.

As described above, Under the No-Project/No-Action Alternative (Alternative 5), restoration and enhancement of habitat would not occur. Alternative 5 would make no contribution to a cumulative impact; however, reasonably foreseeable projects may enhance some existing habitat for hazardous wildlife and therefore this impact is **less than significant**.

HYDROLOGY AND FLOODING

IMPACT 3.18-C24 (Alts. 1–5) **Cumulative Hydrology and Flooding—Long-Term Increased Stormwater Runoff Volumes and Long-Term Increased Peak Flows Generated.** *Project changes to impervious surface areas or modifications to existing channels of the creeks, drainages, or the Upper Truckee River in the study area would be localized and have stormwater runoff volume effects that are beneficial or have effects that could be controlled on-site with design features planned as part of Environmental Commitment 11. The stormwater runoff volume and peak flow effects could combine with other potential changes to stormwater runoff generation or floodplain attenuation in the vicinity, but would not be cumulatively considerable on their own, or in combination. The project's contribution to this cumulative impact would be* ***less than significant****. Because no construction would occur under the No-Project/No-Action Alternative (Alternative 5), the extent of impervious surfaces in the study area would not increase and no channels would be modified; therefore, Alternative 5 would make no contribution and would have* ***no impact****.*

Implementing any of the action alternatives (Alternatives 1-4) would not adversely affect the existing stormwater generation in the study area; rather, it would have a beneficial effect. In compliance with existing CSLT and TRPA requirements, Alternatives 1–4 would incorporate on-site stormwater controls for areas that would have increased runoff under the alternative. The detention or infiltration facilities would be sized to accommodate the entire 20-year, 1-hour storm runoff from each of the developed portions of the site; would convey runoff safely to discharge points without erosion; and would be maintained over the life of the project. The planned controls include providing on-site storm drainage facilities approved by the CSLT and TRPA that would identify the location, size and type of facilities used to retain and treat the runoff volumes and peak flows to meet or surpass preproject conditions. The stormwater designs would incorporate BMPs, such as pervious pavement or pavers, bioswales and vegetated swales, constructed wetlands and detention ponds, rock-lined areas to prevent disruption or erosion, and training of maintenance personnel on stormwater pollution prevention measures. In addition, floodplain improvements that moderate runoff volumes and peak flows would be created under Alternatives 1-4. These floodplain improvements would include measures such as direct removal of existing fill in the floodplain to improve detention storage and storage of runoff entering the study area from surrounding local drainages and the upstream watershed. These actions would be beneficial to both existing and future conditions.

Implementing any of the action alternatives would result in a decrease in existing coverage, and the proposed coverage would be less than that allowed by TRPA regulations. Design requirements for the project and projects upstream would limit increases in runoff resulting from changes in coverage relative to existing and future conditions.

Reasonably foreseeable restoration projects in the vicinity would be either neutral or beneficial to stormwater runoff volumes and peak flows because they would remove impervious surfaces and/or restore natural soil and vegetation properties that better allow the infiltration of runoff. River and stream restoration projects in the Upper Truckee River–Trout Creek watershed may also improve detention and overbank storage of runoff. However, the adverse consequences of past actions in the local drainages and upstream watersheds would continue to contribute runoff to the study area. Reasonably foreseeable erosion control projects in the vicinity would be either neutral or beneficial to stormwater runoff and peak flow volumes because they would provide opportunities for detention and infiltration. These actions would result in conditions similar to or better than existing conditions.

Reasonably foreseeable projects that would include changes in coverage and that might increase runoff would be required to meet TRPA standards regarding the control of runoff volume and rate increases. Although hydrologic effects in the local subwatersheds naturally combine downstream, changes to stormwater volume and peak flow generation in the study area would have only limited potential to combine with other stormwater modifications in the vicinity, and the changes would be small and difficult to discern. In addition, implementing EC 11, "Incorporate Effective Permanent Stormwater Best Management Practices" (Table 2-6), would help to ensure that on-site runoff would be infiltrated into the ground prior to discharging to surface waters. Therefore, implementing any of the action alternatives would not make a considerable contribution to a potentially significant cumulative

effect on stormwater runoff volumes or peak flows generated or released downstream; this impact would be **less than significant**.

Under the No-Project/No-Action Alternative (Alternative 5), no construction would occur; therefore, the extent of impervious surfaces in the study area would not increase and no channels would be modified. For this reason, Alternative 5 would make no contribution and therefore would have **no impact**.

IMPACT 3.18-C25 (Alts. 1–5) **Cumulative Hydrology and Flooding—Long-Term Increased 100-Year Flood Hazard Area or Elevation.** *Project-generated changes to the existing channel (size, shape, or location) or to the floodplain topographic surfaces and configurations in the Federal Emergency Management Agency (FEMA) regulatory floodway or floodplain would not result in a higher 100-year floodwater surface elevation or enlarged 100-year floodplain under Alternative 1 or 4. Changes to the 100-year floodwater surface or floodplain area under Alternative 2 or 3 could occur, but on-site design features planned for the alternatives would avoid increased flood hazards or potential flood damage. The 100-year flood effects from all the action alternatives would remain localized in the study area because of its downstream location and the U.S. 50 bridge crossing upstream, which controls the rate of flow entering from upstream reaches, even during a 100-year flood. Therefore, implementing any of the action alternatives would not result in a cumulatively considerable contribution to effects on the 100-year flood hazard area or elevation; this cumulative impact would be **less than significant**. The channel and floodplain would not be modified under the No-Project/No-Action Alternative (Alternative 5); however, existing flood hazards would remain. This impact would be **less than significant**.*

Implementing any of the action alternatives (Alternatives 1-4) would maintain the existing 100-year floodplain storage and flow routes in the study area, create minor improvements through removal of fill or net excavation (Alternatives 1 and 4), or incorporate on-site design features to remain neutral and not increase risks from flood hazard in the FEMA floodplain (Alternatives 2 and 3). The action alternatives include hydraulic modeling of the proposed channel configuration at a detailed design level to identify modifications that would be incorporated into final design to prevent the future 100-year water surface elevation from increases greater than one foot and prevent any increase in flood elevation or inundation area that could increase flood hazards or potential damages to existing structures, residences, or public infrastructure.

Reasonably foreseeable future restoration projects upstream on the Upper Truckee River would not be expected to result in adverse changes to the 100-year floodplain storage capacity, flow routes, or boundaries. Several projects have proposed alternatives that would remove previously placed fill and/or recontour areas in the existing 100-year floodplain to provide minor incremental improvements to the existing degraded condition. Some of the proposed alternatives for various projects may require incorporation of self-mitigating design features in final designs to meet commitments of remaining neutral and not adversely affecting FEMA special hazard zones. The potential effects in some project reaches could be noticeable if the existing floodplain is highly confined, but in the study area the existing 100-year floodplain is already large and has a large storage volume, so changes are less likely to affect the floodplain boundaries. The project changes in the study area would not be substantial on their own, and the upstream constriction of the U.S. 50 bridge crossing would further limit the ability of project effects in the study area from combining with effects from upstream reaches because the U.S. 50 bridge crossing would continue to control the rate of flow into the study area and would control water surface elevations immediately upstream. Some of the upstream reaches between constricting bridges (e.g., the middle reaches 1–6) might experience combined effects, but those could not cause changes downstream in the study area. Therefore, implementing any of the action alternatives would not make a considerable contribution to a potentially significant cumulative effect on 100-year flood hazard area or elevation; this impact would be **less than significant**. The channel and floodplain would not be modified under the No-Project/No-Action Alternative (Alternative 5) and would therefore not contribute to a cumulative impact; however, existing flood hazards would remain. This impact would be **less than significant**.

IMPACT 3.18-C26 (Alts. 1–5) **Cumulative Hydrology and Flooding—Long-Term Increased Overbanking during Small Flood Events.** *Project changes to the size and configuration of the Upper Truckee River channel or floodplain in the study area would produce beneficial increases in overbanking during small flood events under Alternatives 1–4. The overbanking effects would produce a discernible* ***beneficial*** *effect on their own and could combine with other potential improvements in overbanking processes from upstream projects. The channel and floodplain would not be modified under the No-Project/No-Action Alternative (Alternative 5) and incised channel conditions would remain, limiting overbanking during small flood events. This impact would be* ***less than significant****.*

Implementing any of the four action alternatives (Alternatives 1-4) would decrease the capacity of the Upper Truckee River channel, increase the length of appropriately sized channel, and enlarge the area inundated by the two-year return interval flow (e.g., 760 cubic feet per second in the study area). Under the action alternatives, channel and floodplain conditions would be modified substantially along the Upper Truckee River channel in the study area to improve overbanking at specific streamflow magnitudes. There would be a substantial beneficial effect relative to the existing condition, although it is uncertain whether possible adverse influences of climate change would be fully offset. Changes to overbanking frequency in the study area, although measureable and substantial under Alternatives 1–4, would not have a direct effect on overbanking conditions in other upstream river reaches because of the natural downstream processes and because of the intervening hydraulic controls of the upstream U.S. 50 bridge and road fill across the active floodplain.

Reasonably foreseeable river restoration projects on the Upper Truckee River have alternatives under consideration that would also decrease channel capacity and increase overbank flooding for small flood events and would improve channel and floodplain relationships relative to the existing degraded condition along their respective project reaches. Direct benefits to overbanking would be largely limited to each project area because flows would often return to the channel from the floodplain, particularly where road fill, bridges, or both limit down-valley floodplain continuity. The benefits in the study area that would result from implementing one of the action alternatives would additively combine with the benefits of other projects upstream, but changes in the study area would not directly enhance overbanking and the active floodplain upstream. Increased overbanking upstream of the study area resulting from implementation of other foreseeable projects might alter the flood hydrographs and incrementally reduce the magnitude of the benefits of increased overbanking in the study area. However, the overall effects of increased overbanking along the Upper Truckee River would still be **beneficial**. The channel and floodplain would not be modified under the No-Project/No-Action Alternative (Alternative 5) and incised channel conditions would remain, limiting overbanking during small flood events. This impact would be **less than significant**.

IMPACT 3.18-C27 (Alts. 1–5) **Cumulative Hydrology and Flooding—Long-Term Modified Groundwater Levels and Flow Patterns.** *Project-generated changes to the size, shape, or location of existing river channels, the size, elevation, or frequency of inundation of lagoons and increased overbanking and active floodplain area under Alternatives 1, 2, and 3 would result in* ***beneficial*** *changes to groundwater levels and flows in the study area. The potential benefits could be substantial on their own in the study area and would add to the beneficial effects of similar restoration projects upstream by supporting groundwater levels in the study area. Alternative 4 would not change the groundwater levels or flow patterns from existing condition in the majority of the area (outside of the inset floodplain); therefore, this cumulative impact would be* ***less than significant****. The channel would not be modified and surface connections and subsurface conditions around the channels and lagoons would not be changed under the No-Project/No-Action Alternative (Alternative 5); therefore, groundwater levels would not benefit. Alternative 5 would not contribute to this beneficial effect. This impact would be* ***less than significant.*** *.*

Implementing Alternative 1, 2, or 3 would result in net improvements to groundwater levels and patterns of flow in the study area relative to existing degraded conditions. The location and magnitude of benefit would differ among alternatives. It is uncertain whether implementing Alternative 1, 2, or 3 would fully compensate for the possible adverse influences of climate change. The effects of implementing any of the action alternatives on

groundwater in the study area could be measureable and generally beneficial but would be localized and transitory. The expected changes would affect only the unconfined uppermost water-bearing zone.

Implementing Alternative 4 would not substantially modify the groundwater conditions in the study area (outside of the new inset floodplain) relative to existing degraded conditions. The construction of Alternative 4 would mimic a possible future geomorphic state with an active floodplain inset in a widened stream corridor. This design would result in groundwater levels and flow paths that could be similar to the existing condition. Any changes would be localized and would not substantially affect regional groundwater conditions, this cumulative impact would be **less than significant**.

Other restoration projects along the Upper Truckee River could incrementally improve (i.e., increase) groundwater levels and incrementally improve down-valley groundwater connectivity between adjacent reaches. Restoration project alternatives that would raise streambed elevations and expand groundwater storage capacity in the replaced (backfilled) valley floor materials might provide minor incremental benefits to adjacent downstream locations by increasing groundwater levels, increasing storage volumes, and decreasing losses to surface water upstream. Projects that would improve groundwater levels upstream in the Upper Truckee River–Trout Creek watershed could incrementally and locally improve recharge potential in the watershed and between the upstream reaches and the study area. Proposed erosion control and water quality projects and other enhancement and restoration projects in the local drainages and upstream watersheds would involve site-specific restoration or enhancement of surface water features. These features may control peak-flow hydrology in ways that also improve groundwater recharge potential. To the degree that groundwater recharge is improved in dispersed areas of the groundwater basin, incremental benefits to recharge, total storage, and long-term groundwater support to the stream corridors and the study area may result. The detention of peak flows provided by proposed stormwater treatment facilities might help to counteract reduced opportunities for groundwater recharge that would result from climate change, which is expected to increase rainfall runoff relative to snowmelt runoff. The effects on groundwater conditions from erosion control and water quality projects would be beneficial relative to the existing condition. The study area's location downstream of other reasonably foreseeable restoration projects suggests that the localized and transitory effects in the study area would have a limited ability to combine with the effects of actions upstream, but the study area's benefits would be in addition to those of the upstream reaches and would support improved groundwater discharge through the study area to the lake. This effect would be **beneficial**.

The channel would not be modified and surface connections and subsurface conditions around the channels and lagoons would not be changed under the No-Project/No-Action Alternative (Alternative 5); therefore, groundwater levels would not benefit. Alternative 5 would not contribute to this beneficial effect. This impact would be **less than significant.**

IMPACT 3.18-C28 (Alts. 1–5)

Cumulative Geomorphology and Water Quality—Short-Term Risk of Surface Water and Groundwater Degradation during Construction. *Project construction activities would occur along or in the channel of the Upper Truckee River, in Trout Creek, in the Sailing Lagoon, and near the shoreline of Lake Tahoe under the action alternatives. Although temporary BMPs would be developed as part of Environmental Commitments 5 and 6, short-term risk of water quality degradation during construction could occur during summer construction seasons or intervening winters. Short-term turbidity that potentially impairs noncontact recreation beneficial uses (i.e., aesthetics) would be minimized by environmental commitments planned as part of the alternatives development. The residual impact would be minor under the action alternatives but could violate water quality standards of the Basin Plan, including the turbidity standard (<10 percent above background). If similar impacts occurred under reasonably foreseeable projects at the same time, the effects could combine downstream to increase the magnitude or duration of the water quality standard violation. Although the joint probability of concurrent failures of BMPs, given the high anticipated performance standards and short overlapping periods of construction, would be extremely remote, if it occurred, the combined effect would be cumulatively significant. The project could result in a considerable contribution to the combined, significant cumulative*

*adverse effects related to violation of a water quality standard. This cumulative impact would be **significant**. Because no construction would occur under the No-Project/No-Action Alternative (Alternative 5), the Basin Plan's turbidity standard would not be violated; therefore, Alternative 5 would make no contribution and would have **no impact**.*

All four action alternatives (Alternatives 1–4) would require active construction upslope of, near, or in active stream channels and adjacent to the shoreline of Lake Tahoe, the Tahoe Keys Marina, and other surface water bodies and groundwater recharge areas. Although temporary BMPs would be implemented, short-term risk of water quality degradation during construction could occur. EC 5, "Prepare and Implement Effective Construction Site Management Plans to Minimize Risks of Water Quality Degradation and Impacts to Vegetation," described in Table 2-6, would be implemented under all the action alternatives. The planned controls include many specific measures to be implemented by the Conservancy, including restricting the extent of the areas disturbed and the duration of disturbance; implementing BMPs that are effective up to the 20-year precipitation event and 50-year streamflow event, discrete measures for various subdrainage areas on each side of each water body, and construction equipment and vehicle restrictions; implementing specific winterization guidelines; protecting transported and stored materials and debris; implementing custom dewatering/bypassing plans and rewetting requirements; and monitoring water quality, BMP effectiveness, and remedial action requirements. The controls would limit the likelihood and magnitude of potential short-term water quality degradation that could result in persistent turbidity above background that would impair beneficial uses. EC 6, "Obtain and Comply with Federal, State, Regional, and Local Permits," also would be implemented. However, the potential for violations of narrative or numerical water quality standards of the *Water Quality Control Plan for the Lahontan Region* (Basin Plan), at least for short periods, cannot be feasibly eliminated.

The reasonably foreseeable stream restoration projects along the Upper Truckee River are in contiguous reaches upstream of the study area. They could have active construction over the next several years and exposure to high flows during intervening winters. Each proposed restoration project would be required to take many measures to reduce the potential risk of short-term water quality degradation, including:

- restricting the area and duration of construction disturbance to the absolute minimum necessary and
- designing, installing, and maintaining 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, nutrient, or otherwise contaminated water from entering water bodies outside the construction disturbance zone.

The performance standards for BMPs on other projects would be expected to be the same as those identified in the environmental commitments, but it remains possible that the BMPs could experience failure, particularly if unusual runoff or streamflow conditions occur that exceed the BMP design capacity. The Upper Truckee River has no dams or other flow-regulation facilities, and it is not possible to predict weather and runoff conditions before the onset of construction, especially construction that occurs over more than one season. The projects would all be located along the same unregulated river, and all would be scheduled without advanced prediction of future storm events. If a storm event created conditions in the watershed that overwhelmed temporary BMPs at one project site, BMPs for other projects concurrently in active construction also could fail. The exposure would largely be related to sediment from disturbed or revegetated surfaces that are present on-site over winter, rather than other type of potential pollutants that would be present during active summer construction seasons. The concurrent exposure to the same impact mechanism produces a potential adverse cumulative impact involving storm damage in one construction reach influencing BMP performance in other, downstream reaches. However, the BMP performance standards would be expected to be relatively high (i.e., 20-year precipitation event, 50-year streamflow event) relative to the short time frame of overlapping construction for multiple project reaches (i.e., likely just days or weeks within the years of active construction).

The probability that the BMPs of multiple projects would concurrently fail would be extremely remote. However, the potential for violations of narrative or numerical water quality standards of the Basin Plan, including the turbidity standard, cannot be feasibly eliminated, although inclusion of BMPs would substantially reduce impacts so aesthetics or other beneficial uses would not be affected. Thus, the cumulative risk of violating a water quality standard would be substantial, and the project's contribution to this cumulative impact would be considerable; this cumulative impact would be **significant**.

All feasible mitigation measures to avoid or further reduce the short-term risk of surface water and groundwater degradation during construction under Alternatives 1-4 would be expected to be incorporated into the individual restoration project plans and construction BMPs for specific projects. Additional feasible mitigation is not available to reduce this impact to less than significant, so the residual impact would be cumulatively **significant and unavoidable**.

Because no construction would occur under the No-Project/No-Action Alternative (Alternative 5), the Basin Plan's turbidity standard would not be violated; therefore, Alternative 5 would make no contribution and would have **no impact**.

IMPACT 3.18-C29 (Alts. 1–5) **Cumulative Geomorphology and Water Quality—Short-Term Risk of Surface Water and Groundwater Degradation Following Construction.** *Project implementation would include channel sections that need periods of channel adjustment following construction to meet final design (Alternatives 1 and 3), areas of reseeded native species on active floodplains and biotechnical streambank treatments (all action alternatives) that could be vulnerable to a large flood within the first few years following construction. Potential reductions in coarse sediment delivery downstream, generation of fine sediment related to adjustments to the channel bed and banks, mobilization of fine sediment and organic matter on reactivated floodplains, and flood damage that could result in persistent or chronic water quality degradation would be reduced by design elements planned as part of the alternatives. The residual impacts would be minor under the action alternatives but could still violate water quality standards, and if similar impacts occurred at other project sites during the same period, effects could combine to increase the magnitude or severity of a water quality impact. In the short term, implementing any of the action alternatives could result in a considerable contribution to effects on surface water; this cumulative impact would be* ***significant****. Implementing the No-Project/No-Action Alternative (Alternative 5) would not require construction activities and thus would not require a period of channel adjustments following construction to meet final design; however, existing oversteepend banks and incised channel conditions would remain. This impact would be* ***less than significant****.*

Geomorphic adjustments would occur after construction of any of the action alternatives (Alternatives 1-4) as part of the normal response to the new dimensions, materials, and hydraulics of constructed and/or reactivated channels and floodplains. In particular, implementation of Alternatives 1 and 3 would feature channel sections that would require periods of channel adjustment following construction to meet final design, including net aggradation (e.g., deposition of coarse sediment), bed mobilization to redistribute materials, and (in the case of Alternative 3) natural processes to reoccupy remnant channel sections throughout the floodplain. These adjustments would most likely occur during and just following peak seasonal streamflows. The probability that project-related turbidity impacts would be substantially worse than under the existing flows, that they would extend outside the treatment reach, and that they would impair beneficial uses during the channel adjustment flows would be low.

Implementation of any action alternative would include revegetation of modified floodplain areas (excavated inset floodplains/lowered terraces) and/or re-activation of floodplain surfaces that have been dormant and collecting sediment and organic matter. Under all of the action alternatives, biotechnical streambank protections would be installed that might not achieve maximum hydraulic resistance or geotechnical strength within five years of construction. A large flood (i.e., 25-year or greater) occurring within the first few years of construction could produce erosion and sedimentation in the modified channels and/or floodplain that degrades water quality, at least

for short periods (potentially hours, days, or, at most, weeks). Although the same flood event could also result in potential water quality degradation under existing conditions, the project activities may alter the location, extent, and duration of impacts. Fine sediment and organic matter mobilization in newly reactivated floodplain areas would be minimized by design elements of Alternative 3. Possible channel and floodplain damage that could result in persistent or chronic water quality degradation in the study area would be reduced by mitigation planned as part of all action alternatives (Mitigation Measure 3.9-2 [Alts. 1-4]) to address issues during the interim period after construction. The residual impacts of the action alternatives could be substantial on their own.

The reasonably foreseeable stream restoration projects on the Upper Truckee River are in contiguous reaches upstream of the study area, and although each restoration project is expected to take many measures to reduce potential effects during construction, post-construction mitigation measures for each project have not yet been determined. Some of the alternatives for various reaches include the need for post-construction natural channel adjustments, and all the projects likely include channel, bank, or floodplain treatments that may not reach full geotechnical or hydraulic resistance within the first couple of years. The projects would all be located along the same unregulated river, and if a large flood occurred within the first few years of construction, it could affect multiple project reaches, combining to increase the potential magnitude or duration of effect and/or causing a channel response that eventually affects more than one reach. During an interim period of five years following construction, the probability of damage from a large flood (e.g., 25-year recurrence or larger) is relatively high because it would be the additive probability of the same statistical chance for each year and for each project. Therefore, such an event could be reasonably expected. Overall, the potential for water quality degradation during such an event for the restored condition on multiple project reaches would likely be less than during a flood in the existing degraded channel due to lowered bank heights and reduced channel slopes expected for the restored condition compared the existing degraded channel. Furthermore, a large flood event would have naturally high background turbidity levels. However, locally worse conditions and/or flood damage that could pose a risk of becoming persistent or chronic might result under the action alternatives and other reasonably foreseeable restoration projects. Additionally, violations of the strict water quality standards could occur even if similar effects may result under the No- Project/No-Action Alternative. Therefore, implementing the action alternatives would make a considerable contribution to a potentially significant cumulative impact; this impact would be **significant**.

Implementing the No-Project/No-Action Alternative (Alternative 5) would not require construction activities and thus would not require a period of channel adjustments following construction to meet final design; however, existing oversteepend banks and incised channel conditions would remain. This impact would be **less than significant**.

Mitigation Measure 3.18-C29: Implement an Interim Coordinated Adaptive Management Plan on the Upper Truckee River.

The sponsors (landowners/funders) for all the foreseeable river restoration projects that would be constructed on the Upper Truckee River shall develop and implement an interim coordinated adaptive management plan focused on potential short-term water quality degradation that may result if unexpectedly large flood flows occur within the first five years after construction. The plan shall be jointly developed to address issues that cross project boundaries and look at the system as a whole. The plan shall be in force for the interim period of channel adjustment and initial flood vulnerability (i.e., at least five years but no more than ten years from the end of construction—potentially as long as needed to allow for expected natural channel adjustments).

The plan shall identify specific data collection and monitoring protocols, describe decision-making processes and authorities, and advise on corrective actions. The performance criteria for the corrective actions shall focus on preventing damage or turbidity effects from becoming a persistent, recurring, or chronic source, whether the corrective action is needed at the initial damage site or at other location(s) that could be affected by channel response to the initial damage. The plan shall include a discussion of responsibilities for implementing corrective actions, with a starting assumption that each project sponsor would be financially responsible for implementing

the plan within their project reach. However, it is possible that problems occurring in one reach may affect other reaches and that the group will decide, following review of monitoring data, that mitigation should be applied in a reach different from the one where the problems are initially observed to prevent future or chronic water quality effects.

With implementation of Mitigation Measure 3.18-C29 under Alternatives 1-4, the likelihood and potential magnitude of Impact 3.18-C29 would not be considerably worse than under existing conditions; however, the residual effects could still result in violations of water quality standards. Therefore, Impact 3.18-C29 would be **significant and unavoidable**.

IMPACT 3.18-C30 (Alts. 1–5) **Cumulative Geomorphology and Water Quality—Long-Term Stream Channel Erosion.** *Under any of the action alternatives, changes to the channel of the Upper Truckee River and Trout Creek would result in stream channel erosion effects that are generally beneficial in most of the study area while creating localized erosion that could be controlled by Environmental Commitments 5, 6, and 11 planned as part of the alternatives. The stream channel erosion benefits would be considerable on their own and could combine with other potential reductions of erosion along the Upper Truckee River in upstream restoration reaches by preventing upstream migration of channel instability. Therefore, the effect would be beneficial on its own and would result in a considerable contribution to a cumulatively beneficial effect on stream channel erosion; this cumulative effect would be* ***beneficial****. Implementing the No-Project/No-Action Alternative (Alternative 5) would allow the adverse conditions in the Upper Truckee River channel and the Trout Creek channel in the study area to persist, but this would not be a change from existing conditions; therefore, this cumulative impact would be* ***less than significant****.*

Implementing any of the action alternatives would reduce stream channel erosion in the study area relative to existing conditions, resulting in substantial overall benefits. Under the action alternatives, the Upper Truckee River channel in the study area would be repaired, restored, and/or reconstructed, which would directly reduce rates of erosion relative to the degraded existing condition. Compiling the total maximum daily load (TMDL) streambank erosion results (California Water Boards and NDEP 200) for specific subreaches of the Upper Truckee River allows a quantitative estimate of the effect of the action alternatives on stream channel erosion (Table 3.18-4). The four action alternatives propose varied restoration approaches and designs in the study area. However, the estimated reduction in loads of fine sediment from streambank erosion in the study area varies by only ten cubic yards among the alternatives (Appendix I). These data indicate that implementing any of the action alternatives would reduce loads of fine sediment from streambank erosion in the study area by nearly 60 percent (reduced to 220.55 cubic yards from 538.13 cubic yards under the existing conditions). The potentially significant local erosion impacts of each action alternatives would be controlled through design elements and EC 5, 6, and 11 planned as part of each action alternative. The planned controls include providing channel bed and bank stabilization at and immediately upstream of the river mouth and changed Sailing Lagoon connection, and ensuring bed and bank stability in lower Trout Creek. The dominant long-term project effect of any action alternative would be beneficial.

The study area is a small portion of the entire 15 miles of TMDL study reaches, and the proposed action alternatives alone would reduce the entire Upper Truckee River's channel erosion load of fine sediment from streambanks by about seven percent relative to existing conditions. Although small, this would be a considerable and measureable benefit relative to the degraded existing condition. Other reasonably foreseeable restoration projects in the watershed would also repair, restore, and/or reconstruct portions of the Upper Truckee River channel and would be expected to have a beneficial long-term overall effect on stream channel erosion rates. It is expected, for example, that any potential localized increase in erosion risks in their study areas or adverse effects on immediate upstream or downstream reaches would be controlled through design and implementation of on-site, project-specific mitigation measures.

Table 3.18-4
Estimated Erosion of Stream Channel Banks on the Upper Truckee River under the Upper Truckee Marsh Alternatives and Other Foreseeable Actions

River Reach	Distance Upstream of Lake (feet)	Bank Erosion of Fine Sediment[1] (cubic yards)	
		Upper Truckee Marsh Alternatives Only	With Other Foreseeable Upstream Actions
Upper Truckee Marsh study area	0 to 9,646	220.55	220.55
Upstream project reaches	9,646 to 46,260	2,894.47	1,069.50 to 1,337.25 [2]
Upper watershed	46,260 to 79,364	887.14	887.14
Total	**79,364**	**4,002.16**	**2,177.19 to 2,444.94 [2]**

Notes:

[1] Fine sediment is less than 0.063 millimeter in diameter.

[2] The smaller amount is for the Mixed Treatment assumption; larger value is for the Full Restoration assumption.

Source: California Water Boards and NDEP 2008 (compiled for these subreaches in Appendix I)

If the action alternatives and the other foreseeable Upper Truckee River restoration projects were all implemented, the load of fine sediment from streambanks would be reduced to about 2,177.19 to 2,444.94 cubic yards, depending on the alternatives selected for other upstream project reaches (Table 3.18-4). This would represent a substantial measureable benefit, reducing the entire Upper Truckee River's load of fine sediment from streambank erosion by 43.4 to 51.0 percent relative to the existing degraded conditions. It is uncertain whether these measures would fully compensate for possible adverse influences of climate change. Benefits of these channel modifications would be substantial relative to existing conditions but would be largely limited to each respective project area. Minor interaction and combining benefits between reaches would be expected where project changes in one reach could protect channel stability of adjacent upstream reaches and tributaries. Because of the study area's downstream position, implementing the action alternatives alone would not be expected to directly or indirectly reduce channel erosion along the Upper Truckee River upstream.

The TMDL analysis of load reduction opportunities (California Water Boards and NDEP 2008:211–215) produced quantitative estimates of erosion of fine sediment from streambanks of the Upper Truckee River under the existing condition and for a range of treatments to reduce streambank erosion. Compiling the results for specific subreaches of the Upper Truckee River allows a quantitative estimate of the effect of foreseeable projects on stream channel erosion (Table 3.18-5). The TMDL analysis looked at three tiers of treatment types: Tier 1, Restoration; Tier 2, Mixed Treatment; and Tier 3, Bank Protection. Final designs have not yet been selected for some of the foreseeable stream and river restoration projects upstream of the study area, and a range of alternatives is still being considered for some of these projects. However, most of the projects are focused on full restoration and mixed treatment approaches, so the results compiled in Table 3.18-5 reflect those TMDL treatment tiers. These data indicate that implementing other foreseeable actions throughout the adjacent upstream reaches of the Upper Truckee River would potentially reduce loads of fine sediment from the Upper Truckee River by 1,557.2 to 1,825.0 cubic yards, which equates to a reduction of 36.1 to 42.3 percent of the total under the No-Project/No-Action Alternative without any other foreseeable actions. This would be a substantial benefit relative to the existing degraded condition.

Reasonably foreseeable erosion control projects in the vicinity would be neutral or beneficial because they would control runoff volumes and regulate peak flows in the contributing subwatersheds. Other foreseeable projects include a range of projects that have individually varied effects on runoff. Some projects may potentially increase runoff from increased impervious surfaces (e.g., bike trails, development projects) or reduced vegetation cover (e.g., fuel reduction projects); others may potentially decrease runoff from decreased impervious surfaces (e.g., Lake Tahoe Boulevard Enhancement, Lake Tahoe Airport Runway Restoration). Foreseeable projects that would

Table 3.18-5
Estimated Erosion of Stream Channel Banks along the Upper Truckee River under the No-Project/No-Action Alternative with Other Foreseeable Actions

River Reach	Distance Upstream of Lake (feet)	Bank Erosion of Fine Sediment[1] (cubic yards)	
		No-Project/No-Action	Other Foreseeable Actions
Upper Truckee Marsh study area	0 to 9,646	538.13	538.13
Upstream project reaches	9,646 to 46,260	2,894.47	1,069.50 to 1,337.25 [2]
Upper watershed	46,260 to 79,364	887.14	887.14
Total	**79,364**	**4,319.74**	**2,494.77 to 2,762.52** [2]

Notes:

[1] Fine sediment is less than 0.063 millimeter in diameter.

[2] The smaller value is for the Mixed Treatment assumption; the larger value is for the Restoration assumption.

Source: California Water Boards and NDEP 2008

increase the extent of impervious surfaces would be required to incorporate mitigation to limit their incremental contribution. A measureable beneficial effect of smaller erosion control and other projects would be difficult to discern because the projects focus on controlling runoff for small to moderate events, which are less likely to cause erosion in the main stream channel.

Reductions of stream channel erosion in the study area would be additive with other stream channel erosion reductions in terms of total long-term benefit along the entire Upper Truckee River, but changes in the study area would not directly improve channel erosion upstream. Because of the location of the study area, improvements in the channel stability would combine with other actions only by preventing channel instability from migrating further upstream. Therefore, the effect would be **beneficial**.

Implementing the No-Project/No-Action Alternative (Alternative 5) would allow the adverse conditions in the Upper Truckee River channel and the Trout Creek channel in the study area to persist, but this would not be a change from existing conditions; therefore, this cumulative impact would be **less than significant**.

IMPACT 3.18-C31 (Alts. 1–5) **Cumulative Geomorphology and Water Quality—Long-Term Fine Sediment and Nutrient Retention.** *Project changes to the channel capacity, elevation, the frequency of overbanking, and the area of functional active floodplain and lagoon in the study area would produce beneficial increases in fine sediment and nutrient retention during small to moderate flood events under any of the action alternatives. The fine sediment and nutrient retention effects would produce a discernible beneficial effect on their own and could combine with other potential improvements in floodplain processes upstream to reduce sediment and nutrients delivered to Lake Tahoe. This cumulative effect would be **beneficial**. Implementing the No-Project/No-Action Alternative (Alternative 5) would allow the existing impaired fine sediment and nutrient retention conditions to persist. This impact would be **less than significant**.*

Implementing any of the action alternatives would decrease the Upper Truckee River channel capacity, increase the length of appropriately sized channel, remove floodplain fill, restore lagoon area, and enlarge the area inundated by the two-year return interval flow (e.g., 760 cubic feet per second in the study area). These changes would result in a substantial improvement to overbanking at specific streamflow magnitudes in the study area. The area of active floodplain would be enlarged, and the length of channel with overbanking would increase, allowing more opportunities for low-velocity, shallow flooding that retains fine sediment and supports vegetation uptake of nutrients. In the absence of empirical data or calibrated models to estimate potential quantities of fine sediment and nutrients trapped by floodplain processes, the area inundated by frequent small streamflow events (i.e., the two-year recurrence) under any of the action alternatives is presented as a proxy for comparison

(Table 3.18-6). Changes to active floodplain processes of sediment and nutrient retention in the study area, although measureable and considerable under the action alternatives, would not contribute to floodplain process changes in other adjacent river reaches because of limited natural upstream effects and the intervening hydraulic controls of the upstream U.S. 50 bridge and road fill across the active floodplain.

Table 3.18-6
Estimated Active Floodplain Area along the Upper Truckee River Project Reaches

River Reach	Area of Active Floodplain (acres)[1, 2]		
	Existing	Upper Truckee Marsh Alternatives Only	With Other Foreseeable Upstream Actions
Upper Truckee Marsh study area	65.0	74.0 to 156.0	74.0 to 156.0
Upstream project Reaches 1 and 2 [3]	NA	NA	NA
Upstream project Reaches 3 and 4	18.4	0	18.4
Upstream project at Sunset Stables	58.0	58.0	99.0 to 131.0
Upstream project at Lake Valley State Recreation Area	35.7	35.7	36.9 to 56.8
Subtotal for the project reaches	**177.1**	**167.7 to 249.7**	**228.3 to 362.2**

Notes:

[1] Active floodplain is defined as the area inundated from a 2-year recurrence peak streamflow event.

[2] The range of active floodplain areas for the alternatives under consideration is listed for projects that have not yet selected a preferred alternative or final design.

[3] No quantitative estimate of floodplain area has yet been calculated or modeled for this reach (Rudd, pers. comm., 2008).

Sources: Conservancy and DGS 2005, 2008; CSLT 2006

Reasonably foreseeable river restoration projects on the Upper Truckee River have alternatives under consideration that would also improve floodplain retention of sediment and nutrients for small and moderate flood events, relative to the existing degraded condition along their respective project reaches. Final designs have not yet been determined for some of the proposed stream and river restoration projects upstream, and a range of alternatives are still being considered for some of these projects. Some alternatives along some subreaches of the proposed future restoration projects on the Upper Truckee River might reduce stream-erosion sediment sources while making only very minor improvements to overbanking frequency or the area of floodplain (e.g., the bank stabilization alternative for the Upper Truckee River Restoration and Golf Course Reconfiguration Project). However, the opportunity for floodplain processes to provide water quality treatment would be substantially improved along the Upper Truckee River relative to the degraded existing conditions (see areas listed in Table 3.18-6). Improving floodplain function in particular reaches would incrementally reduce loads conveyed farther downstream, and opportunities might improve for any overbanking in those downstream reaches (including the study area) to trap additional net sediment and nutrients before discharge of the river to the lake. Substantial benefits could result, although it is uncertain whether possible adverse influences of climate change would be fully offset by the implemented action alternatives for the cumulative river restoration projects. Direct benefits to sediment and nutrient retention would be largely limited to each project area because return flows back from the floodplain to channel would occur, particularly where road fill and/or bridges limit down-valley floodplain continuity. However, between existing bridges, it is possible that benefits of improved floodplain connectivity between adjacent reaches may result. The benefits in the study area that would result from implementing any of the action alternatives would add to benefits of other restoration projects upstream to reduce fine sediment and nutrients delivered to Lake Tahoe. The combined effect of the proposed restoration projects would be **beneficial**. Implementing the No-Project/No-Action Alternative (Alternative 5) would allow the existing impaired fine sediment and nutrient retention conditions to persist. This impact would be **less than significant**.

IMPACT 3.18-C32 (Alts. 1–5) **Cumulative Geomorphology and Water Quality—Long-Term Modifications in Transport of Coarse Sediment to Upper Truckee River and Effects on Beach Processes.** *Project-generated changes to the channel bed profile, bank and bed materials, or the hydraulic conditions controlling bedload (i.e., sands and gravel) transport could worsen under Alternative 1, 2, or 3 relative to the effects of historically declining watershed coarse sediment yield on channel erosion and beach erosion adjacent to the river mouth (i.e., at Cove East and Barton Beach), or they could remain similar to existing conditions under Alternative 4. Potential effects of the project could be considerable and could combine with effects of other actions on coarse sediment transport and delivery, but because of highly uncertain climate change influences, especially on beach erosion, the incremental or combined consequences to channel and beach erosion are not predictable. Conditions could range from worse than the existing degraded condition to a possible improvement regardless of coarse sediment delivery changes, and after thorough investigation, the determination for all alternatives, including the No-Project/No-Action Alternative (Alternative 5), remains* ***too speculative for a meaningful significance conclusion****.*

Implementing Alternative 1, 2, or 3 would result in modifications to the channel bed profile, bank and bed materials, and the hydraulic conditions controlling bedload (i.e., sands and gravel) transport in the study area and into the mouth of the Upper Truckee River, at least for an interim period of geomorphic adjustment following construction. Under Alternative 3, major modifications would be made to potential low-flow connectivity in the marsh through the lagoon system and would anticipate net sedimentation of coarse sediment over the long term. This could limit transport from upstream sources through the study area to the lake. Under Alternative 4, no modifications would be made to the bed profile, and bed and bank erosion that could reduce local sources of coarse sediment would be limited; however, transport of coarse sediment from upstream sources through the study area to the mouth of the river would not be limited. Given the background of naturally declining watershed coarse sediment yield and ongoing channel and beach erosion, adverse changes in the project reach could worsen the existing degraded condition.

Impacts of the project could combine with the potential coarse sediment effects of other reasonably foreseeable future restoration projects upstream on the Upper Truckee River to increase the potential risk of erosion consequences in study area channel reaches and along the beach. Although the performance goals of the proposed restoration projects would be focused on reducing human-induced excessive erosion, some of the treatment approaches and channel designs might also further reduce the supply of coarse sediment generated by streambed or streambank erosion. Implementing the projects would not modify coarse sediment sources along the river upstream of Meyers, but it could reduce the downstream delivery of coarse sediment relative to existing conditions because it would create additional opportunities for in-channel and floodplain sedimentation.

Implementing foreseeable erosion control and water quality projects in the local drainages and upstream watersheds would involve installing measures designed to detain runoff and capture fine sediment. Although the performance goals would be focused on treating fine sediment, nutrient, and other urban pollutant loads, many of the methods and facilities would inadvertently trap coarse sediment. Coarse sediment captured in stormwater facilities would likely be removed under normal maintenance practices. This could create a minor but potentially measureable decrease in coarse sediment delivery to downstream receiving waters.

For the long term, highly uncertain climate change influences might overwhelm the possible long-term effects of any action. It is possible that climate change may exacerbate impacts (e.g., further decrease coarse sediment delivery) or counteract them (e.g., lower lake levels, reducing beach erosion). Given the uncertainty of current scientific understanding related to future climate change–and related baseline conditions, the determination of project-specific effects and potential cumulative impacts for all alternatives, including the No-Project/No-Action Alternative (Alternative 5), remains **too speculative for a meaningful significance conclusion**.

LAND USE

IMPACT 3.18-C33 (Alts. 1–5) **Cumulative Land Use—Potential to Physically Divide an Established Community or Conflict with Land Use Plans, Policies, or Regulations.** *Implementing any of the action alternatives (Alternatives 1–4) would not physically divide an established community; the public access components of these alternatives would increase connectivity between established communities. In addition, implementing alternatives 2, 3, and 4 would not conflict with applicable plans, policies, or regulations, including any habitat conservation plans or natural community conservation plans. Thus, when viewed in connection with other projects, implementing any of the action alternatives would not make a considerable contribution to effects on California State Lands Commission policies and regulations regarding use of public trust lands along the Upper Truckee River; would not contribute to conflicts with other land use plans, policies, or regulations; and would not physically divide an established community. The project's contribution to this cumulative impact would be* ***less than significant****. Alternative 1, however, would conflict with the formalized conservation strategy for Tahoe yellow cress, and the memorandum of understanding/conservation agreement for the species. This cumulative impact would be* ***significant****. Implementing the No-Project/No-Action Alternative (Alternative 5) would not alter existing land uses in the study area; thus, it would not physically divide an established community or conflict with plans, policies, or regulations; however, Alternative 5 would make no contribution to attaining the goals of the Regional Plan. This impact would be* ***less than significant****.*

Neither the restoration components nor the public access, recreation, or habitat protection features of any of the action alternatives (Alternatives 1-4) would physically divide an established community. The public access components of the action alternatives would instead increase connectivity between established communities.

No habitat conservation plan or natural community conservation plan is applicable to the study area, so none of the action alternatives would conflict with any applicable habitat conservation plan or natural community conservation plan. However, a formalized conservation strategy exists for Tahoe yellow cress, and a memorandum of understanding/conservation agreement for the species is in place. Alternatives 2-4 would be consistent with this memorandum of understanding/conservation agreement. Alternative 1, however, would conflict with this strategy and memorandum of understanding/conservation agreement because it would negatively affect Tahoe yellow cress by creating additional recreation features (the bridge and boardwalk) in the vicinity of occupied habitat creating opportunity for damage by recreationists and removing potential habitat in the back beach area.

In addition, implementation of any of the action alternatives (Alternative 1-4) would not conflict with applicable plans, policies, or regulations. Land use under these alternatives would be consistent with the applicable plan area statements, including special areas, shorezone tolerance districts, and the Tahoe Keys Marina Master Plan. Land use under these alternatives would also be consistent with the goals and objectives of the city and county general plans; the Lake Tahoe Airport Comprehensive Land Use Plan for the approach/departure zone, which extends into the southeastern corner of the study area; and the policies and regulations of the California State Lands Commission, which has jurisdiction over public trust lands, including the beds of Lake Tahoe and the Upper Truckee River.

Thus, when viewed in connection with other projects, Alternatives 2-4 would not make a considerable contribution to a cumulative effect on physically dividing an established community or conflicting with land use plans, policies, and regulations; this cumulative impact would be **less than significant**. Alternative 1, however, would conflict with the formalized conservation strategy for Tahoe yellow cress, and the memorandum of understanding/conservation agreement for the species. This cumulative impact would be **significant**. Feasible mitigation is not available to reduce this impact to less than significant, so the residual impact would be cumulatively **significant and unavoidable**.

Implementing the No-Project/No-Action Alternative (Alternative 5) would not alter existing land uses in the study area; thus, it would not physically divide an established community or conflict with plans, policies, or regulations; however, Alternative 5 would not contribute to attaining the goals of the Regional Plan. This impact would be **less than significant**.

NOISE

IMPACT 3.18-C34 (Alts. 1–5) **Cumulative Noise—Short-Term or Long-Term Increased Noise and Vibration.** *Noise and vibration generated by any of the action alternatives (Alternatives 1–4) would not combine with other noise sources (existing or related to reasonably foreseeable projects) in the study area or its vicinity to create a cumulatively significant impact. For that reason, and because construction noise and vibration would be at less-than-significant levels, short term, and within time periods exempted by applicable ordinances (i.e., daytime hours), short-term and long-term noise would be similar to current conditions. Therefore, implementing any of the action alternatives would not make a considerable contribution to a cumulatively significant effect on the noise environment; this cumulative impact would be* ***less than significant****. Implementing the No-Project/No-Action Alternative (Alternative 5) would not introduce new sources of noise or vibration; therefore, Alternative 5 would make no contribution and would have* ***no impact****.*

Although implementing any of the action alternatives (Alternatives 1-4) would generate noise from construction activity and project-generated construction traffic, and a reasonably foreseeable project in the vicinity of the study area also could generate construction-related noise (i.e., Al Tahoe Erosion Control project), the action alternatives would not make a considerable contribution to an overall significant effect on noise in either the short term or long term. First, construction-related noise generated by any of the action alternatives would not exceed applicable regulations. Noise from construction activity that occurs between 8:00 a.m. and 6:30 p.m. (daily) is exempt from the provisions of the applicable TRPA regulations; noise from construction activity that occurs between 7:00 a.m. and 7:00 p.m. (weekdays) and between 8:00 a.m. and 5:00 p.m. (weekends and federal holidays) is exempt from the provisions of the applicable El Dorado County regulations because noise sensitivity is less during these daytime periods than during quieter evening, nighttime, or early morning hours. Because construction activities and project-generated construction traffic would occur only during these exempt times, none of the action alternatives would make a considerable contribution to any overall effect on noise that could be cumulatively significant in the short term. A substantial, ongoing, postconstruction increase in noise would not occur under any of the action alternatives because the land uses of the study area would be similar to current conditions following project implementation. In addition, project construction and operation under any of the action alternatives also would not include major sources of vibration. Finally, reasonably foreseeable projects would not create a long-term source of noise or vibration in the study area or adjacent neighborhoods. Therefore, none of the action alternatives would make a considerable contribution to any long-term cumulatively significant effect on noise or vibration; this impact would be **less than significant**. Implementing the No-Project/No-Action Alternative (Alternative 5) would not introduce new sources of noise or vibration; therefore, Alternative 5 would make no contribution and would have **no impact**.

PUBLIC SERVICES

IMPACT 3.18-C35 (Alts. 1–5) **Cumulative Public Services—Increased Demand for and Interference with Public Services.** *Implementing any of the action alternatives (Alternatives 1–4) would not generate substantial demand for public services, and this demand would not contribute to an overall cumulatively significant impact in the study area or its vicinity. Implementing any of the action alternatives could potentially lead to temporary interference with the ability of animal control, law enforcement, fire protection, and emergency medical service providers to provide emergency services to the study area and its vicinity, especially if other reasonably foreseeable projects were to occur at the same time in the area. Environmental Commitment 12 includes commitments to notify public service providers and provide detours where potential access issues may occur as part of the construction management program and traffic control plan planned as part*

of the alternatives. These environmental commitments, along with traffic control measures implemented by other projects, would reduce the potential for temporary disruption of public services during construction to a level that would not be cumulatively significant. Therefore, the project would not make a considerable contribution to a cumulatively significant effect on public services; this impact would be ***less than significant****. Under the No-Project/No-Action Alternative (Alternative 5), no additional recreation facilities would be created, so there would be no additional demand for public services and no roadway construction that could interfere with emergency response; therefore, Alternative 5 would make no contribution and would have* ***no impact****.*

Implementing any of the action alternatives (Alternatives 1-4) could result in a minor increase in demand for law enforcement, fire protection, and animal control services, but the increase in demand would be minimal and would not create the need for additional services or facilities for police, fire, or animal control services. The combined effects of any alternative with other projects would not result in an overall significant impact on any public service.

AS described below, implementing any of the action alternatives would not make a considerable contribution to an overall significant impact on traffic in either the short term or the long term. However, without mitigation, construction of the action alternatives could lead to temporary interference with the ability of law enforcement, fire protection, and emergency medical service providers to provide emergency services to the study area or its vicinity, especially if other reasonably foreseeable projects were being constructed at the same time in the vicinity. As described in Section 3.12, "Public Services," implementation of EC 12, "Prepare and Implement Traffic Control Plans" (Table 2-6), which involves notifying public service providers and providing detours where potential access issues may occur, would reduce the project's potential effects on provision of public services during construction. Along with traffic control measures that would be incorporated into other projects, this mitigation, planned as part of the alternatives, would prevent the combined effect of this and other projects from being cumulatively significant. Therefore, the project would not make a considerable contribution to a cumulatively significant effect on public services; this impact would be **less than significant**. Under the No-Project/No-Action Alternative (Alternative 5), no additional recreation facilities would be created, so there would be no additional demand for public services and no roadway construction that could interfere with emergency response; therefore, Alternative 5 would make no contribution and would have **no impact**.

RECREATION

IMPACT 3.18-C36 (Alts. 1–5) **Cumulative Recreation—Construction-Related Loss of Recreational Opportunities and Public Access, Conflicts among Existing and Proposed Recreational Uses, and Increased Use of Existing Recreational Facilities.** *Implementing any of the action alternatives (Alternatives 1–4) would involve construction activities that would reduce access to the Upper Truckee River, Lake Tahoe, and public land in the study area and thus, for the short term, would displace a small number of recreational users. Environmental Commitments 13 and 14, planned as part of the action alternatives, would be implemented to address safety, accessibility, and other recreation opportunities. Other reasonably foreseeable projects would contemporaneously displace a small number of recreational users and/or limit access to lakes, public land, or waterways. Nonetheless, the combined effects of any of the action alternatives and other reasonably foreseeable projects would not cause substantial short-term effects on recreational opportunities, public access, or existing recreational facilities because of the relatively large number of similar recreational facilities among which the dislocated users would be dispersed. Therefore, in connection with other projects, the short-term contribution of any of the action alternatives to effects on recreational opportunities and public access, conflicts among existing and proposed uses, and existing recreational facilities would not be cumulatively considerable; this impact would be* ***less than significant****. The No-Project/No-Action Alternative (Alternative 5) would not involve construction or new recreation activities that would displace recreational users; therefore, Alternative 5 would make no contribution and would have* ***no impact****.*

The most popular recreational uses of the study area are walking and running, beach use, wildlife viewing, and fishing. The Tahoe Basin has an abundance of locations where people can engage in these activities. Nearby trail systems suitable for walking, running, and wildlife viewing are available on USFS lands south and east of the study area and on California Department of Parks and Recreation lands, including Washoe Meadows, D. L. Bliss, and Emerald Bay DPR and the Lake Valley SRA. Nearby beaches include Baldwin, Kiva, Pope, and El Dorado Beaches. Fishing opportunities are available at numerous locations around Lake Tahoe and at the many smaller lakes in the vicinity. As noted in Section 3.13, "Recreation," during construction, recreational use of the study area would be reduced as a small number of recreationists instead used other existing recreational facilities. This effect would be comparable for all the action alternatives. As described in EC 13, "Prepare and Implement a Public Outreach Plan," and EC 14, "Prepare and Implement a Waterway Traffic Control Plan for Alternatives That Affect the Sailing Lagoon" (Table 2-6), the Conservancy would prepare a Public Outreach Plan and Water Traffic Control Plan to address safety, accessibility, and other recreation opportunities. Other reasonably foreseeable projects would also contribute a small number of recreationists to the number of users of existing recreational facilities during construction. Recreationists displaced by the Upper Truckee River and Marsh Restoration Project and contemporaneous projects would be distributed around the Tahoe Basin to the numerous alternative locations for recreation such that there would not be a resulting short-term cumulatively substantial effect on recreational opportunity; public access to lakes, waterways, or public land; or existing recreational facilities.

Therefore, in connection with other projects, the construction-related effects of any of the action alternatives would not make a considerable contribution to cumulative effects on recreational opportunities, conflicts between existing and proposed recreational uses, public access, or existing recreational facilities; this cumulative impact would be **less than significant**. The No-Project/No-Action Alternative (Alternative 5) would not involve construction or new recreation activities that would displace recreational users; therefore, Alternative 5 would make no contribution and would have **no impact**.

IMPACT 3.18-C37 (Alts. 1–5) Cumulative Recreation—Operation-Related Loss of Recreational Opportunities and Conflicts among Surrounding and Proposed Recreational Facilities. *Implementing any of the action alternatives (Alternatives 1–4) would provide additional recreation facilities compared to existing conditions and therefore have little effect on surrounding recreational facilities with the exception of short-term dispersed increase in use of nearby facilities during construction. Implementing Alternative 3 would likely change the timing and location of boat access along the Upper Truckee River, however, these are user-created facilities and not currently managed for boat access and the study area would remain available to boaters. Therefore, in connection with the effects of other projects, the effect of operation of Alternatives 1–4 on recreational facilities would not be cumulatively considerable; this cumulative impact would be* ***less than significant****. The No-Project/No-Action Alternative (Alternative 5) would not involve changes to access or facilities or other activities that would displace recreational users; therefore, Alternative 5 would make no contribution and would have* ***no impact****.*

In the long term, the cumulative effect of reasonably foreseeable projects (listed in Table 3.18-2) would not create conflicts between existing and proposed uses, or increase the use of surrounding parks and recreational facilities. The river and stream restoration and the water quality and erosion control projects would have no impact or limited adverse or beneficial effects on existing recreational facilities. Only the ongoing urban development would have a long-term adverse effect on existing dispersed recreational facilities. The projects involving new bike paths would likely reduce the number of users of some existing dispersed recreational facilities by providing an alternative location for recreation. Given the slow rate of urban development in the vicinity of the study area, the availability and capacity of alternate locations for dispersed recreation activity, and the additional opportunities for dispersed recreation that would be provided by reasonably foreseeable projects, Alternatives 1-4 would not contribute to a significant cumulative long-term decrease in recreational opportunities, conflicts among existing or proposed recreational facilities, reduction in public access, or long-term increase in the use of surrounding recreational facilities.

If Alternative 3 is implemented, the Upper Truckee River might have multiple, smaller channels with flows dispersed over the study area that would change the timing when nonmotorized watercraft access is possible. However, access is currently dependent on seasonal flows. Under small to moderate flow years, flows would likely be too shallow to allow access, but during larger flow years, access would be expanded because flows would spread across the study area. Because access would continue to be dependent on seasonal flow conditions, and access would continue to be available throughout the rest of the watershed and around the lake, this impact is not significant. Implementing any of the action alternatives (Alternatives 1-4) would provide additional recreation facilities compared to existing conditions and therefore have little effect on surrounding recreational facilities with the exception of short-term dispersed increase in use of nearby facilities during construction.

Therefore, implementing Alternatives 1-4 would not make a considerable contribution to cumulative effects on recreational opportunities, conflicts between surrounding and proposed recreational facilities and public access; this cumulative impact would be **less than significant**. The No-Project/No-Action Alternative (Alternative 5) would not involve changes to access or facilities or other activities that would displace recreational users; therefore, Alternative 5 would make no contribution and would have **no impact**.

IMPACT 3.18-C38 (Alts. 1–5) **Cumulative Recreation—Construction or Expansion of Recreational Facilities That May Have an Adverse Physical Effect on the Environment.** *The action alternatives (Alternatives 1–4) would have short-term significant unavoidable construction impacts but long-term benefits on wildlife, water quality and fisheries, as discussed in Section 3.4, "Vegetation and Wildlife Resources," Section 3.5, "Fisheries," and Section 3.9, "Geomorphology and Water Quality." Both the short-term impacts and long-term benefits to these resources are primarily consequences of the construction of the restoration features of these alternatives. Implementing any of the action alternatives (Alternatives 1–4) would also involve construction of public access features that would be used for recreation. With the exception of Alternative 1, environmental commitments and mitigation measures planned as part of the alternatives as described in Table 2-6 and Table S-1, respectively, would reduce the long-term adverse effects to the physical environment from constructing these features and the residual contributions to cumulative effects would not be considerable (as discussed for each resource area in this section). The recreation facilities associated with Alternative 1 are designed to preserve the natural resources in the study area while providing compatible recreational opportunities, public access, and recreational infrastructure. However, the boardwalk and bridge would likely attract more visitors than the other alternatives. Furthermore, the bridge and boardwalk would be located within Tahoe yellow cress habitat in the back beach area and may lead to negative impacts on the Tahoe yellow cress population. Consequently, implementing any of the action alternatives (Alternatives 1–4) in combination with projects related to construction or expansion of recreational facilities would contribute to a short-term* ***significant*** *impact; however, Alternatives 2–4 would not cause an adverse long-term effect and this cumulative impact would be* ***less than significant****. Implementing Alternative 1, however, would result in a contribution to a cumulative long-term impact that would be* ***significant****. The No-Project/No-Action Alternative (Alternative 5) would not involve project-related construction or expansion of recreational facilities in the study area; therefore, Alternative 5 would make no contribution and would have* ***no impact****.*

The action alternatives (Alternatives 1–4) would have short-term construction impacts on wildlife, water quality and fisheries, as discussed in Section 3.4, "Vegetation and Wildlife Resources," Section 3.5, "Fisheries," and Section 3.9, "Geomorphology and Water Quality," but long-term benefits to these resources. Both the short-term impacts and long-term benefits to these resources are primarily consequences of the construction of the restoration features of these alternatives. The cumulative effects of project construction are discussed in each resource section of this cumulative impact analysis.

The Upper Truckee River and Marsh Restoration Project would also include public access features; some of these features and related construction activities have the potential to adversely affect the environment. Among the action alternatives, Alternative 1 would have the most new public access features and the greatest potential impacts, and Alternative 2 would have the fewest new public access features and the least potential impacts;

Alternatives 3 and 4 would have intermediate amounts of new public access features. With the exception of Alternative 1, environmental commitments (Table 2-6) and mitigation measures (Table ES-1) planned as part of the action alternatives would reduce the adverse effects to the physical environment from recreation features and the residual contributions to cumulative effects would not be considerable (as discussed for each resource area in this section). The recreation facilities associated with Alternative 1 are designed to preserve the natural resources in the study area while providing compatible recreational opportunities, public access, and recreational infrastructure. However, the boardwalk and bridge would likely attract more visitors than the other alternatives. Furthermore, the bridge and boardwalk would be located within Tahoe yellow cress habitat in the back beach area and may lead to negative impacts on the Tahoe yellow cress population.

Other reasonably foreseeable projects related to the construction or expansion of recreational facilities would incorporate mitigation measures to reduce their project-specific and cumulative effects on the environment. Some of the reasonably foreseeable projects involving the construction or expansion of recreational facilities have also been designed to protect, enhance, or restore sensitive resources. Consequently, implementing any of the action alternatives (Alternatives 1-4) in combination with projects related to construction or expansion of recreational facilities would contribute to a short-term **significant** impact. Alternatives 2-4 would not cause an adverse long-term effect, however, and this cumulative impact would be **less than significant**.

Implementing Alternative 1, however, would result in a contribution to a cumulative long-term impact that would be **significant**. Feasible mitigation is not available to reduce this impact to less than significant, so the residual impact would be cumulatively **significant and unavoidable**.

The No-Project/No-Action Alternative (Alternative 5) would not involve project-related construction or expansion of recreational facilities in the study area; therefore, Alternative 5 would make no contribution and would have **no impact**.

SCENIC RESOURCES

IMPACT 3.18-C39 (Alts. 1–5) **Cumulative Scenic Resources—Short-Term Glare from Construction Activities.** *Implementing foreseeable projects in the vicinity of the study area would involve construction activities that may temporarily create glare, but construction would not require construction lighting because construction would not occur at night. Implementing any of the action alternatives (Alternatives 1–4) would also involve construction activities that may temporarily create glare but that would not require construction lighting because construction would not occur at night. Potential glare effects would be intermittent, confined to the short term, and unlikely to combine with the effects of other projects. Therefore, these effects would not be a considerable contribution to cumulative effects on glare on their own, or in combination; this cumulative impact would be **less than significant**. The No-Project/No-Action Alternative (Alternative 5) would not involve construction or changes to existing land uses, and thus would not alter light and glare in the study area; therefore, Alternative 5 would make no contribution and would have **no impact**.*

Glare can be an annoyance to nearby residences, and lighting can reduce the quality of nighttime views. Nighttime lighting can also cause skyglow, a glow that extends beyond the light source and reduces views of the nighttime sky, which are a scenic resource.

The project could introduce heavy construction vehicles and equipment that may create some glare. However, construction would not take place at night and would not require construction lighting. In addition, potential glare effects related to construction would be intermittent and short term.

Under any of the action alternatives (Alternatives 1-4), no new lighting or facilities constructed of materials that would create new sources of light, glare, or skyglow would be constructed. Other projects either would not create new sources of light, glare, or skyglow (e.g., most restoration and erosion control projects listed in Table 3.18-2) or would be required to conform to all applicable design standards in the TRPA Code of Ordinances (e.g., the

small residential, commercial, industrial, and infrastructure projects included in Table 3.18-2 as "Additional Urban Development"). It is unlikely that the short-term, intermittent glare resulting from implementing any of the action alternatives would be combined with glare from other projects.

In summary, the action alternatives would have only short-term, intermittent effects on glare, and in combination with other projects, these effects would not be a considerable contribution to the cumulative effect on glare; this impact would be **less than significant**. The No-Project/No-Action Alternative (Alternative 5) would not involve construction or changes to existing land uses and thus would not alter light and glare in the study area; therefore, Alternative 5 would make no contribution and would have **no impact**.

IMPACT 3.18-C40 (Alts. 1–5) **Cumulative Scenic Resources—Short-Term and Long-Term Effects of Construction Activities and Additional Facilities on Existing Visual Character and Quality.** *Implementing foreseeable projects would affect visual character and quality in the vicinity of the study area, including the scenic quality of Roadway Travel Unit 35 and potentially including the scenic quality of Shoreline Travel Unit 33. These projects would intermittently alter views during construction but would not substantially alter visual character or quality in the long term. During the short term, implementing any of the action alternatives (Alternatives 1–4) would entail construction activities that would intermittently alter visual character and quality. However, all such construction-related impacts would be intermittent and short term. For all action alternatives this short-term impact would be* ***less than significant****. Constructed project elements under Alternatives 2–4 would be consistent with existing views, the low-lying boardwalk and observation platforms would be relatively well screened by existing vegetation, and the study area would remain largely undeveloped and unchanged in the long term. Under Alternative 1, however, the bridge across the Upper Truckee River would result in a substantial change in views from Shoreline Travel Unit 33. Alternative 1 would contribute to cumulative long-term impact. This impact would be* ***significant****. The long-term contribution to a cumulative impact on scenic resources under Alternatives 2–4 would be* ***less than significant****. The No-Project/No-Action Alternative (Alternative 5) would not alter visual character or quality of the study area; therefore, Alternative 5 would make no contribution and would have* ***no impact****.*

Implementing foreseeable projects would result in changes to the visual character and quality of the study area or its vicinity, but these changes would not make a considerable contribution to cumulative effects on visual character and quality, for the reasons described below.

Implementing any of the action alternatives (Alternatives 1-4) would alter the visual character and quality of the study area and its vicinity. In the short term, implementing any of these alternatives would involve construction activities and staging areas in the study area that would change views during a period of approximately 3–5 years. However, all such construction-related impacts would be intermittent and short term. As described in Section 3.14, "Scenic Resources," implementing Alternative 2, 3, or 4 would not result in long-term changes in views from Roadway Travel Unit 35, Shoreline Travel Unit 33, or the surrounding area. Implementing Alternative 1, however, would result in a long-term change in views from Shoreline Travel Unit 33. Although screening and optimal colors would be used, long-term changes in views would occur with implementation of Alternative 1.

Other projects could also affect scenic resources in the study area, its vicinity, or both, including views from Roadway Travel Unit 35 and potentially views from Shoreline Travel Unit 33. Reasonably foreseeable projects in the vicinity of the study area include the Upper Truckee River Middle Reaches 1 and 2 SEZ and Habitat Enhancement project and the Al Tahoe Erosion Control project and may include small residential, commercial, and/or infrastructure development projects in the vicinity of the study area. The Upper Truckee River Middle Reaches 1 and 2 SEZ and Habitat Enhancement project would be visible from Roadway Travel Unit 35, but the temporary effects related to its construction would occur before implementation of the Upper Truckee River and Marsh Restoration Project, and its short-term and long-term effects on visual character and quality would be minor and may not be adverse. The Al Tahoe Erosion Control project would not be visible from Roadway Travel Unit 35 or Shoreline Travel Unit 33 and implementing the project would not result in substantial short-term or long-term effects on visual character or quality. Any other small development projects that may occur in the

vicinity of the study area would be required to conform to standards in the TRPA Code of Ordinances designed to maintain scenic resources (i.e., Section 30.12, "Scenic Quality Standards"). These standards have been designed to ensure that cumulatively significant impacts on scenic resources would not result if applicable standards were conformed to by future projects. Also, small development projects that may occur in the vicinity of the study area may not be visible from Roadway Travel Unit 35 or Shoreline Travel Unit 33 and therefore may not affect the same scenic resources as other projects.

During the short term, implementing any of the action alternatives (Alternatives 1-4) would entail construction activities that would intermittently alter visual character and quality. Constructed project elements under Alternatives 2-4 would be consistent with existing views, the low-lying boardwalk and observation platforms would be relatively well screened by existing vegetation, and the study area would remain largely undeveloped and unchanged in the long term. Under Alternative 1, however, the bridge across the Upper Truckee River would result in a substantial change in views from Shoreline Travel Unit 33. Alternative 1 would contribute to a cumulative long-term impact. This impact would be **significant**. Additional feasible mitigation is not available to reduce this impact to less than significant, so the residual impact would be **significant and unavoidable.** The long-term contribution to a cumulative impact on scenic resources under Alternatives 2-4 would be **less than significant**. The No-Project/No-Action Alternative (Alternative 5) would not alter visual character or quality of the study area; therefore, Alternative 5 would make no contribution and would have **no impact**.

SOCIOECONOMICS, POPULATION AND HOUSING, AND ENVIRONMENTAL JUSTICE

IMPACT 3.18-C41 (Alts. 1–5) **Cumulative Socioeconomics, Population and Housing, and Environmental Justice—Increase in Population and Housing Demand Resulting from Construction-Related Activities.** *Implementing any of the action alternatives (Alternatives 1–4) would not directly induce any long-term population growth, displace substantial numbers of people or existing housing, or require replacement housing to be constructed elsewhere. It would, however, involve construction activities. Any of these alternatives, together with other construction projects, would generate a short-term increase in employment in South Lake Tahoe from construction-related activities. However, this increase would be small relative to the existing labor pool in the City of South Lake Tahoe and nearby communities and thus would not be a considerable contribution to cumulative effects on population growth or on demand for housing; this cumulative impact would be* ***less than significant****. The No-Project/No-Action Alternative (Alternative 5) would not include any construction or other new short-term activities; therefore, Alternative 5 would make no contribution and would have* ***no impact****.*

Because implementing any of the action alternatives (Alternatives 1-4) would not involve new housing or new employment opportunities, it would not directly induce long-term population growth, displace substantial numbers of people or existing housing, or require replacement housing to be constructed elsewhere. Thus, no long-term impact on population and housing would occur as a result of implementing any of these alternatives.

Implementing any of the action alternatives could, however, potentially contribute to a short-term increase in population and housing demand from construction-related activities. For any of these alternatives, the demand for construction workers would be small relative to the existing labor pool of at least several hundred construction workers in the City of South Lake Tahoe and nearby communities. Therefore, the number of existing construction workers in the region is anticipated to be sufficient to meet the demands associated with implementing these alternatives, making the impact of this short-term increase in employment less than significant. Cumulatively, demand for construction workers from the project combined with other projects anticipated during the same construction seasons also would be less than the existing labor pool. (Although based on demographic data and estimates of required construction workers, this interpretation is consistent with the outcome of recent construction seasons with comparable amounts of construction. No evidence of a labor shortage has been demonstrated, planned construction was able to be accomplished with the existing labor pool, and projects were not delayed to future seasons because of labor shortages.) Because the existing labor pool is sufficient to construct the proposed and concurrent projects, implementing the project would not make a considerable contribution to a

cumulatively significant increase in population or housing demand; this cumulative impact would be **less than significant**. The No-Project/No-Action Alternative (Alternative 5) would not include any construction or other new short-term activities; therefore, Alternative 5 would make no contribution and would have **no impact**.

IMPACT 3.18-C42 (Alts. 1–5) **Cumulative Socioeconomics, Population and Housing, and Environmental Justice—Potential Long-Term Increases in Sales or Incomes of Local Businesses Resulting from Additional Visitors to the Study Area.** *Each of the action alternatives (Alternatives 1–4) includes public access facilities that could attract visitors to the study area and thus potentially increase commercial activity at local businesses in South Lake Tahoe. Public access or recreation facilities are also planned for other reasonably foreseeable projects in the area. Nonetheless, the overall number of additional visitors would not be substantial because there are already many similar facilities in the Tahoe Basin to attract visitors looking for similar recreational experiences. Therefore, implementing any of the action alternatives together with other reasonably foreseeable projects would not result in a substantial increase in sales or incomes of local businesses in South Lake Tahoe; this cumulative impact would be* ***less than significant****. Under the No-Project/No-Action Alternative (Alternative 5), no additional recreation facilities would be constructed, and existing facilities would not be expanded; therefore, Alternative 5 would make no contribution and would have* ***no impact****.*

Each of the action alternatives (Alternatives 1-4) includes public access facilities that could attract visitors to the study area and thus potentially increase commercial activity at local businesses in South Lake Tahoe. The overall number of additional visitors would not be substantial; therefore, only a minimal increase in commercial activity would be associated with any of these alternatives. The recreation facilities planned for other restoration projects in the Upper Truckee River watershed and other reasonably foreseeable projects are similar to the Upper Truckee River and Marsh Restoration Project in that they consist of trails and other dispersed recreation facilities or reconfiguration of existing public access or recreation facilities (such as the Lake Tahoe Golf Course). Although additional public access and dispersed recreation facilities in existing public lands improve the visitor experience, there are already many similar facilities in the Tahoe Basin to attract visitors looking for that experience. Consequently, the change in recreation opportunities resulting from implementing the project in conjunction with other reasonably foreseeable projects would not be sufficient to increase the number of recreation visitors substantially; this cumulative impact would be **less than significant**.

Under the No-Project/No-Action Alternative (Alternative 5), no restoration activities, construction of public access facilities, or habitat restoration and enhancement would occur in the study area; therefore, Alternative 5 would make no contribution and would have **no impact**.

TRANSPORTATION, PARKING, AND CIRCULATION

IMPACT 3.18-C43 (Alts. 1–5) **Cumulative Transportation, Parking, and Circulation—Construction and Operation Impacts on the Local and Regional Circulation System.** *Under existing conditions, roadways in neighborhoods adjacent to the study area operate at levels above the minimum acceptable LOS. Implementing reasonably foreseeable projects would not result in substantial construction-related traffic in the study area or adjacent neighborhoods. Implementing any of the action alternatives (Alternatives 1–4) would generate construction traffic but would not reduce operation below the minimum LOS. In addition, the effects of implementing the Upper Truckee River and Marsh Restoration Project would be reduced by implementing Environmental Commitment 12, which involves developing traffic control plans as part of the action alternatives. Implementing reasonably foreseeable projects also would not cause a long-term increase in traffic in the study area or adjacent neighborhoods, and the increase resulting from any of the action alternatives would be small relative to overall traffic and insufficient to alter levels of service. Therefore, the combined effect of implementing reasonably foreseeable projects and any of the action alternatives would not be sufficient to cause a cumulatively significant impact on traffic. Under existing conditions, the supply of parking is sufficient to satisfy demand for parking, and implementing reasonably foreseeable projects would not*

increase demand for parking in the study area or adjacent neighborhoods. Implementing any of the action alternatives would result in an increase in demand for parking, but as described in Section 3.16, "Transportation, Parking, and Circulation," the increased demand for parking would be satisfied by available supply. Therefore, in connection with other projects, none of the action alternatives would make a considerable contribution to cumulative effects on traffic or parking in either the short term or the long term; this cumulative impact would be ***less than significant****. No construction or changes to the study area would occur under the No-Project/No-Action Alternative (Alternative 5); therefore, Alternative 5 would make no contribution and would have* ***no impact****.*

Under existing conditions, potentially affected roadways in adjacent neighborhoods and the intersections of these roads with U.S. 50 operate at LOS A–C, which are above the minimum acceptable level of service (LOS D). The existing demand for parking by visitors to the study area is accommodated by available parking.

Implementing any of the action alternatives (Alternatives 1-4) would generate construction-related traffic. Construction-related traffic would be greater under Alternative 4 than under Alternative 1, 2, or 3. However, under any of the action alternatives, the addition of this automobile and truck traffic would not cause any intersections currently operating at an overall level of service within the range of LOS A–C to operate at an overall level of service within the range of LOS D–F. In addition, the effects of construction-related traffic would be reduced by implementing EC 12, "Prepare and Implement Traffic Control Plans," described in Table 2-6. The traffic control plans would follow the standards of the agency responsible for the affected roadway. Measures typically identified in traffic control plans include advertising planned lane closures, posting warning signage, using a flag person to direct traffic flows when needed, and adopting methods to ensure continued access by emergency vehicles. During project construction, access to existing land uses would be maintained at all times, with detours used as necessary during road closures. The plans would reduce effects on transportation and circulation.

Construction-related traffic also would be generated by reasonably foreseeable projects in South Lake Tahoe, but outside of the neighborhoods adjacent to the study area, such as the Sunset Stables Restoration and Resource Management Plan Project, and the El Dorado U.S. 50, Segment 2—Lake Tahoe Airport to U.S. 50/SR 89 Junction Water Quality Improvement Project. However, construction traffic from these projects would generate only a small fraction of the overall traffic on local and regional roadways, and it would not enter and exit U.S. 50 at the same intersections as construction traffic associated with any of the action alternatives. Furthermore, reasonably foreseeable projects would be constructed at various times and locations in South Lake Tahoe during the summer construction period over the life of the project, which would further reduce their potential to affect intersections that would be measurably affected by implementing any of the action alternatives. Therefore, implementing these other projects and the Upper Truckee River and Marsh Restoration Project would not result in a substantial combined peak traffic congestion impact in the vicinity of the study area, which under existing conditions operates above minimum standards. Thus, the construction-related effects of any of the action alternatives in connection with other projects would not result in a considerable contribution to cumulative effects on traffic or circulation.

Reasonably foreseeable projects would not generate a long-term increase in traffic in the study area or adjacent neighborhoods. Although implementing any of the action alternatives could result in a long-term increase in recreational use of the study area, it also would not increase traffic substantially. Alternative 1 would have the greatest effect on recreational use because it includes the most public access features (however, it also includes parking facilities), Alternative 2 would have the least effect because it includes the fewest public access features, and Alternatives 3 and 4 would have intermediate effects. While an increase in use would occur for any of the action alternatives, this increase would not significantly increase traffic loads (as described in Section 3.16, "Transportation, Parking, and Circulation"). Therefore, in combination with the effects of other projects, the effects of any of the action alternatives would not create an unacceptable level of service or otherwise cause a cumulatively significant effect on transportation or circulation.

Similarly, implementing reasonably foreseeable projects would not increase demand for parking in the study area or in adjacent neighborhoods. Implementing any of the action alternatives would result in a small increase in public use of the study area, and the increased demand for parking would be small relative to available parking capacity in the vicinity of the study area. Also, near the western boundary of the study area, the supply of parking may be increased under Alternative 1 through a joint-use agreement between the Conservancy and the Tahoe Keys Marina. Thus, implementing any of the action alternatives would not result in a considerable contribution to the cumulative effect on parking.

In summary, implementing any of the action alternatives in connection with other projects would not cause a considerable contribution to cumulative effects on transportation, parking, or circulation; this cumulative impact would be **less than significant**.

Under the No-Project/No-Action Alternative (Alternative 5), no construction activities or other changes would occur; therefore, Alternative 5 would make no contribution and would have **no impact**.

UTILITIES

IMPACT 3.18-C44 (Alts. 1–5) **Cumulative Utilities—Short-Term and Long-Term Impacts on Sanitary Sewer, Potable Water, Natural Gas, Electrical, Storm Drain, and Solid Waste Utilities.** *The action alternatives (Alternatives 1–4) entail construction activities and long-term changes in use of the study area that would cause a variety of effects on utilities. However, even in combination with the impacts of other reasonably foreseeable projects, the impacts of any of the action alternatives would not make a considerable contribution to a cumulative effect on utilities because all reasonably foreseeable projects would not appreciably increase long-term utility demand and would be required to comply with local waste diversion and recycling requirements, and because area landfills have enough remaining capacity to accommodate potential increase in solid waste generated from all projects; this cumulative impact would be **less than significant**. The No-Project/No-Action Alternative (Alternative 5) would not entail construction activities or any long-term changes in use of the study area; therefore, Alternative 5 would make no contribution and would have **no impact**.*

Implementing any of the action alternatives (Alternatives 1-4) would involve constructing public access facilities, some of which have the potential to increase recreational use of the study area. Both construction activities and increased recreational use of the study area would affect utilities.

Construction activities could potentially contribute to a short-term increase in utility demand and solid waste generation. For any of these alternatives, the increased demand on utilities and solid waste generation resulting from construction would be small relative to the existing demand and waste generation from the population in the City of South Lake Tahoe and nearby communities. Liberty Energy is expected to have adequate energy resources, and the Lockwood Landfill has adequate capacity, making this impact less than significant. Increased utility demand and solid waste generation resulting from construction activities associated with the project combined with those of other projects anticipated during the same construction seasons also would be small relative to the existing demand. Thus, the project's construction-related effects would not make a considerable contribution to cumulative effects on utilities.

Although none of the action alternatives include sanitary sewer, potable water, or other utility connections, a very small increase in solid waste generation resulting from a small increase in recreational use could have a long-term impact. Currently, South Tahoe Refuse collects solid waste from the area. To comply with state law, all recyclable waste is recycled, and only nonrecyclable waste is taken to the Lockwood Landfill, which has adequate capacity. Increased solid waste generation resulting from implementing the project combined with that from implementing other reasonably foreseeable projects would be small relative to the existing waste generation from the population in the City of South Lake Tahoe and nearby communities, and these projects also would need to meet the state's recycling and waste diversion requirements. Because this increase is very small relative to existing waste

generation from the population in the CSLT and nearby communities and because Lockwood Landfill has adequate capacity, the project's long-term contribution to cumulative effects on utilities would not be considerable. In summary, the project's short-term and long-term contribution to cumulative effects on sanitary sewer, potable water, natural gas, electrical, storm drain, and solid waste utilities would be **less than significant**.

The No-Project/No-Action Alternative (Alternative 5) would not result in project-related short-term or long-term impacts on utilities. Under this alternative, no additional waste or utility demand would be generated, and no increase is stormwater is expected; therefore, Alternative 5 would make no contribution and would have **no impact**.

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