3.0 ENVIRONMENTAL SETTING AND IMPACT ANALYSIS

The following environmental analysis has been prepared using the CEQA Guidelines Appendix G: Environmental Checklist Form to complete an Initial Study (IS). This checklist also includes analysis of environmental impacts required in the TRPA Initial Environmental Checklist (IEC) found at:

http://www.trpa.org/documents/currentapps/Initial_Environmental_Checklist_Web.pdf.

Questions related to NEPA present the resource components for an Environmental Assessment (EA) and serve as decision documentation for the LTBMU, analyzing potential effects of the 1,395 linear feet of Greenway that cross National Forest Lands.

3.1 EVALUATION OF ENVIRONMENTAL IMPACTS

3.1.1 CEQA

CEQA requires a brief explanation for answers to the Appendix G: Environmental Checklist except "No Impact" responses that are adequately supported by noted information sources.

Answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

The following CEQA direction applies to each checklist question.

- A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- “Less than Significant Impact” applies where the project creates no significant impacts based on the criterion or criteria that sets the level of impact to a resource,
- "Significant Impact" is appropriate if there is substantial evidence that an effect is potentially significant, as based on the criterion or criteria that sets the level of impact to a resource.
- “Less than Significant Impact after Mitigation" applies where the incorporation of mitigation measures has reduced an effect from potentially "Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.

3.1.2 TRPA

Article VI of the TRPA Rules of Procedures presents the rules governing the preparation and processing of environmental documents pursuant to Article VII of the Compact and Chapter 5 of the Code.

TRPA uses an IEC, in conjunction with other available information, to determine whether an EIS will be prepared for a project or other matter. As set forth in Code Subsection 5.2.B, based on the information submitted in the IEC, and other information known to TRPA, TRPA shall make one of the following findings and take the identified action:

1. The proposed project could not have a significant effect on the environment and a finding of no significant effect shall be prepared in accordance with TRPA's Rules of Procedure.
2. The proposed project could have a significant effect on the environment, but due to the listed mitigation measures which have been added to the project, could have no significant effect on the environment and a mitigated finding of no significant effect shall be prepared in accordance with TRPA's Rules of Procedure.
3. The proposed project may have a significant effect on the environment and an environmental impact statement shall be prepared in accordance with this Chapter and TRPA's Rules of Procedure.

When completed, TRPA reviews the IEC to determine the adequacy and objectivity of the responses. When appropriate, TRPA consults informally with federal, state, or local agencies with jurisdiction over the project or with special expertise on applicable environmental impacts.

3.1.3 NEPA

The LTBMU prepares an EA in compliance with NEPA and other relevant Federal and State laws and regulations. This EA discloses the direct, indirect, and cumulative environmental effects that would result from the proposed action (Greenway) or no action on National Forest Lands. Given the purpose and need, the Forest Supervisor reviews the proposed action and no action in order to make the following decisions:

1. Whether or not to approve the Greenway and permit the construction of a Class 1 or better shared-use trail across federally managed lands or select an alternative to the proposed action.
2. Whether or not a Finding of No Significant Impact (FONSI) can be supported by the environmental analysis contained in the EA.

3.2 ENVIRONMENTAL SETTINGS AND CEQA, TRPA AND NEPA IMPACTS

The sections that follow present the environmental impact analyses following the CEQA Appendix G Checklist supplemented to also reflect the questions included in the TRPA IEC. The analyses generally follow this format:

1. Setting - A summary including physical and regulatory setting necessary to identify and analyze potentially significant impacts;
2. Environmental Analysis and Mitigation Measures – For each CEQA and TRPA checklist question, this section: begins with a statement of criteria used to determine level of significance; then provides impact analysis.
3. Impact analysis for short-term, long-term, direct and indirect impacts, as applicable; and then includes mitigation measures if needed to reduce impacts to a less than significant level. To avoid excessive duplication where inclusion of both CEQA and TRPA checklist questions address similar impacts, the analysis provides full evaluation in one location only and specific references in related sections.

Section 3.2.18, Mandatory Findings of Significance, addresses cumulative effects to specific environmental resources.

The following environmental analyses incorporate by reference the following technical studies and documents completed for the planning and design stages of the Greenway or for other applicable projects

and studies in the vicinity of the project area. The Conservancy and LTBMU maintain references, studies and reports in electronic format or webpage referral.

1. Allander, K. 2003. Groundwater Reconnaissance of the Bijou Creek Watershed
2. American Association of State Highway and Transportation Officials (AASHTO). 1999. Guide for the Development of Bicycle Facilities.
3. Brand, J. and D. French. 1990. Lake Tahoe Airport Comprehensive Land Use Plan. Prepared for the Airport Land Use Commission. July 1990. South Lake Tahoe, CA
4. California Department of Forestry and Fire Protection (Calfire) Forest Resource Assessment Program (FRAP). 2009. Very High Fire Hazard Severity Zones in LRA, as Recommended by Calfire. El Dorado County. March 12. 2009. Assessed online at www.frap.cdf.ca.gov
5. California Department of Forestry and Fire Protection (Calfire) Forest Resource Assessment Program (FRAP). 2007. Very High Fire Hazard Severity Zones in SRA, Adopted by Calfire November 17, 2006. Assessed online at www.frap.cdf.ca.gov
6. Design Workshop and Western Botanical Services. 2002. Former Highway 50 Bypass Bike Trail Project – Feasibility Report
7. Kleinfelder, Inc. 2004. Preliminary Geologic Hazards Former Highway 50 Bypass Bike Trail Project South Lake Tahoe, CA
8. Hauge Brueck Associates. 2008. Forest Carnivore Report, South Tahoe Greenway Shared-Use Trail
9. LSC Transportation Consultants, Inc. 2009. Tahoe Region Bicycle and Pedestrian Use Models and User Instructions
10. Personal Communication. Lovell, Les. El Dorado County Sheriff's Office. October 8, 2009
11. Personal Communication. Tillman, Jeff. Letter. South Tahoe Refuse Company, Inc. September 9, 2009
12. Personal Communication. Moore, Gary. City of South Lake Tahoe. 2009.
13. Personal Communication. Captain Hewlett, Mark. Letter. South Lake Tahoe Fire Department. January 29, 2010
14. Personal Communication. Matthews, Jeff. Letter. NV Energy/Sierra Pacific Power Company. October 8, 2009
15. Personal Communication. Matthews, Jeff. NV Energy/Sierra Pacific Power Company. February 4, 2010
16. Personal Communication. Michael, Jeff. Lake Valley Fire Protection District. October 14, 2009
17. Personal Communication. Vollmer, Mike. TRPA. July 2009
18. Personal Communication. Helmers, Matthew. Letter. Southwest Gas Corporation. September 4, 2009
19. Personal Communication. Tillman, Jeff. Letter. South Tahoe Refuse Company, Inc. September 9, 2009
20. Personal Communication. Prince, Carol. AT&T. October 7, 2009
21. South Lake Tahoe Fire Department. 2009. www.sltfd.org. Site accessed September 16, 2009
22. Tahoe Coalition of Recreation Providers. 2007. Lake Tahoe Basin – Bike Trail Survey
23. Tahoe Baikal Institute. 2005. Bijou Meadow Study. June 29 to July 15, 2005
24. Tahoe Metropolitan Planning Organization (TMPO). 2010. Lake Tahoe Regional Bicycle and Pedestrian Master Plan
25. TMPO. 2008. Lake Tahoe Regional Transportation Plan
26. Tyler T. 2006. Lahontan Staff Report. Information Requested by Lahontan for the Proposed Siller Ranch Development, Placer County. History and Definitions Pertaining to the 100-year Floodplain Prohibition Exemption Criteria
27. USDA Forest Service, LTBMU. 2011a. Wildlife Biological Evaluation.
28. USDA Forest Service, LTBMU. 2011b. Vegetation Biological Evaluation
29. USDA Forest Service, LTBMU. 2011c. Management Indicator Species

30. USDA Forest Service, LTBMU. 2011d. TRPA Sensitive Species Report
31. USDA Forest Service, LTBMU. 2011e. Migratory Bird Species Act Report
32. USDA Forest Service, LTBMU. 2011f. Noxious Weed Risk Assessment
33. USDA Forest Service, LTBMU. 2006a. Fuels Treatments and Wildfire Risk Reduction in the Lake Tahoe Basin Management Unit. *Fact Sheet*. March 2006. USFS LTBMU. South Lake Tahoe, CA
34. USDA Forest Service, LTBMU. 2006b. National Forest System Urban Intermix Parcels in the Lake Tahoe Basin Management Unit. *In Brief*. March 2006. USFS LTBMU. South Lake Tahoe, CA
35. Wagstaff and Brady. 1982. Lake Tahoe Basin Scenic Resources Inventory
36. Western Botanical Services. 2005. SEZ, Sensitive Plant Species and Noxious Weed Survey, Proposed California Tahoe Conservancy Bike Trail. September 2, 2005

3.2.1 Aesthetics (CEQA), Scenic Resources/Community Design and Light and Glare (TRPA)

This section presents the analyses for potential impacts to aesthetics, scenic resources/community design and light and glare. Table 4 identifies the applicable impacts and anticipated level of impact.

Table 4

Aesthetics, Scenic Resources/Community Design and Light and Glare

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
1. Have a substantial adverse effect on a scenic vista? (CEQA Ia)		**X**		
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, within a state scenic highway? (CEQA Ib)				**X**
3. Substantially degrade the existing visual character or quality of the site and its surroundings? (CEQA Ic)			**X**	
4. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area? (CEQA Id)				**X**
TRPA Initial Environmental Checklist Item	**Yes**	**No, With Mitigation**	**Data Insufficient**	**No**
5. Be visible from any state or federal highway, Pioneer Trail or from Lake Tahoe? (TRPA item 18a)	**X**			
6. Be visible from any public recreation area or TRPA designated bicycle trail? (TRPA item 18b)	**X**			
7. Block or modify an existing view of Lake Tahoe or other scenic vista seen from a public road or other public area? (TRPA item 18c)				**X**
8. Be inconsistent with the height and design standards required by the applicable ordinance or Community Plan? (TRPA item 18d)		**X**		

TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
9. Be inconsistent with the TRPA Scenic Quality Improvement Program (SQIP) or Design Review Guidelines? (TRPA item 18e)		X		
10. Include new or modified sources of exterior lighting? (TRPA item 7a)				X
11. Create new illumination which is more substantial than other lighting, if any, within the surrounding area? (TRPA item 7b)				X
12. Cause light from exterior sources to be cast off-site or onto public lands? (TRPA item 7c)				X
13. Create new sources of glare through the siting of the improvements or through the use of reflective materials? (TRPA item 7d)				X
NEPA Significance of Effects				
14. Greenway effects on Scenic Corridors and the LTBMU VQO.				

3.2.1.1 Environmental Setting

The project area includes a mixture of undeveloped land and public roadway ROWs that pass through lower and higher developed urban uses. Nearby land uses include single family and multi-family homes, undeveloped areas, and some retail/commercial areas.

Views from the project area consist of forest, public facilities (e.g., STPUD treatment plant, roadways and utility corridors), meadow/riparian, low density residential and light commercial. Views of the project area exist from a TRPA designated scenic roadway (Pioneer Trail) and trail (Al Tahoe Bike Trail) and other roadways, and adjacent land uses including public parks, residential and limited commercial development. Views of project features from the adjacent residential areas, specifically from those residential areas with most direct visual access to the Greenway features, are most sensitive to change. Scenic vistas are defined by CEQA as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public defined by local plans or policies. In addition to the scenic resources and views identified by TRPA, the City recognizes the views from the Martin Ave Bridge over Trout Creek and within Bijou Meadow as (General Plan Update Draft EIR page 4.13-54). No state or federal scenic highways exist within the project area. The Greenway is not visible from state or federal highways or from Lake Tahoe. One glimpse of Lake Tahoe from the project area occurs at the intersection of Pioneer Trail and Ski Run Blvd.

The Greenway is visible from TRPA Scenic Roadway Unit 45 (Pioneer Trail North) as it parallels Pioneer Trail for approximately 1,950 linear feet. It is also visible from the Al Tahoe Blvd Bike Trail, a feature in the Lake Tahoe Scenic Resources Evaluation. This IS/IEC/EA examines project effects on both evaluation systems.

TRPA Lake Tahoe Basin Scenic Resource Inventory. In 1982, TRPA surveyed the Lake Tahoe Basin's major roadways and assigned each roadway unit a travel route rating and a scenic quality rating. The travel route rating considers views of man-made features, roadway distractions, road structure, lake views, landscape views, and variety for each roadway unit. The scenic quality ratings include an inventory of visual subcomponents and specific scenic resources within each roadway unit. This rating system provides an assessment of the natural landscape based on four qualities; intactness, unity, vividness, and variety. The primary goal of both the travel route and scenic quality rating systems is to maintain or upgrade the scenic quality of the view from the road. TRPA Scenic Quality Threshold standards require roadway travel routes to attain a minimum travel route rating of 15.5 and to maintain the 1982 scenic quality rating.

The Greenway falls within the Pioneer Trail ROW along a portion of TRPA Scenic Roadway Unit 45 (Unit 45). Unit 45 (Pioneer Trail North), which stretches from Glenwood Way to the terminus of Pioneer Trail with US Hwy 50, is the only scenic roadway identified within the project area. Current ratings for Unit 45 include a Travel Route Rating of 12 and a Scenic Quality Rating of 1 (TRPA Threshold Evaluation Report, 2006). This Unit is a non-attainment area with views primarily of commercial developments, housing, and occasional views of mountainsides. Overall it has a low scenic quality, with the casinos at the north end of the Unit being the only visual feature of note. The natural landscape focus of this unit within the project area is coniferous forest and a relatively flat natural landscape (TRPA SQIP, 1989, page B-77).

TRPA Lake Tahoe Scenic Resource Evaluation. In 1993, TRPA prepared the Lake Tahoe Basin Scenic Resources Evaluation to add specific beach and bike trail resources to the roadway unit scenic resource evaluations conducted in 1982. The Al Tahoe Bike Trail is the one additional resource within the project area and the rating status of this trail has not changed since 1993. According to the 1993 Evaluation, the trail has a moderate scenic quality and a primarily natural character. Overall, the natural views give the Al Tahoe Bike Trail a rating composite of 14 ranked by: Unity – 3; Vividness – 4; Variety – 3; and Intactness – 4.

Man-made features that detract from the scenic quality include residential developments on slopes to the east and by commercial and industrial development near U.S. Highway 50. Looking toward the trail alignment, the rating is 7, comprised of the following: Coherence – 2; Condition – 2; Compatibility – 2; and Design Quality – 1. Note that these ratings do not reflect changes created by the repaving project completed in September 2010.

US Forest Service Visual Quality Objectives. The project area contains LTBMU urban lots and this assessment considers project effects within these lots in relation to federal requirements. The urban lots lie within Segment 2-70 near Glenwood Way and Blackwood Rd, and Segment 2-80 near Wildwood. Each of the lots are within residential areas, the one near Blackwood Road is visible from Pioneer Trail. The *LTBMU Land and Resource Management Plan* (1988) or LTBMU Forest Plan establishes a number of policies for visual quality of the Lake Tahoe Basin and lists recreational developments, roads, and utilities as the most visible impacts on the national forest primarily due to vegetation removal. Practice 9 of the Forest Plan established standards for visual quality restoration and improvement. Under this practice mitigation measures are required for activities that alter the landscape beyond the designated Visual Quality Objective (VQO). The project area is located within the Tahoe Valley Management Area, Prescription 12 – Urban Lots, and has a VQO of Partial Retention. Partial Retention allows management activities that remain visually subordinate to the characteristic landscape.

Figure 24 presents the viewpoints selected for scenic simulation in the resource analysis.

3.2.1.2 Environmental Analysis and Mitigation Measures

1. Would the Greenway have a substantial adverse effect on a scenic vista? (CEQA Ia)

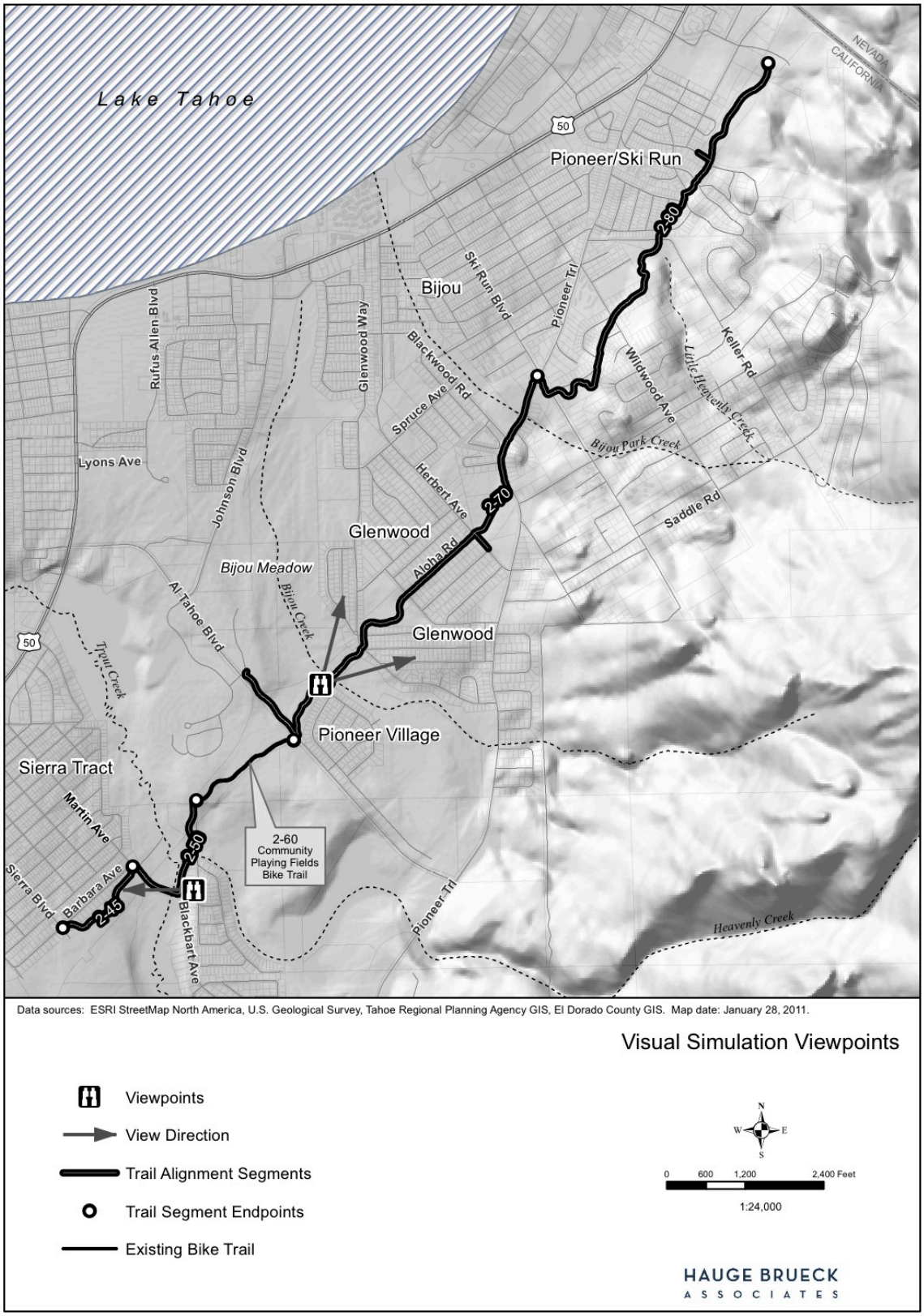
Standard of Significance: Creating visually dominant features that are out of scale with the surrounding landscape constituents a significant impact to scenic vistas under CEQA (project effects associated with TRPA scenic features are discussed below and not repeated here). Points of significance include: 1) creation of strong visual contrast; 2) reduction in scenic vista area viewed from foreground or middleground; and/or 3) non-compliance with scenic resource goals, policies or standards of federal, state of local agencies. CEQA relies on local policies to define scenic vistas. In addition to TRPA policies related to scenic resources discussed below for Question 5, the City identifies community values related to protection of scenic vistas in their General Plan Update (see General Plan Update Draft EIR page 4.13-54). Scenic vistas not part of the TRPA evaluation system and considered here under CEQA include Trout Creek and Bijou Meadow.

Project effects include trail features, tree removal and trail users. The Greenway constructs a Class I or better shared-use trail, which is essentially a flat asphalt surface constructed at grade or near grade or a board walked surface constructed at a minimum height above ground surface to assure the protection of soil, water and biological resources and never more that 30 inches above grade. The project assumes the boardwalk decking could be wood or a manufactured product, but if the latter, final designs will include a color choice compatible with natural surroundings. The trail's low profile and complimentary colors do not block or significantly alter views within the Trout Creek or Bijou Meadow scenic vistas. These trail features stay entirely subordinate in the landscape.

In addition, a portion of the Greenway follows very close to Pioneer Trail and, in several sections, cannot attain the required five-foot separation from the roadway to meet AASHTO safety guidelines. The design in these sections requires a safety rail with a vehicle barrier near the roadway. See Question 5 for analysis of this feature related to the TRPA travel route ratings, as this area along Pioneer Trail is not a defined scenic vista.

Along Martin Ave near Trout Creek (Segment 2-50), the Greenway proposal includes a boardwalk parallel to Martin Ave and a new bridge span with railing across the Trout Creek channel. Figure 25 illustrates project features. Riparian vegetation removal occurs for the Greenway construction in this location, but leaves a majority of existing vegetation immediately adjacent to the trail. The boardwalk and bridge structure includes railings at heights above the roadway guardrail. Although the trail alignment is visible from the road and the vegetation removal changes the current view toward Trout Creek, the location of the trail immediately adjacent to the road creates no substantial alteration to the larger view of the Trout Creek meadow. The placement of the trail and railings somewhat obscures the view of the creek where it crosses under the roadway, but the removal of roadside vegetation on either side of the bridge in the foreground view increases the panoramic middle-ground view of the creek from the roadway. Because the Greenway is immediately adjacent to an existing road and bridge, the project does not create a new visually dominant feature in the Trout Creek meadow. Tree removal needed to accommodate trail construction in the approaches to Trout Creek (e.g., parallel to Black Bart Ave) does not alter the scenic vista of the creek itself.

Figure 24. Visual Simulation Viewpoints



At the Bijou Meadow crossing, the Greenway follows an existing informal foot trail and uses a low profile boardwalk to maintain surface hydrology and protect wet soils and meadow vegetation. Views of the Greenway here originate from some park users at Bijou Park and residential neighborhoods located on each side of Bijou Meadow. The proposed trail surface changes from asphalt in the trees and at the drier edges of the meadow to boardwalk in the center meadow area. The shared use trail will be more visually prominent than the current foot trail. While this is true, the earth tone colors, meandering alignment, and low profile prevent this structure from blocking existing views or creating a visual dominance out of scale with the surrounding landscape.

An increase in trail users creates limited changes to scenic vistas. The Greenway trail users cross the foreground views of the Trout Creek and Bijou Meadow scenic vistas (Figures 25 and 26, respectively) and are visible from limited viewpoint locations. Users offer movement and colors that contrast with vegetative and man-made backgrounds, although the meandering alignment that reduces vegetation and tree removal helps to obscure both the trail and trail-users from view. At the Trout Creek crossing, the Greenway is placed immediately adjacent to the existing roadway, which further limits the changes to the existing scenic vista.

This evaluation concludes Greenway design features specified in Section 2.6.2 avoid and minimize potential impacts to scenic vistas, through minimization of tree and vegetation removal, site-specific design features that minimize ground disturbance, and the use of earth tone colors.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: None

2. Would the Greenway substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? (CEQA Ib)

Standard of Significance: The significance criteria outlined for Question 1 (CEQA checklist item Ia) also apply to Question 2 (CEQA checklist item Ib).

No state scenic highways exist within nor are directly visible from the project area. Therefore, the Greenway has no impact on state designated scenic highways.

Environmental Analysis: *No Impact.*

Required Mitigation: **None**.

Figure 25. Viewpoint of Segment 2-50 at Martin Avenue Bridge - Non-TRPA Threshold Viewpoint

Figure 26. Viewpoint of Segment 2-70 at Bijou Meadow - Non-TRPA Threshold Viewpoint

3. Would the Greenway substantially degrade the existing visual character or quality of the site and its surroundings? (CEQA Ic)

Standard of Significance: Degradation in visual quality or elimination of a specific scenic resource results in a significant impact to scenic resources.

The existing visual character of a majority of the project area consists of urban development and project features that are low to the ground in muted colors avoid degrading the existing visual character or quality of the project area. In the most natural areas (e.g., Trout Creek and Bijou Meadow) within the project area, the changes to visual character do not rise to the level of substantial degradation as documented in Question 1 above. Questions 5 through 9 analyzed for TRPA Checklist items include more stringent quantitative analysis from designated scenic resources. Based on the analysis of TRPA Roadway Units and Scenic Resources, the Greenway does not create a change in visual quality that degrades the current ratings, and therefore creates no significant impact.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None**.

4. Would the Greenway create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area? (CEQA Id)

Standard of Significance: An increase in night lighting or glare sufficient to enter adjacent residences constitutes a significant impact to day or nighttime views in the project area.

The Greenway installs no new permanent light sources and produces no new glare because reflective materials and lighting fixtures are not proposed. Installation of signage, benches, and trash receptacles along the alignment conforms to TRPA Design Guidelines for color and material to avoid creating sources of glare. Lighted pedestrian signals are necessary at several roadway crossings (e.g., Al Tahoe Blvd, Ski Run Blvd), which produce light when activated. These signals are located along heavily travelled roadways, however, where existing traffic signals and some existing street lighting are already present. The addition of pedestrian signals does not substantially increase light levels nor cause a substantial change to existing views. Because the Greenway proposes no new light sources along the trail alignment, no impact to nighttime views results. Since no materials that cause glare are used, no impact to daytime views results.

Environmental Analysis: *No Impact.*

Required Mitigation: **None**.

5. Would the Greenway be visible from any state or federal highway, Pioneer Trail or from Lake Tahoe? (TRPA 18a)

Yes. Standard of Significance: A degradation of adopted TRPA scenic thresholds including scenic travel route or scenic quality ratings constitutes a significant impact on scenic resources.

The Greenway is not visible from state or federal highways or from Lake Tahoe; however, the Greenway is visible from Pioneer Trail as it falls within the roadway ROW for approximately 1,950 linear feet in Scenic Roadway Unit 45 (i.e., 19 percent of the scenic unit). Scenic Roadway Unit 45 includes the northern portion of Pioneer Trail and because this area is highly urbanized, there are few distinctive scenic resources. No mapped visual features exist within the project area along Pioneer Trail. Project

planning and technical studies identify no rock outcroppings, historic buildings or other scenic resources in the project area portion of Roadway Unit 45. TRPA planning recommendations (Scenic Quality Improvement Program) for improving the scenic quality include minimized signage, increased landscaping and larger setbacks to screen and visually soften the urban appearance.

Project features visible from Pioneer Trail include the asphalt trail surface, safety railings and vehicle barriers, tree removal, and revegetation plantings. As the Greenway connects Ski Run Blvd to neighborhoods to the south, developed land use patterns and sensitive wetland and SEZ areas significantly limit trail alignment options. To make this connection, therefore, the Greenway runs for approximately 1,950 feet within the Pioneer Trail ROW as close to the edge of the roadway as possible to avoid excessive encroachment into adjacent private parcels (although some encroachment remains necessary). Figure 10 illustrates trail safety features, including a railing and vehicle barrier, required in approximately 750 feet of this portion of the Greenway in response to the constrained project area. This detail represents seven percent of the total travel route. The trail allows a designated route for bicycles and pedestrians, reducing the distractions for viewers from the road related to these users. While the project produces slight improvements for roadway distractions, these design elements themselves (guardrail and safety railing) increase the prominence of man-made features visible from Pioneer Trail. These project elements will be used in three shorter sections, the longest of which extends for 300 feet. Use of dark colors, slender elements such as cable in the railing detail, and non-reflective surfaces reduces this effect. The project affects no mapped scenic features in this area.

Trail construction requires the removal of a maximum 63 trees in this portion of the project area confined to the Pioneer Trail ROW. Approximately half of these trees are less than 14-inch dbh. As noted in the discussion for Question 44, a detailed tree survey and tree health evaluation has not been completed for the project area. As construction plans develop, additional data will refine the tree removal proposal in this area. This project effect removes the visual resource of the trees themselves and potentially increases view of the adjacent man-made development. For a portion of Pioneer Trail in this area, adjacent undeveloped public parcels with intact forest vegetation exist, limiting the visual effect of tree removal directly adjacent to the roadway. In two locations, project features will increase visibility of adjacent man-made development. These are: a single family house with existing solid wooden fence and eight trees affected by the project, and a trailer park with seven trees in the frontage. Additionally, the Greenway will be constructed in the frontage of a recently approved housing project planned for construction in 2011 (i.e., the Aspens, located directly south of the fire station). Approximately 20 trees in this frontage will be removed to build project features. While the project area along Pioneer Trail is constrained, the revegetation proposal includes vegetation types that will produce a naturally appearing landscape, although not sufficiently tall to provide screening value.

TRPA identifies Pioneer Trail in this area as a “transitional” roadway, characterized by moderate levels of human activity with development responding to the context of the area. Trail uses are consistent with this designation and generally respond to the natural landscape context. However, Roadway Unit 45 is not in attainment with scenic thresholds, and project features will produce negative effects on man-made features for a short portion of the scenic unit. While this effect is not sufficient to reduce the overall unit rating (e.g., degradation of any of the rating criteria), it has potential to produce a significant impact that requires mitigation.

Environmental Analysis: *Less than Significant Impact after Mitigation*.

Required Mitigation:

SCENIC-1. Reduce Tree Removal

The Greenway shall be realigned within view of Pioneer Trail in locations possible to retain existing trees. Additional tree retention between Herbert and Blackwood Ave retains screening for existing man-made features.

SCENIC-2. Create Additional Screening

During construction plan development, locations where fencing and additional landscaping can improve screening shall be identified for existing development, including: relocation of the existing privacy fence at the single-family residence, potentially sufficient to allow frontage planting; adding tree plantings in selected locations according to the Revegetation and Restoration Plans (RRPs) detailed in Appendix D; and where screening is necessary and safety will not be compromised, increasing screening to reduce impacts to man-made features.

SCENIC-3. Retain Slender Elements in the Safety Railing Design

As noted for Question 147, the safety railing proposal that incorporates cable elements requires excessive maintenance when located where snow storage from roadways is necessary. Alternate designs more suited to maintenance needs shall be required. As construction plans develop, alternatives to the cable elements shall remain slender and allow easy visual penetration.

6. Would the Greenway be visible from any public recreation area or TRPA designated bicycle trail? (TRPA 18b)

Yes. Standard of Significance: A reduction in scenic vista area viewed from foreground or middleground from a public recreation area or degradation in visual quality or elimination of a TRPA designated scenic resource constitutes a significant impact to scenic resources.

Project planning and technical studies identify visibility of the Greenway from South Lake Tahoe Community Play Fields, Bijou Community Park, Bijou Meadow, Al Tahoe Bike Trail, and Ski Run Blvd Bike Trail. The Al Tahoe Bike Trail has a moderate scenic quality rating and a primarily natural character according the 1993 Lake Tahoe Basin Scenic Resource Evaluation. The rating status of this trail has not changed since 1993 and remains 14. The Ski Run Blvd Bike Trail does not have a scenic quality rating because it did not exist in 1993.

The South Lake Tahoe Community Play Fields and Bijou Community Park are public recreational areas adjacent to the Greenway, but are not designated as TRPA scenic resources. As stated in Question 1 (CEQA checklist item Ia) above, the Greenway does not create new visually dominant features as viewed from these public recreation areas.

Installing a new shared-use trail across the road from the existing Al Tahoe Bike Trail creates little visible change with the exception of the Greenway's intersection with Al Tahoe Blvd (on the east side of the Roadway) and the Greenway trail connection to Bijou Park that will parallel Al Tahoe Blvd on the opposite side of the road. The intersection with Al Tahoe Blvd will include a crossing detail designed to ensure the safety of Greenway trail users. The crossing design proposes use of a flashing warning signal light to warn automobiles of crossing bicycles and pedestrians. The crossing signage and lights will be consistent with the adjacent roadway features and nearby traffic lights and will not adversely impact scenic quality ratings. The trail connection to Bijou Park includes the removal of approximately 29 trees located within the Al Tahoe Blvd ROW. This portion of the project area is heavily forested and the proposed tree removal within the roadway ROW does not alter the primarily natural character of the park

area adjacent to the roadway corridor. As discussed for Question 44, trail realignment during construction plan development could avoid some of the trees identified here, further reducing the visual effects. As such, construction of new trail connections to the existing Al Tahoe Bike Trail does not reduce the quality of existing scenic vistas in the vicinity.

Because of intervening topography and tree cover, the Greenway is not visible from the nearest Scenic Resource (number 37, Heavenly Ski Resort) identified by TRPA in the 1993 Lake Tahoe Basin Scenic Resource Evaluation. As such, the Greenway does not affect view quality from Scenic Resource number 37.

Installing the Greenway parallel to Ski Run Blvd south of Pioneer Trail and the crossing of Ski Run Blvd. approximately 300 feet south of its intersection with Pioneer Trail creates little visible change from existing Ski Run Blvd. Bike Trail viewpoints north of Pioneer Trail. The Greenway will not be highly visible from the existing Ski Run Blvd. Bike Trail because the roadway crossing and cut slopes on the hillside parallel to David Lane will be over 300 feet away from the closest viewpoint locations. In addition, intervening vegetation will partially screen the Greenway from Ski Run Blvd views located to the north. As such, the Greenway does not degrade view quality from the Ski Run Blvd. bike trail.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigation: **None**.

7. Would the Greenway block or modify an existing view of Lake Tahoe or other scenic vista seen from a public road or other public area? (TRPA 18c)

No. Standard of Significance: Creating visually dominant features that are out of scale with the surrounding landscape constituents a significant impact to Lake Tahoe or other scenic vistas. Points of significance include: 1) creation of strong visual contrast; 2) reduction in scenic vista area viewed from foreground or middleground; and/or 3) non-compliance with scenic resource goals, policies or standards of federal, state of local agencies.

The project area contains no views of Lake Tahoe and thus the Greenway affects no views of Lake Tahoe. As discussed above for Question 1 (CEQA checklist item Ia), the Greenway crosses Trout Creek and Bijou Meadow, two scenic vistas visible from public roadways or recreational areas. As documented in Question 1 above, the Greenway does not create a new visually dominant man made feature that is out of scale with the surrounding landscape.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigation: **None**.

8. Would the Greenway be inconsistent with the height and design standards required by the applicable ordinance or Community Plan? (TRPA 18d)

No, with mitigation. Standard of Significance: The TRPA Regional Plan, including the SQIP for the Lake Tahoe Basin, Community Plans, Design Review Guidelines, and Code each provide scenic standards that are applicable to the Greenway. Chapters 65 and 71 of the TRPA Code set forth standards for tree removal, while Chapter 77 establishes revegetation standards. Chapter 22 sets forth standards for building height and are not applicable to the Greenway. Chapter 71 mandates that tree removal for the purposes of development must be approved by TRPA and shall be accomplished according to TRPA management techniques. According to Code Section 65.2E, trees may be removed when approved

construction activities involving soil compaction, excavation or paving encroach into more than 25 percent of a tree's dripline. Chapter 77 requires revegetation plans for areas that are damaged by project development. These plans must include: descriptions of the site; the number, size, and types of plants to be used for revegetation; descriptions and schedules of revegetation methodology; and specifications for long-term care. Revegetation plant species must be TRPA approved and appropriate BMPs must be employed. Appendix D contains RRPs for the Greenway design to comply with the requirements of the TRPA Code.

Universal project design elements are analyzed in accordance to the appropriate regulations, standards, and guidelines of each jurisdiction. Analysis omits discussions of regulations, standards, or guidelines not applicable to the project.

City of South Lake Tahoe Stateline/Ski Run Community Plan (CP) Standards and Guidelines. The Stateline/Ski Run CP Standards and Guidelines are applicable to the entire project area and also provide specific standards applicable to the project area within the community plan limits (Segments 2-70 and 2-80). Specific standards from the Bijou/Al Tahoe CP Standards and Guidelines do not apply to the Greenway adjacent to Meadow Crest Dr (near the STPUD wastewater treatment plant), as the standards address design qualities and features not applicable to a linear public facility.

CP Standards and Guidelines Part I, Chapters 1 and 2 include City-Wide Design Standards and Guidelines applicable to the majority of the project area. CP Chapter 1, Section 1 (Site Design), Standard A(1) requires that existing natural features outside the project footprint be retained and projects designed to avoid rock outcrops, SEZs, and minimize vegetation removal. Greenway segments 2-50, 2-70 and 2-80 require some vegetation removal and each cross SEZs; however the Greenway design element avoids and minimizes impacts to SEZ areas through the use of raised boardwalks and minimizes vegetation removal by incorporating existing trails or disturbed roadway ROWs into the alignment where feasible.

CP Chapter 1, Section 1, Standard B(2) requires designs that minimize the interference with the existing views within the area to the extent practicable. In compliance with Standard B(2), the trail alignments are primarily on or near-grade and safety rails, when used, incorporate slender elements that blend in color (earth tone) with the surroundings. Boardwalks built above grade to protect SEZ and meadow areas are 30 inches or less above grade with the majority designed well below 30 inches above grade. Also, the meandering design on the trail alignments allows for more vegetation integration and tree removal avoidance, which helps to obscure the trail and avoids the creation of a large, straight corridor.

CP Chapter 1, Section 1, Standards C(1), C(2), and C(5) include requirements for grading, cuts, and fill. The project requires grading in some areas to maintain appropriate access grades for ADA compliance and trail safety. Slope stabilization measures detailed in Section 2.6.2.2 and in the geology and soils analysis for Section 3.2.6 indicate appropriate stabilization measures that are visually integrated into the natural surroundings, using rock, native materials, and earthtone colors. In accordance with Standard C(3), trail design criteria in all segments is compliant with ADA and AASHTO requirements. Standard C(4) requires revegetation of graded areas, which is discussed in the revegetation and restoration plans in Section 2.6.3 and Appendix D. Standard C(6) limits the height of retaining walls to eight feet. The project uses retaining walls visible from Ski Run Blvd to limit grading and retain as many mature trees as possible. The walls will be constructed with native-appearing rock or in some instances, concrete that is designed to appear like native rock in compliance with City's Stateline/Ski Run CP Standard B.2 to blend in color and texture with the surroundings. On the Greenway segment east of Ski Run Blvd the trail design includes several locations where the retaining walls exceed eight feet in height (e.g., plan sheet L1-2.00-17). To be consistent with City design standards, the proposed retaining walls must be redesigned in these locations to use multiple tiered walls (less than eight feet in height) stepped up the hillside and to avoid long, straight unbroken retaining walls over 100 feet in length. An example of the tiered retaining

wall detail is provided in Figure 12 in Chapter 2. Segment 2-70 also requires retaining walls within City limits, but each will be less than eight feet in height. Since the location of the trail prevents vegetation screening directly in front of the retaining wall to shield the large, flat expanse, the color of the retaining wall must blend with adjacent vegetation and the surface texture of the retaining wall must be rough to avoid a large flat plane. Final project designs may incorporate privacy fencing conforming to Standard D(1) height and material standards based on site-specific requests.

CP Chapter 1, Section 6 provides standards associated with landscaping. The RRPs conform to standards by utilizing native materials, reusing on-site materials, and encouraging natural regrowth of the area. Because restoration occurs instead of more urban landscaping, this compliance measure requires no permanent irrigation; however, maintenance and success thresholds established in the Plan ensure that restoration occurs and the revegetated areas adjacent to the trail receive long-term maintenance.

CP Chapter 1, Section 9, Standards 3 and 4 provide guidance regarding the color of road signs and signals, with which the project conforms as discussed in Chapter 2, Sections 2.6.2.7 and 2.6.2.8. CP Chapter 1, Section 10 requires new electrical or communication lines to be placed underground within the Pioneer Trail scenic corridor (Standards 1 and 2). The Greenway installs no new above ground utility lines within scenic corridors.

CP Chapter 2, Guidelines, include an illustration (page 6) that pedestrian paths should be separated from roadways either vertically or horizontally, as the project proposes (See Figure 10 in Section 2.6.2).

CP Standards and Guidelines, Part II, includes citywide signage standards. As discussed in Section 2.6.2.8, project signage conforms to standards established in the CP Standards and Guidelines as well as TRPA Code Chapter 26 and TRPA Design Guidelines Appendix E: Lake Tahoe Recreation Sign Guidelines, which establishes standards for bike route markers.

TRPA Code Chapter 30, Design Standards. The Standards and Guidelines for the City reflect the TRPA Code Chapter 30 Design Standards. Applicable Code Chapter 30 standards include:

- 30.5.A(1) requires integration into the surrounding environment - Trail segments comply with the alignment following contours and avoiding tree removal wherever possible. The trail alignment between Ski Run Blvd and Ruby Lane requires the most cut/fill to accomplish; the project proposes native rock retaining walls to limit the disturbance and tree removal necessary.
- 30.5.A(2) requires use of previously disturbed areas - Trail segments comply either through the use of disturbed areas (Segments 2-50 and 2-80), and/or by following existing trails (Segments 2-70 and 2-80).
- 30.12.A requires maintenance of or improvement to scenic quality ratings, scenic roadway unit ratings, and recreation area threshold ratings – As discussed above under Question 5, scenic quality ratings, scenic roadway unit ratings and recreational threshold ratings will be retained in each of the segments with identified mitigation measures.
- 30.13.C(1) requires the undergrounding of new utility lines –Greenway features do not include new utility lines or the undergrounding existing utility lines. However, the project relocates utility poles in Segment 2-70 and consultation with utility companies will determine if conduit can be placed beneath the trail for these lines.
- 30.14 requires soil and vegetation protection and restoration – some vegetation removal occurs for each segment except 2-60, including riparian vegetation removal in Segments 2-50 and 2-70. Boardwalks and bridges used in Segments 2-50, 2-70, and 2-80 reduce impacts to meadows and SEZs and allow vegetation restoration and natural function to continue. The project restores areas disturbed during construction and trail restoration occurs in Segments 2-70 and 2-80. Trails to be restored as noted above and trails to be retained include installation of BMPs.

- In terms of visibility from scenic roadways (e.g., Pioneer Trail), Code Standard 30.13.C(3) states that shared-use trails are excluded from the requirement that they be sited so as to not be visually evident. Specifically, this standard states, "All projects, excluding signs, …and pedestrian/bicycle paths, shall be sited in such a manner that they are not visually evident from the scenic highway." Therefore, views of the Greenway along Pioneer Trail are consistent with TRPA Code Chapter 30 standards.

The project and trail features comply with TRPA and City goals, policies, standards, and guidelines for design and the visual quality along scenic corridors. Table 5 presents the consistency analysis of the project to the TRPA Regional Plan community design and scenic element goals and policies, in support of the Greenway's less than significant impacts.

Table 5

TRPA Regional Plan Consistency Analysis – Community Design Element

Community Design	
Goal 1 – Insure 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. Policy 2 Restoration programs based on incentives will be implemented in those areas designated in need of scenic restoration to achieve the recommended rating.	Consistent –The Greenway maintain scenic quality ratings while restoring areas in need of revegetation and erosion control.
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/scale, landscaping, lighting, and signing regulations to be used in evaluating projects throughout the region. This review may entail additional requirements. Policy 2 Local jurisdictions are encouraged to adopt design guidelines consistent with the regional plan.	Consistent – The Greenway consists of a linear feature with minimal signage and no lighting. In some areas, rails or bridges may be visible but constructed of materials with colors that blend into the natural surroundings. Signage conforms to TRPA Code Chapter 26.
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 views from roadways, bike paths, public recreation areas, and Lake Tahoe. 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.	Consistent – The Greenway proposal has potential to degrade man-made features in Roadway Unit 45. Mitigation is identified to maintain existing ratings. The Greenway creates no significant changes to views from other area bike paths, recreation areas, and public areas.

Source: HBA 2011

Environmental Analysis: *Less than Significant Impact after Mitigation*.

Required Mitigation (See Question 5 for descriptions of SCENIC-1, -2 and -3):

SCENIC-1. Reduce Tree Removal
SCENIC-2. Create Additional Screening
SCENIC-3. Retain Slender Elements in the Safety Railing Design
SCENIC-4. Reduce Retaining Wall Height and Length

Retaining walls proposed for the Greenway near Ski Run Blvd shall be redesigned to be no more than eight feet tall to comply with City design standards. Retaining walls that require height greater than eight feet shall be designed with multiple tiered wall planes and stepped up the hillside. Further, no long, straight unbroken retaining walls (greater than 100 feet in length) with little or no articulation or other surface features shall be allowed.

9. Would the Greenway be inconsistent with the TRPA Scenic Quality Improvement Program (SQIP) or Design Review Guidelines? (TRPA 18e)

No, with mitigation. Standard of Significance: The SQIP requires that scenic roadway unit ratings be maintained. Six criteria define the ratings: 1) manmade features, 2) roadway physical distractions; 3) road structure; 4) views of Lake Tahoe; 5) landscape views and 6) variety. Impacts to these criteria may decrease scenic quality rating. The TRPA SQIP presents the prescriptions for scenic restoration required to attain and maintain the scenic quality thresholds. The program includes design review guidelines and development standards for different visual environments, assigns implementation responsibilities, and identifies potential funding sources. The SQIP addresses the Pioneer Trail segments of the Greenway and identifies the project area along Pioneer Trail as urban (north of the intersection with Ski Run Blvd) and rural transition (south of the intersection with Ski Run Blvd). Linear trails identified under both zones are an appropriate scale of development. The SQIP promotes restoration of disturbed areas and requires that visual quality ratings be maintained and that non-attainment areas improve. Therefore, development that degrades this rating constitutes a significant impact.

Evaluation presented above for Question 5 concludes project features create potential to degrade man-made features in Unit 45 through tree removal that reduces screening of existing features. Although this project effect occurs in a small portion of the scenic unit and does not endanger the overall unit rating, no degradation can occur in non-attainment units without the potential for significant impact. Therefore, mitigation is identified to maintain existing ratings.

TRPA planning recommendations (SQIP pages B-77-78) for improving the scenic quality in the project area include improved landscaping near structures, elimination/restriction of roadside parking, sign conformance, undergrounding of utility lines, and screening the trailer park. Many of the planning recommendations are proposed for the portion of the Roadway Unit north of Ski Run Blvd. The Greenway implements these provisions along the project area in locations of decommissioned trails and revegetation projects that improve habitat functionality. As discussed for Question 5, tree removal in limited areas along Pioneer Trail could reduce screening for existing structures, including the trailer park, and requires mitigation measures to implement SQIP requirements.

Environmental Analysis: *Less than Significant Impact after Mitigation*.

Required Mitigation (See Questions 5 and 8 for descriptions):

SCENIC-1. Reduce Tree Removal
SCENIC-2. Create Additional Screening
SCENIC-3. Retain Slender Elements in the Safety Railing Design
SCENIC-4. Reduce Retaining Wall Height and Length

10. Would the Greenway include new or modified sources of exterior lighting? (TRPA 7a)

No. Standard of Significance: See analysis for Checklist item 4, which addresses CEQA checklist item Id and concludes the level of impact is less than significant.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigation: **None**.

11. Would the Greenway create new illumination, which is more substantial than other lighting, if any, within the surrounding area? (TRPA 7b)

No. Standard of Significance: See analysis for Question 4, which addresses CEQA checklist item Id and concludes the level of impact is less than significant.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigation: **None**.

12. Would the Greenway cause light from exterior sources to be cast off-site or onto public lands? (TRPA 7c)

No. Standard of Significance: See analysis for Question 4, which addresses CEQA checklist item Id and concludes the level of impact is less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None**.

13. Would the Greenway create new sources of glare through the siting of the improvements or through the use of reflective materials? (TRPA 7d)

No. Standard of Significance: See analysis for Question 4, which addresses CEQA checklist item Id and concludes the level of impact is less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None**.

14. Would the Greenway be inconsistent with regulations, standards or guidelines of the USFS regarding Scenic Corridors or the LTBMU Visual Quality Objective? (NEPA)

The LTBMU Forest Plan VQO requires "partial retention" within the project area. Activities within a partial-retention designated area may only repeat form, line, color, and texture that are frequently found in the characteristic landscape. Changes in size, amount, intensity, direction, pattern, etc. should not be evident. Direct effects to the VQO from the Greenway include small quantities of tree removal and linear trail facilities.

No Project. Under the no project, no change to visual quality occurs, as proposed tree removal and trail construction does not occur. Portions of the project area, including locations on National Forest Lands, would continue to be used as informal trails. This alternative would result in no contribution to potential cumulative effects related to visual resources on National Forest Lands.

Proposed Project. Under the "partial retention" objective of Forest Plan Prescription 12, the landscape may appear slightly altered and the Scenic Integrity Objective is considered moderate. The "partial retention" objective allows features to be of a different color, texture, or material as long as they remain visually subordinate to the visual character. Prescription 12 applies to 1,395 linear feet of the Greenway crossing LTBMU-managed APNs 025-203-001, 025-204-001, 208-090-005 and 027-331-003.

Indirect and Direct effects. The Greenway removes trees within this portion of the alignment, creating open swaths, and erects some visible structures (raised boardwalks and signage). Although boardwalks are not common in these areas, signage and paved roads or trails are common for urban lots. Boardwalks are designed to blend into the surroundings while maintaining user safety and reducing impacts to the adjacent habitat. Since the trail lies at ground level, surrounding vegetation blends the trail alignment into the setting and reduces visibility. Tree, boulder, and log replacement and other vegetative planting within staging areas and the temporary construction area reduce the evidence of a trail alignment. The decommissioning and restoration of informal unpaved trails created within sensitive habitat areas enhances the visual quality of the project area by reducing trail scarring and increasing vegetation coverage and natural visual characteristics (logs, rocks, etc.). The Greenway is consistent with the partial retention objective because it does not visually dominate the setting within the LTBMU urban lots that it crosses.

Reductions in visual quality occur temporarily during the construction process; however, the visual quality improves upon completion of revegetation efforts. The placement of trees, shrubs, seeds, duff, logs, and boulders along the trail alignment retains the forest character. Restoration of the natural environment through the decommissioning of other area trails improves the visual character and reduces the appearance of a network of trail scars. The Greenway utilizes existing roads or trails where feasible and places the trail alignment within a more rural natural setting to enhance the quality of the trail experience.

Location of signage along the trail alignment intends to educate trail users, protect resources, and promote public safety. Directional signs specify designated access areas. Appropriately located signs direct users to appropriate neighborhood access points and connectors, for interpretive opportunities, to identify restoration and revegetation areas, for public safety and crosswalk identification, and to educate users on appropriate trail use and the need to stay on designated paths. As summarized in Section 2.6.2.8, Greenway signage location and orientation comply with TRPA Code Chapter 26, Signage.

The Greenway results in no indirect effects to scenic resources. The strategies outlined in the OMMS (Appendix E) ensure that new informal trails that would result in changes to visual quality on National Forest Lands are not created.

Cumulative effects. Section 3.2.18, Mandatory Findings of Significant, specifically Question 187, addresses cumulative effects of the Greenway and related projects, as listed in Table 60.

Environmental Analysis: *No Impact Anticipated*.

Required Mitigation: **None.**

3.2.2 Agriculture and Forestry Resources

This section presents the analyses for potential impacts to agriculture and forestry resources. Some TRPA checklist items concern impacts to vegetation, which are addressed in Section 3.2.4, Biological Resources. Table 6 identifies the applicable impacts and anticipated level of impact.

Table 6

Agriculture and Forestry Resources

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
15. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to a non-agricultural use? (CEQA Imia)				**X**
16. Conflict with existing zoning for agricultural use, or a Williamson Act contract? (CEQA Ibis)				**X**
17. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resource Code section 12220(g), timberland (as defined by Public Resource Code section 4526) or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? (CEQA IIc)			**X**	
18. Result in the loss of forest land or conversion of forest land to non-forest use? (CEQA IId)			**X**	
19. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? (CEQA IIe)			**X**	

NEPA Significance of Effects				
20. Greenway effects to prime farmland. (NEPA)				

3.2.2.1 Environmental Setting

The project area contains no lands identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, zoned for agricultural use, or a Williamson Act contract.

The project area contains some forestland, or timberlands, as defined by Public Resource Code (PRC) Section 4526.

The project area contains no timberland or timberland zoned Timberland Production, as defined by Government Code Section 51104(g).

3.2.2.2 Environmental Analysis and Mitigation Measures

15. Would the Greenway convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to a non-agricultural use? (CEQA IIa)

Standard of Significance: Conversion of Prime Farmland, Unique Farmland or Farmland of Statewide importance (i.e., Farmland) to a non-agricultural use constitutes a significant impact.

The project is not located in an area identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, and therefore poses no impact to such lands.

Environmental Analysis: *No Impact.*

Required Mitigation: **None**.

16. Would the Greenway conflict with existing zoning for agricultural use, or a Williamson Act contract? (CEQA IIb)

Standard of Significance: A conflict with areas zones for agricultural use under a Williamson Act contract constitutes a significant impact.

The Greenway creates no conflicts with zoning for agricultural use or a Williamson Act contract because no such zoning designations exist within the project area.

Environmental Analysis: *No Impact.*

Required Mitigation: **None**.

17. Would the Greenway conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resource Code section 12220(g), timberland (as defined by Public Resource Code section 4526) or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? (CEQA IIc)

Standard of Significance: A conflict with existing zoning for forest land or timberland creates a significant impact. PRC Section 12220, Article 3 (g) defines "Forest land" as land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. PRC Section 4526 defines "Timberland" as land, other than land owned by the federal government and land designated by the board as experimental forestland, which is available for, and capable of, growing a crop of tree of any commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis after consultation with the district committees and others.

The Greenway conflicts with no zoning of and causes no rezoning of forest land, timberland or timberland zoned Timberland Production because the portion of the Project requiring tree removal is a small subset of the total project area and tree removal is not concentrated, but instead spread out along the 3.8 mile Greenway trail corridor.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None**.

18. Would the Greenway result in the loss of forest land or conversion of forest land to non-forest use? (CEQA IId)

Standard of Significance: The loss of substantial forest land, defined above for Question 17, or conversion of forest land to non-forest use creates a significant if appropriate permits are not obtained.

The Greenway transects short portions of forested lands and provides access, but results in no loss of areas designated as forest land or conversion of forest land to non-forest use by nature of passing through such areas. Question 44 provides detailed analysis of tree removal within the project area. The Project Applicant will file a Public Agency ROW Exemption with Calfire, as described for SP-22 in Section 2.6.5.22.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None**.

19. Would the Greenway involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? (CEQA IIe)

Standard of Significance: See analyses for Questions 16, 17 and 18, which address CEQA checklist items IIb, IIc, and IId, respectively, and conclude no impacts to farmland and less than significant impacts to forest land.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None**.

20. Greenway effects to prime farmlands. (NEPA)

The Greenway affects no prime farmlands because the project area contains no such zoning designation.

No Project. Under the no project alternative, the Conservancy constructs no shared-use trail and no change to the project area occurs. Portions of the project area, including locations on National Forest Lands, would continue to be used as informal trails. This alternative would result in no contribution to potential cumulative effects related to agricultural resources on National Forest Lands

Proposed Project. Although the Greenway results in the upgrade and use of a trail system through undeveloped forest areas, four LTBMU parcels, these lands are not dedicated for timber harvesting or other dedicated farming land uses.

Indirect and Direct Effects. Construction, operation, and use of the Greenway do not indirectly or directly affect farmland through conversion pressure or demand for farming resources because such resources do not exist within the project area or LTBMU parcels.

Cumulative Effects. Section 3.2.18, Mandatory Findings of Significant, specifically Question 187, addresses cumulative effects of the Greenway and related projects, as listed in Table 60.

Environmental Analysis: *No Impact Anticipated.*

Required Mitigation: **None.**

3.2.3 Air Quality

This section presents the analyses for potential impacts to air quality. Table 7 identifies the applicable impacts and anticipated level of impact.

Table 7

Air Quality

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
21. Conflict with or obstruct implementation of the applicable air quality plan? (CEQA IIIa)			**X**	
22. Violate any air quality standards or contribute substantially to an existing or projected air quality violation? (CEQA IIIb)			**X**	
23. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors? (CEQA IIIc)			**X**	
24. Expose sensitive receptors to substantial pollutant concentrations? (CEQA IIId)			**X**	
25. Create objectionable odors affecting a substantial number of people? (CEQA IIIe)			**X**	
TRPA Initial Environmental Checklist Item	**Yes**	**No, With Mitigation**	**Data Insufficient**	**No**
26. Substantial air pollutant emissions? (TRPA 2a)				**X**
27. Deterioration of ambient (existing) air quality? (TRPA 2b)				**X**

TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
28. Creation of objectionable odors? (TRPA 2c)				X
29. Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally? (TRPA 2d)				X
30. Increased use of diesel fuel? (TRPA 2e)	X			
NEPA Significance of Effects				
31. Greenway effects to ambient air quality and contributions to community pollution levels. (NEPA)				

3.2.3.1 Environmental Setting

The project area is located within the Lake Tahoe Air Basin. Federal, State, and regional standards apply to protect air quality within this area. Under authority granted by the California Air Resources Board (CARB), the Air Quality Management District (AQMD) manages air quality within El Dorado County. The AQMD administers air quality regulations developed at the federal, state and local level and publishes the CEQA Guide to Air Quality Assessment (El Dorado County 2002) to provide guidance regarding assessment of air quality impacts under CEQA. The analysis of potential Greenway air quality impacts utilizes this guidebook.

TRPA implements its own set of air quality standards and ordinances, including eight air quality standards and indicators adopted to protect air quality in the Lake Tahoe Air Basin. The TRPA/Tahoe Metropolitan Planning Organization (TMPO) RTP adopted in 2008 and called Mobility 2030, establishes policies, project implementation plans, and funding strategies to shape the Tahoe Region's transportation network so that environmental goals and thresholds are met. The RTP includes an analysis of its conformity with the California State Implementation Plan (SIP) to ensure that the RTP remains consistent with state and local air quality planning efforts to achieve and/or maintain the National Ambient Air Quality Standards (NAAQS).

TRPA Code provisions establish regulatory controls to implement Regional Plan policies. Code provisions relevant to the project include Code Chapter 91 which establishes air quality control requirements to aid in the implementation of TRPA air quality goals and policies for the purpose of attaining and maintaining applicable federal and state air quality standards and TRPA thresholds.

The LTBMU Forest Plan, as amended by the 2004 Sierra Nevada Forest Plan Amendment (SNFPA), provides the basis for evaluating the project's impact on air quality under NEPA. An air quality goal in the Forest Plan includes "maintaining and, where necessary, restoring the clear, clean air important to the aesthetic enjoyment of the area and the health of the people." Most of the forest management practices and forest wide standards and guidelines contained in the LTBMU Forest Plan pertain to emission sources in wilderness areas, fire protection and prevention practices, fuels treatment, and prescribed burn practices. These issues are not directly relevant to the Greenway and are not further addressed.

The federal and state governments have established ambient air quality standards for seven criteria pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than or equal to 10 microns in diameter (PM_{10}), particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), and lead (Pb). Air quality regulations focus on the following air pollutants because these are the most prevalent air pollutants known to be deleterious to human health and extensive health-effects criteria documents are available, they are commonly referred to as "criteria air pollutants." Monitoring stations as the South Lake Tahoe Airport (1901 Airport Rd, South Lake Tahoe, CA 96150) and South Lake Tahoe-Sandy Way (3337 Sandy Way, South Lake Tahoe, CA 96150) report existing air quality conditions relevant to the project area. Monitoring results report occasional violations of the 8-hour ozone and $PM_{2.5}$ ambient air quality standards during a three-year period from 2006-2008, the most recent and available data representation of existing air quality conditions within the Lake Tahoe Air Basin.

Given the unique climatic conditions within the Lake Tahoe Air Basin, the TRPA has established a standard for 8-hour CO, which is more stringent than both state and national regulations. National and California ambient air quality standards (NAAQS and CAAQS, respectively) are shown in Table 8. The table also specifies the TRPA 8-hour CO standard. Ozone and NO_2 (an ozone precursor) are regional pollutants because they affect air quality on a regional scale; oxides of nitrogen (NO_X), including NO_2, react photochemically with reactive organic gases (ROG) to form ozone some distance downwind of the source of pollutants. Pollutants such as CO, PM_{10}, and $PM_{2.5}$ are local pollutants because they tend to disperse rapidly with distance from the source. PM_{10}, and $PM_{2.5}$ are regional pollutants that travel and impact downwind areas.

Table 8

Ambient Air Quality Standards Applicable in California

Pollutant	Symbol	Average Time	Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria	
			California	National	California	National	California	National
Ozone*	O_3	1 hour	0.09	NA	180	NA	If exceeded	NA
		8 hours	0.070	0.075	137	147	If exceeded	If fourth highest 8-hour concentration in a year, averaged over 3 years, is greater than the standard
Carbon monoxide	CO	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded on more than 1 day per year
		1 hour	20	35	23,000	40,000	If exceeded	If exceeded on more than 1 day per year
(Lake Tahoe only)		8 hours	6	NA	7,000	NA	If equaled or exceeded	NA
Nitrogen dioxide	NO_2	Annual arithmetic mean	0.030	0.053	57	100	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.18	NA	339	NA	If exceeded	NA

Pollutant	Symbol	Average Time	Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria	
			California	National	California	National	California	National
Sulfur dioxide	SO_2	Annual arithmetic mean	NA	0.030	NA	80	NA	If exceeded
		24 hours	0.04	0.14	105	365	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.25	NA	655	NA	If exceeded	NA
Hydrogen sulfide	H_2S	1 hour	0.03	NA	42	NA	If equaled or exceeded	NA
Vinyl chloride	C_2H_3Cl	24 hours	0.01	NA	26	NA	If equaled or exceeded	NA
Inhalable particulate matter	PM10	Annual arithmetic mean	NA	NA	20	NA	If exceeded	NA
		24 hours	NA	NA	50	150	If exceeded	If exceeded on more than 1 day per year
	PM2.5	Annual arithmetic mean	NA	NA	12	15.0	If exceeded	If 3-year average of the weighted annual mean from single or multiple community-oriented monitors exceeds the standard
		24 hours	NA	NA	NA	35	NA	If less than 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard
Sulfate particles	SO_4	24 hours	NA	NA	25	NA	If equaled or exceeded	NA
Lead particles	Pb	Calendar quarter	NA	NA	NA	1.5	NA	If exceeded no more than 1 day per year
		30-day average	NA	NA	1.5	NA	If equaled or exceeded	NA
		Rolling 3-Month average	NA	NA	NA	0.15	NA	Averaged over a rolling 3-month period

Source: CARB 2008

3.2.3.2 Environmental Analysis and Mitigation Measures

21. Would the Greenway conflict with or obstruct implementation of the applicable air quality plan? (CEQA IIIa)

Standard of Significance: A significant impact occurs if the project conflicts with standards identified in the El Dorado County AQMD CEQA Guide Chapter 3 or the RTP (TRPA/TMPO 2008).

As discussed above, the RTP includes an analysis of its conformity with the California SIP to ensure that the RTP remains consistent with state and local air quality planning efforts to achieve and/or maintain the NAAQS. The SIP demonstrates how the Lake Tahoe Air Basin will continue to maintain compliance with the federal 8-hour CO standard. A project is typically deemed inconsistent with air quality plans if it results in population and/or employment growth that exceeds growth estimates included in the applicable planning documents and therefore generates emissions not accounted for in the emissions budget. The Greenway does not result in additional population or employment growth.

Construction Emissions. Modeling presented for Question 22 below demonstrates that Greenway construction will not exceed emission thresholds.

Operational Emissions. Modeling presented for question 158 (Table 54) demonstrates that the Greenway operation will reduce overall VMT and therefore reduces long-term operational emissions and avoids impact.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

22. Would the Greenway violate any air quality standards or contribute substantially to an existing or projected air quality violation? (CEQA IIIb)

Standard of Significance: A significant long-term (e.g. operational) impact results if the project causes violations of air quality standards listed in Table 8 or contributes substantially to an existing or projected air quality violation. As identified by CARB and TRPA, a significant short-term (e.g., construction related) air quality impact results if construction-generated emissions of ROG (reactive organic gases), NO_X (ozone), PM_{10} (particulate matter less than 10 microns in size), or SO_2 exceed mass emissions of 82 lb/day, or construction-generated emissions of CO (carbon monoxide) exceed mass emissions of 550 lb/day.

Long-term. The Greenway constructs an alternative transportation route that is not accessible to motorized vehicles or other modes of transportation that emit emissions outlined in Table 8 and thus results in no long-term or operational impacts to air quality, as supported by VMT reductions and daily trip reductions demonstrated in Question 158.

Short-term. Short-term, temporary effects to air quality occur during construction activities. The URBEMIS2007 model estimates construction emissions for the Greenway. The model includes the following assumptions: 1) construction activities take place daily utilizing equipment and personnel as detailed in Appendix F, 2) estimation of total construction duration assumes 100 linear feet of trail is constructed per day, 3) construction takes place during the summer construction season with the total duration for completion extending over several years for 200 work days, and 4) the model encompasses the 3.86 mile project.

Construction along the trail alignment is subject to El Dorado County Rule 223-1, Fugitive Dust – Construction Requirements. Under this rule, a required Fugitive Dust Control Plan will be submitted to the AQMD for approval prior to construction (CM-9, detailed in Section 2.6.5.9) and address techniques for fugitive dust control and reducing track out. Within the project area, few limitations to typical dust control plan elements exist. Site watering in narrow construction zones must avoid overspray beyond project area boundaries and equipment washing must occur on high capability land with the discharge contained to avoid runoff. This analysis concludes that typical elements of a Fugitive Dust Control Plan can avoid suspension of dirt, dust and small particles and, therefore, avoid significant air quality impacts.

Table 9 presents the construction emissions and significance conclusions for the Greenway. Daily construction emissions were calculated and compared to the threshold criteria for a 3.86-mile shared-use trail for determination of any increase above AQMD air quality standards emissions greater than 82 pounds per day of ROG, NO_x, SO_2 and PM_{10} and emissions greater than 550 pounds per day of CO.

Table 9

Daily Construction Emissions (lbs/day)

	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
Construction Emissions	4.63	36.01	22.79	2.57	1.92	0.00
AQMD Threshold	82	82	550	82	N/A	82
Exceed Threshold?	**No**	**No**	**No**	**No**	**N/A**	**No**

Source: HBA 2010

The project produces no daily emissions that will exceed construction emission limits.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

23. Would the Greenway result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? (CEQA IIIc)

Standard of Significance: The Region is in non-attainment for PM_{10}, as presented in Table 10. A significant cumulative impact results if the project causes an increase in PM_{10}.

In the Lake Tahoe Region, these pollutants relate to automobile use and potential impacts measured with VMT calculations. The Greenway results in a net reduction of 80 total daily vehicle trips and 177 miles of VMT as compared to existing conditions (see Section 3.2.16 for detailed analysis of VMT). Additionally, the Greenway avoids creating vehicle delay along streets and at intersections that create significant emissions increases as described in Question 158.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

Table 10

Federal and State Attainment Status for the Lake Tahoe Air Basin

Pollutant	State Status	Federal Status
8-Hour Ozone	Attainment	Attainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Attainment	Unclassifiable/attainment
CO	Attainment	Attainment

Source: CARB 2009b.

24. Would the Greenway expose sensitive receptors to substantial pollutant concentrations? (CEQA IIId)

Standard of Significance: A sensitive receptor defines a location where human populations, especially children, seniors, and sick persons are found with a reasonable expectation of continuous human exposure according to the averaging period for ambient air quality standards. Typical sensitive receptors include residences, hospitals, and schools. A significant impact results from the generation of peak 24-hour emissions greater than: NO_x 3.0 kg or 6.6 lbs; PM_{10} 2.0 kg or 4.4 lbs; VOC 8.0 kg or 17.6 lbs; SO_2 3.0 kg or 6.6 lbs and CO10.0 kg or 22.0 lbs.

Long-term. The Greenway, as a non-motorized feature, introduces no new emission sources associated with use of the shared-use trail. Where the trail crosses streets, some vehicle delay will occur. As presented in Table 55 of Section 3.2.16, implementation of the Greenway results in an increased Average Queue Length of 1-2 vehicles at the mid-block Al Tahoe Blvd trail roadway crossing. The nearest sensitive receptors to this location are residences located in the Pioneer Village subdivision, immediately south and east of the trail crossing. No other sensitive receptors exist nearby. At this low volume of queuing associated with the Greenway, there is no measureable change to existing 24-hour air quality emissions.

Short-term. Construction of the Greenway will result in emissions of air pollutants from temporary ground disturbance associated with site excavation, construction equipment exhaust operating at the construction site(s), construction worker vehicles, and supply trucks, and from traffic impacts resulting from construction worker vehicle and construction equipment movements along streets. These emissions are temporary and localized and cease once construction activities have been completed in the specific project area location. Thus, it is not anticipated that the construction of the Greenway results in significant short-term impacts to sensitive receptors.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

25. Would the Greenway create objectionable odors affecting a substantial number of people? (CEQA IIIe)

Standard of Significance: A significant impact results if Greenway construction or operation creates objectionable odors affecting a substantial number of people.

The occurrence and severity of odor effects depend on the nature, frequency, and intensity of the odor source, wind speed and direction, and the presence of sensitive receptors. Offensive odors rarely cause physical harm, but odors can be unpleasant and generate citizen complaints to regulatory agencies and local governments. Typical sensitive receptors include residences, hospitals, and schools. There are residences, lodges and motels along the Greenway alignment.

Over the long-term, CEQA checklist item III-e is not applicable to the Greenway because there are no sources of objectionable odors associated with project operation.

In the short-term, odor impacts occur from the use of diesel engines and asphalt paving during construction. As stated in the discussion of short-term impacts to sensitive receptors under Question 24 above, these odors are both temporary and localized, affecting only the area immediately adjacent to the active construction area. Construction activities along the 3.86-mile Greenway generate odors during initial grading and site preparation and during paving at the completion of construction. Diesel exhaust emissions and asphalt paving odors dissipate rapidly away from the source and cease upon completion of construction activities. Thus, the project does not result in substantial direct or indirect exposure of sensitive receptors to offensive odors.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

26. Would the Greenway result in substantial air pollutant emissions? (TRPA 2a)

No. See analysis for Question 24, which addresses CEQA checklist item IIId and concludes a less than significant impact on air pollutant emissions.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

27. Would the Greenway result in deterioration of ambient (existing) air quality? (TRPA 2b)

No. See analysis for Question 22, which addresses CEQA checklist Item IIIb and concludes a less than significant impact to ambient air quality.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

28. Would the Greenway result in creation of objectionable odors? (TRPA 2c)

No. See analysis for Question 25, which addresses CEQA checklist item IIIe for the creation of objectionable odors and concludes a less than significant odor impact to short-term and long-term effects to sensitive receptors.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

29. Would the Greenway result in alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally? (TRPA 2d)

No. Standard of Significance: A significant impact occurs if the project CO_2 or methane emissions exceed 500 tons/year and/or the concentration of resultant tree removal changes habitat categorization.

As presented in Section 3.2.16, Tables 61 and 62, the Greenway results in a net reduction of 80 total daily vehicle trips from existing conditions and overall daily VMT reduce by 177 miles. No increase occurs in the emission of Greenhouse Gases (GHGs) from project operations. The Greenway consists of surface-level shared-use trails and existing parking facilities – no construction of parking facilities occurs and thus no obstructions or changes to local air circulation result. The project includes no activities or facilities that generate heat or moisture.

Question 44 addresses tree removal as an effect to habitat alterations, concluding that tree removal within the project area creates no impact to habitat categorization. The removal of select trees along the shared-use trail does not create reductions in forest canopy sufficient to increase local solar gain, raise temperatures or create microclimate changes.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigation: **None.**

30. Would the Greenway result in increased use of diesel fuel? (TRPA 2e)

Yes. Standard of Significance: The increased use of diesel fuel that results in objectionable odors results in a significant impact to sensitive receptors within and downwind of the project area.

See the analysis for Question 25, which addresses CEQA checklist item IIIe for the creation of objectionable odors and concludes that the level of impact from the project is less than significant to short-term and long-term odor impacts to sensitive receptors. See analysis for Question 29, which addresses TRPA checklist Item 2d and concludes that the Greenway results in a net reduction in total daily vehicle trips and VMTs from existing conditions.

Some Greenway construction activities use diesel-powered equipment, creating a short-term increase in diesel fuel usage over the active construction period. This short-term increase does not contribute significantly towards violations of air quality standards or create concentrations of adverse odors since construction equipment must pass vehicle emissions standards. TRPA checklist Item 2c is not applicable to the project during the operational phase because of the subsequent project-related reduction in fossil fuel use upon implementation.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigation: **None.**

31. Greenway effects to ambient air quality and contributions to community pollution levels. (NEPA)

An air quality goal in the LTBMU Forest Plan includes "maintaining and, where necessary, restoring the clear, clean air important to the aesthetic enjoyment of the area and the health of the people." Most of the forest management practices and forest wide standards and guidelines contained in the LTBMU Forest Plan pertain to major emission sources in wilderness areas, and fire protection and prevention practices including fire detection and suppression, fuels treatment, and prescribed burn practices. These issues are not directly relevant to the Greenway and are not further addressed.

Evaluation criterion from the LTBMU Forest Plan includes a compliance measure to be applied if the Greenway produces more than 200 trips per day.

Section 3.2.16, Traffic, Transportation and Circulation, provides an analysis of traffic-related effects associated with the Greenway and indicates an overall reduction in VMT and daily vehicle trips during project operation. Thus, the compliance measure does not apply.

No Project. Under the no project alternative, the Conservancy constructs no shared-use trail and no change to the project area occurs. Portions of the project area, including locations on National Forest Lands, would continue to be used as informal trails. Under the no project alternative, no short-term construction emissions or potential long-term benefits from vehicle trip reductions occur. Portions of the Greenway, including locations on National Forest Lands, continue to be used as informal trails. No shared-use path would be constructed; therefore, no contribution to potential cumulative effects related to short-term construction-generated or long-term operational emissions of criteria air pollutants would result.

Proposed Project. Questions 21 to 30 describe project effects to air quality with analyses concluding that the Greenway does not threaten a violation of federal, state, or local air quality laws or requirements imposed for the protection of the environment. The analysis focuses on mobile and area source emissions generated by the Greenway, as no permanent stationary sources affecting air quality would be developed.

The project area lies within the Lake Tahoe Air Basin and the El Dorado AQMD. As a matter of regional policy, a Fugitive Dust Control Plan will be submitted to and approved by El Dorado AQMD, as described in CM-9 (Section 2.6.5.4). Particulate matter emissions from construction and operation of the Greenway will not violate CAAQ emission standards. Section 2.6.5 describes additional measures included in the project for the control of particular matter under CM-4 (NPDES Permit Requirements, CM-3 (TRPA Erosion and Sediment Control Plan), CM-5 (Revegetation and Restoration Plans) CM-8 (Operations, Maintenance and Management Strategies), and CM-15 (Fire Suppression and Management Provisions). Analysis supports the conclusion that the project is consistent with the Clean Air Act (Public Law 84-159).

Indirect and Direct effects. Section 3.2.16 provides an analysis of traffic-related effects associated with the Greenway and indicates an overall reduction in VMT following project implementation. Indirect effects of the Greenway include reduced vehicle trips and associated VMT as a result of providing a non-automobile alternative to the use of private vehicles. Reduced vehicle trips and VMT have an indirect benefit to air quality. Direct effects of the Greenway include short-term emissions from construction equipment and dust from construction related ground disturbance. Greenway operations do not include motorized vehicles and therefore create no direct emissions from these sources. A small amount of temporary and intermittent emissions would occur from equipment used to maintain the Greenway.

Cumulative effects. Question 23 describes Greenway cumulative effects to air quality. Section 3.2.18, Mandatory Findings of Significant, specifically Question 187, further addresses cumulative effects of the Greenway and related projects, as listed in Table 60.

Environmental Analysis: *No Impact Anticipated.*

Required Mitigation: **None.**

3.2.4 Biological Resources (Stream Environment Zones, Wetlands, Wildlife and Vegetation)

This section presents the analyses for potential impacts to biological resources, including impacts to SEZs, wetlands, wildlife and vegetation. Table 11 summarizes impacts and anticipated level of impact.

Table 11

Biological Resources

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
32. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? (CEQA IVa)				X
33. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service? (CEQA IVb)			X	
34. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? (CEQA IVc)			X	
35. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? (CEQA IVd)		X		
36. Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance? (CEQA IVe)			X	
37. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (CEQA IVf)				X

TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
38. Removal of native vegetation in excess of the area utilized for the actual development permitted by the land capability/IPES system? (TRPA 4a)				X
39. Removal of riparian vegetation or other vegetation associated with critical wildlife habitat, either through direct removal or indirect lowering of the groundwater table? (TRPA 4b)	X			
40. Introduction of new vegetation that will require excessive fertilizer or water, or will provide a barrier to the normal replenishment of existing species? (TRPA 4c)				X
41. Change in the diversity or distribution of species, or number of any species of plants (including trees, shrubs, grass, crops, micro flora and aquatic plants)? (TRPA 4d)				X
42. Reduction of the numbers of any unique, rare or endangered species of plants? (TRPA 4e)		X		
43. Removal of streambank and/or backshore vegetation, including woody vegetation such as willows? (TRPA 4f)	X			
44. Removal of any native live, dead or dying trees 30 inches or greater in diameter at breast height (dbh) within TRPA's Conservation or Recreation land use classifications? (TRPA 4g)				X
45. A change in the natural functioning of an old growth ecosystem? (TRPA 4h)				X
46. Change in the diversity or distribution of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects, mammals, amphibians or microfauna)? (TRPA 5a)				X
47. Reduction of the number of any unique, rare or endangered species of animals? (TRPA 5b)				X
48. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals? (TRPA 5c)				X
49. Deterioration of existing fish or wildlife habitat quantity or quality? (TRPA 5d)		X		
NEPA Significance of Effects				
50. Greenway effects on vegetation and wildlife. (NEPA)				

3.2.4.1 Environmental Setting

Wildlife. Wildlife use of the project area differs greatly because there are a number of different habitats. Use has been documented through numerous conversations with local biologists and review of reports prepared for and adjacent to the project area. Habitats include riparian, upland forest, meadow, urban with various levels of disturbance and human presence. The project area provides habitat for numerous small mammals, including golden-mantled ground squirrel (*Spermophilus lateralis*), Belding's ground squirrel (*Spermophilus beldingi*), Douglas' squirrel (*Tamiasciurus douglasii*), several species of chipmunk (*Tamias sp*.), and a variety of smaller rodents. Porcupine (*Erethizon dorsatum*), American marten (*Martes americana*) and long-tailed weasel (*Mustela frenata*) are also common.

Larger mammals known to occur in the vicinity of the project area include coyote (*Canis latrans*), bobcat (*Lynx rufus*), mountain lion (*Felis concolor*), black bear (*Ursus americanus*), and mule deer (*Odocoileus hemionus*). Mule deer are regularly observed in the vicinity of the project area. These deer are part of the Carson River Deer Herd that occupies the eastern slope of the Sierra Nevada in Alpine and El Dorado counties in California and Douglas County in Nevada. The project area is within the western end of the herd's range (USDA, 2002).

The Carson River Deer Herd is a small to average sized herd of 3,000 to 3,500 animals. The size and quality of the herd's winter range is small and acts as a limiting factor to the size of the herd. The Greenway project area is located within the summer range of the Carson River Deer Herd, but individuals of this herd may also migrate through portions of the project area during the fall and spring. These migrations generally occur between early November to mid-November and between mid-April to May. Deer from the Carson River Deer Herd generally migrate to lower elevation winter range located in the Carson Valley east of the project area. Although most of the herd winters in the Carson Valley, a few deer remain in the Lake Tahoe Region each winter.

A wide variety of resident and migratory bird species nest and forage in or in the vicinity of the project area. Clark's nutcrackers (*Nucifraga columbiana*) and Steller's jays (*Cyanocitta stelleri*) can be found year-round throughout the project area and surrounding forested lands. Mountain chickadee (*Parus gambeli*), evening grosbeak (*Coccothraustes vespertinus*), and white-breasted nuthatch (*Sitta carolinensis*) may also be found year-round, while other species such as western tanager (*Piranga ludoviciana*) and western wood pewee (*Contopus sordidulus*) are summer residents only. A variety of woodpeckers, including northern flicker (Colaptes auratus) and hairy woodpecker (*Picoides villosus*), are commonly observed in association with forested habitats in the project area. Typical raptors include red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*), and turkey vulture (*Cathartes aura*).

Reptiles are represented within the project area by species such as the western fence lizard (Sceloporus occidentalis), northern alligator lizard (Gerrhonotus coeruleus), rubber boa (*Charina bottae*), and western terrestrial garter snake (*Thamnophis elegans*). Amphibians include western toad (*Bufo boreas*) and Pacific chorus frog (*Pseudacris regilla*).

Figure 27 outlines the suitable habitat within the project area for special status wildlife species.

Fisheries. The Greenway crosses Trout Creek at the Martin Ave Bridge and subsequently Heavenly Valley Creek, which flows under Meadow Crest Drive. A number of fish are present within Trout Creek. Both native species and introduced species have been observed. Native species include Lahontan cutthroat (*Oncorhynchus clarki henshawi*), Lahontan redside (*Richardsonius egregius*), mountain whitefish (*Prosopium williamsoni*), Piute sculpin (*Cottus beldingi*), speckled dace (*Rhinichthys osculus*), Tahoe sucker (*Catostomus tahoensis*), and tui chub (*Siphateles bicolor*). Non-native species were introduced in the past by governmental agencies to provide sportfishing opportunities. These introduced

species include brook trout (*Salvelinus fontinalis*), brown bullhead (*Ameirus nebulosus*), brown trout (*Salmon trutta*), kokanee salmon (*Oncorynchus nerka*), and rainbow trout (*Oncorynchus mykiss*).

Vegetation. Vegetation communities in the project area are primarily forested and include Jeffrey pine, montane riparian, montane chaparral, wet meadow (nomenclature follows Mayer and Laudenslayer, 1988). In addition to these forest associations, the project area contains relatively small, dispersed patches of sagebrush and aspen vegetation.

The most widely distributed forest association in the project area is Jeffrey pine forest. This forest type is dominated or co-dominated by an overstory of Jeffrey pine (*Pinus jeffreyi*) and white fir (*Abies concolor*). Other overstory species, including incense cedar (*Calocedrus decurrens*) and sugar pine (*Pinus lambertiana*), occur as an occasional component within the Jeffrey pine forest association. The TRPA Code protects a number of trees within the Jeffrey pine forest association because they are larger than 24-inch dbh.

Lodgepole pine forest has limited distribution within the project area. Lodgepole pine forest occurs where the microclimate favors the growth of lodgepole pine (*Pinus contorta*), generally in locations with seasonally wet soils such as meadow margins. Lodgepole pine may also occur as a component of the other forest types within the project area.

SEZs are shown on the plan sheets included in Appendix C as LCD 1b. Figure 28 illustrates SEZ and Section 404 Wetlands and Waters of the U.S. within the project area. Appendix G further details the jurisdictional wetlands delineated within the project area that are in the process of being verified by the USACE.

The Greenway crosses Trout Creek and Heavenly Valley Creek just above the confluence at the Martin Ave Bridge. The next SEZ that the trail crosses is a montane dry meadow known as Bijou Meadow. A montane mesic meadow is crossed just to the west of Herbert Ave followed by Bijou Park Creek, which is located just to the south of Ski Run Blvd. A small ephemeral drainage is crossed just to the south and west of Keller Dr. A montane mesic meadow is crossed by the trail located between Glen Rd and Chonokis Rd. The trail terminates at Van Sickle Bi-State Park where a riparian wetland and montane mesic meadow. Refer to Appendix G for a more detailed description of these wetland areas.

Vegetation communities associated with SEZs in the project area include montane riparian, aspen, and wet meadow. Characteristic species in the montane riparian association include mountain alder (*Alnus tenuifolia*), willow (*Salix sp*.), and mountain maple (*Acer glabrum*). Montane riparian vegetation occurs in discontinuous patches along the edges of Trout Creek and the Upper Truckee River in the project area. Aspen associations, dominated by quaking aspen (*Populus tremuloides*), are interspersed throughout the survey area, generally occurring near a stream or in low-lying areas where a high water table is present during the growing season. Wet meadows consist of a layer of herbaceous plants that occur where water is at or near the surface most of the growing season.

Figure 27. Special Status Wildlife Habitat

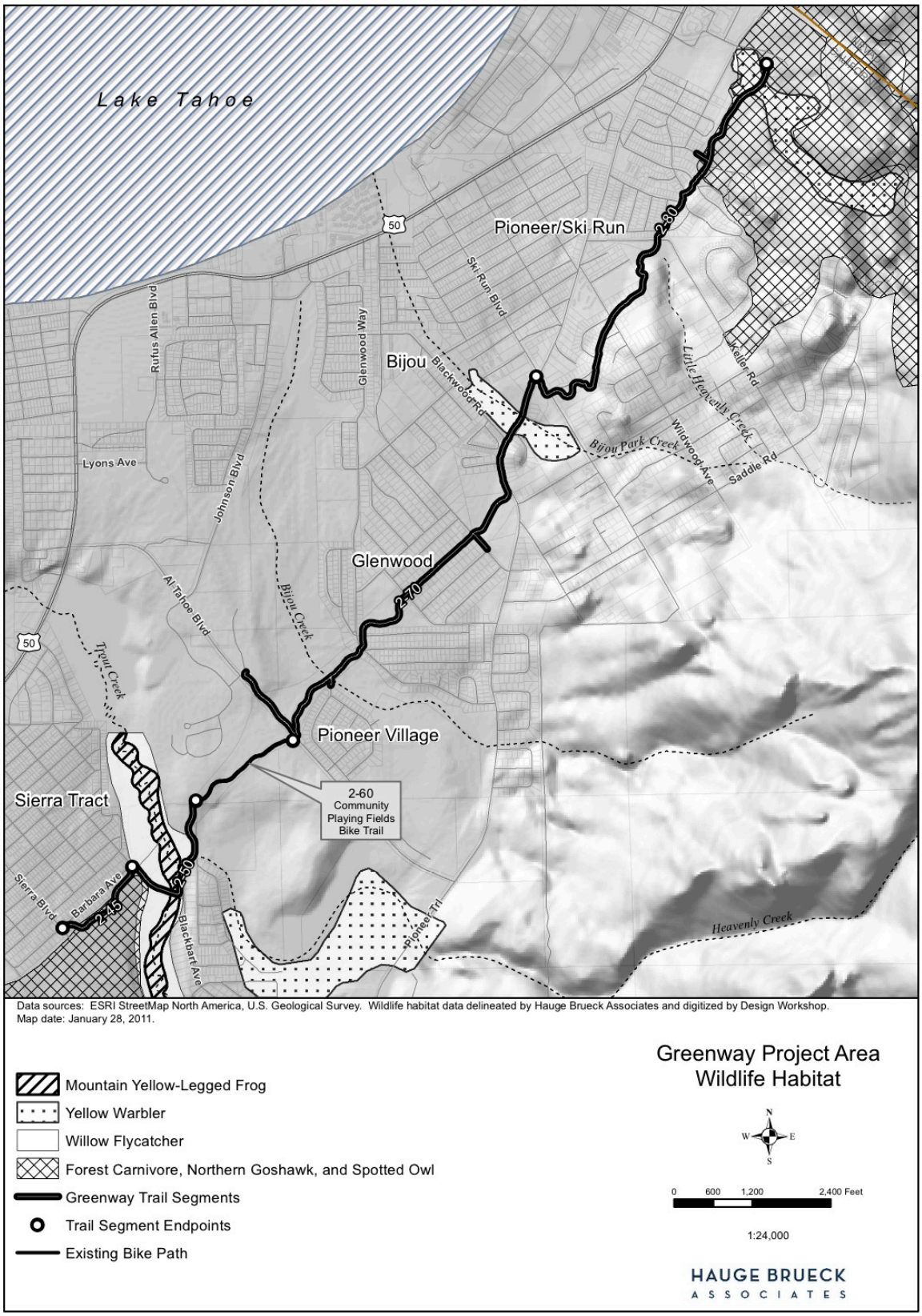
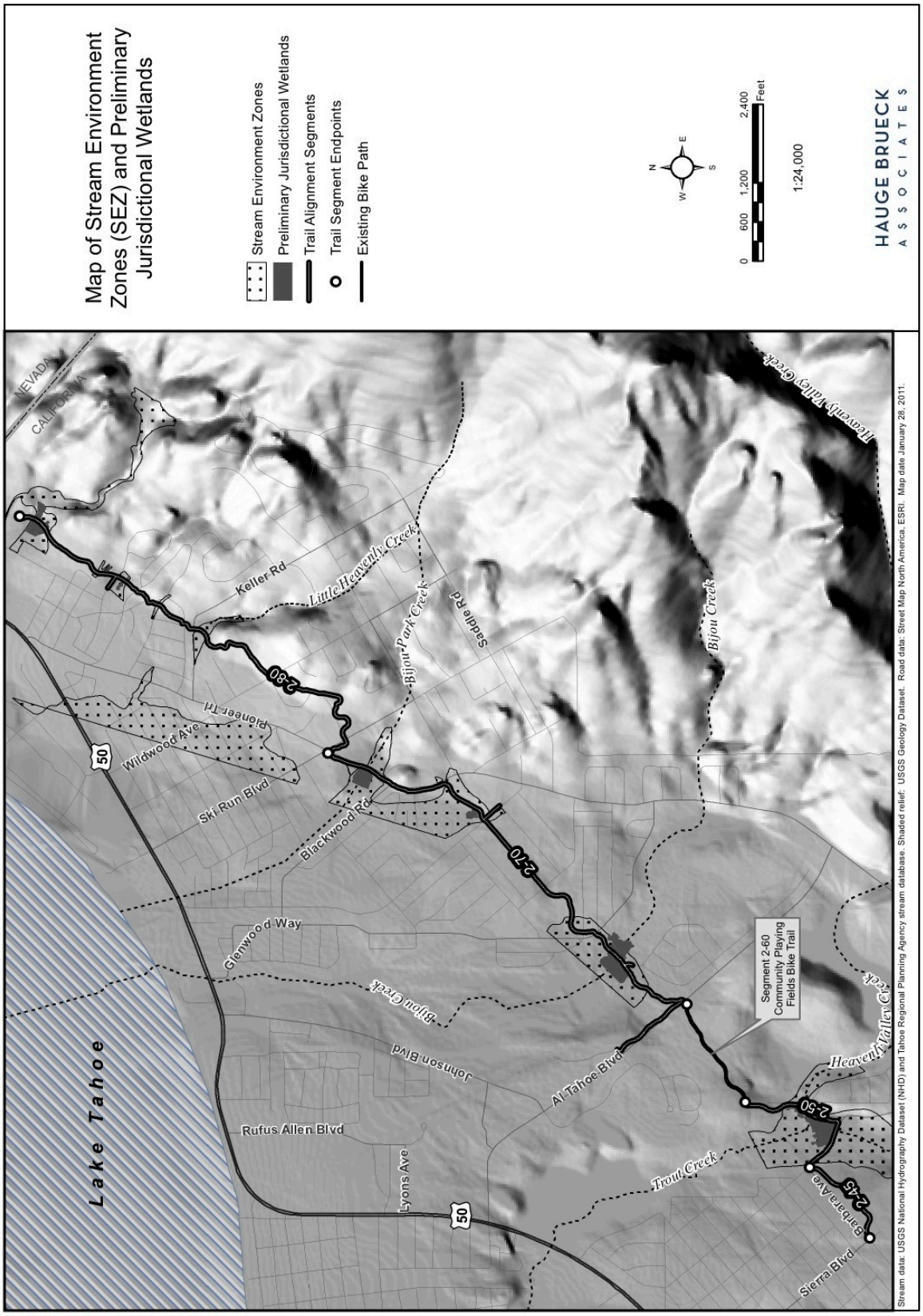


Figure 28. SEZ and Preliminary Jurisdictional Wetlands



The project area contains small patches of sagebrush and montane chaparral associations. The sagebrush vegetation community is dominated by Basin sagebrush (*Artemisia tridentata*), but may also include components of the montane chaparral association. Characteristic species in the montane chaparral association include mountain whitethorn (*Ceanothus cordulatus*), chinquapin (*Castanopsis sempervirens*), and huckleberry oak (*Quercus vaccinifolia*). Characteristic understory species found within various communities in the project area include: greenleaf manzanita (*Arctostaphylos patula*), beardtongue (*Penstemon sp*.), currant (*Ribes sp.),* mule ears (*Wyethia sp*.), mountain whitethorn (*Ceanothus cordulatus*), serviceberry (*Amelanchier sp*.), huckleberry oak (*Quercus vaccinifolia*), California lilac (*Ceanothus velutinus*), young white fir (*Abies concolor*), willow (*Salix sp*.), quaking aspen (*Populus tremuloides*), corn lily (*Veratrum sp*.), and bracken fern (*Pteridium aquilinum*).

LTBMU Parcels. The Greenway crosses a total of four LTBMU parcels. These four parcels are APNs 025-203-001, 025-204-001, 028-090-005 and 027-331-003.

Parcels 025-203-001 and 025-204-01 are located between Becka Dr and Walkup Rd. These parcels contain a total of 956 linear feet of asphalt trail on grade with the exception of 254 linear feet of trail on raised asphalt trail on permeable fill as dictated by the presence of SEZ located at the west end. The vegetation in these two parcels is Jeffrey pine forest with minimal understory and a mosaic of montane chaparral.

Parcel 027-331-003 is located on the northeast corner of Blackwood Rd and Pioneer Trail. This parcel contains a total of 334 linear feet asphalt trail on grade. The vegetation consists of Jeffrey pine forest with little to no understory on the western portion of the parcel with riparian vegetation consisting of mostly *Populus tremuloides* and an herbaceous layer.

Parcel 028-090-005 is located between David Lane and Keller Rd. This parcel contains a total of 105 linear feet of asphalt trail on grade. The vegetation consists of Jeffrey pine forest with *Arctostaphylos patula* as the main understory component.

Special-Status Species. Special-status wildlife and fish species are species that have been afforded special recognition and protection by federal, State, or local resource conservation agencies and organizations. These species are generally considered rare, threatened, or endangered due to declining or limited populations. Special-status species include:

- Animals that are legally protected or proposed for protection under the California Endangered Species Act (CESA) or Federal Endangered Species Act (FESA);
- Animals defined as endangered or rare under CEQA;
- Animals designated as species of special concern by the CDFG;
- Animals designated as species of concern by the USFWS;
- Animals listed as "fully protected" in the Fish and Game Code of California (Sections 3511, 4700, 5050 and 5515);
- Animals designated as special interest species by the TRPA;
- Animals designated as sensitive species by the LTBMU;
- Plants that are legally protected or proposed for protection under the CESA or FESA;
- Plants defined as endangered or rare under CEQA;
- Plants designated as species of concern by the USFWS;
- Plants listed in the California Native Plant Society's Inventory of Rare and Endangered Plants of California (2001);
- Plants designated as special interest species by the TRPA; and
- Plants designated as sensitive species by the LTBMU.

The evaluation utilized the following sources to identify the occurrence or potential occurrence of special-status species within the project area. Tables 12 and 13 below tabulate these sources according to federal, state CNPS and TRPA status.

- California Natural Diversity Database (CNDDB/Rarefind, January 2011). A copy of the CNDDB report (Appendix H) for the Echo Lake, Emerald Bay, South Lake Tahoe and Freel Peak 7½ minute USGS topographic quadrangles.

In addition to the CNDDB/Rarefind report, the analysis reviewed the following lists prepared by the CDFG Natural Heritage Division:

- Special Animals (July 2009);
- State and Federally Listed Endangered and Threatened Animals of California (October 2009);
- Special Vascular Plants, Bryophytes, and Lichens List (October 2009); and
- State and Federally Listed Endangered, Threatened, and Rare Plants of California (October 2009).
- CNPS Inventory of Rare and Endangered Vascular Plants of California (Electronic Version October 2009).
- USFWS list of federally listed and proposed threatened and endangered species that may occur in the project vicinity (letter dated January 5, 2010, covering the Echo Lake, Emerald Bay, South Lake Tahoe and Freel Peak 7½ minute USGS topographic quadrangles). Appendix H attaches the letter.
- TRPA Special Interest Species. Source: TRPA Regional Plan, Rules and Procedures and Code Chapters 78 and 79.
- USDA Forest Service, LTBMU Sensitive Species. Source: http://www.r5.fs.fed.us/ltbmu/management/wildlife/indicator.htm.
- USDA Forest Service, LTBMU Management Indicator (MI) Species. Source: http://www.r5.fs.fed.us/ltbmu/management/wildlife/indicator.htm.

Project-level Surveys. The following surveys have been completed for the project area:

- Special-status plants;
- Noxious and invasive weeds;
- California spotted owl;
- Northern goshawk;
- Willow flycatcher;
- Yellow warbler;
- Sierra Nevada yellow-legged frog; and
- Forest carnivore.

The environmental analysis presents the surveys results where appropriate.

Table 12

Special-Status Plants that May Occur In the Project Area or Vicinity

	Status						
Species	**Federal**	**State**	**CNPS**	**TRPA**	**Habitat Description**	**Bloom Period**	**Likelihood of Occurrence Within Project Area**
Galena Creek (=Carson Range) rock cress *Arabis rigidissima* var. *demota*	FSS	--	1B	SI	Broadleaved upland forest, upper montane coniferous forest on rocky substrates. Known in CA from only two occurrences near Martis Peak, and in NV from eleven occurrences in the Carson Range. Elevational range 2,255-2,560m.	August	Moderate; although not previously observed on site, potentially suitable habitat is present on site.
Upswept moonwort *Botyrchium ascendens*	FSC	--	2	--	Grassy fields and coniferous woods near springs and creeks of montane coniferous forest. Elevational range 1,500-2,060m.	Not applicable	Moderate; although not previously observed on site, potentially suitable habitat is present on site.
Scalloped moonwort *Botyrchium crenulatum*	FSC	--	2	--	Saturated soils in margins of small streams or near springs and creeks of montane coniferous forest. Elevational range 1,500-2,060m.	Not applicable	Moderate; although not previously observed on site, potentially suitable habitat is present on site.
Slender moonwort *Botyrchium lineare*	FSC	--	2	--	Habitats of western populations of Botrychium lineare are primarily meadows, fen-like seeps and gravelly roadsides resulting from past (15 to 50 year old) disturbance.	Not applicable	Moderate; although not previously observed on site, potentially suitable habitat is present on site.
moonwort *Botyrchium lunaria*	FSC	--	2	--	Botrychium lunaria is cosmopolitan in its habitats. At high latitudes and high altitudes it is often a plant of open to lightly wooded meadows as well as sparsely vegetated screens slopes. At lower elevations and latitudes it occurs in deep woods as well as meadows and sparsely vegetated sand dunes. It most commonly occurs on moist but well-drained soils with a neutral pH.	Not applicable	Moderate; although not previously observed on site, potentially suitable habitat is present on site.

Table 12

Special-Status Plants that May Occur In the Project Area or Vicinity

Species	Status				Habitat Description	Bloom Period	Likelihood of Occurrence Within Project Area
	Federal	State	CNPS	TRPA			
					Elevational range 2280-3400m		
Mingan moonwort *Botyrchium minganense*	FSC	--	2	--	The habitat of B. minganense varies widely from dense forest to open meadow and from summer-dry meadows to permanently saturated fens and seeps. When in meadows, plants may stand in open sun or under dense herbaceous cover. The species is often found in association with old (>10 year) disturbances such as logging roads and road shoulders. B. minganense may be less closely associated with calcareous soils than most moonworts. Elevational range 1,455-2,055m	Not applicable	Moderate; although not previously observed on site, potentially suitable habitat is present on site.
Western goblin *Botyrchium montanum*	FSC	--	2	--	This species occurs where there is a continuous supply of moisture and a high mineral content either in fens, seeps and meadows along streams or under incense cedar (Calocedrus decurrens) along side streams. Elevational range 2,200-9,800 ft.	Not applicable	Moderate; although not previously observed on site, potentially suitable habitat is present on site.
Shore sedge *Carex limosa*	--	--	2	--	Meadows, marshes, and swamps of upper montane coniferous forest. Possibly more widespread in the Sierra Nevada. Elevational range 1,200-2,700m.	June-August	Moderate; potentially suitable habitat is present on site.
Alpine dusty maidens *Chaenactis douglasii* var. *alpina*	--	--	2	--	Alpine boulder and rock fields of granite. Elevational range 3,000-4,000m.	July-September	None; suitable habitat not present within project area.

Table 12

Special-Status Plants that May Occur In the Project Area or Vicinity

	Status						
Species	**Federal**	**State**	**CNPS**	**TRPA**	**Habitat Description**	**Bloom Period**	**Likelihood of Occurrence Within Project Area**
Subalpine cryptantha *Cryptantha crymophila*	--	--	1B	--	Volcanic rocky sites in subalpine coniferous forest. Elevational range 2,600-3,200m.	July-August	None; suitable habitat not present within project area.
Tahoe draba *Draba asterophora* var. *asterophora*	--	--	1B	SI	Alpine boulder and rock fields in crevices, and open talus slopes of decomposed granite in subalpine coniferous forest. Elevational range 2,500-3,505m.	July-August	None; suitable habitat not present within project area.
Cup Lake draba *Draba asterophora* var. *macrocarpa*	FSC	--	1B	SI	Alpine boulder and rock fields in shade of granitic rocks in subalpine coniferous forest. Elevational range 2,500-2,815m.	July-August	None; suitable habitat not present within project area.
Subalpine fireweed *Epilobium howellii*	--	--	1B	--	Meadows and seeps, and subalpine coniferous forests in mesic environments. Known from only four occurrences in Fresno, Mono, and Sierra counties. Elevational range 2,000-2,700m.	July-August	Low; potentially suitable habitat is present on site. No documented occurrences in the Lake Tahoe Region.
Oregon fireweed *Epilobium oreganum*	FSC	--	1B	--	Bogs and fens of montane coniferous forest. Elevational range 500-2,240m.	June-September	Moderate; although not previously observed on site, potentially suitable habitat is present on site.
Marsh willowherb *Epilobium palustre*	--	--	2	--	Bogs, fens and meadows of montane coniferous forest. Elevational range 2,200m.	July-August	None; suitable habitat not present within project area.
Donner Pass buckwheat *Eriogonum umbellatum* var. *torreyanum*	FSC	--	1B	--	Meadows and seeps, and upper montane coniferous forest on volcanic, rocky substrate. Elevational range 1,855-2,620m.	July-September	None; suitable habitat not present within project area.

Table 12

Special-Status Plants that May Occur In the Project Area or Vicinity

	Status						
Species	**Federal**	**State**	**CNPS**	**TRPA**	**Habitat Description**	**Bloom Period**	**Likelihood of Occurrence Within Project Area**
Long-petaled lewisia *Lewisia longipetala*	FSC	--	1B	SI	Alpine boulder and rock fields in subalpine coniferous forest. Elevational range 2,500-2,925m.	June-August	None; suitable habitat not present within project area.
Mees's moss *Meesia triquetra*	--	--	2	--	Bogs and fens of montane coniferous forest. Elevational range 1,300-2,500m.	Not applicable	Moderate; although not previously observed on site, potentially suitable habitat is present on site.
Tahoe yellow cress *Rorippa subumbellata*	FC	SE	1B	SI	Lower montane coniferous forest, meadows and seeps / decomposed granitic beaches along the shore of Lake Tahoe. Known in CA from fewer than ten extant occurrences around Lake Tahoe. Elevational range 1,895-1,900m.	May-September	None; suitable habitat not present within project area.
Water bulrush *Scirpus subterminalis*	--	--	2	--	Bogs, fens, marshes, swamps and lake margins of montane coniferous forest. Elevational range 750-2,250m.	July-August	Moderate; potentially suitable habitat is present on site.

Source: CDFG 2009, CNPS 2009; USFWS 2009

Federal status:

- FE Listed as endangered under the Federal ESA
- FT Listed as threatened under the Federal ESA
- PE Proposed for listing as endangered under the Federal ESA
- PT Proposed for listing as threatened under the Federal ESA
- FC Candidate species for listing under the Federal ESA
- FSC Species of concern as identified by the USFWS
- D Delisted in accordance with the Federal ESA
- FSS USDA, Forest Service sensitive species

State Status:

- SE Listed as endangered under the CA ESA
- ST Listed as threatened under the CA ESA

CSC Species of concern as identified by the CDFG

CFP Listed as fully protected by the CDFG Code

Rare Species identified as rare by the CDFG

California Native Plant Society Listing Categories (CNPS 2001):

1B Plant species that are rare, threatened, or endangered in CA and elsewhere

2 Plant species that are rare, threatened, or endangered in CA, but are more common elsewhere

3 Plant species that lack the necessary information to assign them to a listing status

4 Plant species that have a limited distribution or that are infrequent throughout a broader area in CA

TRPA Status:

SI Species of Special Interest to the TRPA

Table 13

Special-Status Wildlife Species that May Occur In the Project Area or Vicinity

Species	Status			Habitat Description	Likelihood of Occurrence Within Project Area
	Federal	State	TRPA		
Fish					
Lahontan cutthroat trout *Oncorhynchus (=Salmo) clarki henshawi*	FT MI	--	S	Historically occurred in all accessible cold waters of the Lahonton Basin in a wide variety of water temps and conditions. Cannot tolerate presence of other salmonids. Gravel riffles in streams required for breeding.	High; confirmed sightings in the Upper Truckee River.
Rainbow trout *Salmo gairderi*	MI	--	--	Inhabits cold-water streams. Spring spawning takes place in streams. Prefers fast moving riffles.	High; Upper Truckee River and Trout Creek have known occurrences.
Brook trout *Salvelinus fontinalis*	MI	--	--	Commonly found at elevations between 5,000 and 9,000 feet (CDFG). Spawns near cold lake springs. Thrives and reproduces in small, cold streams and spring-fed lakes. Can tolerate colder waters than other trout.	High; Upper Truckee River and Trout Creek have known occurrences.
Lahontan Lake tui chub *Gila bicolor pectinifer*	FSS	CSC	--	A schooling species that inhabits large, deep lakes. Known from Lake Tahoe; Pyramid Lake, NV; and Walker Lake, NV. Populations of chubs that occur in Stampede, Boca, and Prosser reservoirs may also represent this subspecies (Moyle et al. 1995).	High; Upper Truckee River has known occurrences.
Amphibians					
Mount Lyell salamander *Hydromantes platycephalus*	FSC	CSC	--	Inhabits rock fields in mixed conifer, red fir, lodgepole pine, and subalpine communities, utilizing rock fissures, seeps, shade, and low-growing plants. Elevational range extends from 1,200 to 3,500m.	Low; suitable habitat present on site but the species is not known within the Lake Tahoe Region.
Mountain yellow-legged frog *Rana muscosa*	FSC FSS	CSC	--	Inhabits ponds, lakes, and streams associated with montane riparian, lodgepole pine, subalpine conifer, and wet meadow communities.	Moderate; montane riparian and wet meadow communities within the study area may provide suitable habitat.

Table 13

Special-Status Wildlife Species that May Occur In the Project Area or Vicinity

Species	Status			Habitat Description	Likelihood of Occurrence Within Project Area
	Federal	State	TRPA		
Northern leopard frog *Rana pipiens*	FSS	CSC	--	Aquatic habitat in close proximity to grass- or forb- dominated community with a moist substrate. Aquatic habitat provides oviposition and overwintering sites. Grassy shelves used for foraging during the active season. Within CA the known elevational range of this species extends from 1,216 to 1,503m.	Low; suitable habitat present on site but the species is not known within the Lake Tahoe Region.
Yosemite toad *Bufo canorus*	FSC	CSC CFP	--	High mountain meadows and forest borders of the whitebark and lodgepole pine zones emerging soon after the snow melts.	None; suitable habitat is not present on site. Occurrence within the Lake Tahoe Region has not been confirmed.
Birds					
Waterfowl			SI	Avian species associated with marsh/wetland habitats.	Moderate/High; marsh/wetland habitats present within project area.
Mallard *Anas platyrhynchos*	MI	--	SI	Inhabits a wide variety of aquatic environments including fresh emergent wetlands, estuarine, lacustrine, and riverine habitats, ponds, pastures, and urban parks.	Moderate/High; Upper Truckee River likely provides suitable habitat for this species.
Osprey *Pandion haliaetus*	--	CSC	SI	Uses large snags and open trees, primarily in ponderosa pine through mixed conifer community types, near large bodies of water.	Low; nearest sighting is 5 miles from project area.
Bald eagle *Haliaeetus leucocephalus*	D MI	SE CFP	SI	Breeds and roosts in remote coniferous forests in close proximity to a river, stream, lake, reservoir, marsh, or other wetland area.	Low; nearest sighting is 9 miles from project area.
Golden eagle *Aquila chrysaetos*	--	CSC CFP	SI	Rolling foothills, mountain areas, grasslands, savannas, deserts, and early successional stages of forests and shrub communities. Cliffs and large trees are utilized for nesting.	None; no suitable habitat present within the project area.

Table 13

Special-Status Wildlife Species that May Occur In the Project Area or Vicinity

	Status				Likelihood of Occurrence Within Project Area
Species	**Federal**	**State**	**TRPA**	**Habitat Description**	
Cooper's Hawk *Accipiter cooperii*	--	CSC	--	Uses dense stands of conifer, liver oak, riparian deciduous or other forest communities. Appear to be expanding into urban areas throughout the Central Valley and foothills.	Moderate/High; potentially suitable habitat is present within the project area.
Northern goshawk *Accipiter gentilis*	FSC FSS MI	CSC	SI	Breeds and forages in mature stands of coniferous, mixed, and deciduous forest. Nest sites often associated with north-facing aspects.	High; sightings within 1 mile of the project area.
Sharp-shinned hawk *Accipiter striatus*	--	CSC	--	Breeds in riparian deciduous, mixed conifer, black oak, ponderosa pine, and Jeffrey pine communities. During winter may be found in a wide variety of communities.	High; potentially suitable habitat is present within the project area.
American peregrine falcon *Falco peregrinus anatum*	D MI	SE CFP	SI	Inhabits open country, breeding near rivers, wetlands, lakes, or other aquatic features; nests on cliffs, banks, dunes, mounds, and human-made structures.	Moderate; potentially suitable habitat is present within the project area.
Blue grouse *Dendragapus obscurus*	MI	--	--	Inhabits mature conifer stands interspersed with open, brushy conifer stands, and open grass/forb areas, in close proximity to water.	Moderate; potentially suitable habitat is present within the project area.
Black tern *Chlidonias niger*	FSC	CSC	--	Nests on lakeshores and in marshes, uncommon to rare on the west coast of North America.	Low; the species may occur as a seasonal migrant.
Great gray owl *Strix nebulosa*	FSS	SE	--	A resident of mixed conifer and red fir forest communities, in or on edge of meadows. High canopy closure and large diameter snags are required.	Low; occurrence within the Lake Tahoe basin has not yet been confirmed (Schlesinger and Romsos 2000).
California spotted owl *Strix occidentalis occidentalis*	FSC FSS MI	CSC	--	Typically breeds in stands of mixed coniferous forest containing a mixture of tree sizes with a number of very large, old trees, usually at least two canopy layers, and a total canopy cover in	Moderate; potentially suitable habitat is present within the project area.

Table 13

Special-Status Wildlife Species that May Occur In the Project Area or Vicinity

Species	Status			Habitat Description	Likelihood of Occurrence Within Project Area
	Federal	State	TRPA		
				excess of seventy percent (may be as low as thirty-forty percent at high elevations). Large snags and an abundance of downed woody debris are also usually present.	
Black swift *Cypseloides niger*	FSC	CSC	--	In western British Columbia, Klamath Region, northern Sierra Nevada, west-central Rocky Mountains and Sierra Madre Occidental, this species nests in colonies on cliffs and beneath waterfalls.	None; suitable nesting habitat is not present within the project area.
Rufous hummingbird *Selasphorus rufus*	FSC	--	--	A common migrant and uncommon summer resident of California; many post-breeders migrate south through the Cascade Range and Sierra Nevada. Found in a variety of environments that provide nectar-producing flowers; including montane riparian, high mountain meadows, valley foothill hardwood-conifer, and various chaparral communities.	High; may occur within the project area as a post-breeding migrant. Has been observed within the project area.
Pileated woodpecker *Dryocopus pileatus*	MI	--	--	A yearlong resident of mature, montane coniferous forest communities. Nests typically in snags or living trees with dead limbs.	High; has been observed within the project area.
Lewis' woodpecker *Melanerpes lewis*	FSC	--	--	An inhabitant of open, deciduous and conifer communities with bushy understory. Snags or dead portion of a live tree are commonly used for nesting.	Low; potentially suitable habitat is present within the project area.
Willow flycatcher *Empidonax traillii brewsteri*	FSC MI	--	--	Typically breeds in willow-dominated riparian vegetation along perennial streams in moist meadows or spring-fed or boggy areas.	High; potentially suitable habitat is present within the project area.
Hermit warbler *Dendroica occidentalis*	FSC	--	--	A summer visitor and migrant, breeds in mature ponderosa pine, montane hardwood-conifer, mixed conifer, redwood, Douglas fir, red fir, and Jeffrey pine communities.	Moderate; forested areas within the project area may provide suitable habitat.
California yellow warbler *Dendroica petechia brewsteri*	--	CSC	--	Breeds in willow dominated riparian woodlands that may also include cottonwoods, alders, and sycamores, montane chaparral	High; potentially suitable habitat is present within

Table 13

Special-Status Wildlife Species that May Occur In the Project Area or Vicinity

Species	Status			Habitat Description	Likelihood of Occurrence Within Project Area
	Federal	State	TRPA		
				and montane shrubbery in open coniferous forests.	the project area.
Brewer's sparrow *Spizella breweri*	FSC	--	--	Breeds in extensive treeless shrub communities with moderate canopy coverage, especially sagebrush.	None; project area does not contain suitable breeding habitat.
Mammals					
Townsend's big-eared bat *Corynorhinus townsendii*	FSC FSS	CSC	--	Found in a wide variety of communities, including coastal conifer and broad-leaf forests, oak and conifer woodlands, grasslands, and high-elevation forests and meadows. Most commonly associated with mesic environments. Roosts in caves, mines, tunnels, buildings, or other man-made structures. This species is extremely sensitive to disturbance at its roosting sites.	Low; project area may provide foraging habitat; however, breeding and roosting habitat is not present on site. Occurrence within the Lake Tahoe basin has not yet been confirmed (Schlesinger and Romsos 2000).
Spotted bat *Euderma maculatum*	FSC	CSC	--	Occurs in a variety of environments, ranging from deserts and grasslands to mixed conifer forests; roosts in rock crevices along cliffs or caves.	Low; project area may provide foraging habitat; however, breeding and roosting habitat is not present on site. Occurrence within the Lake Tahoe basin has not yet been confirmed (Schlesinger and Romsos 2000).
Small-footed myotis bat *Myotis ciliolabrum*	FSC	--	--	Inhabits relatively arid wooded and brushy uplands in close proximity to water, from sea level to about 8,900 feet. Maternity colonies may occur in buildings, caves and mines.	Low; project area may provide foraging habitat; however, breeding habitat is not present on site.

Table 13

Special-Status Wildlife Species that May Occur In the Project Area or Vicinity

Species	Status			Habitat Description	Likelihood of Occurrence Within Project Area
	Federal	State	TRPA		
					Occurrence within the Lake Tahoe basin has not yet been confirmed (Schlesinger and Romsos 2000).
Long-eared myotis bat *Myotis evotis*	FSC	--	--	May be found in a variety of brush, woodland, and forest communities, from sea level to about 9,000 feet; shows a preference toward coniferous woodlands and forests. Nursery colonies located in buildings, crevices, spaces under bark, snags; night roosting in caves.	Low/Moderate; forested portions of project area provide potentially suitable breeding and foraging habitat.
Fringed myotis bat *Myotis thysanodes*	FSC	--	--	May be found in a variety of environments; valley and foothill hardwood, hardwood-conifer and pinyon-juniper woodland provide optimal habitat. Maternity colonies and roosts located in caves, mines, buildings, and crevices.	Moderate; potentially suitable foraging habitat occurs on site.
Long-legged myotis bat *Myotis volans*	FSC	--	--	This species is most commonly associated with woodland and forest communities above 4,000 feet. However, may also forage in chaparral, coastal scrub, Great Basin shrub habitats, and in early successional stages of woodlands and forests. Occurrence records range from sea level to 11,400 feet. Roosts in rock crevices, buildings, under tree bark, in snags, mines, and caves.	Moderate; potentially suitable breeding and foraging habitat occurs on site.
Yuma myotis bat *Myotis yumanensis*	FSC	CSC	--	Optimal environments include open forests and woodlands in proximity to bodies of water used for foraging; maternity colonies in caves, mines, crevices, and buildings.	Moderate; potentially suitable foraging habitat occurs on site.
Sierra Nevada snowshoe hare *Lepus americanus tahoensis*	FSC	CSC	--	Frequents early successional stages of mixed conifer, red fir, lodgepole pine forests, and deciduous riparian communities at higher elevations.	Moderate; potentially suitable habitat is present within the project area.
Sierra Nevada mountain beaver *Aplodontia rufa californica*	--	CSC	--	In the Sierra Nevada and East Slope, associated with dense growth of small deciduous trees and shrubs, wet soil, and an	Moderate; potentially suitable habitat is present

Table 13

Special-Status Wildlife Species that May Occur In the Project Area or Vicinity

Species	Status			Habitat Description	Likelihood of Occurrence Within Project Area
	Federal	State	TRPA		
				abundance of forbs. Needs an abundant supply of water.	within the project area.
Sierra Nevada red fox *Vulpes vulpes necator*	FSS	ST	--	Inhabits a variety of communities from wet meadows to forested areas; preferring forests that are interspersed with meadows or alpine fell-fields. Dense vegetation and rocky areas provide cover and den sites.	Low; potentially suitable habitat is present within the project area. Not detected during forest carnivore studies.
California wolverine *Gulo gulo luteus*	FSS	ST CFP	--	Occurs in a variety of environments, including subalpine conifer, alpine dwarf-shrub, barren, mixed conifer, and lodgepole pine forests at or near timberline. Typically associated with areas of low human disturbance.	Low; potentially suitable habitat is present within the project area. Not detected during forest carnivore studies.
American (Pine) marten *Martes americana*	FSS	--	--	Prefers multi-storied, mature mixed coniferous forests with high canopy coverage and an abundance of large snags and downed woody debris. Riparian corridors may be used for foraging and as travelways.	High; occurrence documented within the project area during forest carnivore studies.
Pacific fisher *Martes pennanti pacifica*	FSC FSS	CSC	--	Prefers multi-storied, mature mixed coniferous forests with high (>50 percent) canopy coverage and an abundance of large snags and downed woody debris. Dense riparian corridors are utilized as dispersal corridors. Foraging often occurs in small (< 2 acres) forest openings with significant ground cover.	Low; CNDDB occurrence approximately 03.5 mile south of the project area in 1967. Not detected during forest carnivore studies.
Mule deer *Odocoileus hemionus*	MI	--	SI	Prefers areas interspersed with diverse seral stages or edges. This includes riparian vegetation, meadows, and the early to mid-successional stage of most vegetation types.	High; species observed during biological surveys of the project area.

Source: CDFG 2009, USFWS 2009; USFS 2009

Federal Status:

FE Listed as endangered under the Federal ESA
FT Listed as threatened under the Federal ESA
PE Proposed for listing as endangered under the Federal ESA

PT	Proposed for listing as threatened under the Federal ESA
PD	Proposed for delisting as threatened or endangered under the FESA
FSC	Species of concern as identified by the USFWS
D	Delisted in accordance with the Federal ESA
FSS	USDA Forest Service sensitive species
MI	LTBMU Management Indicator species

State Status:

SE	Listed as endangered under the CA ESA
ST	Listed as threatened under the CA ESA
CSC	Species of concern as identified by the CDFG
CFP	Listed as fully protected by the CDFG Code
Rare	Species identified as rare by the CDFG

TRPA Status:

SI	Species of Special Interest to the TRPA

Stream Environment Zones. The TRPA defines a SEZ as a biological community that derives its characteristics from the presence of surface water or a seasonal high groundwater table. Stream environment zones exhibit the ability to rapidly incorporate nutrients into the usually dense vegetation and moist to saturated soils. A SEZ is delineated by the presence of drainage ways and floodplains, including adjacent marshes, meadows, and riparian areas.

SEZs are important because they make up a natural system of runoff conveyance, provide wildlife habitat, and can filter and treat (through soils and vegetative complexes) spring snowmelt, stormwater runoff, and other forms of surface runoff before discharge to Lake Tahoe. SEZs have been verified using the criteria described below and are shown on plan sheets in Appendix C.

TRPA verified SEZs within the project area in 2004, illustrated on Figure 28 (Appendix J). Segment 2-45 crosses no SEZ. Segment 2-50 crosses Trout Creek and Heavenly Valley Creek with their attendant SEZs. Segment 2-70 crosses three delineated SEZs: Bijou Meadow; an unnamed SEZ to the east of Herbert Ave; and the SEZ that lies to the north of Pioneer Trail across from Charlesworth Ct. Segment 2-80 crosses three SEZ areas: an ephemeral drainage identified as Little Heavenly Valley Creek just to the south and west of Keller Rd; one SEZ to the east of Chonokis Rd; and the meadow located at the northern terminus of Segment 2-80 located in Van Sickle Bi-State Park.

Wetlands and Waters of the U.S. The USACE regulate activities in wetlands and waters of the U.S. in accordance with Section 404 of the Clean Water Act. To determine the potential for impacts to this resource, HBA scientists performed preliminary wetland delineation in the fall of 2010. Appendix G contains the draft report; Figure 8 locates the wetland areas identified. The delineation found five wetland types within the project area including: other waters, emergent floodplain, riparian wetland, montane dry meadow, and montane mesic meadow. Segment 2-50 crosses other waters, emergent floodplain, and riparian wetland at Trout Creek. Segment 2-70 crosses montane dry meadow in Bijou Meadow. The trail also encroaches at the very edge of two wetland areas in Segment 2-70: a montane mesic meadow near Herbert Ave and Aloha Rd and riparian wetland and emergent floodplain along Pioneer Trail near Charlesworth Ct between Glen Rd and Van Sickle Bi-State Park. Segment 2-80 crosses two wetland areas containing montane mesic meadow and a small area of riparian wetland. Refer to Appendix G for full descriptions, figures, and maps of Wetlands and Waters of the U.S. identified within the project area.

3.2.4.2 Environmental Analysis and Mitigation Measures

32. Would the Greenway have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? (CEQA IVa)

Standard of Significance: The loss of greater than zero endangered, threatened or rare fish or wildlife individuals or disturbance of greater than zero acres of occupied or designed critical habitat constitute a significant impact as defined by CEQA Article 5, Section 15065, CESA Sections 2062 and 2067, CDFG Code Sections 1900-1913, and TRPA Thresholds.

As noted in Table 12 and 13, because the project area contains no species identified as a candidate, sensitive or special-status species in local or regional plans, policies or regulations or by the CDFG or USFWS and because the project area contains no occupied or designated critical habitat, no impact occurs either directly or indirectly from construction or operation of the Greenway.

LTBMU Parcels. See analysis for Questions 46 and 47.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

33. Would the Greenway have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service? (CEQA IVb)

Standard of Significance*:* Direct or indirect impact greater than zero acres for State or Federal sensitive natural communities, direct or indirect impact greater than zero acres to SEZ including riparian habitat constitute a significant impact.

Sensitive Natural Communities. The Greenway impacts no listed sensitive natural communities because the project area contains no such communities. Database searches covering the project area include the CDFG's CNDDB and USFWS (species list dated January 2011) for the South Lake Tahoe, Freel Peak, Emerald Bay and Echo Lake 7.5 min quad maps. The USFWS identifies no critical habitat within the project area. CDFG identifies two sensitive plant community locations of Sphagnum Bog in the USGS Quad search. The communities are outside the project area. The CNDDB lists Grass Lake and Osgood Swamp as sensitive natural communities, which are not within the project area.

TRPA designates uncommon plant communities in TRPA Code Section 75.2, which are as follows: the deepwater plants of Lake Tahoe, Grass Lake (sphagnum fen), Osgood Swamp, Hell Hole (sphagnum fen), Pope Marsh, Taylor Creek Marsh, Upper Truckee Marsh, and the Freel Peak cushion plant community. These communities lie outside of and distant from the project area.

Riparian Habitat. TRPA SEZ designations encompass riparian habitats within the Lake Tahoe Basin. See the following discussion of SEZ for evaluation of project effects on riparian habitat. In addition, the project area encompasses riparian wetland as defined by Section 404 of the Clean Water Act. Evaluation for Question 34 includes project effects on this and other wetland types related to Section 404 permit requirements and Section 401 water quality certification.

Stream Environment Zones. TRPA maintains the Regional Plan elements that establish SEZ as a sensitive natural community protected by standards and regulations. Lahontan also maintains standards in the Lahontan Basin Plan related to activities in SEZ. Construction of the Greenway results in direct and indirect impacts to SEZs. Direct impacts to SEZs include removal of riparian vegetation and grading and disturbance to soils. Removal of vegetation and grading in SEZs directly impacts the quality and functionality of the riparian system and threatens temporary and permanent degradation to surface water quality. Riparian vegetation provides modifications to SEZs by regulating microclimates and water temperature of adjacent water bodies. Removal of vegetation can result in changes in the microclimate by reducing the shading abilities of plants. Moisture retention ability of soils decreases after vegetation removal and often results in xeric conditions, thereby creating inhospitable environment for adjacent riparian vegetation. Removal of riparian vegetation increases sun exposure to shallow surface water areas to increase water temperatures, which can decrease habitat suitability.

Riparian vegetation removal in the Trout Creek SEZ includes the removal of both woody riparian vegetation (*Salix sp., Rosa woodsii, Ribes sp.*) as well as meadow grasses. Trail construction in Bijou meadow will not result in any removal of woody riparian vegetation but will result in the removal of annual meadow grasses and forbs. The Herbert Ave SEZ will result in the removal of both woody riparian vegetation and annual grasses, however since there is no water body associated with this SEZ, trail construction will not result in changes to surface water temperatures as noted above. Project features in the SEZ area directly adjacent to Pioneer Trail across from Charlesworth Ct will result in the removal

of woody riparian vegetation including quaking aspen as well as annual grasses. The SEZ adjacent to Keller Rd results in the removal of *Rosa woodsii* and *salix sp.* as well as annual grasses in the area. The montane mesic meadow SEZ area to the east of Chonokis Rd results in the removal of annual grasses and woody riparian vegetation. The termination of the trail at the north end in Van Sickle Bi-State Park results in the removal of annual grasses as well as woody riparian vegetation in the form of *Salix sp., Ribes sp.* and *Populus tremuloides.*

Riparian areas are often utilized as travel corridors for wildlife species as they provide cover to conceal movement. Riparian areas associated with the Greenway that may be utilized for travel corridors include the Trout Creek area and the meadow area located in Van Sickle Bi-State Park. Species that may utilize these corridors include mule deer, Mustelids and other more common mammal species such as raccoon and coyote. As noted for Question 35, these species are abundant in Tahoe in areas of human disturbance. Indirect impacts to SEZs from project implementation include modifications to the SEZ quality of habitat for various wildlife and fish species present within the project area. Loss of riparian vegetation and increases in exposed soils can increase sedimentation into water bodies. On-site restoration in like communities offsets some of this effect and is augmented by off-site restoration as described in other sections.

New disturbance and land coverage in SEZ (LCD 1b) is necessary to construct the Greenway, as shown in Table 14. Both TRPA and Lahontan prohibit new SEZ disturbance except for limited uses such as public service and public recreation that can demonstrate compliance with restrictive findings. TRPA Code Subsection 20.4.B.3 outlines these restrictions for public service projects. The findings analysis below cites Code requirements (*in italics*), followed by analysis of the Greenway's consistency with the findings. Table 15 identifies the square footage of SEZ disturbed in each trail segment. Evaluation of required Lahontan findings follows that for TRPA.

Table 14

Greenway LCD 1b Land Coverage and Disturbance Summary (square feet and acres)

Segment	Existing LCD 1b Coverage	Existing LCD 1b Coverage to be Removed/ Restored	Existing LCD 1b Coverage to Remain	New LCD 1b Trail Coverage	Total LCD 1b Coverage (New & Exist)	New LCD 1b Trail Disturbance (Clear Zones)	New LCD 1b Coverage Plus New LCD 1b Disturbance	Project Area in LCD 1b	Allowable Coverage in LCD 1b	Offsite LCD 1b Restoration Required
2-45	0	0	0	0	0	0	0	0	0	0
2-50	805	415	390	19,665	20,055	4,754	24,419	75,781	758	36,214
2-70	13,907	10,922	2,985	32,287	35,272	19,275	51,562	1,059,188	10,592	66,421
2-80	15,281	13,652	1,629	8,786	10,415	1,984	10,770	294,954	2,950	2,503
TOTAL	**29,993 sf (0.69 acres)**	**24,989 sf (0.57 acres)**	**5,004 sf (0.11 acres)**	**60,738 sf (1.39 acres)**	**65,742 sf (1.51 acres)**	**26,013 sf (0.60 acres)**	**86,751 sf (1.99 acres)**	**1,429,923 sf (32.8 acres)**	**14.300 sf (0.33 acres)**	**105,138 sf (2.41 acres)**

Source: TRPA land capability verifications, South Tahoe Greenway Project Coverage Calculations Tables January 2010, and HBA 2011

TRPA SEZ Disturbance Findings. *TRPA Code Subsection 20.4.B(3) Public Service: Land coverage and disturbance for public service facilities may be permitted in Land Capability District 1b (stream environment zones) if TRPA finds that:*

(a) The project is necessary for public health, safety or environmental protection:

The Greenway is necessary to:

1) Protect health and safety. Implementation of the non-auto network and increased non-auto transportation envisioned throughout the Region will increase the number and diversity of trail users. Direct conflict between autos and pedestrians/bicyclists will exist without construction of a safe alternative network, including separated trails designed to AASHTO and ADA standards. Specifically, the project provides the major north-south trail corridor in South Lake Tahoe, protecting non-auto travelers in areas of high traffic volume. Therefore, the project will protect public health and increase safety.
2) Provide essential public transportation services. TRPA identifies development of non-auto trail networks, including the major Class I link provided by the Greenway, as essential transportation facilities. TRPA includes the project in the Lake Tahoe RTP (TMPO 2008), Lake Tahoe Regional BPMP (TMPO 2010) and TRPA EIP Update, Planning Horizon 2008-2018 (TRPA 2009).
3) Improve environmental protection. TRPA relies on alternative transportation systems, including bike trails, as important measures to improve air quality and reduce atmospheric contribution to water quality degradation. Section 3.2.3 and 3.2.7, Air Quality and Greenhouse Gas Emissions, identify that the project contributes to improvements in air quality. The project reduces erosion, disturbance and land coverage through removal and restoration of informal trails in designated SEZ areas. Question 66 provides evaluation for coverage relocation findings related to this restoration and concludes it meets the requirement for providing environmental improvement. Therefore, the Greenway will assist in the protection of the environment.

(b) There is no reasonable alternative, including a bridge span or relocation, which avoids or reduces the extent of encroachment in the stream environment zone; and

The project proposal incorporates design features that reduce disturbance and the effects of disturbance, including alignment location, use of raised asphalt on permeable fill, and boardwalk and bridge spans. Section 2.6.5 describes these features. These design options minimize disturbance in LCD 1b SEZ by confining users to structured trails particularly during wet conditions, accommodating seasonal surface flows and high groundwater, and allowing for some vegetative cover under boardwalks. Project development also considered alternative alignments. Evaluation of design proposals and alternatives by analysis segment follows.

- Segment 2-50 results in a total of 24,419 square feet of new LCD 1b land coverage and disturbance. The total Greenway length of Segment 2-50 in SEZ is 945 linear feet of boardwalk, 395 linear feet of asphalt trail on raised permeable fill and 413 linear feet of asphalt trail. The SEZ disturbed in Segment 2-50 lies within the Trout Creek and Heavenly Valley Creek riparian areas. The shared-use trail includes boardwalked sections in the SEZ as well as a bridge span over Trout Creek to minimize direct impacts. Along Martin Ave in some places and Meadowcrest Dr, the trail follows the roadway very closely to limit disturbance in more intact portions of the riparian area. In these locations, designers rejected use of boardwalk due to snow load and maintenance needs, and asphalt on permeable fill due to the ineffectiveness of this design near existing compacted soil for roadways. There are no reasonable alternatives to the Segment 2-50 alignment that would limit the disturbance to SEZ because the Greenway runs perpendicular to the Trout Creek and Heavenly Valley Creek SEZ and cannot be safely located within the existing roadway. Section 2.1.2 (including Table 2 and Figure 2) identifies a design

option that made a direct connection between the Barbara Ave/Martin Ave intersection and the LTCC. This alternative, while producing a somewhat shorter and more direct route, encroached on a more intact riparian zone, crossed a wider floodway and floodplain area, removed more woody riparian vegetation with higher habitat values, and required more temporary construction disturbance to adequately access. For these reasons, this alternative was rejected from further consideration.

- Segment 2-70 results in a total of 51,562 square feet of new LCD 1b land coverage and disturbance. Total length of Segment 2-70 in SEZ is 1,377 linear feet of boardwalk, 1,168 linear feet of asphalt trail on raised permeable fill and 1,095 linear feet of asphalt trail. The SEZ disturbed in Segment 2-70 has been identified above as the Bijou Meadow, Herbert Ave SEZ and the SEZ across from Charlesworth Ct adjacent to Pioneer Trail. Location criteria for use of the surface options respond to site conditions as described in Section 2.6.2.3 in order to minimize impacts. Section 2.1.2 identifies an alternative considered early in the planning process that diverted the Greenway to the northwest, crossing Bijou Meadow further north and paralleling neighborhood streets including Spruce Ave. Examination of this alternative found: 1) no difference to the amount of SEZ disturbance necessary in Bijou Meadow, but disturbance location lower in the watershed with more potential for conflict with the Bijou SEZ restoration and park redevelopment proposals; and 2) substantially higher conflicts with existing residential uses including driveway crossings and potential private easement acquisitions needed. Another option previously considered an alternative way to cross Pioneer Trail in the northern section of Segment 2-70. This alternative, following the former Caltrans ROW alignment, approached Pioneer Trail near Needle Peak, crossing that major arterial on an overpass and encroaching into intact and dense aspen stand growth east of Charlesworth Ct. Multiple objections to this route included increased SEZ disturbance, increased woody riparian area disturbance, significant scenic impacts, and greatly increased cost.
- Segment 2-80 results in a total of 10,770 square feet of new LCD 1b land coverage and disturbance. Total length of Segment 2-80 in SEZ is 531 linear feet of boardwalk, 324 linear feet of asphalt trail on raised permeable fill and 50 linear feet of asphalt trail. The shared-use trail includes boardwalked sections within SEZ delineated areas in order to minimize impacts. Near Keller Rd and north of Glen Rd the Greenway crosses mapped SEZ areas at the narrowest location possible while maintaining grade requirements for accessibility. Near Van Sickle Bi-State Park, the alignment follows an existing foot trail near overhead power lines and crosses both drier and wetter SEZ areas (delineated as montane mesic meadow and riparian wetland). Alternative routes to reduce the total SEZ encroachment in this location produce increased large tree removal. TRPA Code prohibits this tree removal as described for Question 44. Additionally, alternative routes that do not follow the existing foot trail and clearing for the overhead power lines, while they cover less SEZ, require more riparian vegetation removal to accomplish in an area of dense, intact riparian vegetation.

The determination of reasonable segment alignments considers technical feasibility, economic feasibility, existing land use patterns and the regulations and requirements of lead agencies in concert with the stated objectives and purpose and need of the project. This evaluation is described above and concludes no alignment alternative exists that completely avoids encroachment in LCD 1b SEZ areas and meets the project objectives and purpose. Additionally, compliance with AASHTO and ADA standards is necessary to provide a safe and usable public facility and places constraints on design elements such as minimum trail widths, separation distance from roadways, and grade.

(c) The impacts of the coverage and disturbance are fully mitigated in the manner prescribed by Subparagraph 20.4.A(2)(e). For LCD 1b the restoration requirement in such Subsection shall apply exclusively to SEZ lands and shall include coverage and disturbance within the permitted Bailey coefficients.

Permanent Coverage and Disturbance. Table 14 and the preceding paragraphs identify permanent encroachment on 86,751 square feet of new land in LCD 1b SEZ. To offset the impacts to LCD 1b SEZ lands consistent with TRPA Code Subsection 20.4.A(2)(e), restoration must occur at a restoration/disturbance ratio of 1.5:1. This drives a total restoration need of 130,127 square feet to avoid significant impacts. The Greenway proposes to offset new disturbance through a combination of on-site and off-site restoration of SEZs in amounts shown in Table 15.

As noted in Section 2.6.3, the Greenway offsets impacts to LCD 1b SEZ in part by removing and restoring existing trails located within LCD 1b lands. Throughout the project area, TRPA verified existing coverage in LCD 1b SEZ areas that can be removed so that the native hydrology and vegetation community will reestablish. The restoration involves removal of existing informal biking/walking trails. Appendix D describes the specific restoration prescriptions that will result in long-term restoration. TRPA Code Subsection 20.5.C.4 requires coverage relocation in LDC 1b lands produce net environmental benefit. This evaluation concludes the prescriptions are suited to site conditions and are capable of producing long-term SEZ restoration. This restoration occurs very near the areas of new disturbance in areas of similar vegetation communities and hydrologic conditions. Additionally, restoration of existing unpaved trails reduces sediment sources from these surfaces. Appendix E describes adaptive management strategies to monitor restoration and protect SEZ vegetation in these foot trail locations from future disturbance.

On-site restoration mitigates a portion of the loss of SEZ habitat that results from Greenway construction; additional off-site restoration is required to fully comply with TRPA Subsection 20.4.A.2(e). Table 15 highlights the off-site restoration requirement, identifying 105,138 square feet (2.41 acres) needed. As allowed in Code Subsection 20.3.C, the Conservancy will utilize banked land coverage restoration from LCD 1b SEZ from the California Land Bank equal to 105,138 square feet. Section 2.6.5.19 describes land bank sources that could meet the requirement to produce no more than 0 acres of SEZ disturbance and avoid significant impact. At the time of construction permitting, other restoration projects could be considered as candidate sources for California Land Bank credit in compliance with Land Bank provisions. If other projects supply needed credit, additional evaluation to assure offsetting restoration mitigates project impacts may be necessary.

Table 15

On-site and Off-site LCD 1b SEZ Restoration by Segment

Segment(s)	On-site Restoration Proposed (square feet)	Off-site Restoration Required (square feet)
2-45	0	0
2-50	415	36,214
2-70	10,922	66,421
2-80	13,652	2,503
Total	**24,989 (0.57 acres)**	**105,138 (2.41 acres)**

Source: Appendix K tables; HBA 2011

Temporary Disturbance. Temporary disturbance in SEZ areas will occur during construction of trail features. This evaluation considers the effectiveness of the required compliance measures for temporary

erosion control generally in response to Questions 62 and 90. Within SEZ areas specifically, the analysis assumes project construction will require a work zone up to 10 feet wide to allow equipment operation and passage. Construction of the boardwalk design as proposed allows smaller and lighter equipment in the meadow areas such as at Bijou Meadow and near Van Sickle Bi-State Park. This reduces the amount of disturbance from heavy equipment operation that typically is required for other boardwalk designs that use larger concrete footings. Additionally, the SEZ areas very near roadways such as Trout Creek and Pioneer Trail allow some construction activity to occur on the adjacent pavement (limited by construction traffic control needs). Appendix D includes provisions for protection and revegetation related to construction disturbance including: limiting overall encroachment with use of fencing and on-site inspectors, and salvaging riparian vegetation for replanting after construction.

This evaluation concludes the project meets TRPA Code requirements described above to avoid, reduce, and mitigate project impacts on SEZ. No additional mitigation is required.

Lahontan Basin Plan Findings. Lahontan implements provisions of the Basin Plan, including waste discharge prohibitions applicable to SEZs. Exceptions to waste discharge prohibitions for permanent disturbance in SEZ exist for public outdoor recreation and public health and safety facilities if (Basin Plan 5.8):

(a) the project by its nature must be sited in a SEZ

By their very nature, roads, trails, and utilities traverse large areas of the landscape, following an alignment chosen to connect different locations. (Siller Ranch Resolution No. R6T-2006-0021, page 6) The bowl-like nature of the Tahoe Region in South Lake Tahoe creates drainages with their attendant soil types that travel from the surrounding mountains to Lake Tahoe; creating a non-motorized transportation network within this context cannot avoid surface waters and associated SEZ. Therefore, such features by their very nature interact with SEZs in areas where crossings are necessary.

or (a) for public health and safety

As described above related to the TRPA Findings Analysis, the Greenway is necessary to protect public health and safety by: 1) providing an AASHTO Class I and ADA certified shared-use trail as an alternative to existing roadways and Class II bike lanes; and 2) provide an essential link in the non-auto public transportation network capable of providing safe access for the broadest spectrum and diversity of user groups. TRPA recognized these project features when incorporating the Greenway in elements of the Regional Plan, specifically: as EIP project 752; on the TRPA Air Quality Transportation Program list; and in the Lake Tahoe RTP (TMPO 2008), Lake Tahoe Regional BPMP (TMPO 2010) and TRPA EIP, Planning Horizon 2008-2018 (TRPA 2009).

(b) there is no feasible alternative which would reduce the extent of SEZ encroachment;

The evaluation for reasonable alternatives provided above for the TRPA findings analysis concludes no location alternatives reduce SEZ encroachment, although use of boardwalks and asphalt on permeable fill in suitable locations reduces the effects of this encroachment.

(c) impacts are fully mitigated;

The evaluation for offsetting mitigation for SEZ disturbance presented above concludes permanent and temporary measures incorporated into the project mitigate SEZ impacts. The on-site and off-site restoration proposals also maintain similar function as the areas proposed for disturbance. On-site restoration proposed lies in close proximity to areas of new disturbance and demonstrates similar characteristics. Off-site restoration originates from the Land Bank as described in Section 2.6.5.19.

Eligible Land Bank projects include restoration in a diversity of potential wetland types, matching the diversity of types disturbed by the project. Table 18 identifies disturbance by preliminary wetland type. Final project plans, accompanied by approved wetland delineations, will refine these proposals and meet compliance requirements,

(d) SEZs are restored in an amount 1.5 times the area of SEZ disturbed or developed for the project

The evaluation for on-site and off-site restoration proposals presented above demonstrates compliance with the requirements of 1.5:1 restoration.

This evaluation concludes the project meets Lahontan Basin Plan requirements described above to avoid, reduce, and mitigate project impacts on SEZ. No additional mitigation is required.

LTBMU Parcels. Two of the four LTBMU parcels that are crossed by the Greenway contain SEZ: APN 025-203-001 in Segment 2-70 (7,261 square feet of new land coverage and disturbance) and APN 027-331-003 in Segment 2-80 (1,926 square feet of existing land coverage to be removed). The SEZ in these areas is included in the analysis above and incorporated into the on-site restoration and off-site restoration requirements as described.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

34. Would the Greenway have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? (CEQA IVc)

Standard of Significance: Greater than zero acres and/or zero linear feet of disturbance or discharge to wetlands as defined by Section 404 of the CWA through direct removal, filling, hydrologic interruption or other means constitutes a significant impact as defined by the USACE jurisdictional waters regulations, 404 CFR 230 Section 404(b)(1), CDFG Section 1600 et seq, and USEPA and State of California no net loss policies.

In July, August and November of 2010, HBA conducted jurisdictional wetland delineations in accordance with the USACE and CDFG protocols, mapping, quantifying and characterizing potential jurisdictional waters and wetlands. Appendix G contains the Draft Preliminary Jurisdictional Delineation Report, dated January 31, 2011. As noted in Table 2 of Appendix G a total of 3.73 acres of potential jurisdictional 404 wetlands were delineated within the study area. (HBA 2011)

USACE Section 404 Clean Water Act Requirements. The USACE reviews projects that may have impacts on the waters of the U.S. under the provisions of Section 404 of the CWA. Permanent discharges that exceed 0.1 acre require review under the provisions of the applicable Nationwide Permit (#14 for Linear Transportation Project as a trail, or #42 for a Recreation Project as a bike trail). Discharges over 0.5 acres require consideration under the provisions of an Individual Permit. In all cases, activities that result in discharge over 0.1 acres must follow the required mitigation sequence of avoid, minimize, and compensate.

In Table 16, this evaluation identifies project impacts and offsetting mitigation requirements for impacts to wetlands. Table 16 identifies the temporary and permanent disturbance that results from installation of the shared-use trail. The permanent disturbance is the area of trail that lies directly under the areas of asphalt on permeable fill and that required for helical pier footings in the boardwalk sections. The

boardwalk designs presented in Figures 8 and 9 require two 4-inch diameter pipes for every 8 linear feet of boardwalk. The assumption is that temporary impacts result to wetland areas immediately adjacent to the trail during construction and calculated as a 10-foot area along side the permanent disturbance to allow for construction equipment and vehicle access. For portions of the trail that are adjacent to existing roadways, temporary disturbance includes the area between the trail and the roadway. It should be noted, the calculation for disturbance included in this analysis is based on the draft preliminary delineation and may change as a result of USACE verification.

Table 16 presents permanent disturbance from project features by wetland type, totaling 0.22 acres. As described in other sections of this document, the project development process avoided wetland encroachment where possible, reduced effects of wetland impacts through project design features, and developed offsetting restoration strategies to mitigate remaining impacts. This process, described in detail for Questions 33 and 66, closely follows that prescribed by the CWA. Required mitigation must offset the loss of wetland function; restoration/disturbance ratios, therefore, will vary depending on this functional assessment. Mitigation will never be less than 1:1 for in-kind restoration.

The project implements a mixture of on-site and off-site restoration. The Conservancy expects that wetland delineations for the current project area and those identified for qualifying off-site restoration projects will produce restoration in wetland categories that closely match those disturbed by the project. On-site restoration will occur in close proximity and in similar landscape types to new disturbance. Section 2.6.5.19 describes the potential wetland types on candidate restoration sites including types affected by project proposals. As construction plans and 404 permit processes progress, additional detail confirming the functional analysis of compensatory mitigation will be developed.

Table 16

Section 404 Wetlands and Waters of the US and Mitigation Required (square feet)

Wetland Type	Total Area Within Survey Area	Permanent Disturbance Boardwalk	Permanent Disturbance Asphalt on Grade	Permanent Disturbance Asphalt on Permeable Fill	Total Disturbance	Mitigation Required (using 1:1.5 ratio)
Emergent Floodplain	7,988	46.99	1,319.75	0	1,366.74	2,050.11
Montane Dry Meadow	48,258	238.35	0	1,035.15	1,273.50	1,910.25
Montane Mesic Meadow	41,220	116.34	0	0	116.34	174.51
Other Waters	3,086	0	0	42.37	42.37	63.55
Riparian Wetland	60,256	280.65	239.53	3,059.26	3,579.44	5,369.16
Total (square feet)	**160,808**	**682.33**	**1,559.28**	**4,136.78**	**6,378.39**	**9,567.58**
Total (Acres)	**3.69**	**0.02**	**0.04**	**0.09**	**0.15**	**0.22**

Source: HBA 2011

Lahontan 401 Water Quality Certification Requirements. Prior to obtaining a 404 permit issued by USACE, the project must receive a Section 401 Water Quality Certification issued by Lahontan. Receipt of this certification demonstrates project proposal meets applicable statewide water quality standards. Other sections of this IS/IEC/EA identify compliance with elements of the Basin Plan and Board orders needed to consider Section 401 Water Quality Certification (see CM-20 in Section 2.6.5.20). This includes: land capability and coverage (Questions 33 and 66), temporary and permanent disturbance in SEZ including on-site and off-site restoration needs (Question 33), and water quality standards and beneficial uses (Question 90). As project plans near completion, additional detail such as specific provisions of the SWPPP and land bank restoration project details will refine this evaluation.

LTBMU Parcels. One of the four LTBMU parcels that are crossed by Segment 2-70 contains potentially jurisdictional wetlands. This is APN 027-331-003. The emergent floodplain wetland delineated on this property is crossed by the Greenway for a length of 50 feet at the south east corner. The subject wetland is included in the analysis above and is incorporated into the off-site restoration requirements that are outlined in Section 2.6.5.19.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

35. Would the Greenway interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? (CEQA IVd)

Standard of Significance: A significant impact results from the blockage, disruption or impedance of use of greater than zero wildlife or fish corridors or native wildlife nursery sites, as defined by TRPA Code Chapter 78 and 79.

Fish. Construction of the project results in no blockage of fish migration corridors. The Greenway crosses Trout Creek via a bridge span that places no structures within the stream channel. Crossings of SEZs with evidence of surface hydrology use boardwalk construction so as to not interfere with the flow of waters or block any fish movement.

Mammals. Mule deer resident or passing through the project area are members of the Carson River Deer Herd. The Carson River Deer Herd management plan identifies the migration corridors utilized for seasonal movements. The closest corridor to the project area is in the High Meadows area south of Monument Peak and north of the ridgeline leading to Job's Peak (CDFG 1985). The corridor then enters Lake Valley, where the project area is located via the Cold Creek Drainage. The management plan identifies no specific corridor within Lake Valley.

Mule deer may avoid the project area because of noise generated during construction activities, but the project will not block movements long-term. Implementation of the Greenway assures that construction impacts are intermittent and discontinuous. Movement is preserved through the project design element, which maintains large open areas within the project area.

Railings are necessary in trail portions where boardwalk is over 30 inches above ground surface. The only location in which this occurs is the Trout Creek crossing, and this railing will not interfere with the movement of deer in this location. Boardwalks installed in meadow and riparian areas are typically below 18 inches above ground surface with no railings, allowing for deer to walk over the boardwalk.

Use of the Greenway by walkers and bikers should not have a detrimental effect on the migration of mule deer because the location of the shared-use trail is within the summer range and not within the migration corridor identified to the south of the project area.

No other identified resident wildlife corridors are mapped within the project area. American marten are known to occupy suitable habitat areas adjacent to the proposed tail alignment. The Greenway trail design will not impede the movement of marten or other mammals that may be moving though the area, such as coyote, raccoon or bobcat. Riparian zones are often utilized as movement corridors for wildlife. The use of boardwalks in SEZ areas will not impede the movement of wildlife as it allows for passage of small mammals under the structure and does not prevent the movement of larger wildlife over the boardwalk surface.

Native Wildlife Nurseries. Tree removal and construction activities associated with construction may result in direct removal of active nests for migratory birds and/or raptors and may result in disturbance or abandonment of nesting, roosting, or breeding sites in adjacent habitat. In addition wildlife nursery sites may be present within the project area and may be disturbed due to construction activities. Surveys performed for forest carnivores recorded presence/absence in suitable habitat but did not include searches for nursery or den sites. While no surveys have been performed for wildlife nurseries, the potential exists for nursery sites to be present before trail construction commences. Implementation of mitigation measure BIO-1 below identifies native wildlife nurseries and provides protection to the identified sites, reducing the potential impact to native wildlife nurseries is less than significant after mitigation.

LTBMU Parcels. The four LTBMU parcels contain known no native resident migratory or movement corridors; therefore there is no impact associated with the Greenway to movement or migration corridors on LTBMU parcels within the project area. The potential exists for native wildlife nurseries to exist on LTBMU parcels within the project area. Implementation of mitigation measures BIO-1 prior to construction is necessary to avoid potential adverse effects.

Environmental Analysis: *Less than Significant Impact after Mitigation*.

Required Mitigation:

BIO-1: Active Raptor and Migratory Bird Nest Site and Wildlife Nursery Site Protection Program

The Program shall include surveys, consultation, and protective actions. Pre-construction surveys, conducted during the nesting/breeding season immediately prior to initial project construction (e.g., excavation, grading and tree removal), shall be conducted to identify any active raptor or migratory bird nest sites and wildlife nursery sites within the project area. During initial construction activities (tree removal and excavation for the construction), a qualified biological monitor shall evaluate whether any raptors or migratory birds are occupying trees or whether any wildlife den/nursery sties are within the project area. The biological monitor shall have the authority to stop construction near occupied trees or nursery sites if it appears to be having a negative impact on nesting raptors or migratory birds or their young observed within the construction zone. If construction must be stopped, the monitor shall consult with TRPA staff within 24 hours (and LTBMU staff in locations on LTBMU lands) to determine appropriate actions to restart construction while reducing impacts to identified nursery sites, raptors or migratory bird nests.

36. Would the Greenway conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance? (CEQA IVe)

Standard of Significance: If the Greenway conflicts with goals and policies outlined in the conservation element of the TRPA Regional Plan for vegetation, wildlife and fisheries a significant impact results to biological resources.

Evaluation of Greenway compliance with TRPA ordinances related to SEZ can be found in other portions of this section. Table 17 presents the consistency analysis of the Greenway with the TRPA Regional Plan Conservation Element Goals and Policies for biological resources.

Table 17

TRPA Regional Plan Consistency Analysis – Biological Resources

Vegetation	
Goal 1 – Provide for a wide mix and increased diversity of plant communities in the Tahoe Basin Policy 2 Opportunities to improve the age structure of the pine and fir plant communities shall be encouraged when consistent with other environmental considerations. Policy 3 Forest pattern shall be manipulated whenever appropriate as guided by the size and distribution of forest openings. Policy 4 Edge zones between adjacent plant communities will be maximized and treated for their special value relative to plant diversity and wildlife habitat. Policy 5 Permanent 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. Policy 6 The management of vegetation in urban areas shall be in accordance with the polices of this plan and shall include provisions that allow for the perpetuation of the natural appearing landscape Policy 7 Disturbance or removal of forest litter should be avoided to promote the natural catchment of nutrients. 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. Policy 9 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.	Consistent – The Greenway does not modify the diversity of plant communities in the Lake Tahoe Basin. The RRPs utilize TRPA-approved species suitable to maintain natural plant communities, including SEZ and upland types, that address wildlife, fire prevention, and water quality needs.
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. Policy 2 Riparian plant communities shall be restored or expanded whenever and wherever possible.	Consistent – The project avoids SEZ to the extent possible to maintain beneficial uses. Restoration of SEZ areas occurs as required to protect overall diversity and habitat quality.
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. Policy 2 The population sites and critical habitat of all sensitive plant species in the Lake Tahoe Basin shall be identified and preserved.	Consistent – Sensitive plant species surveys completed within the project area identify no occurrences of TES plant species. The Greenway impacts no uncommon plant communities.
Goal 4 – Provide for and increase the amount of late seral/old growth	Not Applicable – The project area

stands within the Lake Tahoe Basin Policy 4 Retain large trees as a principal component of late seral/old growth ecosystems. Policy 5 Retain trees of medium and small size sufficient to provide for large tree recruitment over time and to provide structural diversity.	contains no late seral/old growth forest.
Goal 5 – The appropriate stocking level and distribution of snags and coarse woody debris shall be retained in the regions forests to provide habitat for organisms that depend on such features and to perpetuate natural ecological processes. Policy 1 Allow for a sufficient number and an appropriate distribution of snags throughout the region's forests to provide and maintain habitat for species dependent on such features. Policy 2 Allow for an appropriate amount, level, and distribution of coarse woody debris throughout the region's forests to maintain biological integrity, to stabilize soil, and to afford a reasonable level of fire safety.	Not Applicable – The Greenway creates no change to the distribution of snags and coarse woody debris.
Wildlife	
Goal 1 – Maintain suitable habitats for all indigenous species of wildlife without preference to game or non-game species through maintenance of habitat diversity Policy 1 All proposed actions shall consider impacts to wildlife. Policy 2 Riparian vegetation shall be protected and managed for wildlife	Consistent – The Greenway maintains suitable wildlife habitats, protecting riparian vegetation to the greatest extent feasible. Mitigations require the restoration of SEZ at a ratio of 1:1.5 protects wildlife habitat.
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.	Consistent – The Greenway results in no adverse impacts to threatened, endangered, rare or sensitive species as a result of construction or operations.
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 1 Development proposals affecting streams, lakes and adjacent lands shall evaluate impacts to the fishery. Policy 2 Unnatural blockages and other impediments to fish movement will be prohibited and removed wherever appropriate.	Consistent – The Greenway results in no adverse impacts to aquatic habitat and creates no blockages or other impediments to fish movement.
Stream Environment Zones	
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% of the SEZ lands that have been disturbed, developed, or subdivided. Policy 2 SEZ lands shall be protected and managed for their natural values. Policy 5 No new land coverage or other permanent land disturbance shall be permitted in SEZs except for those uses as noted (including outdoor recreation facilities if six conditions are met).	Consistent - Restoration of SEZ areas occurs throughout the project area to protect SEZ area in the Lake Tahoe Basin, including protecting diversity and habitat quality.

Source: HBA 2011

Consistency with the TRPA Regional Plan goals and policies reduces the potential impact to biological resources to a level of less than significant.

LTBMU Parcels. Consistency with the LTBMU Forest Plan assures actions that avoid and reduce potential adverse effects to biological resources.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

37. Would the Greenway conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (CEQA IVf)

Standard of Significance: If the project conflicts with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved habitat conservation plan, a significant impact results.

The Greenway does not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan because no such plans exist for the project area.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

38. Would the Greenway result in removal of native vegetation in excess of the area utilized for the actual development permitted by the land capability/IPES system? (TRPA 4a)

No. Standard of Significance: Removal of greater than zero acres of native vegetation in excess of the area utilized for the actual development permitted by the TRPA land capability system results in a significant impact as defined by TRPA Code Chapters 20 and 65.

The Greenway results in land coverage associated with the physical shared-use trail surfaces and land disturbance associated with adjacent clear zones that infiltrate runoff and cut and fill slopes necessary to control trail grades for compliance with AASHTO and ADA design standards. Question 66 analyzes land coverage by LCD and Question 33 addresses land coverage specific to LCD 1b and TRPA-designated SEZs.

Greenway construction removes native vegetation during soil disturbance activities; however, the project complies with TRPA regulations for restoration and revegetation of disturbance areas. The Greenway design element minimizes the extent of disturbance through trail location, retaining walls, and trail surface options. Appendix D details the RRPs for disturbance areas, including clear zones, cut and fill slopes. Plan components include reestablishment of native vegetation. The disturbance necessary for project implementation is in accordance with the requirements outlined for each LCD as noted in Question 66 for restoration of temporary disturbance. The vegetation removal will be limited to the area utilized only for the actual development, therefore this impact is considered less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

39. Would the Greenway result in removal of riparian vegetation other vegetation associated with critical wildlife habitat, either through direct removal or indirect lowering of the groundwater table? (TRPA 4b)

Yes. Standard of Significance: The direct removal or indirect lowering of the groundwater table during project construction or long-term operations that causes loss of riparian vegetation or other vegetation associated with critical wildlife habitat constitutes a significant impact as defined by TRPA Code Chapter 74.

Direct vegetation removal will include riparian vegetation removal in 10 locations as described for Question 33. The evaluation presented for that question concludes the project proposes offsetting restoration for riparian vegetation removal both on-site and off-site sufficient to avoid significant impact. Other vegetation removal occurs for project construction as described in other sections. Evaluation presented above for Question 32 identifies no critical wildlife habitat within the project area, however, so other vegetation removal will have no affect on this habitat type, avoiding potential for significant impact.

No direct removal of groundwater will occur. However, typical trail construction could intercept groundwater, affecting the water table, through excavation needed for the trail itself or associated retaining walls. Evaluation of the Greenway proposal identifies design details that avoid trail excavation in areas associated with high ground water (i.e. SEZ and or wetland) through use of boardwalk or asphalt on permeable fill. In mapped SEZ where the trail is proposed very near an existing roadway, excavation for standard trail paving will occur, yet existing roadway development already affects groundwater sufficiently to conclude no interruption will occur. Question 69 identifies the project effects related to retaining wall construction and concludes the low probability of intercepting groundwater for this construction. As final plans develop with additional engineering detail, a soils/hydraulic reports required for excavations in excess of five feet will confirm this assumption. If necessary, additional design revisions may be necessary to avoid interception of groundwater. This evaluation concludes project proposals will avoid intercepting groundwater, which could impact riparian vegetation and therefore avoids potential for significant impact.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

40. Would the Greenway result in introduction of new vegetation that will require excessive fertilizer or water, or will provide a barrier to the normal replenishment of existing species? (TRPA 4c)

No. Standard of Significance: The introduction of noxious species or the introduction of new vegetation that requires excessive fertilizer or water constitutes a significant impact as defined by TRPA Code Chapter 77.

Although the Greenway constructs impervious surfaces that do not allow for the replenishment of existing plant species, this affects a very small area. Proposed land coverage affects approximately 6 percent of the project area. Approximately 12 percent of the proposed land coverage lies over existing coverage, which currently restricts the normal replenishment of existing species. Additionally, construction of boardwalks in SEZ areas allows for some maintenance and regrowth of riparian vegetation to occur under the boardwalk surface.

Introduction of noxious weed species could also create a barrier to the replenishment and growth of existing native species if noxious weeds out compete and displace native plant species. Invasive weeds such as tall white-top (*Lepidium latifolium*), Klamath weed (*Hypericum perforatum*) and thistle species

(*Cirsium spp.*) often result in monocultures, resulting in loss of diversity and degradation of habitats. Seed mixes proposed for the Greenway include native species and adaptive species and do not include noxious weed or invasive species. Chapter 2 identifies provisions of the Noxious Weed and Invasive Species Plan (Section 2.6.5.17, CM-17) prepared prior to project construction that includes measures to avoid accidental introduction of invasive species. Appendix E identifies long-term management strategies to monitor the project area for invasive species presence and address infestations should they occur.

Application of preventative measures to control noxious weed and invasive species during construction and expedited identification and removal of such species during revegetation and long-term maintenance activities allows for normal replenishment of existing species and native and adapted species post-project and avoids potential for significant impact.

The Greenway includes RRPs that rely on native and adapted species to avoid the need for excessive water and fertilizer use. Appendix D describes this strategy for disturbed areas, outlining the approaches to revegetation and restoration according to type and location. The treatment types are: upland sites, SEZs, upland slopes 3:1 and steeper, clear zones, trail land coverage removal and disturbance restoration, and topsoil/organic matter stockpiles. Treatment types are specific for each area including individual plantings in specific areas to control traffic and the application of revegetation seed mixes.

The project proposes no irrigation. The revegetation specifications identify soil amendments specified as slow-release 8-2-4 for application where topsoil is not available. Organic matter and topsoil stockpiled during construction will be reused during revegetation activities. Slow release fertilizer applied during the establishment phase consists of SYMBIOS 6-4-4. Long-term application of fertilizers is unnecessary.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

41. Would the Greenway result in change in the diversity or distribution of species, or number of any species of plants (including trees, shrubs, grass, crops, micro flora and aquatic plants)? (TRPA 4d)

No. Standard of Significance: A change in diversity or distribution of species or number of species of plants resulting from Greenway construction or operations constitutes a significant impact as defined by TRPA Code Chapter 65 and 78 and 79.

Construction of the Greenway results in the removal of vegetation as addressed in Questions 33, 34, 39 and 40. This removal of this vegetation does not result in the reduction in diversity of species; however a temporary loss in individual numbers of plant species likely results. As noted in Question 33, the restoration of SEZ in an amount 1.5 times the area lost mitigates the loss of riparian habitat (i.e., SEZ), with restoration and revegetation offsetting the temporary loss in numbers of individuals. Through the implementation of CM-5 addressing revegetation, combined with mitigation of SEZ impacts, the project maintains the diversity and distribution of species of plants, reducing potential impacts to a level of less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

42. Would the Greenway result in reduction of the numbers of any unique, rare or endangered species of plants? (TRPA 4e)

No, with mitigation. Standard of Significance: The reduction of the number of any unique, rare or endangered species of plants as a result of Greenway construction and operations constitutes a significant impact as defined by TRPA Code Chapter 75.

The project area contains suitable habitat for the following sensitive species:

- Galena Creek rock cress (*Arabis rigidissima* var. *demota*),
- *Botrychium* species listed in Table 13,
- Shore sedge (*Carex limosa*),
- Oregon fireweed (*Epilobium oreganum*),
- Mees's Moss (*Meesia triquetra*), and
- Water bulrush (*Scirpus subterminalis*).

Western Botanical Services, Inc. (WBS) surveyed the project area for suitable habitat in July and August of 2005. No sensitive plant species were observed within the project corridor (WBS 2005). Appendix I contains the SEZ, Sensitive Plant Species and Noxious Weeds Survey prepared by WBS, including a list of species that were surveyed. While no sensitive species were observed within the project area, the potential exists for the species to colonize the project area since the surveys were performed in 2005.

Suitable habitat exists for Galena Creek rock cress and Oregon fireweed in the upland locations. Suitable habitat exists for the *Botrychium* species, Mees's moss, and water bulrush in the SEZ areas as delineated on the plan design sheets. While no known populations have been recorded in the project area from previous surveys, preconstruction sensitive plant surveys required for compliance with TRPA codified regulations, minimizes potential impacts to sensitive plant species through proper detection of sensitive plant species within the project area and protection of native species from noxious weeds and invasive species.

During the WBS survey in 2005, two noxious weed locations were observed and recorded just outside the project area. No occurrences of noxious weeds were observed within the project area during the survey (WBS 2005).

Surveys performed by a qualified botanist or biologist prior to ground disturbing construction activities determine the presence of sensitive plant species listed in Table 13. Identified sensitive plant individuals and populations are marked and their location recorded. A report is then prepared and submitted to pertinent agencies providing documentation of observed plant species.

Pre-project surveys allow for the identification and subsequent avoidance of detected populations. If pre-project surveys identify the presence of sensitive plants within the project area, mitigation is necessary to assure that project construction does not result in reduction of the numbers of any unique, rare or endangered species of plants**.** In accordance with TRPA Code Subsection 75.2.A(5), the Conservancy may mitigate impacts to sensitive plant species through preparation of a mitigation and monitoring plan to restore disturbed habitat on-site or off-site. CM-17, Noxious Weed and Invasive Species Program, requires the detection of sensitive plant species within the Greenway construction corridor for the protection of native species from noxious weeds and invasive species. Implementation of mitigation measure BIO-2 reduces the impact to a level of less than significant through avoidance and protection of sensitive plans species, should such species be identified in the project area.

LTBMU Parcels. LTBMU Parcels fall under the analysis above because they were surveyed in 2005 and contain suitable habitat for the listed species. Implementation of mitigation measure BIO-2 below is avoids and protects sensitive plant species, should they be present.

Environmental Analysis: *Less than Significant Impact after Mitigation.*

Required Mitigation:

BIO-2 – Avoid Sensitive Plants or Prepare Sensitive Plant Protection Program

If pre-project surveys identify sensitive plant species, the Conservancy shall develop a Sensitive Plant Protection Program to mitigate impacts to LTBMU Sensitive, CNPS and TRPA Special Status Plant Species. Program features shall include:

Avoidance. Impacts to rare plant populations identified from the rare plant surveys shall be avoided where feasible by reconfiguring project design and fencing rare plant populations to prevent encroachment.

Identify, Select, and Restore or Purchase Mitigation Sites. If avoidance is not feasible, the Conservancy together with input from the TRPA and LTBMU when applicable shall identify opportunities for mitigation of sensitive plants impacts from Greenway construction and operation. Mitigation is not limited to but may include a single, or combination of the following items: restoration of degraded sensitive plant habitat owned by the Conservancy, purchase of mitigation sites, negotiation of conservation easements, or habitat restoration in off-site, degraded rare plant populations to compensate for unavoidable impacts.

Prepare a Special Status Plant Species Mitigation & Monitoring Plan. If avoidance is not feasible, the Conservancy shall produce a mitigation and monitoring plan to follow the CNPS and CDFG guidelines to comply with Chapter 10 of CDFG Native Plant Protection Policy and TRPA Code Subsection 75.2.A.

43. Would the Greenway result in removal of streambank and/or backshore vegetation, including woody vegetation such as willows? (TRPA 4f)

Yes. Standard of Significance: TRPA Code Section 74.2 prohibits the removal of SEZ vegetation except as allowed by other Code provisions. Loss of riparian vegetation results in a significant impact.

The Greenway will remove a small amount of woody riparian vegetation near Trout Creek, along Pioneer Trail near Charlesworth Ct, and near Van Sickle Bi-State Park. See analysis for Question 33, which addresses CEQA checklist item IVb and concludes offsetting restoration reduces the level of impact to less than significant.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigation: **None.**

44. Would the Greenway result in removal of any native live, dead or dying trees 30 inches or greater in diameter at breast height (dbh) within TRPA's Conservation or Recreation land use classifications? (TRPA 4g)

No. Standard of Significance: TRPA Code Subsection 71.2.A prohibits the removal of trees larger than 30 inches dbh for west side forest types in lands that are in conservation or recreation plan areas except under specific project conditions, tree removal that does not meet findings outlines in Subsection 71.2.A results in a significant impact within TRPA Conservation or Recreation land use areas.

The Greenway transects a combination of PASs. Table 33 provides a breakdown of each trail segment by PAS, use designation, and length of Greenway within each PAS. Figure 32 in the Section 3.2.10 identifies the locations of each of the PAS and their applicable Land Use Classifications.

Portions of Segments 2-50, 2-70 and 2-80 run within Conservation and/or Recreation land use designations. As the entirety of the project area is within TRPA designated west side forest type (M. Vollmer TRPA, personal communications, July 2009), prohibition of removal of trees 30-inch dbh or

greater applies in these areas. Table 18 identifies the estimated number of trees for removal in Segments 2-45, 2-50, 2-70 and 2-80, the number of trees larger than 30-inch dbh along in the segment, and the number of trees 30-inch dbh or larger within Conservation and Recreation PAS.

Table 18

Tree Removal Estimates by Segment

Segment	Total Trees*	30 inch dbh Trees	30 inch dbh Trees in Conservation or Recreation Plan Areas
2-45	12	2	0
2-50	125	13	13
2-70	189	14	2
2-80	189	4	3
Total	**515**	**33**	**18**

Source: HBA 2011

Notes: *Although trees less than 14-inch dbh require no regulatory decision for removal, total tree counts include trees greater than 6-inch dbh to less than 14-inch dbh to best quantify effects to scenic and biological resources.

HBA scientists counted trees in the summer of 2009 by following the flagged centerline of the trail segments, estimating the extent of project disturbance, and measuring using a dbh tape and/or Biltmore stick. Project development to date does not include a survey providing precise tree location in relation to project features or a hazard or tree health survey completed by a qualified forester. During construction plan development, additional data will confirm the size, location, and condition of all trees, including 30-inch dbh trees in Recreation and Conservation plan areas and will refine removal estimates. Provisions in TRPA Code Subsection 71.2.A for tree removal will be considered for applicable large trees within the project area, potentially further refining removal estimates related to construction of Greenway features. Considering the methodology for tree removal evaluation employed to date, Table 18 presents a worst-case estimate of tree removal needs.

The Greenway design element includes trail alignment criteria that directs designers to avoid tree removal where possible. Evaluation of the current Greenway proposal identifies additional trail sections that could be realigned to better meet this criteria. This includes design refinement possible to avoid large trees in several portions of the project area, although trail realignment must occur to comply with TRPA Code provisions for trees in Recreation and Conservation plan areas as noted in CM-21 in Section 2.6.5.21. As noted in CM-21, the Greenway is to be realigned in areas that are not limited by resource restrictions (SEZ, wetlands, topography, land uses) to protect large trees. Additional encroachment into SEZ or wetland areas may be required to protect large trees and therefore have an overall impact on SEZ/wetland area to be restored. Currently the project is not consistent with TRPA Code Subsection 71.2.A, however with the required re-design and realignment as described in CM-21, the impact is considered less than significant as it requires the retention of large trees in conservation and recreation plan areas.

Other trees 30-inch dbh or larger are present within the project area but not identified for removal. Excavation, compaction and grading activities associated with construction of the Greenway potentially affect these trees. Installation of retaining walls, slope layback and vehicle access during construction may impact tree roots, potentially degrading tree health. Removal of trees for Greenway construction results in no substantial changes to the existing habitat and no changes in habitat categorization.

LTBMU Parcels: The LTBMU parcels are located within Residential Plan areas and therefore this impact does not apply.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigation: **None.**

45. Would the Greenway result in a change in the natural functioning of an old growth ecosystem? (TRPA 4h)

No. Standard of Significance: A change in the natural functioning of an old growth ecosystem would constitute a significant impact as determined by TRPA Code Chapter 71 and Goals and Policies.

Because the project area contains no ecosystems delineated or otherwise identified as old growth, the Greenway results in no impact or change to the natural functioning of old growth ecosystems.

LTBMU Parcels: LTBMU parcels contain no old growth ecosystems.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

46. Would the Greenway result in change in the diversity or distribution of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects, mammals, amphibians or microfauna)? (TRPA 5a)

No. Standard of Significance: A change in the diversity or distribution of species, or numbers of any species of animals resulting from Greenway construction or operations constitutes a significant impact to TRPA Thresholds, as cited in TRPA Resolution 82-11 Exhibit A, and TRPA goals and policies pertaining to wildlife fisheries.

See the analysis for Question 49, which addresses TRPA checklist item 5d and concludes the project creates no change in the diversity or distribution of species.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

47. Would the Greenway result in reduction of the number of any unique, rare or endangered species of animals? (TRPA 5b)

No. Standard of Significance: See analysis for Question 32, which addresses CEQA checklist item IVa and concludes the level of impact to species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS is less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

48. Would the Greenway result in introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals? (TRPA 5c)

No. Standard of Significance: The introduction of new species into the project area or the blockage or disruption of fish or wildlife corridors constitutes a significant impact by the Greenway to the migration or movement of animals.

See the analysis for Question 35, which addresses CEQA checklist item IVd and concludes the level of impact to migration or movement of animals is less than significant.

No new species of animals are proposed for introduction into the project area as a result of the Greenway project. The project and associated compliance measures do not include species introduction outside of proposed SEZ and wetland restoration. No animals, insects or invertebrate species will be introduced.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigation: **None.**

49. Would the Greenway result in deterioration of existing fish or wildlife habitat quantity or quality? (TRPA 5d)

No, with mitigation. Standard of Significance: Deterioration of existing fish or wildlife habitat quantity or quality from construction and operations of the Greenway constitutes a significant impact to these habitats as defined in TRPA Code Chapters 78 and 79.

Wildlife Habitat. The project transects a variety of wildlife habitats, ranging from montane meadows (xeric and mesic), riparian wetlands, Jeffrey pine forest, lodgepole pine forest and areas of montane chaparral. Question 33 identifies the impacts to SEZ and Question 34 describes the impacts to wetlands and includes measures to decrease impacts to these habitats and restore 1.5 times the SEZ area impacted. Impacts to other habitat types are described below.

Other habitat types present along the project alignment, aside from delineated SEZ, are Jeffrey pine forest, lodgepole pine, and montane chaparral. Areas of impacted Jeffrey pine forest impacted include: Segment 2-45, a small portion of Segment 2-50 in the upland area outside the SEZ, Segment 2-70 in the area between Glenwood Ave and Aloha, and between Herbert St and Pioneer Trail. Segment 2-80 contains Jeffrey pine forest between Ruby Way and Keller Rd, then from Rocky Point Rd to the terminus of the trail in Van Sickle Bi-State Park. Lodgepole pine forest is located along the margins of Bijou Meadow. Montane chaparral is present along the alignment between Walkup Rd and Herbert St.

These portions of the Greenway transect residential neighborhoods or are immediately adjacent to roadways and streets; thus, the habitat within these areas is of low suitability for many wildlife species due to high existing human presence and use. Many of these habitat areas in the urban interface have experienced fuels treatment in the recent past and therefore lack levels of structural complexity (i.e., multiple canopy layers, high degree of species diversity, high levels of down woody debris or standing snags) that are associated with high quality wildlife habitat. A variety of common species utilize the habitats described above such as Stellar's jay (*Cyanocitta stelleri*), mountain chickadee (*Poecile gambeli*), northern flicker (*Colaptes auratus*), Douglas squirrel (*Tamiasciurus douglasii*), coyote (*Canis latrans*), black bear (*Ursus americanus*), and western fence lizard (*Sceloporus occidentalis*). The Greenway design element decreases impacts to the surrounding habitat where possible through minimization of tree removal, avoidance of trees larger than 30-inch dbh and minimization of grading impacts. The project results in the relative low numbers of removed trees, as analyzed in Question 44. The minimal vegetation

and tree removal, together with the location of the proposed trail within low quality habitat reduces the potential impact to wildlife habitat to a level of less than significant.

TRPA Sensitive Species. Mallard and waterfowl nesting habitat may be modified due to trail construction because the Greenway is located in open meadow and riparian areas that are suitable for nesting, specifically in the Trout Creek riparian area. Northern goshawk has suitable foraging and nesting habitat in the project area and have been documented (HBA 2007) adjacent to the project area. Construction of the project results in removal of trees within suitable habitat, most notably in the Van Sickle Bi-State Park area. Approximately 0.58 acres of suitable northern goshawk habitat may be lost as a result of project implementation. No known occurrences of nesting northern goshawks have been recorded in areas within or adjacent to the project area. However, because the timing for construction of the Greenway is unknown, the potential exists for Northern goshawk to establish a nesting territory prior to construction. Therefore, the level of impact is potentially significant, requiring mitigation.

The project results in the minor loss of foraging habitat for mule deer due to the installation of the Greenway. However, decommissioning of existing informal trails restores some foraging habitat. Mule deer feed on a variety of shrubs, forbs and grasses (Ahlborn 2006). Mule deer foraging habitat is diverse and plentiful within the project area and is not considered sensitive by TRPA. The loss of foraging habitat is minimal and will not result in large areas lost due to the linear nature of the project. Therefore, the level of impact is less than significant.

CDFG and LTBMU Species. Sensitive species as defined by the LTBMU and CDFG that have been sighted or have suitable habitat within the project area include: Lahontan Lake tui chub, mountain yellow-legged frog, Cooper's hawk, sharp-shinned hawk, California spotted owl, California yellow warbler, Sierra Nevada snowshoe hare, Sierra Nevada mountain beaver, and American marten.

Surveys for mountain yellow-legged frog have been performed in the project area with no individuals observed or recorded; however, the montane riparian habitat on the banks of the Trout Creek and Heavenly Valley Creek provide suitable habitat for this species. No mountain yellow-legged frogs were observed, and the removal of montane riparian vegetation in close proximity to open water will only occur immediately adjacent to the roadway and existing bridge on Martin Ave. This habitat is suitable but disturbed by the existing roadway and bridge structure. The potential exists however, for mountain yellow-legged frogs to be present in the project area and to be directly impacted by construction of the proposed trail crossing at Trout Creek. Therefore, the level of impact is potentially significant, requiring mitigation.

Cooper's hawk and Sharp shinned hawk have been observed within the project area, but not during Northern goshawk surveys or other biological survey periods. These species, however, are assumed to be extant within the project area. Installation of the Greenway results in the removal of coniferous trees and other habitats that are suitable foraging and nesting locations for these species. Cooper's hawks prefer the use of forests with patches and often utilize edges for perching and hunting (Zeiner et al, 1988). Creation of new edge through the removal of trees for the proposed trail may create additional suitable roost sites for Cooper's hawk in the project area; however, increased human presence associated with use of the trail would likely offset any increase in suitability. While no habitat has been specifically defined by CDFG as sensitive for these species and the relative small number of acres removed in the project area as compared to the available habitat in the Lake Valley and Stateline areas, the level of impact is less than significant for these species.

Marginal suitable habitat exists within the project area for California spotted owl. As noted above, surveys for spotted owls have been performed within the project area with no detections (HBA 2007). The habitat within the project area is marginal foraging and nesting habitat as the majority of the forest is second growth and does not contain many of the attributes that California spotted owls tend to prefer:

multi layered canopy, high degree of canopy cover, large trees and other late seral forest characteristics. The closest PACs are the Saxon, Trout and Cold Creek PACs. These three PACs are greater than 1 mile away from the Greenway and will not be impacted by use of the shared-use trail or construction activities. No PACs or Home Range Core areas (as delineated by LTBMU) will be impacted by the project. However, the potential exists for California spotted owls to take up residence before commencement of construction and be directly or indirectly impacted as a result of the project. Direct impacts result if nesting California spotted owls are present within or immediately adjacent to the project area. If presence of a nesting pair occurred on LTBMU lands, a PAC will be delineated, thereby protecting the best 150-acres of suitable habitat surrounding the nest location. Direct removal of habitat within the PAC is then subject to the regulations of the SNFPA and a Limited Operating Period is implemented for construction activities. Because the exact construction phasing of the Greenway is unknown, there is a possibility for California spotted owls to be present and impacted within the project area. Therefore, this impact is potentially significant, requiring mitigation.

Suitable habitat for California yellow warbler exists within the project area in the form of riparian vegetation. Surveys were performed for this species within the project area, but it was not detected. While survey results were negative, the potential exists for this species to be present within the project during construction. Due to the potential impacts that may result to yellow warblers that may be nesting within the project area, the level of impact is potentially significant, requiring mitigation.

Habitat for Sierra Nevada snowshoe hare is present within the project alignment in the form of montane riparian habitats and brushy under story of secondary forest. However, due to the relative small amount of montane riparian habitat that will be removed, a decline in the viability of the population is not likely. Therefore, the level of impact is less than significant for this species.

Montane riparian habitat present within the project area is marginally suitable for mountain beaver. Impacts to montane riparian habitat will occur as noted and described above. Surveys for mountain beaver have not occurred within the project area. Despite the lack of presence/absence data, it is unlikely that the impacts associated with removal of riparian habitat will have an overall detrimental effect on this species because of the small amount of removed riparian habitat. As discussed in Impact 33, the project restores SEZ to offset impacts to SEZs and associated riparian habitats, which offsets impacts associated with loss of mountain beaver habitat. Restoration potentially increases the suitable habitat for this species. Therefore, the level of impact is less than significant for this species.

The project area was surveyed for forest carnivores as late as 2007. American marten were detected at four of the five survey locations and are presumed to be extant within the project area. Construction and operations of the Greenway results in the removal of trees and other vegetation utilized by marten. American marten prefer mixed conifer stands with a relative high degree of canopy closure. Marten detected in association with the surveys performed for the project were in relative close proximity to residential development and human use and habitation. The existence of marten in these areas shows this species is able to utilize habitats that have been influenced by human activity in the form of structures being present in close proximity to the detections, human generated noise and presence in the form of vehicles, hikers, and bikers. Modification of the existing environment as a result of trail construction will not result in removal or modification of marten habitat to a degree that would result in the decrease in viability of the existing marten population. The level of impact is less than significant for this species.

Human use and presence in the form of hikers and mountain bikers on the existing dirt trails is relatively widespread and common. The Greenway increases human use of the project area, but allows for concentration of use through the restoration and decommissioning of informal trails within and adjacent to the project area. The anticipated increase in use of the Greenway project area, at up to 31 people per hour (pedestrians) and 77 people per hour (bicyclists) as identified in Table 52 in Section 3.2.16, is relatively small for wildlife concerns and should not deter use of the habitat by marten or other wildlife

species based on their current use of the area. Increased human presence may impact wildlife species in the area through increased levels of noise, the potential for elevated levels of trash and refuse within the project area.

Various species that are more tolerant to human presence may become dependant on human food sources and therefore lose their ability to forage naturally. Black bear, American marten, Douglas squirrels, golden mantled ground squirrels, chipmunk spp., mountain chickadees and Clark's nutcracker are some species that are present within the project area and have been observed foraging for human food within residential areas. Consumption of human foodstuffs by these animals can lead to digestive and health problems and behavior modifications. Readily available human food and refuse limits these species ability to naturally forage and can cause dependency on human food. Animals becoming dependent on this non-natural foraging technique often become aggressive toward humans as they associate humans with food. Other behavior changes, such as delayed and decreased hibernation activity, smaller home range size and modified patterns of activity, are evident in black bears within the Tahoe Basin (Beckman and Berger 2003). While the project may result in increased human presence in some areas, the degree of increase is not expected to result in an overall decrease in quality of wildlife habitat or result in significant impacts to wildlife species numbers or diversity.

LTBMU Parcels. LTBMU parcels are subject to mitigation BIO-3 to avoid and minimize potential effects to species.

Environmental Analysis: *Less than Significant Impact after Mitigation*.

Required Mitigation:

BIO-3. Wildlife Protection Program

Pre-construction surveys, conducted during the nesting/breeding season immediately prior to initial project construction (e.g., excavation, grading and tree removal), shall occur for the following species: mountain yellow-legged frog, California yellow warbler, northern goshawk, and California spotted owl. Surveys will be performed wherever construction activities will occur in suitable habitat as illustrated in Figure 27. Survey methods shall be approved by TRPA, and CTC and LTBMU (when occurring on LTMBU lands) prior to commencement of surveys. Survey methods shall follow the accepted regional protocol. Survey results shall be submitted for approval to the TRPA, CTC and LTBMU prior to construction activities. If sensitive wildlife species are found, project redesign shall occur to avoid these resources. During initial construction activities (i.e., tree removal and excavation for the construction), a qualified biological monitor shall be on-site to evaluate if construction activities disturb the identified wildlife resources. The biological monitor shall have the authority to suspend construction near known wildlife territories if such activities appear to cause a negative impact on nesting raptors or migratory birds or their young observed within the construction area. If construction is suspended, the monitor shall consult with TRPA and/or LTBMU staff, as appropriate, within 24 hours to determine appropriate actions to restart construction while reducing impacts to identified wildlife individuals, pairs or territories.

50. Greenway effects to vegetation and wildlife. (NEPA)

Under NEPA, the context and intensity of an alternative's potential effect on biological resources were evaluated based on whether the project will:

- Substantially reduce the size, continuity, or integrity of a plant community through temporary or permanent removal, interruption of natural processes that support it, and/or disturbance that favors the establishment of invasive nonnative species;

- Substantially reduce the size, continuity, or integrity of wildlife or fish habitat, or result in unnatural changes in the abundance, diversity, or distribution of wildlife or fish species; substantially affect, either directly or through habitat modifications, any species listed as threatened or endangered under the Federal ESA, or designated as sensitive by the Regional Forester (i.e., "Forest Service sensitive");
- Substantially affect the habitat for any Forest Service Management Indicator Species; or
- Conflict with the Forest Service's land management practices and requirements provided in the LTBMU Forest Plan.

The Biological Evaluations for vegetation and wildlife, Noxious Weed Risk Assessment, Management Indicator Species Report and Migratory Bird Treat Act Report are available at the LTBMU Forest Supervisor's Office.

No Project. The no project alternative constructs no shared-use trail or bridge and creates no change to the project area on National Forest Lands, and as such creates no effects to plant communities, wildlife or fish habitat. The no project alternative effects no sensitive species, as there are no species identified as candidate, threatened or endangered by USFWS or CDFG within the project area. The no project alternative would result in no indirect or direct effects to habitat for Management Indicator Species. Portions of the project area, including locations on National Forest Lands, would continue to be used as informal trails. This alternative would result in no contribution to potential cumulative effects related to biological resources on National Forest Lands.

Proposed Project. See the analyses for Questions 32 through 49, which disclose potential effects of the project related to parcels owned and managed by the LTBMU. The Greenway requires implementation of mitigation measures to assure avoidance and minimization of such effects. The following are referenced to the denoted questions: Special Status Species (Question 32), Sensitive Natural Communities and Habitats (Questions 33 and 49), Riparian Areas and Wetlands (Questions 33, 34, 39 and 43), Wildlife Corridors (Questions 35 and 48), Forest Plan Consistency (Question 36), Noxious Weeds (Question 40), Biological Diversity (Questions 41, 42, 46, 47 and 48), and Tree Removal (Questions 44 and 45),

Analysis identifies no significant effects to native plant communities, wildlife or fish habitat as a result of implementation. The project creates no direct effects on sensitive species because there are no species identified as candidate, threatened or endangered by USFWS or CDFG within the project area. The Greenway results in no effects to habitat for Management Indicator Species, as discussed in the Management Indicator Species Report, or conflicts with the LTBMU Forest Plan, as discussed in Question 36. The project will not result in the violation of Federal, State or local law that is imposed for the protection of the environment.

Indirect and Direct Effects. The project results in the loss of forested and riparian habitats and the potential loss of nursery sites. Implementation of mitigation measure BIO-1 will offset the loss of riparian and wetland habitats and avoid the loss of nursery sties. As noted in Question 34 there is a small portion of delineated wetland present within one of the LTBMU parcels, totaling of 500 square feet. Section 2.6.5.19 details CM-19 for restoration of new disturbance in SEZs. The Greenway results in no adverse affects to endangered or threatened species or its habitat because there are no species identified as candidate, threatened or endangered by USFWS within the project area.

Indirect effects include the potential of introduction of noxious weed species to LTBMU-managed lands, potentially impacting sensitive plant habitats. Implementation of mitigation measure BIO-2 will minimize the risk of introduction of noxious weed species.

Analysis in the Biological Evaluation prepared for the project concludes that the Greenway is consistent with Section 7(c) of the federal ESA, the USFWS list of federally listed and proposed threatened and

endangered species that may occur in the project vicinity. Appendix H attaches USFWS letter and list dated January 5, 2010. The project creates no effect on endangered or threatened species or its habitat that has been determined to be critical under the federal ESA of 1973.

Analysis in the Migratory Bird Treaty Act Report prepared for the project concludes that the Greenway is consistent with the MBTA. The original 1918 statute implemented the 1916 Convention between the United States and Great Britain (for Canada) for the protection of migratory birds. Later amendments implemented treaties between the United States and Mexico, Japan, and the Soviet Union (now Russia). Specific provisions in the statute include the establishment of a federal prohibition, unless permitted by regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention…for the protection of migratory birds…or any part, nest, or egg of any such bird." Because forest lands provide a substantial portion of breeding habitat, land management activities within the LTBMU can have an impact on local populations. The Greenway would not adversely impact populations or habitat of migratory birds.

Analysis supports the conclusion that the effects from removal of dead trees or the thinning of live trees, SEZ and wetland restoration and the manual treatment of noxious and invasive weeds are not uncertain and do not involve unique or unknown risk to biological resources.

Cumulative Effects. The Greenway will contribute to the cumulative loss of forested area within the urban boundary through the removal of trees and vegetation required to construct the trail. The project could result in a barrier to the replenishment of species. Implementation of mitigation measure BIO-3 establishes a wildlife protection program to reduce potentially adverse project affects to wildlife and minimize contributions of the Greenway towards a cumulatively significant effect. Section 3.2.18, Mandatory Findings of Significant, specifically Question 187, further addresses cumulative effects of the Greenway and related projects, as listed in Table 60.

Environmental Analysis: *Project Requires Mitigation.*

Required Mitigation (See Questions 35, 42 and 49 for descriptions):

BIO-1. Active Raptor and Migratory Bird Nest Site and Wildlife Nursery Site Protection Program

BIO-2. Avoid Sensitive Plants or Prepare Sensitive Plant Protection Program

BIO-3. Wildlife Protection Program

3.2.5 Cultural Resources (CEQA) and Archaeological/Historical (TRPA)

This section presents the analyses for potential impacts to cultural, archaeological and historical resources, discussing the Greenway impacts on cultural resources related to the disturbance of archaeological, historical, architectural, and Native American/traditional heritage resources. The section also addresses disturbance of unknown archaeological resources, as well as paleontological resources (fossils). Table 19 identifies the applicable impacts and anticipated level of impact.

Table 19

Cultural Resources and Archaeological/Historical

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
51. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? (CEQA 5a)		X		
52. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? (CEQA 5b)		X		
53. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (CEQA 5c)				X
54. Disturb any human remains, including those interred outside of formal cemeteries? (CEQA 5d)		X		
TRPA Initial Environmental Checklist Item	**Yes**	**No, With Mitigation**	**Data Insufficient**	**No**
55. Will the proposal result in an alteration of or adverse physical or aesthetic effect to a significant archaeological or historical site, structure, object or building? (TRPA 20a)		X		
56. Is the proposed project located on a property with any known cultural, historical, and/or archaeological resources, including resources on TRPA or other regulatory official maps or records? (TRPA 20b)		X		

TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
57. Is the property associated with any historically significant events and/or sites or persons? (TRPA 20c)		X		
58. Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values? (TRPA 20d)		X		
59. Will the proposal restrict historic or pre-historic religious or sacred uses within the potential impact area? (TRPA 20e)		X		
NEPA Significance of Effects				
60. Greenway effects to cultural resources. (NEPA)				

3.2.5.1 Environmental Setting

Current environmental review policies, in compliance with the TRPA mandates under Code Chapter 29, guidelines under CEQA Section 10564.5, California PRC Section 5020 et seq., and LTBMU procedures in the adoption of NEPA guidelines (Uniform Rules and Regulations of the Secretary of the Interior, Section 106 of the National Historic Preservation Act (NHPA) of 1966 as amended, Archaeological Resources Protection Act of 1979, Procedures of the Advisory Council on Historic Preservation, 36 CFR 800, and FSM 2361) require that heritage resources be considered as part of the environmental review process.

Steven Hilton of Parsons conducted a cultural resources inventory within the former Caltrans ROW in April of 2003. The intensive pedestrian survey followed a 50-foot wide (15-meter) transect along the Greenway centerline to capture the Area of Potential Effect (APE). Areas of special attention included cut banks, streamsides, springs, landform and vegetation anomalies, rock outcrops, and streambeds. Granite boulders outcropping were examined for evidence of mortar holes. Surface visibility averaged approximately 30 percent due to heavy vegetation. Vegetation obscuring ground visibility included long-grass chaparral, whitethorn, rabbitbrush, sage, and manzanita.

Sites were recorded on California Department of Parks and Recreation (CDPR) site forms. A Garmin 76 GPS unit, with sub-five meter accuracy, was used to map and record site locations. GPS-generated data, along with field drawn sketches, were used to provide an accurate sketch map for each site. Generally, a representation of artifact distribution across the site was provided. Identified diagnostic artifacts were given an artifact number and mapped with the GPS unit. An electronic site datum was also established for each site. Recommendations for eligibility to the National Register of Historic Places (NRHP) were also made for each site.

Each site was photographed, usually providing at least one overview of the site setting. Diagnostic artifacts and stylistically distinctive artifacts were drawn and photographed. No shovel probes were conducted to test the depth of cultural material at the sites. Instead, visual inspection of deposition was

weighed with the surface manifestations of the cultural material and site condition to make a judgment about potential depth. No cultural materials were collected during the inventory. Five archaeological sites were recorded during the 2003 field survey but are not located within the project area.

Fifteen previously recorded sites were identified as existing within the former Caltrans ROW. Several of these sites are adjacent to the Greenway, but were not formally evaluated for NRHP eligibility. While previous inventories have been conducted within the project area, documentation from those surveys is incomplete and did not provide adequate detail concerning the definitive location or possible eligibility of these sites. For these reasons, Chambers Group verified the locations of these resources in August of 2009 and April of 2011.

Chambers Group provides the following assessment of the sites near the project area:

- P-9-3863 (McComber's Station/Keller Residence): Location - T.13N, R.18E, S.34. This site comprises an historic residence that belonged to John and Margaret Keller. This site was recorded in 1992 by S. Lindstrom and described as being in the northwest portion of the surveyed area and consisting of "a rock fountain, rock gateway, concrete house foundations and ornamental landscaping" Historic refuse recorded on the site included cut board fragments, clear and amber glass, concrete and asphalt chunks, one spoon, four intact foundation concrete piers, one 2-pound coffee can, one Copenhagen snuff can, one door hinge, wire and carpeting. She recommended the site as unevaluated for inclusion in the NRHP.
- P-9-4170 (Historic road segment): Location- T13N, R18E, S. 34. This site was recorded by S. Lindstrom in 1992 as "being a 200-foot segment of the Pioneer Trail or 'back route' of the old Placerville Rd." No artifacts or features were observed other than the road grade. She recommended the site as unevaluated for inclusion in the NRHP.
- P-9-3485 (Historic can scatter): Location - T.12N, R.18E. S.2. L. Knapton recorded this site in 2003. This site consists of eight small, rusted food cans. Two are "hole-in-top" cans that likely contained condensed milk and were opened via punch method. Knapton recommended the site as unevaluated for inclusion in the NRHP. The location of this site seems to have been misplotted on several maps. The Knapton site record seems to be the most accurate, placing the site outside of the project area.
- P-9-3257-H/CA-ELD-2184H (Jacks Ranch Cabin): Also known as the "Lakeside Cabin", J. Marvin recorded this site in 2000 and described it as a one-story log structure with rectangular mass and moderately pitched end-gable roof". A large barn was also recorded, described as "a two-story frame structure, of post and beam construction, with a rectangular mass measuring 60 feet 2 inches in length and 41 feet 5 inches in width." The structures were moved from their original location (in what is now a shopping center parking lot) in 1960 in anticipation of highway construction. The site has been recommended as eligible to the NRHP. This site is outside of the project area.
- FS 05-19-1008 (Historic can scatter): Location - T.13N, R.18E, S.34. This site was recorded by H. Davis in 2002 and described as two adjacent historic trash scatters consisting of approximately 400 to 500 assorted cans, many of which are rusted and or flattened. Site also contains glass shards of clear, red, blue, brown and white. An abandoned water pump and rock dam are located nearby. The site has been recommended as evaluated for eligibility to the NRHP. The site lies to the south of the Greenway, which is oriented on a nearby abandoned road grade.
- P-9-4169 (Isolated metal fragment): Location T13N, R18E, S. 34. This is an isolated find consisting of a single piece of rusted heavy gauge metal measuring 30cm x 6cm x 1cm. Isolated finds are generally considered categorically ineligible for inclusion to the NRHP.

3.2.5.2 Environmental Analysis and Mitigation Measures

51. Would the Greenway cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? (CEQA 5a)

Standard of Significance: If the Greenway adversely affects important examples of major periods of California history or pre-history, a significant impact results to historical resources. Impacts to eligible or potentially eligible resources include those resulting from construction, operation, or maintenance activities that adversely impact the integrity of prehistoric or historic archaeological resources and are unavoidable based on the Greenway trail placement.

Three unevaluated sites listed above (and thus potentially eligible) lie within the Greenway alignment. These sites are listed below by segment:

- Segment 2-45: None
- Segment 2-50: None
- Segment 2-70: P-9-3863 (McComber's Station/Keller Residence), P-9-4170 (Pioneer Trail Segment).
- Segment 2-80: FS 05-19-1008 (Historic can scatter).

Three sites identified in the environmental setting section lie outside the trail corridor and thus will not be impacted. The remaining three sites are discussed below.

P-9-3863 and P-9-4170. These sites appear to have been destroyed during the construction of the SLTFD Fire Station #1 at Pioneer Trial and Ski Run Blvd and adjacent parking lot in 1993-1994. No evidence of either the structure or the trail could be identified. Concrete foundation fragments and some possible historic debris were noted in an unimproved lot behind the fire station. This area is outside of the proposed APE and has been heavily impacted by modern earthmoving, recreation use and refuse dumping.

FS 05-19-1008. This can scatter, although unevaluated, appears to be a common example of a palimpsest of dumping episodes by local residents throughout the 20th Century. It is a secondary deposition of refuse and has integrity of context. Furthermore, the site lies to the south of the Greenway, which is situated on an existing abandoned roadbed. The project will have no direct impact on the site.

While the Greenway does not impact known resources, it is located near known resources. As such, there is a possibility of unearthing unknown buried resources during construction.

Implementation of mitigation measure CUL-1 reduces potential impacts to unknown historical resources. Completion of a cultural resources monitoring plan allows for the timely response to the identification of unanticipated or inadvertent impacts to historical resources.

Environmental Analysis: *Less than Significant after Mitigation*.

Required Mitigation:

CUL-1. Cultural Resource Monitoring Program

A qualified archaeological monitor shall be present during initial ground disturbing activities to identify previously unknown significant or potentially significant historical and archaeological resources that may be eligible for inclusion in the NRHP, the CRHR, or eligible for designation as a TRPA historical resource, and to identify any unanticipated or inadvertent impacts to known historical or archaeological

resources. A Qualified archaeological monitor shall be on-site during active construction and shall inspect ground disturbing activities for the presence of cultural resources. The responsibilities of the archaeological monitor shall include: inspecting, documenting, and describing cultural material identified during monitoring; communicating with construction personnel; and notifying agencies (e.g., LTBMU, the SHPO, and TRPA) if previously unidentified historical or archaeological resources are encountered that may be eligible for inclusion in the NRHP, the CRHR or eligible for designation as a TRPA historical resource. Archaeological monitors shall have the authority to halt construction activities that have the potential to disturb significant historical or archaeological resources until appropriate measures can be implemented.

Ground disturbing activities in the vicinity of the resource shall cease if the archaeological monitor determines that continuation of activity shall affect a significant historical or archaeological property, or if human remains are identified. If the archaeological monitor identifies cultural material but is unable to determine whether the resumption of the construction activity will affect historical or archaeological resources that may be eligible for listing, the monitor shall contact the appropriate agency official. Subsequent notification and consultation shall follow regulations pertaining to the evaluation of significance, assessment of effects, and consultation with the SHPO and the ACHP, as appropriate (36 CFR, part 800.4 through 800.9).

52. Would the Greenway cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? (CEQA 5b)

Standard of Significance: If the project causes "a substantial adverse change in the significance of an historical or archaeological resource" (i.e. physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings) pursuant to PRC Section 15064.5, a significant impact results to archaeological resources.

The project will cause no substantial adverse change to the three unevaluated sites listed in Question 51, above. Two of the sites have been destroyed and the third is sufficiently far from the Greenway to avoid any direct impacts.

Implementation of mitigation measure CUL-1 allows for the timely response to the identification of unanticipated or inadvertent impacts to known archaeological resources.

Environmental Analysis: *Less than Significant after Mitigation*.

Required Mitigation (See Question 51 for description):

CUL-1. Cultural Resource Monitoring Program

53. Would the Greenway directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (CEQA 5c)

Standard of Significance: A significant effect on the environment occurs if the Greenway has the potential to pose a significant impact to paleontological resources identified during construction related ground disturbing activities, if any paleontological resources are identified during construction, as provided in PRC Section 5097.98, or if the Greenway directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. The significance of paleontological resources is determined in part by compliance with the Antiquities Act of 1906. Fossil remains of vertebrates are considered significant resources.

The project area contains no unique paleontological resources or geologic features, and therefore, no paleontological resources or unique geologic features will be directly or indirectly destroyed by the Greenway.

Environmental Analysis: *No impact.*

Required Mitigation: **None**.

54. Would the Greenway disturb any human remains, including those interred outside of formal cemeteries? (CEQA 5d)

Standard of Significance: The potential exists to pose a significant impact to human remains identified during construction related ground disturbing activities. A significant impact results if the Greenway affects human remains.

Cultural resource studies identified no formal cemeteries within the Greenway project area. Encountering buried resources is unlikely in the environment of the project area. However, as with any ground-disturbing activity, the possibility of encountering buried resources that were not revealed during intensive surface investigations exists. Therefore, this impact is considered potentially significant and requiring mitigation. The presence of archaeological monitors during ground disturbing activities and completion of a cultural resources monitoring program, as outlined in mitigation measure CUL- 1, reduces potentially significant impacts to a level less than significant by allowing for the timely response to the identification of any unanticipated or inadvertent impacts to known historical or archaeological resources and/or human remains.

Environmental Analysis: *Less than Significant after Mitigation.*

Required Mitigation (See Question 51 for description):

CUL-1. Cultural Resources Monitoring Program

55. Will the Greenway result in an alteration of or adverse physical or aesthetic effect to a significant archaeological or historical site, structure, object or building? (TRPA 20a)

No with Mitigation. Standard of Significance: See analyses for Questions 51 and 52, which address CEQA checklist items 5a and 5b and conclude that the level of impact is less than significant after mitigation.

Environmental Analysis: *Less than Significant Impact after Mitigation*.

Required Mitigation (See Question 51 for description):

CUL-1. Cultural Resource Monitoring Program

56. Is the Greenway located on a property with any known cultural, historical, and/or archaeological resources, including resources on TRPA or other regulatory official maps or records? (TRPA 20b)

No with Mitigation. Standard of Significance: See analysis for Questions 51 and 52, which address CEQA checklist items 5a and 5b and conclude that the level of impact is less than significant after mitigation.

Environmental Analysis: *Less than Significant Impact after Mitigation.*

Required Mitigation (See Question 51 for description):

CUL-1. Cultural Resource Monitoring Program

57. Is the Greenway associated with any historically significant events and/or sites or persons? (TRPA 20c)

No with mitigation. Standard of Significance: See analysis for Question 51, which addresses CEQA checklist item 5a and concludes that the level of impact is less than significant after mitigation.

Environmental Analysis: *Less than Significant Impact after Mitigation.*

Required Mitigation: (See Question 51 for description)

CUL-1. Cultural Resource Monitoring Program

58. Does the Greenway have the potential to cause a physical change which would affect unique ethnic cultural values? (TRPA 20d)

No with mitigation. Standard of Significance: See analysis for Question 51, which addresses CEQA checklist item 5a and concludes that the level of impact is less than significant after mitigation.

On April 21, 2008, a letter was sent to Mr. Dave Singleton of the NAHC requesting that a review of the Sacred Lands file be conducted. Chambers Group also began initial consultation with the Washoe Tribe of Nevada and California by contacting Mr. Daryl Cruz, Tribal Historic Preservation Officer. Mr. Cruz was notified by letter on May 28, 2008. Tribal representatives were contacted in order to inform them about current project activities and incorporate their opinions, knowledge and sentiments. No response was received from either the NAHC or the Washoe Tribe of Nevada and California.

Environmental Analysis: *Less than Significant Impact after Mitigation.*

Required Mitigation (See Question 51 for description):

CUL-1. Cultural Resource Monitoring Program

59. Will the Greenway restrict historic or pre-historic religious or sacred uses within the potential impact area? (TRPA 20e)

No with mitigation. Standard of Significance*:* See analysis for Question 52, which addresses CEQA checklist item 5b and concludes that the level of impact is less than significant after mitigation.

Environmental Analysis: *Less than Significant Impact after Mitigation.*

Required Mitigation (See Question 51 for description):

CUL-1. Cultural Resource Monitoring Program

60. Greenway effects to cultural resources (NEPA).

The LTBMU Forest Plan directives determine the effects on cultural resources under NEPA. The following directives from the LTBMU Forest Plan apply to this project:

- Conduct surveys and inventories to identify the presence or absence of archaeological, historic, or other cultural resource properties, giving priority to planned activity areas, in a manner consistent with the NHPA. Prepare written reports documenting survey coverage, methods, and recordation using guidelines from the SHPO, the LTBMU, and the ACHP.

- Evaluate properties to assess their scientific, ethnic, or historic significance by applying the NRHP criteria of eligibility. Assess the effects of each undertaking on significant historic properties. In consultation with the SHPO and the ACHP if necessary, develop mitigation measures to alleviate adverse impacts on significant properties.

- Protect identified cultural properties until they are evaluated, with unevaluated properties being treated as eligible for nomination to the NRHP and afforded the same consideration as National Register properties. Evaluate the historical an architectural significance of buildings scheduled for removal.

- Conduct compliance inspections of special use operations and project activities with stipulations or conditions regarding known cultural resources. Ensure confidentiality of most site locations to minimize threat of thefts and vandalism. Prevent natural physical deterioration where possible.

- Enhance cultural resources through scientific study and interpretation of their significant values, for increased public education and enjoyment. Avoid and/or protect Native American religious or burial sites; and encourage the reestablishment of traditional ties to Lake Tahoe by the Washoe Tribe through such means as the construction of a cultural center near Taylor Creek. Rehabilitate or restore historic structures for interpretive or other purposes.

No Project. Under the no project alternative, the Conservancy constructs and operates no shared-use trail and no change to the project area occurs. Thus, no changes to existing, unidentified or unexpected archaeological resources would occur. Portions of the project area, including locations on National Forest Lands, would continue to be used as informal trails. The no project alternative would result in no contribution to potential cumulative effects related to documented archaeological resources on National Forest Lands.

Proposed Project. The proposed action constructs and operates a 3.86-mile shared-use trail, of which 1395 linear feet cross National Forest Lands, potentially affect two archaeological resource sites.

Indirect and Direct Effects. Increased public use of the areas adjacent to sites P-9-3257-H/CA-ELD2148H and P-9-4169 could increase the possibility of vandalism and erosion of integrity for those resources. However, site P-9-4169 is presently located in a busy urban area adjacent to Pioneer Trail and the SLTFD Fire Station #1 and consists of a single piece of rusted heavy gauge metal - generally considered categorically ineligible for inclusion to the NRHP. Site P-9-3257-H/CA-ELD2148H is located uphill of the Greenway in a rugged forested area not accessible by existing trail access. As such, it is unlikely that increased activity generated on the Greenway would result in greater visitation in the area of this site.

Questions 51, 52 and 53 address effects to historical, archaeological and paleontological resources, respectively. Question 58 discusses Native American consultation completed for the Greenway proposal. The Greenway does not adversely affect districts, sites, highways, structures, or objects listed in or

eligible for listing in the NRHP and does not cause loss or destruction of significant scientific, cultural, or historical resources.

Analysis concludes that the project is consistent with Section 106 of the NHPA, which requires federal agencies to take into account the effect of a project on any district, site, building, structure, or object that is included in, or eligible for inclusion in the NRHP. Section 106 of the NHPA (Public Law 89.665, as amended) also requires federal agencies to afford the SHPO a reasonable opportunity to comment. Surveys were conducted for Native American religious or cultural sites, archaeological sites, and historic properties or areas that may be affected by the Greenway. The project has complied with SHPO requirements to evaluate cultural resources within the project area and submit a report for review. To date, SHPO has not provided eligibility determinations. Determinations are not necessary for document review during the public comment period but must be made prior to the Forest Supervisor's signing the Record of Decision.

Cumulative Effects. Section 3.2.18, Mandatory Findings of Significant, specifically Question 187, addresses cumulative effects of the Greenway and related projects, as listed in Table 60.

Environmental Analysis: *Project requires mitigation.*

Required Mitigation (See Question 51 for description):

CUL-1. Cultural Resource Monitoring Program

3.2.6 Geology and Soils (CEQA) and Land (TRPA)

This section presents the analyses for potential impacts to geology, soils and land. Table 20 identifies the applicable impacts and anticipated level of impact.

Table 20

Geology and Soils and Land

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
61. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42? ii) Strong seismic ground shaking? iii) Seismic-related ground failure, including liquefaction? iv) Landslides? (CEQA VIa)			**X**	
62. Result in substantial soil erosion or the loss of topsoil? (CEQA VIb)			**X**	
63. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? (CEQA VIc)			**X**	

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
64. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? (CEQA VId)			**X**	
65. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? (CEQA VIe)				**X**
TRPA Initial Environmental Checklist Item	**Yes**	**No, With Mitigation**	**Data Insufficient**	**No**
66. Compaction or covering of the soil beyond the limits allowed in the land capability or Individual Parcel Evaluation System (IPES)? (TRPA 1a)				**X**
67. A change in the topography or ground surface relief features of site inconsistent with the natural surrounding conditions? (TRPA 1b)				**X**
68. Unstable soil conditions during or after completion of the proposal? (TRPA 1c)				**X**
69. Changes in the undisturbed soil or native geologic substructures or grading in excess of 5 feet? (TRPA 1d)	**X**			
70. The continuation of or increase in wind or water erosion of soils, either on or off the site? (TRPA 1e)				**X**
71. Changes in deposition or erosion of beach sand, or changes in siltation, deposition or erosion, including natural littoral processes, which may modify the channel of a river or stream or the bed of a lake? (TRPA 1f)				**X**

TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
72. Exposure of people or property to geologic hazards such as earthquakes, landslides, backshore erosion, avalanches, mud slides, ground failure, or similar hazards? (TRPA 1g)				**X**
NEPA Significance of Effects				
73. Greenway effects to slope erosion, or soil suitability or unique natural features. (NEPA)				

3.2.6.1 Environmental Setting

Geology. The project area, by the nature of a linear public facility, crosses a variety of topography associated with forested foothills, open meadow and developed residential areas. The topography within the project area is generally flat to rolling slopes; however, side slopes are at times steeper than 3:1.

The Greenway is located partially within the Echo Lake, Emerald Bay, Freel Peak and predominately on the South Lake Tahoe USGS 7.5-minute quadrangle maps, within an approximate elevation range of 6,240 to 6,400 feet above msl, in Township 13 north, Range 18 East, Section 34 and Township 12 North, Range 18 East, Sections 2, 3, 4, 9, 10, 16, 20, 21, and 29, Mount Diablo Meridian.

Kleinfelder completed the Preliminary Geologic Hazards Former Highway 50 Bypass Bike Trail Project South Lake Tahoe, California on November 10, 2003 (Kleinfelder 2004). Kleinfelder performed site visits and reviewed available literature to determine potential geologic and soil hazards for the former Caltrans ROW and the project area. The project record includes this preliminary geotechnical report and the Greenway design element considers the potential geological hazards identified in this report.

The surface geology of the area, illustrated in Figure 29, is predominately alluvial (Q and Qf), glacial outwash (Qogo) and till (Qog) deposits, fluvial and lacustrine (Qfp; Ql and Qlt) deposits, and decomposed granite and granodiorite outcrop (Kbmg) at higher elevations. These map units are defined as follows (Saucedo 2005):

- Ql Lake deposits (Holocene) – Thin-bedded sandy silt and clay.
- Q Alluvium (Holocene and Pleistocene) – Unconsolidated, moderately to poorly sorted sand, silt and gravel. Locally includes alluvial fan deposits, glacial outwash and lacustrine deposits.
- Qf Alluvial fan deposits (Holocene and Pleistocene) – Poorly sorted bouldery sand and gravel. Locally includes older fan deposits and alluvium.
- Qfp Floodplain deposits (Holocene) – Gravelly to silty sand and sandy to clayey silt. Locally includes lacustrine and delta deposits. In part may be Pleistocene.
- Qlt Lacustrine terrace deposits (Pleistocene) – Poorly to moderately sorted silt, sand and gravel forming broad low terraces 5-10 meters above lake level. Locally includes delta deposits.
- Qog Till – Deeply weathered bouldery deposits generally without morainal form; surface granitic boulders are weathered with stained, pitted and knobby surface; granitic boulders within the deposit are decomposed. Locally may include outwash deposits.
- Qogo Outwash deposits – Poorly sorted boulder and cobble gravel, sand and silt.

- Kbmg Bryan Meadow granodiorite (Cretaceous) – Light-gray, medium-grained locally porphyritic hornblende-biotite granodiorite typically containing about 5 percent subhedral and euhedral hornblende crystals as large as 1 cm, and similar amounts of biotite in a groundmass of feldspar and quartz.

Glacial activity during the past 1.5 to 2 million years transported large volumes of boulders and sediments from sources to the west and south of the project area and deposited materials throughout the South Lake Tahoe areas as glacial till and glacial outwash. Holocene-age and late Pleistocene-age floodplain and lacustrine deposits overlay the glacial outwash along the channels of the Bijou Creek and Trout Creek (Kleinfelder 2004).

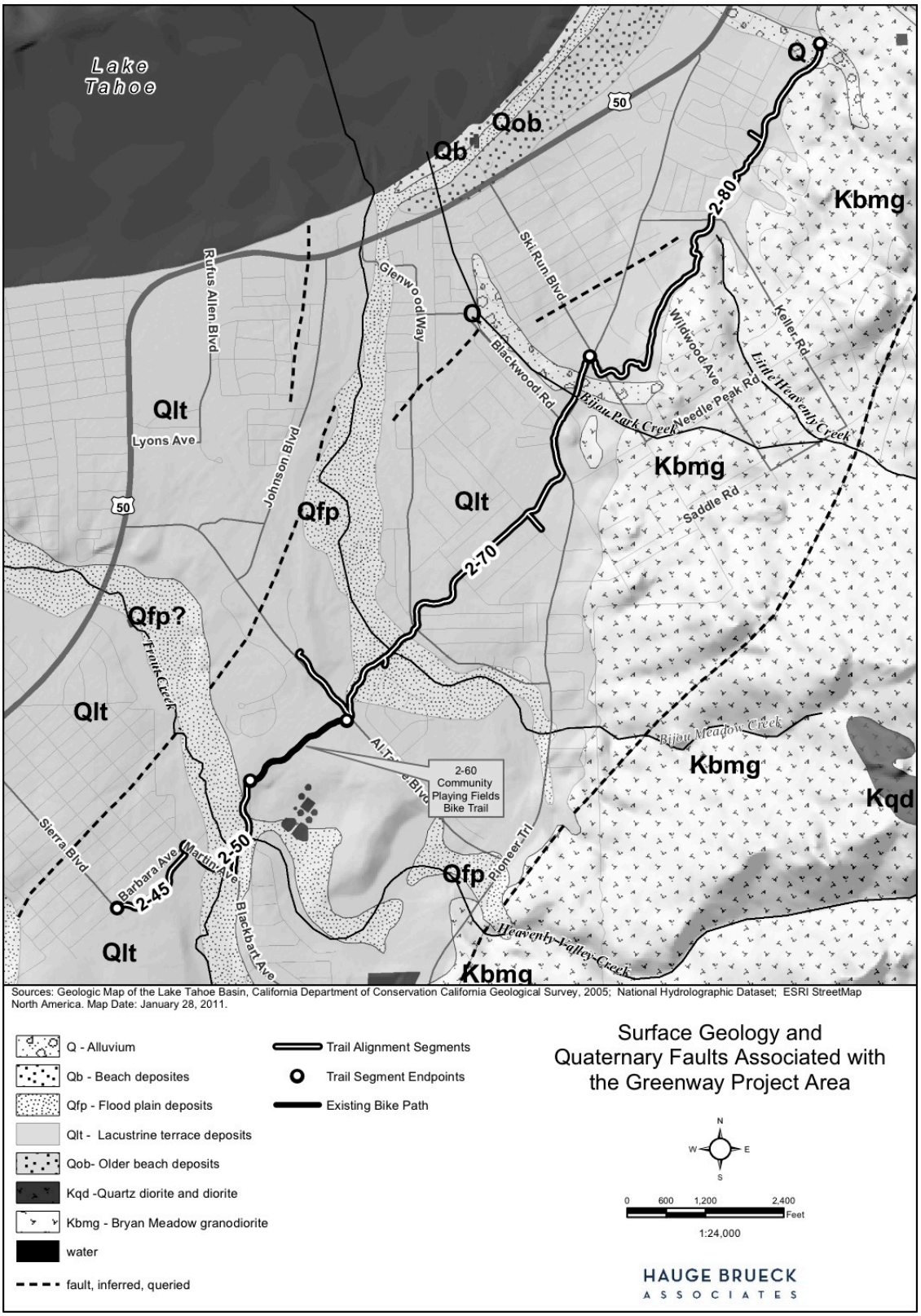
The potential for seismic activity within a project area is primarily related to the proximity of faults. The Lake Tahoe Basin is located in a region of Holocene age, the faults of which are considered active within the last 11,000 years, and early Quaternary age, sometimes referred to as potentially active faults with activity within the last 1.6 million years.

Geologic Hazards. The preliminary geotechnical evaluations identify and assess potential geologic hazards within and in the vicinity of the project area in accordance with the requirements of the California Board for Geologists and Geophysicists (Board) Geologic Guidelines for Earthquake and/or Fault Hazard Reports; the Board Guidelines for Engineering Geologic Reports; California Geological Survey (CGS) Special Publication 42, Fault-Rupture Hazard Zones in California: Alquist-Priolo Earthquake Fault Zoning Act with index to Earthquake Fault Zone Maps (Hart and Bryant 1997); and CGS Special Publication 117, Guidelines for Evaluating and Mitigating Seismic Hazards in California (California Division of Mines and Geology 1997). The secondary purpose of the evaluation is compliance with City guidelines for a preliminary geotechnical report.

Potential geologic hazards for the project area include: proximity to potentially active faults, debris flows, flooding, rock fall, avalanche, and liquefaction resulting form subsurface soil conditions. A common effect of earthquakes that could occur in the project area is ground shaking along a fault. The most significant geologic hazards associated with the project area are from earthquakes and their associated effects (Kleinfelder 2004). Earthquakes present direct (primary) and indirect (secondary) hazards; both of which can occur locally or at locations distant from the earthquake source. Direct, local earthquake hazards include damage caused by fault displacements either by ground surface rupture or gradual fault creep. The damage caused by ground shaking is also a direct effect; however, shaking can occur locally or at remote locations. Indirect hazards presented by earthquakes include liquefaction and earthquake-induced landslides, both of which are triggered by ground shaking. The portions of the project area that are located on or near steep terrain could be subject to slope instability (landsliding, both gravitational or earthquake-induced) hazards. Roads, structures, pipelines, utilities lines and embankments in the vicinity may also be subject to this hazard. The analysis of these hazards is based on an understanding of the potential for these events to occur in the project area.

Fault Rupture and Creep. Based in a review of the Preliminary Map of Pleistocene to Holocene Faults in the Lake Tahoe Basin (Schweikert 2000), the project area intersects no active faults. As a result, potential for displacement caused by fault rupture or fault along sections of asphalt or boardwalk trail and cut and fill slopes is low.

Figure 29. Surface Geology and Quaternary Faults Associated with the Project Area



Ground Shaking. The severity of ground shaking due to an earthquake is determined by several factors including the size of the earthquake, fault rupture characteristics, and proximity of the earthquake to the site of interest. The type of soil or bedrock beneath the site also determines the strength of ground shaking. For this evaluation, ground shaking is described by the Modified Mercalli scale, which is a method involving 12 levels of intensity denoted by Roman numerals. The scale relates human perception and amount of damage. Modified Mercalli intensities range from I (shaking that is not felt) to XII (total damage).

The project area is mapped as having a probable maximum earthquake intensity of IX or X on the Modified Mercalli scale. Intensity IX involves violent ground shaking and heavy damage. The effects of Intensity IX are described as "considerable damage to designed structures; well designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse; underground pipes may be broken". Damage under Intensity X is even greater, with "some well built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked". The majority of the project area is located in areas that will experience moderate severity of ground shaking during an earthquake. The project area crosses several drainages including Bijou Creek and Trout Creek, which are areas that will experience the greatest severity of ground shaking (Kleinfelder 2004).

The CGS maintains a web-based computer model that estimates probabilistic seismic ground motions for any location within California. The computer model estimates the "Design Basis Earthquake" ground motion, which is defined as the Peak Ground Acceleration (PGA) with a 10 percent chance of exceedance in 50 years (475-year return period). The estimated PGA for the project area is approximately 0.3g; thus indicating that the ground shaking hazard in the Greenway project area is moderate (Cao et al. 2003; CGS 2007). The PGA values are typically described for firm rocks. The ground shaking hazard within the project area could be slightly higher because much of the soils are alluvium and colluvium, which are typically softer (CGS 2006).

Liquefaction. Liquefaction occurs in water-saturated sediments that are shaken by moderate to large earthquakes. Liquefaction hazard analysis involves understanding the potential for ground shaking combined with the physical properties and conditions of the soil. Soils most susceptible to liquefaction are saturated, loose, clean, uniformly graded, and fine-grained sand deposits. Geologic age also influences the potential for liquefaction. Sediments deposited within the past few thousand years are generally much more susceptible to liquefaction than older Holocene age sediments; Pleistocene age sediments, which are between 12,000 and 2.5 million years, are even more resistant; and pre-Pleistocene age sediments (more than 2.5 million years) are generally immune to liquefaction (California Division of Mines and Geology 1997).

Earthquake-Induced Landslides, Avalanches and Rock Fall. Landslides and debris flows triggered by earthquake ground shaking have historically been the cause for a great deal of property damage and loss of life. Areas most susceptible to earthquake-induced landslides are generally on steep slopes or adjacent to existing landslide deposits. The possibility of landslides and seismically induced slope instability is considered moderate due to topography in the vicinity of the Greenway, specifically Keller Canyon, which Segment 2-80 transects. Most locations along the project area that are located adjacent to steep slopes have existing development.

Ground shaking and displacement is less likely to occur in the rocky soils located within the project area. However, a potential for seismically induced rock fall exists along the project area near Keller Rd (Kleinfelder 2004).

Moderate or large avalanches can generate enough force to destroy most man-made objects and structures. Restricting the intensity of development in areas of high avalanche potential reduces the possibility of loss of life and property. Therefore, avalanche risk areas are taken into consideration during

development review. Steep slopes and cut slopes are present along the project area, but based on literature reviews do not present a substantial potential for avalanche within the project area (Kleinfelder 2004).

Because shallow groundwater is likely to be encountered at Bijou Creek and Trout Creek, a potential for debris flows exists in these portions of the project area. In these areas, seepage could contribute to debris flow mobilization and shallow landslides (Kleinfelder 2004).

Soils. The NRCS maps soils in the Lake Tahoe Region, as described in the Soil Survey of the Tahoe Basin Area, California and Nevada (USDA 2007). Based on the NRCS Soil Survey (2007) in concert with the review of documents prepared for Conservancy and City projects, there are a number of primary soil series in the project area, including Tahoe, Cassenai, Christopher, Gefo, Marla and Oneidas. Figure 30 illustrates the distribution of the soil groups present in the project area, and Table 21outlines the soil characteristics pertinent to geotechnical evaluations.

Subsurface Conditions. Section 3.2.9, Hydrology and Water Quality, details the expected groundwater conditions for the project area. A potential for perched water tables exists in portions of the Greenway mapped as loamy alluvial lands, which are generally located near drainages (Kleinfelder 2004). Exploratory drilling completed for a STPUD pipeline study in the area of the Martin Ave Bridge encountered groundwater in soil borings at depths ranging from 3.0 to 10.5 feet bgs (Kleinfelder 2004).

Land Capability and Coverage. The TRPA established a land capability system based upon the Bailey Land Classification System methodology (Bailey 1974). Land capability classification delineates the amount of impermeable development coverage (e.g. base allowable land coverage) that may exist within a land capability district (LCD). LCDs 1 to 3 are more sensitive to development, with LCD 1 being the most environmentally fragile. LCD 1b (also referred to as Stream Environment Zones or SEZ) is assigned whenever land is influenced by a stream or high groundwater.

Chapter 2 of TRPA Code defines Land Coverage as a man-made structure, improvement, or covering that prevents normal precipitation from directly reaching the surface of the land underlying the structure, improvement or covering. Hard coverage typically describes structures, improvements or coverings that inhibit more than 75 percent of precipitation from directly reaching the soil or inhibits the growth of vegetation included in TRPA's most current approved species list. Soft coverage describes compacted areas without structures, improvements or coverings.

TRPA staff completed the land capability verifications for the former Caltrans ROW in September 2004. The project area includes LCDs 1a, 1b, 2, 3, 4, 5, 6 and 7. Appendix J contains the TRPA land coverage and land capability verifications confirming these LCDs. Existing coverage within the project area includes dirt roads, road shoulders, and trails. Appendix K contains the master land coverage tables summarizing land coverage by LCD.

Verified existing land coverage for the 5,124,067 square foot project area is 230,213 square feet. TRPA allowable base land coverage within the project area equates to 777,582 square feet.

Table 21

Project Area NRCS Soil Characteristics

Soil Type[1]	Parent material[2]	Surface Runoff Class[3]	Shrink/ Swell Potential[4]	Permeability[5]	Drainage Class[6]	Available Water Capacity[7]	Hydrologic Group [8]
Tahoe Complex, 0 to 2% slopes	Alluvium derived from granitic and volcanic rocks	Very High	Low	Moderate	Very poorly drained	9.2 inches	C/D
Tahoe - Mucky silt loam, Drained, 0 to 5% slopes	Alluvium derived from granitic and volcanic rocks	Very High	Low	Moderate	Very poorly drained	5.5 inches	A/D
Cagwin - Rock Outcrop Complex, 15 to 30 percent slopes, extremely stoney	Colluvium over grus derived from granodiorite	Medium	Low	Very Slow	Somewhat excessively drained	2.1 inches	B
Cassenai – Gravelly loamy coarse sand, 5 to 15 percent slopes, Very stony	Colluvium derived from granodiorite	Low	Low	Moderately Rapid	Somewhat excessively drained	4.4 inches	A
Cassenai – Gravelly loamy coarse sand, 15 to 30 percent slopes, Very stony	Colluvium derived from granodiorite	Low	Low	Moderately Rapid	Somewhat excessively drained	4.4 inches	A
Christopher – Loamy coarse sand, 0 to 9% slopes	Outwash derived from granodiorite	Low	Low	Rapid	Somewhat excessively drained	6.6 inches	A
Chistopher-Gefo Complex 0 to 5 percent slopes	Outwash derived from granodiorite	Very Low	Low	Rapid	Somewhat excessively drained	6.6 inches	A

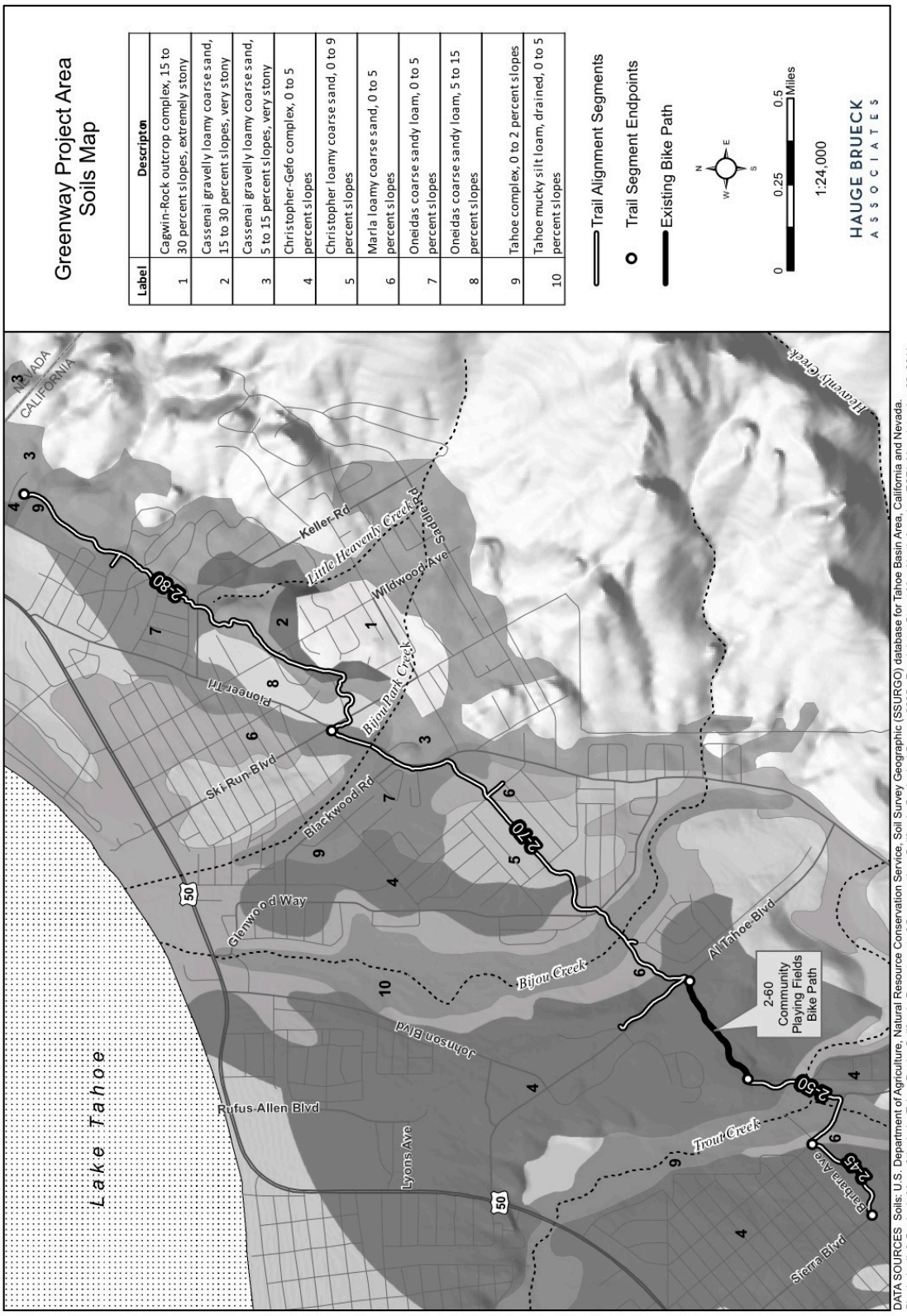
Soil Type[1]	Parent material[2]	Surface Runoff Class[3]	Shrink/ Swell Potential[4]	Permeability[5]	Drainage Class[6]	Available Water Capacity[7]	Hydrologic Group [8]
Marla – Loamy coarse sand, 0 to 5% slopes	Alluvium derived from granodiorite	Very High	Low	Slow	Poorly Drained	6.8 inches	A/D
Oneidas – Coarse sandy loam, 0 to 5 percent slopes	Outwash and/or till derived from granodiorite	Very High	Low	Slow	Poorly Drained	1.3 inches	D
Oneidas – Coarse sandy loam, 5 to 15 percent slopes	Outwash and/or till derived from granodiorite	Very High	Low	Slow	Poorly Drained	1.3 inches	D

Source: NRSC 2007 Soil Survey Maps; HBA 2011

Notes:

1. See Figure 30 for locations of NRCS Soils
2. Parent material. The unconsolidated and chemically weathered mineral and organic material in which the solum of a soil is formed as a result of pedogenic processes. Granitic. A textural term commonly pertaining to an igneous intrusive rock of felsic to intermediate composition. Referring to granite like rock, but not necessarily true granite. Commonly applied to granite, quartz monzonite, granodiorite, and diorite. Granodiorite. An igneous intrusive rock that is intermediate between felsic and mafic in composition and contains quartz and somewhat more plagioclase than orthoclase.
3. Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.
4. Shrink/Swell Potential provides criteria for determination of expansive soil properties.
5. Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality.
6. Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."
7. Available water capacity (AWC) (available moisture capacity). The volume of water that should be available to plants if the soil, inclusive of fragments, were at field capacity. It is commonly estimated as the difference between the amount of water at field capacity and the amount at wilting point with adjustments for salinity, fragments, and rooting depth. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as: Very low 0 to 2.5; Low 2.5 to 5.0; Moderate 5.0 to 7.5; High 7.5 to 10.0; Very high more than 10.0.
8. Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Hydrologic Soils Group Definitions: A =low runoff potential (0.30 to 0.45 in/hr); B=moderate runoff potential (0.15 to 0.30 in/hr); C=moderately high runoff potential (0.05 to 0.5 in/hr); D=high runoff potential (less than 0.05 in/hr)

Figure 30. Soil Map Units Associated with the Project Area



3.2.6.2 Environmental Analysis and Mitigation Measures

61. Would the Greenway expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42? (CEQA VIa).

Standard of Significance: For Question 61i through 61iv, the location of facilities within an Alquist-Priolo earthquake fault zone or known active fault zone or the location of facilities within areas of unstable soil without appropriate design features or construction controls constitutes a significant impact.

The Alquist-Priolo Earthquake Fault Zoning Act (PRC Section 2621-2630) intends to reduce the risk to life and property from surface fault rupture during earthquakes by regulating construction in active fault corridors and prohibiting the location of most types of structures intended for human occupancy across the traces of active faults. The act defines criteria for identifying active faults, giving legal support to terms such as active and inactive and establishes a process for reviewing building proposals in Earthquake Fault Zones. As defined by the Alquist-Priolo Earthquake Fault Zoning Act (1972), an active fault is one that has had surface displacement within Holocene time or the last 11,000 years.

The project area is located within the Sierra Nevada-Great Basin seismic belt. Based in the Index to Official Maps of Earthquake Fault Zones (Hart and Bryant 1997), the project area is not located in the Alquist-Priolo Earthquake Fault Zone (Kleinfelder 2003). Figure 29 illustrates the approximately located and inferred/queried faults in the vicinity of the project area. These inferred faults are not listed in Alquist-Priolo Earthquake Fault Zones because they do not have surface ruptures and are not officially recognized.

The risk of fault rupture is a less than significant impact based on existing published data of officially recognized faults and proximity of the project area to such faults. The Greenway relocates land coverage with minimal alteration to the existing landscape and does not increase the present surface rupture hazard nor construct habitable structures in these areas.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

ii) Strong seismic ground shaking?

The project area is located in a region traditionally characterized by moderate seismic activity. A large earthquake in the project vicinity could cause moderate to high ground shaking in the project area (Kleinfelder 2004). Anticipated ground acceleration at the project area is great enough to cause structural damage to shared-use trail features, such as warping or cracking of the trail surface.

Project proposals include design features and construction controls appropriate to seismic coefficients (e.g., 0.3g) to minimize the potential ground shaking hazards on structures and features in the project area. As engineering details develop, additional geotechnical investigations at locations such as Trout Creek crossing and portions of the trail requiring excavation depths in excess of 5 feet bgs will direct engineering specification for structures such as bridges, retaining walls, and causeways. These include appropriate site preparation, excavation of unstable materials, structural fill, compacted fill, subsurface

drainage, subgrade and aggregate base for paved trail surfaces and helical pier footings to minimize the adverse effects from ground shaking. The project constructs no occupied structures and thus exposes no new occupants to ground shaking or injury resulting from seismically induced structural damage.

Through compliance with federal, regional, State and local codes and requirements and implementation of project design features and construction controls, the potential impact from ground shaking is avoided, minimized and reduced to a level of less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

iii) Seismic-related ground failure, including liquefaction?

Review of available literature and project area soil maps indicates that the sandy soils below the groundwater table are dense in nature and thus not as susceptible to liquefaction. Liquefaction associated with earthquake activity is not likely to occur within the majority of the Greenway project area due to the high rock content of the soils. With such high rock content, the saturation levels of the soils do not reach a state of liquefaction readily (Kleinfelder 2004).

Locations with shallow groundwater and less dense sandy soil could be more susceptible to liquefaction. Because shallow groundwater is likely to be encountered at Trout Creek, a potential for liquefaction exists in these portions of the project area (Kleinfelder 2004). The Greenway installs design features and construction controls appropriate to seismic coefficients (e.g., 0.3g) to minimize the potential effects from liquefaction, as described for CM-1, Standard Engineering Practices for Seismic Coefficients, in Section 2.6.5.1.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

iv) Landslides?

The possibility of landslides and seismically induced slope instability is considered moderate because of the topography within and adjacent to the project area. The impact level is less than significant because most locations along the trail alignments that are adjacent to steep slopes support existing development and private residences. The construction and operation of a shared-use trail does not increase the potential for landslides or seismically induced slope instability. Design features and construction controls are built into the proposal for avoidance, reduction and minimization of impacts from landslides and seismically induced slope instability. These include use of retaining walls in areas with steep side slopes to reduce earthwork requirements and to stabilize adjacent slopes. Revegetation of slopes disturbed during Greenway construction correspond to the type of disturbance and comply with State and TRPA codified regulations.

A rock outcrop is adjacent to the project area along Keller Ave; so, the potential for seismically induced rock fall could exist. The potential impact is reduced to a level of less than significant through establishment of adequate distance between this single rock outcrop and the trail. Based on available literature, the slopes present within and adjacent to the project area do not present a significant potential for avalanche (Kleinfelder 2004). The Greenway design element will incorporate the recommendations of geotechnical evaluations to further reduce potential impacts from secondary geologic hazards to a level of less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None**.

62. Would the Greenway result in substantial soil erosion or the loss of topsoil? (CEQA VIb)

Standard of Significance: Significant impacts result from non-compliance with TRPA Code Chapters 20, 25 and 64, the 208 Plan, the Lahontan Basin Plan (Chapter 5) or construction permit conditions requirements for the control of erosion on and off-site and the stabilization of soils during and upon completion of excavation, grading and fill activities.

The Greenway project description in Chapter 2 includes provisions to prevent short-term erosion from construction impacts and long-term erosion from operational and maintenance activities. Evaluation of project proposals follows.

Short-Term. The potential for erosion is greatest during the construction period and prior to establishment of revegetation plantings. Construction of the Greenway involves soil disturbance and vegetation removal from clearing and grubbing activities, grading for cut and fill slopes necessary to achieve final shared-use trail grades, construction of retaining walls and elevated boardwalk trail sections, and the actual construction of the shared-use trail. Construction activities could cause temporary, short-term increases in runoff, soil erosion, wind erosion and sedimentation within and down gradient of the project area. When disturbed sites are not adequately stabilized and revegetated, wind can dislodge soil particles and make them airborne. When runoff bypasses natural processes, this water is not infiltrated and filtered by soils to provide contribution to local groundwater supplies. Excess runoff can overwhelm stream channels with increased water volumes and pollutant concentrations and result in stream bank erosion, loss of vegetation, and reductions in functional aquatic habitat and SEZ.

Compliance with the SWPPP and the ESCP ensures that runoff, wind and water erosion, and sedimentation are contained on-site during construction of the project. The ESCP determines the site-specific temporary BMPs for installation during construction activities. The SWPPP developed by a qualified engineer or erosion and sediment control specialist is submitted concurrently with the NOI to Lahontan 30 days prior to the start of construction for review and approval. As preparation of construction documents progress, details for the Lahontan-required SWPPP and the TRPA-required ESCP will refine project proposals.

The design features and construction controls incorporated into the project description to reduce short-term erosion potential include: project construction phasing to limit the duration of construction and extent of disturbance present at one time, and temporary BMPs. Temporary BMPs provide dust control, protect and stabilize materials storage, define work zones, staging and access areas to limit disturbance, slow runoff velocity and intercept sediment during storm events, and stabilize slopes during project construction and initial vegetation establishment periods.

Design features and construction control measures for these plans include, but are not limited to:

- Construction Phasing that minimizes the extent of disturbance areas and duration of disturbance;
- Clearly marked staging and access areas;
- Construction equipment and vehicle restrictions;
- Temporary BMPs that are effective in containing the 20-year, 1-hour TRPA design storm;
- Temporary BMPs provide dust control,
- Topsoil salvaging and pile protection;
- Site-specific dewatering plan;

- Stabilize slopes during project construction and initial vegetation establishment periods
- TRPA winterization guidelines; and
- The QSP present during construction to assure BMP effectiveness and conduct remedial actions.

The project area presents few site challenges to construction that could limit the effectiveness of standard construction controls and design features. The majority of the project area is relatively flat with adequate to good construction access. Three portions of the project area present challenges that require more detail as the SWPPP and ESCP are developed. Sections 2.6.5.3 and 2.6.5.4 present the preliminary elements of these plans and the performance criteria construction controls must meet to avoid impacts.

- The Trout Creek crossing (Segment 2-50) requires construction in riparian zones directly adjacent to surface flow. Construction here includes vegetation removal and excavation for bridge footings and boardwalk supports. No project activities occur in the streambed or the active flood flow area. Temporary BMPs necessary for this location described in Section 2.6.2.5 require: properly installed project fencing; detention basins; covering of stockpiled soils; drop inlet protection; and sediment barriers, such as silt fences and sediment logs.

- Construction north of Ski Run Blvd along David Lane (Segment 2-80) requires substantial excavation to construct the trail and related retaining walls. Requirements developed during final construction document preparation will address spoils management to prevent erosion from excavation (dust control and track-out), soils stabilization during the revegetation establishment period, and material disposal (including temporary stockpiling if necessary).

- Construction in SEZ or wetland areas occurs in Segments 2-50, 2-70 and 2-80. Construction controls in these areas designed to limit equipment access and impacts include: Construction fencing or use of landing plates to define equipment access, and use of light, tracked equipment to the maximum extent practicable limits soil compaction.

Long-term. The Greenway design element includes hydrologic source controls to infiltrate runoff from the trail surface into the adjacent clear zones and avoid off-site impacts to soils. The project stabilizes and revegetates areas disturbed during construction and maintains these areas as detailed in the OMMS in Appendix E. Long-term maintenance of these areas minimizes long-term effects to soils. The project design minimizes soil disturbance and loss of topsoil through:

- Use of boardwalk and helical pier construction in areas with evidence of high groundwater or seasonal surface hydrology to reduce overall disturbance;
- Revegetation specifications that respond to site-specific conditions;
- Rock walls and toe slopes for slopes greater than 3:1;
- Adequate cross drainage;
- A variety of retaining walls to minimize grading and soil disturbance necessary so the Greenway can meet AASHTO and ADA grade requirements; and
- Long-term monitoring and adaptive management strategies to limit new disturbance from user created trails.

This evaluation concludes that the project proposal includes compliance measures and design features that are appropriate and adequate to control erosion on and off-site and stabilize soils during and upon completion of excavation, grading and fill activities.

Environmental Analysis: *Less than Significant Impact.*

Required mitigation: **None.**

63. Would the Greenway be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? (CEQA VIc)

Standard of Significance: The location of new structures of facilities within areas subject to unstable soil conditions resulting from grading, excavation or fill constitutes a significant impact.

Question 61 analyzes potential for landslides, lateral spreading and liquefaction and determines the level of impact to be less than significant.

The preliminary geotechnical hazards evaluation (Kleinfelder 2004) identifies no areas of unstable soil conditions that are susceptible to collapse or subsidence. Standard design features and construction controls such as selective site grading, retaining walls, use of boardwalk, and revegetation of disturbed areas are part of the project for stabilization of disturbed soils and cut and fill slopes created by the shared-use trail. The Greenway design element minimizes grades and cut and fills slopes, as discussed in Section 2.6.2.

As discussed below in relation to Question 66, the Greenway cannot avoid encroachment in limited areas of LCD 1a, 2 and 3. TRPA identifies these land capability districts as sensitive to disturbance. The project includes provisions for short-term and long-term stabilization that recognize this sensitivity including: construction controls to limit disturbed soil erosion, use of retaining walls to limit site grading, and a revegetation planting plan suited to site specific soil type and condition.

Environmental Analysis: Less than Significant Impact.

Required mitigation: **None.**

64. Would the Greenway be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? (CEQA VId)

Standard of Significance: Significant impacts result if the project locates facilities within areas of moderate to high soil risk potential identified by geotechnical assessments, of unstable soils, or of expansive or corrosive soils without appropriate geotechnical and engineering measures.

Figure 30 illustrates the soil map units and Table 21 details the characteristics of the soil map units found within the project area. Soil map units within the project area are not considered expansive. The shrink-swell potential is Low (see Table 21). CM-2 incorporates standard engineering practices for corrosive or expansive soils into the final project design should these soil properties be encountered during final geotechnical explorations. Implementation of this compliance measure reduces potential impacts to a level of less than significant through installation of trail materials appropriate for the soil conditions.

Environmental Analysis: Less than Significant Impact.

Required mitigation: **None.**

65. Would the Greenway have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? (CEQA VIe)

Standard of Significance: Development of septic systems or alternative wastewater disposal systems in areas of soils that are inadequate of support such a use results in a significant impact.

The Greenway proposes no septic tanks or alternative wastewater disposal systems, and therefore, creates no impact to this resource.

Environmental Analysis: *No Impact.*

Required mitigation: **None.**

66. Would the Greenway result in compaction or covering of the soil beyond the limits allowed in the land capability or Individual Parcel Evaluation System (IPES)? (TRPA 1a)

No. Standard of Significance: Project proposals that do not comply with provisions of TRPA Code Subsection 20.3.B for maximum coverage for linear public facilities, Section 20.4 for additional coverage in low capability lands, or Section 20.5 for existing excess coverage create a significant impact.

TRPA Code Chapter 20 contains the criteria pertinent to land coverage for the project area. The following analysis evaluates project proposals in relation to: 1) existing land coverage and allowable base limits, and 2) the effects of additional land coverage in both high and low land capability districts. This analysis considers project proposals related to additional land coverage in SEZs (LCD 1b) in Section 3.2.4 Biological Resources, in Question 33 and those related to floodplains in Section 3.2.9, Hydrology and Water Quality, in Question 97. These analyses are not repeated in detail in this section.

The Greenway is a linear public facility and is thus not subject to the excess land coverage mitigation program in Code Section 20.5. TRPA Code Subsection 20.3.B states the maximum land coverage (allowable base land coverage plus transferred land coverage) for linear public facilities is limited to the minimum amount needed to achieve their public purpose.

Table 22 provides the land coverage calculations upon which evaluation of the land capability limitations rest. Table 22 provides data segregated by analysis segment and LCD and includes total project area and allowable base land coverage, verified existing land coverage, new land coverage, and land coverage proposed for removal and restoration. In addition, the evaluation estimates land disturbance to measure and minimize temporary effects during construction. The calculations in Table 22 recognize that permanent disturbance exists along the edges of many paved trails. This analysis assumes the entire two-foot wide clear zones on either side of the Greenway asphalt sections could become soft coverage and represents the worst-case scenario. Clear zone vegetation in many locations will persist and reduce the impact reported here, substantially in some cases. However, to simplify monitoring and compliance assessment, this analysis includes the entire clear zone area as permanent land coverage in the Table 22 calculations and mitigation responsibilities.

In instances where proposed land coverage exceeds the TRPA allowable base land coverage, land coverage must be relocated from other portions of the project area in conformance with TRPA Code Subsection 20.5.C. If relocation of land coverage within the project area cannot fully offset the proposed land coverage, then land coverage must be transferred into the project area following the process outlined in TRPA Code Section 20.3. Subsection 20.3.B.4 lists the findings relevant to transfer land coverage for a linear public facility.

The Plan Sheets in Appendix C present detailed land coverage calculation tables that support the following analysis and disclose the minimum land coverage needed for the Greenway.

Existing Verified Land Coverage. Table 22 presents the results of the TRPA land coverage verification, reported by land capability and by analysis segment. Evaluation of this land coverage relies on TRPA Code Section 20.3 for calculation of allowed base land coverage. The existing verified land coverage associated with high capability LCDs 4, 5, 6 and 7 does not exceed TRPA base allowable land coverage. Existing verified land coverage exceeds the limits in low capability LCDs 1a, 1b, 2 and 3, requiring relocation of land coverage from comparable LCDs within the project area and the transfer of land coverage from comparable LCDs outside of the project area to meet Greenway land coverage requirements.

Additional Land Coverage for LCDs 4, 5, 6 and 7. The Greenway design element maximizes the location of the shared-use trail in higher capability LCDs, which allow for more land coverage and are more suitable for development. Table 22 calculates the effects of new trail construction, in some cases over existing verified land coverage, retaining some existing land coverage to allow continuation of informal trails, and removal and restoration of existing land coverage in some locations. The Greenway proposal including these features results in a total increase in land coverage in LCDs 4, 5 and 7, and decreases total land coverage in LCD 6. The post-project land coverage condition conforms to allowable base land coverage limitations for these high capability LCDs and avoids significant impact.

The land coverage calculations for the project include coverage needed to cross several private parcels located in Segment 2-70. The Conservancy will obtain easement rights for this access and transfer necessary land coverage for the linear public service use as allowed in Code Subsection 20.3.B(4). As such, no land coverage penalty for the private parcels occurs.

Table 22

TRPA Land Coverage Characteristics – By Segment

Segment	Land Capability District (LCD)	Percent Allowable Land Coverage	Project Area (sf)	Allowable Land Coverage (sf)	Verified Existing Land Coverage (sf)	Existing Land Coverage Removed (sf)	Existing Land Coverage to Remain (sf)	New Trail Land Coverage (sf)	Total Land Coverage (New & Existing) (sf)	New Trail Disturbance (Fill and Clear Zones) (sf) *	Total Land Coverage Including Clear Zones (sf)	Off site Restoration Requirements (sf) **
2-45	7	30%	294,839	88,452	43,698	-27,973	15,725	5,661	21,386	3,827	25,213	--
		Totals	**294,839**	**88,452**	**43,698**	**-27,973**	**15,725**	**5,661**	**21,386**	**3,827**	**25,213**	
2-50	1b	1%	75,781	758	805	-415	390	19,665	20,055	4,754	24,809	36,214
	4	20%	87,502	17,500	2,599	-1,636	963	1,225	2,188	630	2,818	--
	7	30%	105,248	31,574	11,048	-6,867	4,181	3,307	7,488	2,077	9,565	--
		Totals	**268,531**	**49,833**	**14,452**	**-8,918**	**5,534**	**24,197**	**29,731**	**7,461**	**37,192**	
2-70	1a	1%	21,153	212	467	-467	-	-	-	-	-	(467)
	1b	1%	1,059,188	10,592	13,907	-10,922	2,985	32,287	35,272	19,275	54,547	66,421
	3	5%	573***	29	163	--	163	652	815	328	1,143	980
	4	20%	252,865	50,573	21,334	- 21,334	- -	11,115	11,115	3,071	14,186	--
	5	25%	11,352	2,838	921	-61	860	3,502	4,362	1,645	6,007	--
	6	30%	636,967	191,090	35,238	-23,444	11,794	11,188	22,982	7,273	30,255	--
	7	30%	423,028	126,908	6,757	-4,847	1,910	19,666	21,576	7,841	29,417	--
		Totals	**2,405,126**	**382,242**	**78,787**	**-61,075**	**17,712**	**78,410**	**96,122**	**39,433**	**135,555**	
2-80	1a	1%	472,565	4,726	16,804	-11,157	5,647	9,051	14,698	2,944	17,642	838
	1b	1%	292,978	2,930	15,281	-13,652	1,629	8,786	10,415	1,984	12,399	2,503
	2	1%	162,054	1,621	1,933	-1,920	13	293	306	133	439	(1,494)
	4	20%	1,184,257	236,851	57,487	-50,310	7,177	48,608	55,785	18,033	73,818	--
	5	25%	43,717	10,929	1,771	-1,319	452	1,649	2,151	653	2,804	--
		Total	**2,155,571**	**257,057**	**93,276**	**-78,358**	**14,918**	**68,437**	**83,355**	**23,747**	**107,102**	

Segment	Land Capability District (LCD)	Percent Allowable Land Coverage	Project Area (sf)	Allowable Land Coverage (sf)	Verified Existing Land Coverage (sf)	Existing Land Coverage Removed (sf)	Existing Land Coverage to Remain (sf)	New Trail Land Coverage (sf)	Total Land Coverage (New & Existing) (sf)	New Trail Disturbance (Fill and Clear Zones) (sf) *	Total Land Coverage Including Clear Zones (sf)	Off site Restoration Requirements (sf) **
Project Area	1a	1%	493,718	4,937	17,271	-11,624	5,647	9,051	14,698	2,944	17,642	371
	1b	1%	1,427,947	14,279	29,993	-24,989	5,001	60,738	65,742	26,013	91,755	105,138
	2	1%	162,054	1,621	1,933	-1,920	13	293	306	133	439	(1,494)
	3	5%	573	29	163	--	163	652	815	328	1,143	980
	4	20%	1,524,624	304,925	81,420	-73,280	8,140	60,948	69,088	21,734	90,822	--
	5	25%	55,069	13,767	2,692	-1,380	1,312	5,201	6,513	2,298	8,811	--
	6	30%	636,967	191,090	35,238	-23,444	11,794	11,188	22,982	7,273	30,255	--
	7	30%	823,115	246,935	61,503	-39,687	21,816	28,634	50,450	13,745	64,195	--
	Totals for Project Area		**5,124,067**	**777,582**	**230,213**	**-176,324**	**53,889**	**176,705**	**230,594**	**74,468**	**305,062**	

Source: TRPA land capability verifications, South Tahoe Greenway Project Coverage Calculations Tables January 2011 by DWS, HBA 2011

* The calculation of new trail disturbance recognizes permanent disturbance exists along the edges of many paved trails. Therefore, the analysis assumes the entire two-foot wide clear zones will become soft coverage and represents the worst-case assumption. Clear zone revegetation in many locations will persist and reduce the impact reported here, substantially in some cases. For LCD 1b, new trail disturbance includes fill (e.g., disturbance) and clear zones (e.g., soft coverage). For other LCDs, only clear zone area (e.g., soft coverage) is calculated.

** Off-site restoration requirements calculated for LCD 1b as follows: New Land Coverage + New Disturbance * 1.5 - Existing On-site Land Coverage Removed. Off-site restoration requirements calculated for LCDs 1a, 2, and 3 as follows: New Land Coverage + New Clear Zone Disturbance – Existing On-site Land Coverage Removed.

*** LCD 3 project area calculations only include publicly owned land, but estimated land coverage includes all Greenway related land coverage. A portion of the Greenway will require an easement on private property located within LCD 3.

Additional Land Coverage for LCDs 1a, 2, 3 and 1b (SEZ). The Greenway encroaches into low land capability districts in some locations when alternatives to avoid doing so are not available or not feasible. Table 22 identifies new land coverage and disturbance (e.g., fill and clear zones) for low land capability districts as follows: LCD 1a, 11,995 square feet; LCD 1b, 86,751 square feet; LCD 2, 426 square feet; and LCD 3, 980 square feet. TRPA Code generally prohibits new coverage in low land capability districts except in limited situations when applicable findings can be met and offsetting restoration provided. The Greenway must meet findings for this land coverage allowed by both Lahontan and TRPA for linear public service projects. These findings are in TRPA Code Subsection 20.4.B(3) for LCD 1b and Code Subsection 20.4.A(3) for other low LCDs. The findings analysis for encroachment in LCD 1b is presented in detail in Section 3.2, Biological Resources, in the evaluation of Question 33. Only the conclusions are restated here to avoid excessive duplication.

TRPA Code Subsection 20.4.A(3)(a) and 20.4.B(3)(a) The project is necessary for public health, safety or environmental protection.

The Greenway is necessary to protect public health and safety by: 1) providing an AASHTO Class I and ADA certified shared-use trail as an alternative to existing roadways and Class II bike lanes; and 2) providing an essential link in the non-auto public transportation network capable of providing access for the broadest spectrum and diversity of user groups. The Greenway provides environmental protection by: 1) reducing use of private automobiles and improving related air quality; 2) consolidating public access on a protected surface trail through sensitive lands, reducing erosion associated with unpaved trails; 3) decommissioning redundant trails through sensitive lands and restoring the associated disturbance to natural conditions; and 4) constructing raised boardwalks or asphalt pavement over permeable fill in locations where SEZ or wetlands cannot be avoided to protect surface and subsurface hydrologic connections. TRPA recognized these project features when incorporating the Greenway in elements of the Regional Plan. Specifically related to public health and safety and environmental projection, TRPA incorporates the project: as EIP project 752; on the TRPA Air Quality Transportation Program list; and in the Lake Tahoe RTP (TMPO 2008), Lake Tahoe Regional BPMP (TMPO 2010) and TRPA EIP, Planning Horizon 2008-2018 (TRPA 2009).

20.4.A(3)(b) and 20.4.A(3)(b) There is no reasonable alternative, including relocation, or for LCD 1b a bridge span or relocation, which avoids or reduces the extent of encroachment in LCDs 1a, 1c, 2 and 3 and 1b;

Throughout design, project team members considered segment alignments to avoid low land capability districts to the extent possible. Section 2.1.2 details major alternatives considered and demonstrates that some did not produce less environmental disturbance and others failed to satisfy project objectives or encountered other obstacles to implementation.

No alignment alternative exists that completely avoids encroachment in low LCDs and meets the Greenway objectives and purpose. Connecting developed neighborhoods in South Lake Tahoe requires crossing the landscape in a mountainous area; no reasonable alternative exists to these crossings.

Additionally, the Greenway constructs a public facility and as a result, user safety is paramount. Compliance with ADA, Caltrans and AASHTO Class I standards is necessary to meet safety and access needs and places constraints on design elements such as minimum trail widths, separation distance from roadways, and grade. Reduction in conflicts associated with street and driveway crossings is also necessary to create a safe public facility. Design constraints can result in location constraints. Some alternative routes described in Table 2 encountered excessive grades or unsafe street crossing locations. Other alternative development considerations included existing developed land uses and land ownership patterns. The design team rejected detailed consideration of alternative routes that encountered substantial private property requiring easement acquisitions.

The overall selection of reasonable segment alignments considered technical feasibility, environmental assessment, existing land use patterns and the regulations and requirements of permitting agencies in concert with the stated project objectives and purpose.

The Greenway design element avoids encroachment in LCD 1b as described in more detail for Question 33.

TRPA Code Subsection 20.4.A.(3)(c) and 20.4.B(3)(c) The impacts of the coverage and disturbance are fully mitigated in the manner prescribed by Subparagraph 20.4.A(2)(e) (note: for LCD 1b the restoration requirement in such Subsection shall apply exclusively to SEZ lands and shall include coverage and disturbance within the permitted Bailey coefficients).

Construction of the Greenway requires encroachment (land coverage and permanent disturbance) in sensitive LCDs 1a, 2 and 3 and 1b. The project area contains no LCD 1c. To avoid significant impacts from new encroachment, Subparagraph 20.4.A(2)(e) requires application of BMPs and additional land coverage mitigated with restoration in each low land capability district in a restoration/disturbance ratio of 1.5:1. The project proposes use of both temporary and permanent BMPs and on-site land coverage relocation per Code Subsection 20.5.C to offset the new encroachment. The findings for relocation of existing land coverage are provided below.

Chapter 2 describes project provisions for temporary BMPs that will reduce construction related environmental impacts. Permanent BMPs include slope stabilization, revegetation, and drainage controls. See evaluation presented for Question 62 for more description. That evaluation concludes project stabilization and revegetation proposals avoid impacts to soils related to additional land coverage.

To meet the restoration requirement for additional land coverage in low capability lands, the Greenway will remove verified existing land coverage related to on-site informal trails. Table 22 identifies the quantity of removed land coverage and Appendix D contains the RRPs for this trail removal. Evaluation for Impact 33 in Section 3.2.4, Biological Resources, describes the effectiveness of this restoration mitigation for encroachment in LCD 1b. TRPA requires that removing and restoring on-site land coverage meet the findings for relocated coverage presented in Code Subsection 20.5.C. The findings analysis for relocation is presented below.

Insufficient on-site restoration opportunities exist within each LCD to meet the mitigation responsibilities. The last column in Table 22 identifies where off-site restoration is required for new encroachment. Based on the calculations, land coverage transfer into the project area for restoration responsibilities is necessary in LCDs 1a (371 square feet), 1b (105,138 square feet) and 3 (980 square feet). However, proposed land coverage restoration in LCD 2 (1,494 square feet) is sufficient to provide for the off-site land coverage restoration required for LCDs 1a and 3 (total of 1,351 square feet). For LCD 1b, off-site land coverage restoration is required. Off-site restoration must follow provisions established in Code Subsection 20.3.B(4) for linear public service facilities. The findings analysis for such transfer is presented after the findings for on-site land coverage relocation.

The Greenway, including the provisions for BMPs and on-site and off-site restoration, can meet findings necessary to avoid significant impact from additional encroachment in low capability lands.

Additional coverage in LCD 1b must also meet Lahontan Basin Plan requirements. Evaluation based on the criteria is presented in Question 33.

Relocation of Existing Land Coverage within the Project Area. The project relocates existing verified land coverage within the project area to accommodate a portion of the new land coverage created by the

shared-use trail, even in low capability LCDs. TRPA Code Subsection 20.5.C requires that land coverage relocation within the same project area meet the following three findings:

TRPA Code Subsection 20.5.C Relocation Of Existing Land Coverage: Existing land coverage may be relocated on the same parcel or project area if TRPA finds that:

(1) The relocation is to an equal or superior portion of the parcel or project area, as determined by reference to the following factors:

(a) Whether the area of relocation already has been disturbed;

A majority of the project area in low capability LCDs is currently disturbed by existing uses including roadways and informal trails. Land coverage relocation is proposed in LCDs 1a, 1b, 2, 3, 4, 5, 6 and 7. In each case, the Greenway alignment follows existing disturbance where it can do so and still achieve project objectives, including compliance with allowable trail grades for ADA. On-site land coverage removed to meet relocation standards originates from equal to or lower capability LCDs than the LCD where it will be used; therefore the relocation is of equal or superior environmental suitability. Table 22 documents that a majority of land coverage relocation will occur within the same LCD. Land coverage removed from LCD 2 will be relocated for use in LCDs 1a and 3.

(b) The slope of and natural vegetation on the area of relocation;

Slope is a factor in determining land capability. As such, land coverage relocated in conformance with standards requiring transfer from equal or lower LCDs to higher ones generally avoids greater impacts related to slope. Native vegetation within the project area is variable, yet the vegetation community types most sensitive to disturbance exist in LCD 1b lands. Land coverage removed for relocation purposes exists in close proximity to areas of new LCD 1b land coverage with closely related vegetation communities. It is reasonable to conclude that further design development can demonstrate relocation from an area of equal or more sensitive natural vegetation to an area of less sensitive natural vegetation.

(c) The fragility of the soil on the area of relocation;

Land capability designation generally represents soil fragility; soils more sensitive to disturbance are grouped in lower LCDs. Because land coverage will be relocated from one lower capability LCD to another lower capability LCD, an equal or superior relationship to fragile soils is expected. The Greenway conforms to the TRPA Code restrictions related to land coverage relocation.

(d) Whether the area of relocation appropriately fits the scheme of use of the property;

Section 3.2.10, Land Use and Planning, concludes the Greenway appropriately fits the scheme of use of the project area, specifically those portions of the project area that correspond to the former Caltrans ROW, which is designated for the shared-use trail use. Construction of a shared-use trail is a permissible use throughout its length and continues similar informal recreation and access uses found in the project area under existing conditions. In most scenarios, the relocated land coverage comes from the elimination of existing land uses similar to the Greenway including abandoned roadways and informal trails that are no longer needed.

(e) The relocation does not further encroach into a stream environment zone, backshore, or the setbacks established in the Code for the protection of stream environment zones or backshore;

The relocation minimizes encroachment into a SEZ or the setbacks established in the TRPA Code for the protection of SEZs to the greatest extent feasible. Please refer to the analysis in 3.2 Biological Resources for Question 33 related to TRPA Code Subsection 20.4.B(3) findings for placement of the Greenway in SEZs. Also refer to the analysis provided above for Code

Subsection 20.4.A(3)(b). The project is sited to utilize existing disturbed areas to the greatest extent feasible and where necessary, to cross SEZs with the least amount of new disturbance. Existing SEZ disturbance not utilized by the shared-use trail or necessary to access the project area will be restored to reduce total SEZ disturbance. The project area does not contain backshore.

(f) The project otherwise complies with the land coverage mitigation program set forth in Section 20.5;

This analysis identifies that the project complies with the land coverage mitigation program set forth in Code Section 20.5. See Section 3.2.4, Biological Resources, and Question 33 for evaluation of permanent disturbance in LCD 1b.

(2) The area from which the land coverage was removed for relocation is restored in accordance with Subsection 20.4.C.

The project identifies land coverage to be removed for relocation and restores these areas in accordance with Code Subsection 20.4.C. Restoration strategies outlined in Section 2.6.3 and Appendix D will return areas of former land coverage to more naturally functioning conditions. The Conservancy will monitor and maintain these areas of vegetative cover.

(3) The relocation is not to Land Capability Districts 1a, 1b, 1c, 2 or 3, from any higher numbered land capability district.

The project area contains adequate verified existing land coverage to achieve relocation from similar lower LCDs to other lower LCDs, with the exception of LCD 1b. Relocation of existing on-site land coverage in LCD 1b will be strictly from land coverage removed in LCD 1b. Following proposed restoration, LCD 2 contains 1,494 square feet of land coverage available for relocation to LCDs 1a and 3.

When sufficient verified existing land coverage does not exist within a project area, specifically LCD 1b for the Greenway, land coverage must be transferred in accordance with TRPA Code Subsection 20.3.B (see discussion below).

Transfer Existing Land Coverage. For public service projects, off-site land coverage transfer can meet the land coverage needs when insufficient on-site land coverage is available within the project area. Land coverage transfer into the project area created by the shared-use trail is necessary in LCD 1b (105,138 square feet). To transfer restored LCD 1b land coverage to the project area the following findings for linear public facilities must be made:

TRPA Code Subsection 20.3.B(4) Linear Public Facilities And Public Health And Safety Facilities: The maximum land coverage (base coverage plus transferred coverage) for linear public facilities and public health and safety facilities is limited to the minimum amount needed to achieve their public purpose. Such transfer may be permitted, provided TRPA makes the following findings:

(a) The project is on the list of additional public service facilities if required pursuant to Section 33.5;

The Greenway is TRPA EIP project 752 and is included on the TRPA Air Quality Transportation Program list. Additionally, the project provides an essential public transportation link identified in the Lake Tahoe RTP (TMPO 2008), Lake Tahoe Regional BPMP (TMPO 2010) and TRPA EIP Update, Planning Horizon 2008-2018 (TRPA 2009).

(b) There is no feasible alternative that would reduce land coverage;

Alternatives analysis presented in Section 2.1.2 and for Questions 33 and 66 concludes no feasible alternatives exist to reduce land coverage needs.

(c) The project, because of its unusual configuration or service requirement, requires special consideration; and

The number, placement and size of existing land uses along the project area places constraints on the location of the linear public facility. The resulting configuration of the shared-use trail requires special consideration because of location within this complex context. Additionally, a central objective of the Greenway is to provide an essential public transportation service identified in the Lake Tahoe RTP (TMPO 2008), Lake Tahoe Regional BPMP (TMPO 2010) and TRPA EIP Update, Planning Horizon 2008-2018 (TRPA 2009). The project provides transportation services and links to existing trails, neighborhoods and public facilities, which place a constraint on the project endpoints and hence location. The Greenway should be given special consideration in reference to these configuration and service requirements.

(d) The facility primarily serves the needs of persons other than those who are, or will be, residents of the lands in question, or the owners of the land in question.

The Greenway is a linear public facility that serves the public at large. The project provides for key connections to existing neighborhoods and thus the residents of these neighborhoods, but the shared-use trail will be accessible to a much larger geographical area and a wide variety of age groups, user types and levels of experience.

The Greenway, including the provisions for BMPs and on-site and off-site restoration, meets the findings necessary to demonstrate compliance with TRPA land capability system and avoid significant impact.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

67. Will the Greenway result in a change in the topography or ground surface relief features of site inconsistent with the natural surrounding conditions? (TRPA 1b)

No. Standard of Significance: Changes in topographic features of the project area that are inconsistent with the surrounding conditions results in a significant impact to topography or ground surface relief features.

The Greenway design element complies with the TPRA Code Site Development Provisions and Grading and Construction Provisions (TMPO 2006), creates no impact to native geologic substructures, and minimizes changes in topography. The proposal locates the Greenway in areas of appropriate slope, but includes short portions of trail grades over 5 percent. The use of retaining walls in limited locations will reduce the extent of grading necessary and minimize the extent of excavations and alteration to surrounding conditions. To comply with scenic resource requirements the retaining walls will be constructed of natural appearing materials to best blend into the surrounding conditions.

Environmental Analysis: *Less than Significant Impact*.

Required mitigation: **None.**

68. Will the Greenway result in unstable soil conditions during or after completion of the proposal? (TRPA 1c)

No. Standard of Significance: Significant impacts result from non-compliance with TRPA Code Chapters 20, 25 and 64, the 208 Plan and the Lahontan Basin Plan (Chapter 5), which require the control of erosion

on and off-site and the stabilization of soils during and upon completion of excavation, grading and fill activities.

See analysis for Question 63, which addresses CEQA checklist item VIb and concludes the level of impact to soils to be less than significant.

Environmental Analysis: *Less than Significant Impact*.

Required mitigation: **None.**

69. Will the Greenway result in changes in the undisturbed soil or native geologic substructures or grading in excess of 5 feet? (TRPA 1d)

Yes. Standard of Significance: TRPA Code Subsection 64.7.B prohibits excavation in excess of 5 feet in depth or where there exists a reasonable possibility of interference or interception of a water table except under defined and permitted conditions. If groundwater interception or interference will occur as demonstrated by a soils hydrologic report, excavations can be made and significant impacts avoided through inclusion of project measures to protect groundwater flows to avoid adverse impacts to SEZ vegetation, if any would be affected, and to prevent groundwater or subsurface water from leaving the project area as surface flow.

The *Preliminary Geologic Hazards* Report (Kleinfelder 2004) identified no severe soil constraints that preclude grading and construction activities with the exception of areas of expected shallow groundwater along Bijou Meadow and Trout Creek. The Greenway design element addresses these geotechnical constraints by placing boardwalk in these areas and a bridge span over Trout Creek.

Table 23 outlines the estimates for excavation, grading and fill volumes for the Greenway by segment.

Table 23

Excavation, Grading and Fill Volumes in Cubic Yards

Segment	Cut volume	Fill Volume	Net Cut or Fill
2-45	603	0	607 Cut
2-50	1,267	22	1,245 Cut
2-70	784	404	380 Cut
2-80	12,780	3,000	9,780 Cut

Source: JWA February 26, 2010 Calculations as based on the Appendix C Plan sheets

The Greenway avoids cut slopes in SEZ areas by establishing trail elevations appropriately. Trail construction in some SEZ areas requires fill. Where the alignment closely parallels an existing roadway, such as adjacent to Meadowcrest or Pioneer Trail, the proposal locates the asphalt trail on grade as close to the existing road and within the existing roadway fill to the maximum extent possible. Trail designs in drier SEZ areas located away from existing roadways rely on a raised asphalt surface on permeable fill. This design avoids excavation in SEZ for the asphalt surface and retains surface and subsurface hydrologic connections on both sides of the trail. Impacts associated with this fill are described in other

sections of this document related to Question 33 (SEZ disturbance), Question 66 (land coverage), and Question 90 (water quality).

Construction of the Greenway requires little importation of fill materials, as the project utilizes materials from cut areas within the project area, with transportation of excess cut materials off-site to a TRPA approved disposal site to be identified during project permitting. The exception is permeable fill to underlay asphalt sections in areas with potentially high water tables during parts of the year, which requires specific compositions of engineered soils.

Although the Greenway proposal minimizes excavation through route design that follows natural topography wherever possible and use of the maximum flexibility allowed by ADA trail standards for trail grades, as presented in Table 24, Segment 2-80 could require excavation in excess of five feet at nine locations along the alignment to meet AASHTO and ADA grade requirements.

Table 24

Greenway Areas Potentially Requiring Excavations in Excess of Five Feet

Segment	Plan Sheet	Feature	Size (ft)	LCD
2-80	L1-2.00-17A	Cut with Wall	7.5	4
2-80	L1-2.00-17B	Cut with Wall	6.75 to 11.5	4
2-80	L1-2.00-17B	Cut with Wall	11 to 16.5	4
2-80	L1-2.00-18A	Cut with Wall	13 to 16	1A
2-80	L1-2.00-18B	Cut	7	1A/4
2-80	L1-2.00-19A	Cut	5	4
2-80	L1-2.00-19B	Cut	5	4
2-80	L1-2.00-20A	Cut with Wall	5 to 8	1A
2-80	L1-2.00-20A	Cut with Wall	6.5 to 9	1A

Source: Greenway Project Site Plans January 3, 2011; HBA 2011

Note: The Greenway L Series Plan sheets show limits of proposed excavation and fill and are available for review at the Conservancy, TRPA, City, and LTBMU offices.

TRPA prohibits excavations deeper than five feet because of the potential for groundwater interception or interference, except under defined and permitted conditions. Preliminary geotechnical investigations, described in Section 3.2.6.1 Environmental Setting, identified few areas of seasonal high groundwater along Segment 2-80 (Kleinfelder 2004), a finding confirmed by preliminary jurisdictional wetland investigations reported in Appendix G. Trail segments identified in Table 24 that require cut slopes in excess of five feet exist on steeper Cassenai and Oneidas complex soil types unlikely to exhibit near surface groundwater and could therefore avoid groundwater interception or interference. Engineering plan development that includes a soils/hydrologic report required by TRPA Code Subsection 64.7.B(1) will confirm this assessment. Features of this report include test pits or drill boring to 125 percent of planned excavation depth and will reveal the vertical sequence of soil textures, percent rock fragment, soil colors, and depths associated with the contact boundaries of these features. Final plan development in response to this report could include refining trail grades and wall construction details if necessary to meet Code requirements. This could include final project design that raises the elevation of the shared-

use trail surface, or that creates a double retaining wall, so that no one step or tier requires wall heights in excess of the five-foot limit.

Compliance with TRPA Code Subsection 64.7.B reduces the potential impacts from excavations to a level of less than significant through conformance with codified regulations.

Environmental Analysis: *Less than Significant Impact.*

Required mitigation: **None**.

70. Will the Greenway result in the continuation of or increase in wind or water erosion of soils, either on or off the site? (TRPA 1e)

No. Standard of Significance: A significant impact occurs if the Greenway causes a continuation of or increase in wind erosion or water erosion of soils, either on or off-site, creating non-compliance with TRPA Code Chapters 20, 25 and 64, the 208 Plan and the Lahontan Basin Plan (Chapter 5), which require the control of erosion on and off-site and the stabilization of soils during and upon completion of excavation, grading and fill activities.

The Greenway complies with applicable regulations and permitting requirements for control of erosion on or off-site and the protection of topsoil to reduce temporary construction impacts and long-term operational impacts to project area soils to a level of less than significant.

See analysis for Question 62, which addresses CEQA checklist item VIb and concludes potential impacts to soils to be less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required mitigation: **None.**

71. Will the Greenway result in changes in deposition or erosion of beach sand, or changes in siltation, deposition or erosion, including natural littoral processes, which may modify the channel of a river or stream or the bed of a lake? (TRPA 1f)

No. Standard of Significance: Effects to shorezone areas that modify the channel of a river or stream or the bed of a lake create a significant impact.

The project area does not include shorezone area and therefore creates no impact to river mouths or lakebeds.

Environmental Analysis: *No Impact.*

Required mitigation: **None.**

72. Will the Greenway result in exposure of people or property to geologic hazards such as earthquakes, landslides, backshore erosion, avalanches, mudslides, ground failure, or similar hazards? (TRPA 1g)

No. Standard of Significance: The location of facilities within an Alquist-Priolo earthquake fault zone or known active fault zone or the location of facilities within areas of unstable soil without appropriate design features or construction controls constitutes a significant impact.

See analysis for Question 61, which addresses CEQA checklist item VIa and concludes potential impacts from hazardous conditions to be less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required mitigation: **None.**

73. Greenway effect on slope, erosion, soil suitability and unique natural features. (NEPA)

The LTBMU's land management practices and requirements provided in the LTBMU's Forest Plan, as amended by the SNFPA, are used to evaluate an action's effect on earth resources. Section 43, "Soil Resource," of the Forest Plan includes the following directives:

- Maintain surface litter, duff, and adequate coarse woody debris to maintain organic matter reserves and recycle nutrients.
- Maintain protective groundcover (litter, duff, or slash) or vegetative cover to minimize soil erosion. Areas in which the soil resource is continuously impacted by recreation use will be considered an ongoing priority.
- Minimize soil displacement when grading slopes or when piling brush or slash.
- Where past management activities have reduced soil productivity, improve soil productivity by respreading displaced topsoil, by using tillage to increase porosity, by increasing nutrient supplies through the addition of fertilizer (utilizing the TRPA guidelines for fertilizer use), or by increasing nutrient holding capacity through the addition of organic matter.
- Where soils are susceptible to compaction and puddling, minimize the area covered by heavy equipment or operate when soils are least susceptible to damage.
- Design projects to reduce potential soil erosion and the loss of soil productivity caused by loss of vegetation and ground cover. Examples are activities that would: (1) provide for adequate soil cover in the short-term; (2) accelerate the dispersal of coarse woody debris; (3) reduce the potential impacts of the fire on water quality; and (4) carefully plan restoration/salvage activities to minimize additional short-term effects.
- Recommend restoration practices in: (1) areas with compaction in excess of soil quality standards, (2) areas with lowered water tables, or (3) areas that are either actively down cutting or that have historic gullies.
- Identify other management practices, for example, road building, recreational use, grazing, and timber harvests that may be contributing to the observed degradation.

Existing conditions and potential environmental effects related to water quality resulting from soil erosion and other stormwater issues are addressed in Section 3.2.8, Hydrology and Water Quality.

No Project. Under the no project alternative, the Conservancy constructs and operates no shared-use trail and no change to the project area occurs. Portions of the project area, including locations on National Forest Lands, would continue to be used as informal trails. Since no change occurs within the project area, this alternative would result in no direct or indirect effects related to: land coverage (i.e., there would be no relocation, removal, or addition of land coverage to parcels); soil erosion that exceeds designated grading regulations; or increased risk of injury or property damage from strong seismic ground shaking, landslides, or associated geologic hazards. Under the no action alternative, no shared-use trail would be constructed; therefore, this alternative would result in no contribution to potential cumulative effects on National Forest Lands related to: increases in land coverage; grading or soil erosion; and seismic or geologic hazards when considered with potential effects from projects listed in Table 60.

Proposed Project. The Greenway IS/IEC/EA addresses potential effects of the project to earth resources, including geologic hazards, seismicity, soils and TRPA land coverage under Questions 61 through 73. Figures 29 and 30 identify the surface geology and quaternary faults and soil map units associated with the project area. Table 22 details the TRPA land coverage characteristics of the project area and Table 23 presents excavation, grading and fill volumes associated with construction of the Greenway.

The Greenway maintains consistency with the LTBMU Forest Plan, TRPA Regional Plan and Lahontan Basin Plan; therefore, the proposed action alternative would not contribute to potential cumulative impacts to earth resources. Potential effects to earth resources are avoided or minimized through implementation of Greenway design element and compliance measures CM-1, CM-2, CM-5, CM-6 and CM-18 (see Sections 2.6.2 and 2.6.5).

Indirect and Direct Effects. Question 66 addresses direct and indirect effects of land capability and coverage. Question 62 addresses direct and indirect effects from grading and soil erosion. Question 61 addresses primary and secondary seismic and geologic hazards. The analyses identify probably effects on the human environment and conclude less than significant effects from the project.

The analysis supports the conclusion that the effects from shared-use trail construction and decommissioning/restoration of informal trails are not uncertain, and do not involve unique or unknown risk to slope, erosion, soil suitability and unique natural features. The potential effects are not anticipated to be controversial.

Cumulative Effects. The Greenway and related projects listed in Table 60 have the potential to increase coverage in the Lake Tahoe Basin. The projects, however, must adhere to TRPA Code Chapter 20, that sets forth regulations for the permissible amount of land coverage in the Region, including LCDs, prohibition of additional land coverage in certain LCDs, and transfer and mitigation of land coverage.

TRPA Code Subsection 20.3.B states the maximum land coverage (i.e., allowable base land coverage plus transferred land coverage) for linear public facilities is limited to the minimum amount needed to achieve their public purpose. Sufficient land coverage exists within the project area for relocation to equal or high capability LCDs. The exception is LCD 1b (SEZ), which requires transfer of some land coverage into the project area at a ratio of 1.5 square feet restored for each 1 square foot of disturbance. Along with the Greenway, related projects that cannot fully offset the proposed land coverage through relocation of coverage from comparable or high capability LCDs would be required to mitigate excess land coverage by identifying, purchasing, and transferring coverage from off-site parcels so that total land coverage does not increase in the Lake Tahoe Basin. Therefore, related projects listed in Table 60 as well as the Greenway would not result in adverse cumulative effects related to increases in coverage. Section 3.2.18, Mandatory Findings of Significant, specifically Question 187, further addresses cumulative effects of the Greenway and related projects.

Environmental Analysis: *No Impact Anticipated.*

Required mitigation: **None.**

3.2.7 Greenhouse Gas Emissions

This section presents the analyses for potential impacts to GHG emissions. Table 25 identifies the applicable impacts and anticipated level of impact.

Table 25

Greenhouse Gas Emissions

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
74. Greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (CEQA VIIa)		X		
75. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (CEQA VIIb)				X
TRPA Initial Environmental Checklist Item	**Yes**	**No, With Mitigation**	**Data Insufficient**	**No**
Same as Question 29. Will the Project significantly alter climate, air movement, moisture, or temperature? (TRPA 2d)				X
NEPA Significance of Effects				
76. Greenway effects on Greenhouse Gas emissions. (NEPA)				

3.2.7.1 Environmental Setting

Global climate change is caused in large part by anthropogenic (man-made) emissions of GHGs released into the atmosphere through the combustion of fossil fuels and by other activities that affect the global GHG budget, such as deforestation and land-use change. According to the California Energy Commission (CEC), GHG emissions in California are attributable to human activities associated with industrial/manufacturing, utilities, transportation, residential, and agricultural sectors as well as natural processes (CEC 2006).

GHGs play a critical role in the Earth's radiation budget by trapping infrared radiation emitted from the Earth's surface, which could have otherwise escaped to space. Prominent GHGs contributing to this process include water vapor, CO_2, N_2O, CH_4, ozone, certain HFCs and PFCs, and SF_6. This phenomenon,

known as the "greenhouse effect," keeps the Earth's atmosphere near the surface warmer than it would otherwise be and allows for successful habitation by humans and other forms of life. The combustion of fossil fuels releases carbon that has been stored underground into the active carbon cycle, thus increasing concentrations of GHGs in the atmosphere. Emissions of GHGs in excess of natural ambient concentrations are thought to be responsible for the enhancement of the greenhouse effect and to contribute to what is termed "global warming," a trend of unnatural warming of the Earth's natural climate. Higher concentrations of these gases lead to more absorption of radiation and warm the lower atmosphere further, thereby increasing evaporation rates and temperatures near the surface.

Climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants (such as ozone precursors) and TACs, which are primarily pollutants of regional and local concern. Because GHG emissions have long atmospheric lifetimes, GHGs are effectively well mixed globally and are expected to persist in the atmosphere for time periods of several orders of magnitude longer than criteria pollutants such as ozone. Given their long atmospheric lifetimes, GHG emission reduction strategies can be effectively undertaken on a global scale whereby the mitigation of local GHG emissions can be offset by distant GHG reduction activities

The CARB compiled a GHG inventory of California's 2006 GHG emissions. Their report states that 1990 emissions amounted to 433.3 million metric tons of CO_2e, while 2006 emissions levels rose to 483.9 million metric tons of CO_2e (CARB 2009). Based on California's 2006 population of 37,114,598, this amounts to approximately 13 metric tons of CO_2e per person (State of California, Department of Finance 2008). CO_2 emissions accounted for 89% of the state's 2006 inventory, followed by CH_4 (5 percent), N_2O (3 percent), and other gases included HGWPGs (3%) (CARB 2009). Table 26 summarizes statewide GHG emissions by sector, as defined in the CARB report.

Table 26

Statewide Greenhouse Gas Emissions from the 2006 CARB Inventory

Sector	CO_2e (million metric tons)
Transportation	188.721
Electricity Generation	106.458
Industry	101.619
Agriculture and Forestry	29.034
Residential	29.034
Commercial	14.517
Other	14.517
Total	483.9

Source: Adapted from CARB 2009

Notes: Emissions inventory includes estimates for CO_2, CH_4, N_2O, SF_6, HFCs, and PFCs.

3.2.7.2 Environmental Analysis and Mitigation Measures

74. Would the Greenway generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (CEQA VIIa)

Standard of Significance: There are no numeric local, state or federal significance thresholds established for GHG impacts. This analysis assesses construction and long-term operational emissions as a percent of existing emissions.

Project construction produces direct emissions. This analysis estimated GHG emissions (calculated as CO_2) from construction using URBEMIS2007, presented in Appendix F. As indicated in the Appendix, project construction results in GHG emissions from construction equipment emissions and emissions from workers' vehicles traveling to and from the construction sites. The estimated CO_2 construction emissions from these sources total 360 metric tons over the construction period or about 3,972 pounds (1.8 metric tons) per day. This assumes a construction completion rate of about 100 linear feet of trail per day during the summer construction season for approximately 200 working days taking place over several calendar years. Construction phase emissions cease at the completion of construction. The CO_2 emission estimate for construction activity represents less than 0.00007 percent of the California total, which is a negligible amount.

Development projects often produce direct and long-term GHG emissions from project operations. However, as presented in Tables 61and 62, the Greenway promotes a shift in transportation mode from autos to non-motorized users and results in a net reduction of regional VMT by 177 and daily vehicle trips by 80. Therefore, the operational phase of the project creates a small beneficial effect on long-term vehicle-related GHG emissions and global warming.

Environmental Analysis*: Less than Significant Impact.*

Required Mitigation: **None.**

75. Would the Greenway conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (CEQA VIIb)

Standard of Significance. Currently, neither the TRPA, TMPO nor the El Dorado County AQMD maintains local or regional plans, policies or regulations for the purpose of reducing the emissions of GHGs. Therefore, evaluation of this effect relies on general compliance with the 2008 CARB Scoping Plan strategies to achieve GHG emissions reduction goal as directed by the California Global Warming Solutions Act of 2006 (AB 32).

AB 32 requires CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. The 2008 CARB Scoping Plan adopted by CARB contains eight key strategies to achieve its GHG emissions reduction goal. The Scoping Plan strategy relevant to the Greenway is implementation of SB 375 (Steinberg), which provides for a new planning process to coordinate land use planning and regional transportation plans and funding priorities to meet the GHG reduction goals. SB 375 requires regional transportation plans, developed by Metropolitan Planning Organizations (MPOs), to incorporate a "sustainable communities strategy" in their regional transportation plans that will achieve GHG emission reduction targets set by CARB. The Lake Tahoe RTP (i.e., Mobility 2030, TRPA 2008) includes as a foundational element goals and policies that create sustainable communities by encouraging land use changes and improvements to non-auto transportation systems such as shared use trails.

The Greenway implements a specific high-priority project identified in the Lake Tahoe RTP (RTP #26) in compliance with a sustainable communities strategy. As noted in other sections of the analysis, trail use will decreases regional VMT by 177 and daily vehicle trips by 80 under cumulative conditions. Therefore, the Greenway does not conflict with the Scoping Plan, but instead is consistent with the Plan's GHG emissions reduction objectives.

Environmental Analysis*: No Impact.*

Required Mitigation: **None.**

Refer to Question 29. Will the Project significantly alter climate, air movement, moisture, or temperature? (TRPA 2d)

No. See analysis for Question 29, which addresses TRPA checklist item 2d and concludes the level of impact to CO_2 or methane emissions and the concentration of tree removal are less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

76. Greenway effect on GHG emissions. (NEPA)

No NEPA GHG threshold guidance has been established to date. On February 18, 2010, the CEQ issued draft guidelines addressing GHG analysis, but these have not yet been finalized. The draft threshold to use to initiate GHG analysis in a NEPA document was 25,000 metric tons per year but was not intended for use as a threshold of significance. Other federal guidance, such as USFS NEPA guidelines, has no set threshold; instead they rely on the state or local threshold.

As opposed to localized air quality effects of criteria air pollutants, the effects of GHGs are global. The quantity of GHGs that it takes to ultimately result in climate change is not precisely known, but the quantity is enormous. No single project alone would measurably contribute to a noticeable incremental change in the global average temperature, or to global, local, or microclimate. Therefore, GHG impacts to global climate change are considered to be inherently cumulative under NEPA process.

The draft NEPA guidance that is currently available for federal actions focuses on major projects, including the proposal by the CEQ anticipating an emissions level of 25,000 tons per year for requiring federal impact analysis. Other guidance for federal agencies directs them to evaluate GHG impacts in terms of state and local requirements. Federal action on establishing further federal guidance in GHG impact analysis and mitigation is presently stalled in Congress.

No Project. Under the no project alternative, the Conservancy constructs no shared-use trail and no change to the project area occurs. Portions of the project area, including locations on National Forest Lands, would continue to be used as informal trails. Under the no project alternative, no short-term construction emissions or potential long-term benefits from vehicle trip reductions occur. Portions of the Greenway, including locations on National Forest Lands, continue to be used as informal trails. No shared-use path would be constructed; therefore, no contribution to potential cumulative effects related to short-term construction-generated or long-term operational emissions of GHGs would result.

Proposed Project. Questions 21 to 30 describe project effects to air quality with analyses concluding that the Greenway does not threaten a violation of federal, state, or local air quality laws or requirements imposed for the protection of the environment. The analysis focuses on mobile and area source emissions

generated by the Greenway, as no permanent stationary sources affecting air quality would be developed. Questions 74 and 75 address GHG analysis requirements for California under CEQA.

Indirect and Direct effects. Section 3.2.16 provides an analysis of traffic-related effects associated with the Greenway and indicates an overall reduction in VMT following project implementation. Indirect effects of the Greenway include reduced vehicle trips and associated VMT as a result of providing a non-automobile alternative to the use of private vehicles. Reduced vehicle trips and VMT have an indirect benefit to air quality. Direct effects of the Greenway include short-term emissions from construction equipment and dust from construction related ground disturbance. Greenway operations do not include motorized vehicles and therefore create no direct emissions from these sources. A small amount of temporary and intermittent emissions would occur from equipment used to maintain the Greenway.

Construction-related emissions of GHGs associated with the Greenway are measurably small, temporary, and finite in nature. There are currently no federal measures to determine the level of GHG emissions from construction projects, as considered an adverse effect.

Cumulative Effects. Given the scale and nature of the construction associated with the Greenway, the GHGs generated during construction will not result in adverse cumulative effects related global climate change. The Greenway decreases regional VMT by 177 and daily vehicle trips by 80 under cumulative conditions. The USEPA determines that motor vehicles cause an effect to GHG emissions. Since the Greenway results in a net reduction in VMT and daily vehicle trips, project implementation provides a beneficial effect on GHG emissions and would not result in a contribution to potential cumulative effects related to climate change. Section 3.2.18, Mandatory Findings of Significant, specifically Question 187, further addresses cumulative effects of the Greenway and related projects, as listed in Table 60.

Environmental Analysis: *No Impact Anticipated.*

Required Mitigation: **None.**

3.2.8 Hazards and Hazardous Materials (CEQA) and Risk of Upset and Human Health (TRPA)

This section presents the analyses for potential impacts to hazards and hazardous materials and risk of upset and human health. Table 27 identifies the applicable impacts and anticipated level of impact.

Table 27

Hazards and Hazardous Materials and Risk of Upset and Human Health

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
77. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (CEQA VIIIa)			**X**	
78. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? (CEQA VIIIb)			**X**	
79. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (CEQA VIIIc)			**X**	
80. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (CEQA VIIId)				**X**

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
81. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? (CEQA VIIIe)			X	
82. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? (CEQA VIIIf)				X
83. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (CEQA VIIIg)			X	
84. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? (CEQA VIIIh)			X	
TRPA Initial Environmental Checklist Item	**Yes**	**No, With Mitigation**	**Data Insufficient**	**No**
85. Involve a risk of an explosion or the release of hazardous substances including, but not limited to, oil, pesticides, chemicals, or radiation in the event of an accident or upset conditions? (TRPA 10a)				X
86. Involve possible interference with an emergency evacuation plan? (TRPA 10b)				X
87. Creation of any health hazard or potential health hazard (excluding mental health)? (TRPA 17a)				X

TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
88. Exposure of people to potential health hazards? (TRPA 17b)				**X**
NEPA Significance of Effects				
89. Greenway hazards and nuisances effects, including public safety. (NEPA)				

3.2.8.1 Environmental Setting

Wildfire. Dry summers, steep topography, and forests with high fuel loads create an annual wildfire hazard in the project area. The project area is situated within developed and wildland-urban interface (WUI) areas. WUI areas are locations in which developed areas are adjacent to areas of natural vegetation capable of carrying a wildfire. Such areas can also be defined as those areas where houses and wildland vegetation coincide. The wildfire suppression strategy in the Greenway project area, defined in the City of South Lake Tahoe Mitigation Strategy and Action Plan, calls for suppression of fires due to the WUI setting of the basin and proximity to homes and other structures (Citygate Associates, LLC 2004). Land management agencies in the Lake Tahoe Basin are cooperating to reduce hazardous fuel levels in the project area and vicinity through forest stand thinning, understory burning, and other strategies. Roadways and trails in the project area create fire protection access and fuel breaks during wildfire events.

Fire protection services in the project area and vicinity are provided primarily by the South Lake Tahoe Fire Department (SLTFD). Depending on the initial location of the fire and mutual aid agreements, wildfire suppression in the project area or vicinity is also provided by the Lake Valley Fire Protection District, Calfire, or the LTBMU. A MOU between these agencies provides mutual aid and assistance to suppress wildfires and protect structures. Initial wildfire suppression responsibilities are divided into three categories based on land ownership or MOUs: Local Responsibility Areas (LRAs) include City and County areas, State Responsibility Areas (SRAs) include State lands, and Federal Responsibility Areas (FRAs) include LTBMU lands.

The SLTFD provides primary response for emergency services within the boundaries of the City and responds, through mutual aid agreements, to fires outside city-limits or on state or federal land. There are four SLTFD fire stations in the Project vicinity. Fire Station #1 is located at 1252 Ski Run Blvd directly adjacent to the project area, while Stations #2 and #3 are located at 2951 and 2101 Lake Tahoe Blvd, respectively. Stations #1 and #3 each have an engine staffed by one captain and one engineer and a medic staffed by one firefighter paramedic and one firefighter. Station #2 has an engine staffed by one captain and one engineer and a truck staffed by engine crew for extrication or commercial fires. Fire Station #4 is located at 1901 Airport Rd and staffed by three personnel, Airport Crash Rescue engines, and medic vehicles. The administrative offices are located at Station #3 (www.sltfd.org, 11/19/08).

The SLTFD is implementing a Mitigation Strategy and Action Plan to reduce risks associated with WUI fire events in South Lake Tahoe. The Action Plan includes the following strategies (Citygate Associates, LLC 2004):

1. Create fuel reduction zones for neighborhoods.
2. Create defensible space on individual properties.

3. Encourage use of firewise landscaping.
4. Improve use of street, house and property signage.
5. Encourage compliance with codes and regulations by annual inspection.
6. Encourage installation of fire safe roofing.
7. Restore fire adaptive ecosystems.
8. Seek ongoing funding opportunities to support compliance efforts.
9. Improve use of biomass.
10. Seek improved cooperation and coordination through community education efforts.

Calfire maintains a fire station to respond to wildfires in SRAs from the Tahoe Valley Station, 870 Emerald Bay Rd, South Lake Tahoe, CA. Calfire administers the Fire and Resource Assessment Program (FRAP), which maps and describes landscapes susceptible to wildfire fire based on factors such as vegetation, climate, and topography. Much of the Greenway project area and vicinity is classified as a Very High, High, and Moderate Fire Hazard Severity Zone (FHSZ) in areas of City, County, State, and federal responsibility (California Department of Forestry and Fire Protection, Forest And Resource Assessment Program 2006, 2007, 2009). Calfire prescribes vegetation and fuel clearance standards around structures under PRC §4291, and the California Building Code (CBC) prescribes standards for construction in wildland fire hazards areas to reduce the susceptibility to wildfire.

The Conservancy's Forestry Program plans and implements fuel reduction and forestry health projects on its lands in the Lake Tahoe Basin. In urban interface lands, these projects reduce fuel loads by selectively thinning trees and removing understory. The Conservancy plans to complete fuel reduction projects on lands within the former Caltrans ROW by 2011.

The LTBMU implements programs on Vegetation Management, Urban Lot Management, and Fire and Fuels Management on LTBMU lands in the project area and vicinity. A goal of these programs is to reduce wildfire risks in the WUI setting by reducing fuels and creating defensible fuel profile zones with a combination of hand and mechanical treatments and prescribed burning. LTBMU wildland fire fighting crews dispatch from the LTBMU at 35 College Dr, South Lake Tahoe.

Hazards and Hazardous Materials. The term hazardous substance refers to both hazardous materials and hazardous wastes, including explosives. A material is defined as "hazardous" if it appears on a list of hazardous materials prepared by a federal, state or local regulatory agency or if it has characteristics defined as hazardous by such an agency. The CalEPA Department of Toxic Substances Control (DTSC) defines hazardous waste, as found in the California Health and Safety Code §25141(b), as follows:

> […] its quantity, concentration, or physical, chemical, or infections characteristics: (1) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; (2) pose a substantial present or potential hazard to human health or the environment, due to factors including, but not limited to, carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties, or persistence in the environment, when improperly treated, stored, transported, or disposed of, or otherwise managed.

The Cal-EPA and the State Board establish rules governing the use of hazardous materials and the management of hazardous waste. If a release of a hazardous substance(s) is (are) detected in the project area, the SLTFD responds to evaluate conditions and determine if additional emergency services will be required.

The project area, as undeveloped land located away from industrial or heavy commercial sites is considered to have a low risk for hazardous materials contamination. Segment 2-50 passes the STPUD property and may be impacted to fuel spills. The project area also confronts radon gas, a radioactive gas found in soil types but often concentrated in granite and granitic soils (City of South Lake Tahoe 2008). Radon vapors occurring in building materials, within buildings, and through indoor water systems are

considered hazardous if they are allowed to concentrate to levels at 4 pico-curies per liter of air. Risk to humans in outdoor setting such as a bike trail is low.

The City has 25 known active sites that release contaminants (mainly petroleum hydrocarbons, MTBE, and solvents) to groundwater. Most of these sites are located along Lake Tahoe Blvd; however, two of the 25 sites are located on the STPUD property on Meadowcrest Dr. According to Lahontan, these sites are undergoing effective remediation to control their contaminant plumes. These sites are not expected to pose risks to the public and pose a minimal threat to drinking water supply wells (City of South Lake Tahoe 2008).

Mosquito/Vector Control. The climate, topography, and plant communities of the Lake Tahoe Basin provide an abundance and variety of larval mosquito habitats. The restoration of stream environment zones has created additional habitat sources. The mosquito population in the Basin is most active in the spring and early summer. Mosquitoes are potential vectors of organisms that can cause disease to pets, domestic animals, wildlife, or humans. Human diseases transmitted by mosquitoes include encephalitis, malaria, and West Nile virus.

The Greenway is located within the El Dorado County Vector Control District. Operating in both the City and unincorporated El Dorado County, the Vector Control District employs technicians certified by the State of California Health Services in pesticide usage, and mosquito and vector identification. The Vector Control District routinely conducts surveillance to locate mosquito breeding sources and to solve mosquito problems using physical, biological and chemical means, along with conducting public education outreach efforts (El Dorado County Vector Control District 2010).

Biological larvicides include *Bacillus thuringiensis israelensis* and *Bacillus sphaericus,* which are naturally occurring bacteria. Mosquitoes, black flies, and certain midges are susceptible to these bacteria – other aquatic invertebrates and non-target insects are unaffected. Larvicidal oils and monomolecular films are used to drown the mosquito larvae in their later aquatic stages, when they are not feeding, by forming a thin coating on the surface of the water. The Vector Control District uses pyrethrins and pyrethroids for its adult mosquito-fogging program in and around populated areas. These are generally applied by truck mounted or hand held foggers (El Dorado County Vector Control District 2010).

Emergency Preparedness and Airports. Each California county is responsible for preparing an emergency operations plan that describes various anticipated emergency situations and outlines the County's response to such situations. El Dorado County's plan, the Multi-Hazard Plan, has recently been approved by the State and is regularly updated. The Plan serves as the implementation program for the coordination of hazard planning and disaster response efforts in El Dorado County, and thus the City, as stated in Objective 6.1.1 of the El Dorado County General Plan.

California has developed an Emergency Response Plan to coordinate emergency services provided by federal, state and local governments and private agencies. Response to hazardous materials incidents is on part of this plan. The plan is managed by the Governor's Office of Emergency Services (OES), which coordinates the responses of other agencies including the Cal-EPA, CHP, CDFG, Lahontan, County Sheriff's Department, and City Police and Fire Departments.

The Lake Tahoe Airport is designated as a public safety transportation facility for the Lake Tahoe Basin. During road closures due to weather or landslides, the Airport provides emergency and medical transportation for those requiring hospitalization or specialized medical assistance. The airport provides an alternative base for the Calfire fire fighting aircraft and provides emergency supplies of aviation fuels, diesel, and unleaded fuels. The airport maintains a trailer of disaster medical supplies that is available for

medical emergencies within the Basin. Barton Memorial Hospital in South Lake Tahoe is a designated heliport for emergency helicopter transport for medical treatment.

Lake Tahoe Airport is situated approximately one-half mile to the south and west of Segment 2-45. The project area does not fall within one of the CPs or Special Areas associated with the airport.

3.2.8.2 Environmental Analysis and Mitigation Measures

77. Would the Greenway create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (CEQA VIIIa)

Standard of Significance: Non-compliance with state and federal standards for transport and use of hazardous materials during construction of operation of the Greenway constitutes a significant impact. The Federal Hazardous Materials Transportation Act, California Health and Safety Code Division 20, and California Code of Regulations Titles 8 and 19 determine the regulatory standards.

Project construction includes grading, slope stabilization, and construction of trails, bridges, boardwalks, and culverts. Hazardous materials associated with construction include diesel fuel, hydraulic fluid and asphalt products and paints. The STR Transfer Station, Materials Recovery Facility, in South Lake Tahoe, handles the disposal of hazardous wastes from the project area and vicinity. CM-4, detailed in Section 2.6.5.4, identifies staging areas and construction controls related to the use and storage of these materials. Protection and remediation in the event of accidental spills is also addressed. These measures, further detailed at the time of final permitting, will meet federal, state, and local standards. No site conditions, particularly those related to potential staging areas along Barbara and Aloha Aves, present challenges to standard compliance with construction controls suitable to avoid public hazard.

Long-term bike trail operations include periodic maintenance of trail infrastructure. Asphalt sealing and boardwalk maintenance will occur as necessary and follow standard practices for materials use.

Construction and operation of the Greenway will meet standards for public and environmental protection related to hazardous materials and avoid potential for significant impact.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

78. Would the Greenway create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? (CEQA VIIIb)

Standard of Significance: Non-compliance with state and federal standards for transport and use of hazardous materials during construction of operation of the Greenway constitutes a significant impact. The Federal Hazardous Materials Transportation Act, California Health and Safety Code Division 20, and California Code of Regulations Titles 8 and 19 determine the regulatory standards.

The City General Plan does not include industrial or other land use designations that allow the handling, use, or manufacture of hazardous materials. Only relatively small quantities of hazardous materials and hazardous wastes are generated, stored, and transported in South Lake Tahoe because of limited heavy industrial land uses and lack of major interstate trucking routes. Consequently, the project area has a low risk of hazardous materials spills or incidents, as the majority of the trail alignment is located on disturbed

but undeveloped land. Trail segments located adjacent to industrial developments, such as segment 2-50, which passes the STPUD property, may be located near fuel spill sites.

The area does have naturally occurring hazardous materials such as radon gas, which is a radioactive gas that is found in soil types, but is often concentrated in granite and granitic soils (City of South Lake Tahoe 2008). Radon vapors occurring in building materials, within buildings, and through indoor water systems are considered hazardous if they are allowed to concentrate to levels at 4 pico-curies per liter of air. Although radon vapors are found in the soil, they typically only become hazardous when vapors are concentrated, such as in indoor settings, and are unable to disperse into the atmosphere. The Greenway creates no such environment.

Trail construction involves the use of potentially hazardous materials, including but not limited to, fuels, petroleum products, and asphalt. Construction personnel and people living or working near the sites could be exposed to accidental releases of these materials. CM-4 includes a spill response plan that will detail measures to avoid and minimize the potential for accidental spills and specific response actions to be taken should an accidental spill occur. Operation of Greenway facilities requires no use of hazardous materials.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

79. Would the Greenway emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (CEQA VIIIc)

Standard of Significance: The transport or use of hazardous materials within one-quarter mile of a school constitutes a significant impact if the project includes no measures ensuring public health and safety.

LTCC (One College Drive) and Bijou Community School (3501 Spruce Ave) are within one-quarter mile of the Greenway. Construction and operations activities involve no transport, consumption, remittance, disposal, or handling of hazardous substances that have potential to create a significant hazard to the public or the environment, and therefore pose a low risk of reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. The risk is further reduced through implementation of CM-4, detailed in Section 2.6.5.4.

Some construction equipment will likely use diesel fuel, creating a short-term increase in diesel fuel usage over the active construction period. This short-term increase is not likely to contribute significantly towards hazards to the public or environment. Question 78 addresses

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

80. Would the Greenway be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (CEQA VIIId)

Standard of Significance: Project location on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 creates a significant hazard to the public or the environment.

Listed hazardous waste facilities or contaminated sites are not reported within the project area or along major transportation routes that may be used or affected during construction or operation of the Greenway in the City or adjacent areas of unincorporated El Dorado County (DTSC 2010). The closest site, the Meyer's Landfill along Pioneer Trail in unincorporated El Dorado County, is over 1.3 miles away and is closed for remediation actions.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

81. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? (CEQA VIIIe)

Standard of Significance: A significant impact results from non-compliance with the Lake Tahoe Airport Comprehensive Land Use Plan or FAA Safety Regulations.

Segment 2-45, the start of the project area is within a half mile of the southern and eastern boundary of the Lake Tahoe Airport, a public-use airstrip. The Greenway constructs and operates a shared-use trail in the vicinity of the airport, but develops no structures that could obstruct visibility or impede navigation by protruding above imaginary surfaces as described in FAR Part 77. The Greenway is a compatible land use in the vicinity of the airport and complies with the Airport Land Use Commission policies for land uses in Airport Safety Zones in the vicinity of the Lake Tahoe Airport. The project produces no smoke, light, glare, or electronic interference nor encourages the concentration of birds in the safety zone around the airport. The Greenway has a less than significant impact on public safety in the vicinity of a public-use airport.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

82. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? (CEQA VIIIf)

Standard of Significance: Creation of a safety hazard to people residing or working in the vicinity of a private airstrip results in a significant impact.

The Greenway is not located within the vicinity of a private airstrip. The Lake Tahoe Airport is a public use airport.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

83. Would the Greenway impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (CEQA VIIIg)

Standard of Significance: If impediments to emergency response or evacuation routes occur or response times fall below emergency response plan standards because of Greenway construction or operations, a significant impact occurs.

The Greenway interferes with no emergency response or evacuation plans and provides for a new, alternative emergency vehicle access route to areas in WUI areas. WUI areas are locations in which developed areas are adjacent to areas of natural vegetation capable of carrying a wildfire.

In the event of wildfire or other significant community threat, emergency access for evacuation or fire-fighting equipment can occur along the Greenway. In portions of its alignment, (e.g. in the Bijou neighborhood), the shared-use trail allows an alternate route capable of improving response times or improving circulation options during evacuation. In these situations, official personnel will direct emergency use to avoid creating trail use safety concerns. Therefore, the Greenway produces a less than significant impact on emergency response or evacuation plan.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

84. Would the Greenway expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? (CEQA VIIIh)

Standard of Significance: Project exposure of people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands a creates significant impact.

The project does not expose people or structures to a significant risk or loss due to wildfire hazards. Several portions of the project area are adjacent to naturally vegetated open space and the Greenway traverses WUI settings. Operation of the Greenway increases the number of people using the area and people are potential ignition sources for wildfire. The number of potential ignition sources, however, is generally not a determinant of wildfire occurrence. The risk of loss to wildfire is directly related to hazardous fuel accumulations near structures and the ability to access and suppress a wildfire shortly after ignition. The project area is an existing urbanized setting with multiple existing access roads and trails. The project will be integrated into existing Conservancy and LTBMU fuel reduction programs active in the area, and construction and operation of the trail won't interfere with ongoing fuel reduction and vegetation management programs. Forest stand thinning for fuels reduction typically occurs within a minimum of 150 feet from the trail centerline to allow the trail to serve as a fire break and a safe area from which to conduct suppression activities, with signage provided to remind users of fire danger and the need to properly dispose of cigarettes and other potential igniters.

In natural vegetation areas, construction of the Greenway provides a more effective fuel break compared to existing conditions by reducing the continuity of fuels. The trail may act to decrease the rate of spread of a wildfire and provide greater ability for fire fighters and safety vehicles to access a wildfire location, providing for greater opportunity for wildfire suppression. Manufacturers of boardwalk systems similar to that proposed by the Greenway identify that boardwalk and bridge designs can accommodate emergency response vehicles up to 15,000 pounds.

Greenway operations will improve emergency vehicle access and provide for a new fuel break in WUI settings, and thereby provides enhanced ability to suppress a wildfire to result in a less than significant impact on exposure of people and structures to wildfire risks.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

85. Will the Greenway involve a risk of an explosion or the release of hazardous substances including, but not limited to, oil, pesticides, chemicals, or radiation in the event of an accident or upset conditions? (TRPA 10a)

No. Standard of Significance: Non-compliance with local, state and federal standards for transport and use of hazardous materials during construction of operation of the Greenway constitutes a significant impact. The Federal Hazardous Materials Transportation Act, California Health and Safety Code Division 20, and California Code of Regulations Titles 8 and 19 determine the regulatory standards. The City General Plan sets forth the goals, policies, and action plans related to public safety and hazards associated with hazardous materials that are applicable to the Greenway. Lahontan Board Order No. 2R6T-2005-0007 also outlines requirements for storage and handling of hazardous substances for construction projects within the City.

Questions 77 and 78 (i.e. CEQA checklist items VIIIa and VIIIb) respectively address the transport, use or disposal and the risk of accidental release of hazardous materials and conclude the level of impact from the project to be less than significant. Construction of the Greenway involves the short-term use and storage of hazardous materials typical of a shared-use trail construction project (e.g., asphalt, fuel, and paint for striping). Materials will be used, stored, and disposed of in accordance with applicable federal, state, and local laws including Cal-OSHA, and Lahontan NPDES construction permit conditions and manufacturer's instructions. For transport to the project area, the CHP regulates transportation of hazardous materials on area roadways. Compliance measure CM-4 of the project serves to meet the conditions of the NPDES construction permit and includes preparation of a site-specific spill prevention plan that addresses hazardous materials use, storage, transport, and disposal and management and containment of hazardous materials in the event of a spill and is sufficient to minimize risks associated with hazardous materials use.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

86. Will the Greenway involve possible interference with an emergency evacuation plan? (TRPA 10b)

No. Standard of Significance: If impediments to emergency response or evacuation routes occur or response times fall below emergency agency standards because of Greenway construction or operations, a significant impact occurs.

See analysis for Question 83, which addresses CEQA checklist item VIIIg and concludes that the Greenway has a less than significant impact on emergency response or evacuation plans.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

87. Will the Greenway result in creation of any health hazard or potential health hazard (excluding mental health)? (TRPA 17a)

No. Standard of Significance: Non-compliance with state and federal standards for transport and use of hazardous materials during construction of operation of the Greenway constitutes a significant impact. The Federal Hazardous Materials Transportation Act, California Health and Safety Code Division 20, and California Code of Regulations Titles 8 and 19 determine the regulatory standards.

See analysis for Questions 77 and 78 concerning the Greenway's potential to create health hazards or increase exposures to health hazards, which addresses CEQA checklist items VIIIa and VIIIb and conclude the level of impact is less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

88. Will the Greenway result in exposure of people to potential health hazards? (TRPA 17b)

No. Standard of Significance: Non-compliance with state and federal handling and disposal regulations and procedures during construction of operation of the Greenway constitutes a significant impact. The Federal Hazardous Materials Transportation Act, California Health and Safety Code Division 20, and California Code of Regulations Titles 8 and 19 determine the regulatory standards.

See analysis for Question 78, which addresses CEQA checklist VIIIb and concludes that the Greenway has a less than significant impact towards exposure of people to potential health hazards related to construction and operation of the shared use trail.

Other potential hazards relate to hazardous waste sites and disease spread from mosquitos. With no known hazardous waste sites within the project area, and known underground contaminated sites well documented and undergoing effective remediation outside the project area, the potential for encountering contaminated soils or hazardous wastes during construction or operation of the Greenway is minor. Federal and state OSHA regulations for construction workers will be followed during trail development and workers will not be subject to contaminant exposure. The Greenway crosses several SEZs that include streams and wet meadow environments that provide breeding habitats for mosquitoes. Trail construction in wet meadow and stream environments includes boardwalks on piers that do not affect the existing grade or hydrologic patterns below the trail. Construction and design does not interrupt flow patterns or otherwise create new standing water or saturated habitats that provide for new breeding habitats for mosquitoes nor interrupt existing vector control programs. Consequently, the Greenway has a less than significant impact on public health risks and hazards.

Required Mitigation: **None.**

89. Greenway hazards and nuisances effects, including public safety. (NEPA)

Under NEPA, the LTBMU Forest Plan provides the basis for evaluating project features that could contribute to hazards and risks associated with hazardous materials and public health. The LTBMU Forest Plan requires that potential hazards are evaluated and that appropriate protection measures are incorporated into the project. According to the LTBMU Forest Plan, potential hazards include risk of fires and public safety related to roadway hazards or conflicts.

No Project. Under the no project alternative, the Conservancy constructs and operates no shared-use trail and no change to the project area occurs. Portions of the project area, including locations on National Forest Lands, would continue to be used as informal trails. No storage, use or transport of hazardous materials risk of hazardous materials that would increase the risk of spill or release of hazardous materials. This alternative would create no indirect, direct, or cumulative effects on emergency access or exposure to wildfire hazard on National Forest Lands.

Proposed Project. Question 84 addresses indirect and direct wildfire effects. Question 160 addresses indirect and direct emergency access and traffic-related hazards. Questions 77 through 80 address short-term risk related to storage of hazardous substances during construction.

Indirect and Direct Effects. The Greenway poses no adverse indirect or direct effects to public health or safety. Compliance measures CM-4, CM-7, CM-8, C-14, CM-15 address potential effects from wildfire, traffic-related hazards and hazardous substances.

The analysis supports the conclusion that the effects from shared-use trail construction and decommissioning/restoration of informal trails are not uncertain, and do not involve unique or unknown risk to public safety. The Greenway poses no direct effects to the human environment that are likely to be controversial because the project proposal addresses uncertain and unique risks (i.e. street crossings) through the Greenway design element and complies with federal, states and local laws for the protection of the environment.

Cumulative Effects. Implementation of related projects listed in Table 60 could expose the public or the environment to risks associated with the use or transport of hazardous materials. The proposed project and related projects, however, are subject to similar government regulations. Transportation of hazardous materials on area roadways is regulated by the CHP, while use, storage, and disposal of hazardous materials are regulated by a number of state agencies, including Lahontan. Compliance with regulations minimizes the combined effect related to hazardous materials use. Therefore, the related projects in the project area vicinity as well as the Greenway will not result in adverse cumulative effects related to the use or transport of hazardous materials.

The Greenway maintains consistency with the LTBMU Forest Plan, TRPA Regional Plan and Code, Lahontan Basin Plan, City General Plan and Cal-EPA rules governing wildfire, vectors, emergency preparedness and hazardous materials and handling; therefore, the proposed action would not contribute to potential cumulative impacts to human health or risk of upset. Section 3.2.18, Mandatory Findings of Significant, specifically Question 187, further addresses cumulative effects of the Greenway and related projects, as listed in Table 60.

Environmental Analysis: *No Impact Anticipated.*

Required Mitigation: **None.**

3.2.9 Hydrology and Water Quality

This section presents the analyses for potential impacts to hydrology and water quality. Table 28 identifies the applicable impacts and anticipated level of impact.

Table 28

Hydrology and Water Quality

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
90. Violate any water quality standards or waste discharge requirements? (CEQA IXa)			**X**	
91. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? (CEQA IXb)			**X**	
92. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? (CEQA IXc)			**X**	
93. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? (CEQA IXd)			**X**	

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
94. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? (CEQA IXe)			**X**	
95. Otherwise substantially degrade water quality? (CEQA IXf)			**X**	
96. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? (CEQA IXg)				**X**
97. Place within a 100-year flood hazard area structures which would impede or redirect flood flows? (CEQA IXh)			**X**	
98. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? (CEQA IXi)			**X**	
99. Inundation by seiche, tsunami, or mudflow? (CEQA IXj)				**X**
TRPA Initial Environmental Checklist Item	**Yes**	**No, With Mitigation**	**Data Insufficient**	**No**
100. Changes in currents, or the course or direction of water movements? (TRPA 3a)				**X**
101. Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff so that a 20 yr. 1 hr. storm runoff (approximately 1 inch per hour) cannot be contained on the site? (TRPA 3b)				**X**

TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
102. Alterations to the course or flow of 100-yearflood waters? (TRPA 3c)				**X**
103. Change in the amount of surface water in any water body? (TRPA 3d)				**X**
104. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity? (TRPA 3e)				**X**
105. Alteration of the direction or rate of flow of ground water? (TRPA 3f)				**X**
106. Change in the quantity of groundwater, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations? (TRPA 3g)				**X**
107. Substantial reduction in the amount of water otherwise available for public water supplies? (TRPA 3h)				**X**
108. Exposure of people or property to water related hazards such as flooding and/or wave action from 100-year storm occurrence or seiches? (TRPA 3i)				**X**
109. The potential discharge of contaminants to the groundwater or any alteration of groundwater quality? (TRPA 3j)				**X**
110. Is the project located within 600 feet of a drinking water source? (TRPA 3k)				**X**
NEPA Significance of Effects				
111. Greenway effects to water resources. (NEPA)				

3.2.9.1 Environmental Setting

The Greenway affects the Trout Creek, Bijou Creek and Bijou Park Creek watersheds, with approximately 0.8 miles, 1.4 miles and 1.6 miles of the shared-use trail alignment located within each, respectively. The following sections detail the characteristics of these local watersheds.

Trout Creek. The Trout Creek drainage area is approximately 41.2 square miles with a channel length of 12.2 miles. The watershed ranges in elevation from lake level at 6,229 feet to over 10,000 feet mean sea level (msl) (Cartier et al. 1995). Fifty-four percent of the Trout Creek watershed is located at lower elevation, between lake level and 8,000 feet msl and about 10 percent of the Trout Creek watershed lies below 6,500 feet. Glacial outwash and Quaternary lake sediments underlie the lower portion of the watershed (Mussetter 2001). Trout Creek flows into the Upper Truckee River approximately 600 feet upstream from the mouth of the Upper Truckee River at Lake Tahoe.

A geologic cross section developed by Scott et al. (1978) extends between the Trout Creek watershed near the Martin Ave Bridge crossing to Lake Tahoe between the Al Tahoe and Bijou communities. This cross section shows estimated distribution and extent of fine-grained sediments as well as basement rock geometry in and near the study area and an almost continuous band of fined-grained sediments below the surface at an altitude of about 6,200 ft. This indicates that the basement rock slopes toward the Trout Creek watershed.

Lahontan identifies beneficial uses for Trout Creek in Table 5.1-1 in the Basin Plan as: municipal and domestic supply, agricultural supply, groundwater recharge, water contact recreation, noncontact water recreation, commercial and sport fishing, cold freshwater habitat, wildlife habitat, migration of aquatic organisms, spawning, reproduction and development.

Flow rates in Trout Creek respond to watershed conditions and precipitation events. Several sources peak flow rates in differing levels. USGS measures daily and peak flow at two monitoring stations near the project area: at Martin Ave Bridge (Station 10336780) and near the confluence of the Upper Truckee River (Station 10336790). Peak flows associated with flood events from these monitoring stations are (50-year/100 year flood event): at Martin Ave Bridge of 638 cfs/783 cfs and at Upper Truckee River of 691 cfs/848 cfs (USGS 2002).

According to the FEMA Flood Insurance Rate Map for El Dorado County, California, a portion of Segment 2-50 as illustrated in Figure 31 intersects FEMA Zone A. The FEMA designates floodplains associated with Cold Creek and Trout Creek on FEMA Flood Insurance Rate Maps 060040 0387B, effective October 18, 1983, and 060040 0389B, effective October 18, 1983.

Katzer and Glancy (1986) estimate the 100-year peak flood flow height, at 1,100 cfs, a flow that could inundate the road crossing and cover the extent of the SEZ downstream. The California Water Plan Update reports the peak discharge of record at the Martin Ave Bridge station as 615 cfs with a peak stage of record measured at 11.1 feet (Lahontan 2009).

The seasonal snowmelt process creates annual stream flow peak generally in May or June. Seasonal low flows take place in the summer and fall, usually between July and November. The typical snowmelt season stream flow on Trout Creek ranges from 50 to 150 cfs, with fall low flows under 25 cfs. Climate-driven cycles can produce extreme highs and lows during a single year and from one year to the next in the Trout Creek watershed. The extreme high flows are mostly, but not entirely, associated with winter rain-on-snow conditions. Mean daily stream flows associated with major rain-on-snow events (e.g., Feb 1963, Dec 1964, Jan 1997) are about 3.5 times greater than typical snowmelt flows. Several high streamflow events have occurred on Trout Creek during snowmelt season (e.g., 1967, 1969, 1983, 1995,

and 1996). In addition to longer duration snowmelt runoff peaks in spring, short duration peak runoff events with lower volumes occur in summer months from thunderstorms that typically last only a few hours (USACE 1999).

The FEMA estimated 100-year flow represents as worst-case scenario to be used in design of the Martin Ave Bridge crossing. The 100-year floodplain follows the Trout Creek channel and gets wider in the lower reaches with the decrease in slope. The width of the 100-year floodplain below Pioneer Trail for Trout Creek ranges in width between 400 feet and 900 feet (Stantec 2006).

The groundwater elevations within the Trout Creek watershed generally parallel the topography, with higher groundwater elevations in the headwaters and along ridgelines and lower groundwater elevations in the valleys and along the lake (Rowe and Allander 2000). In the upper watershed reaches, groundwater generally flows towards the stream channels and in the middle reaches it flows down valley, approximately parallel to the streams (Rowe and Allander 2000). Trout Creek is mapped to have increased potential for debris flow and flooding (Kleinfelder 2004) due to shallow groundwater that could saturate soils and streambanks and contribute to slumping. The major basin diversion is groundwater withdrawal for municipal use (USGS 2000). The preliminary geotechnical report (Kleinfelder 2004) states that shallow groundwater is likely to be encountered at the Trout Creek crossing.

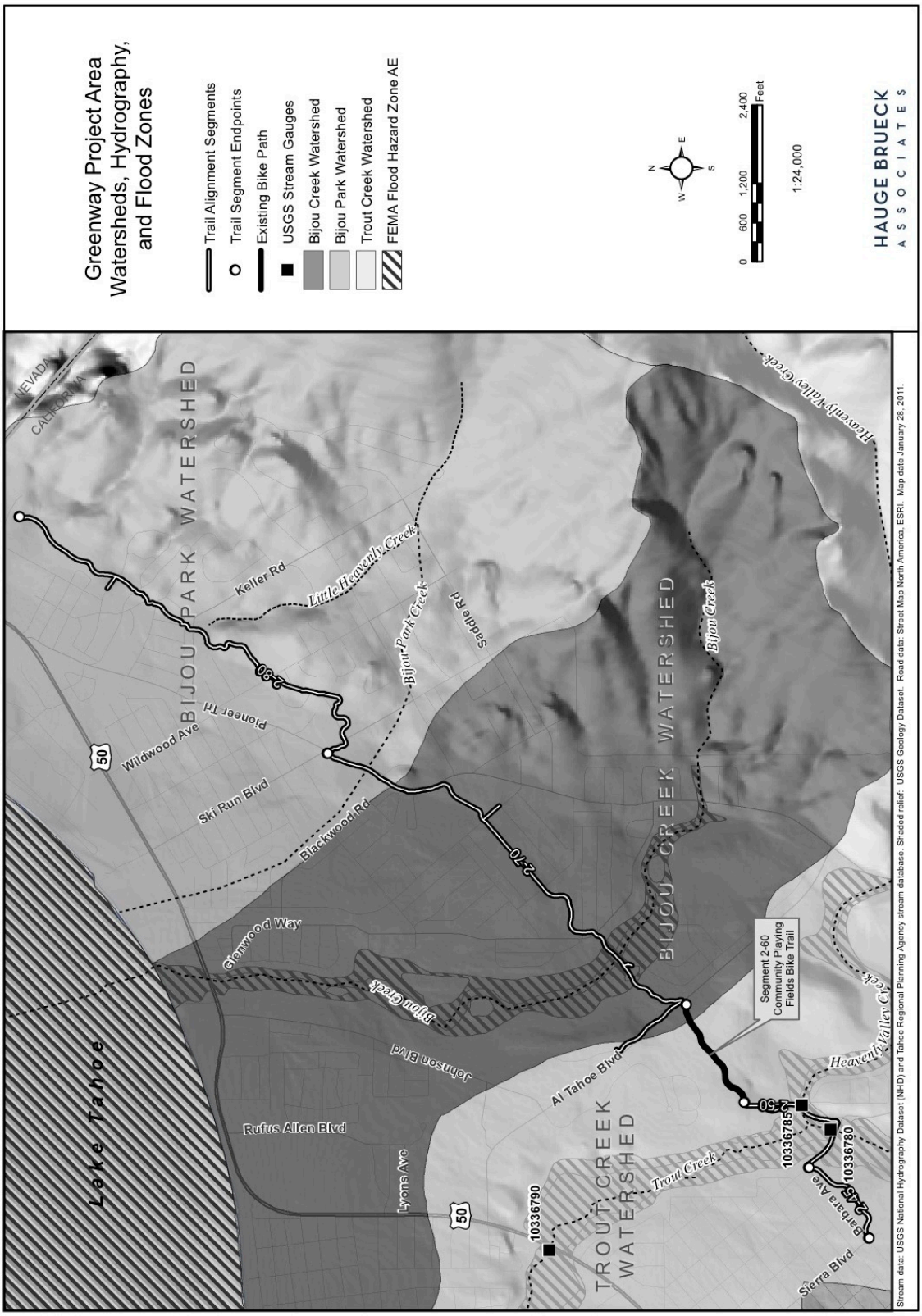
Bijou Creek. The Bijou Creek watershed ranges from 6,226 feet msl to 8,371 feet msl, is 1,386-acres and contains the Bijou Meadow. Al Tahoe Blvd forms the approximate western boundary and Glenwood Way forms the approximate eastern boundary (Lumos 2005). The Bijou Creek watershed receives between 20 and 35 in. of precipitation a year, with the majority of the precipitation falling during the winter as snow (Allander 2003).

The TRPA classifies the entire Bijou Meadow as SEZ. TRPA PAS 101 identifies a stream channel or flowline that is officially called Bijou Creek, but existing conditions do not support concentrated surface flow or a well-defined channel. Historically, the Bijou Creek and Meadow received runoff from several drainages through a series of diversion channels, which are currently no longer in use (Lumos 2005). The meadow is characteristically wet during spring melt conditions but soil conditions dry in the late spring to early summer, allowing recreational access from local residents (Tahoe Baikal Institute 2005). The wetlands investigation prepared for this project reflects the current generally drier conditions, delineating the central meadow area as montane dry meadow (HBA 2010).

In the 1800's a railroad network transported logs from Bijou Meadow to Lake Tahoe. When logging ceased, the meadow was then used for cattle grazing from around 1900 to 1950, and diversions from Heavenly Valley and Cold Creeks were constructed to route waters to the meadow for summer irrigation (Johnson 2003). The City plans to implement Phase One of the Bijou Erosion Control Project in 2011 as part of TRPA's EIP project No. 172. This project will construct a shared treatment facility to address the urban stormwater from the densely developed commercial core in the lowest portion of the watershed

The current land uses within the watershed are urban, a mixture of residential, recreational, and commercial uses, and undeveloped forest. Undeveloped, natural forest conditions exist in the upper parts (headwaters) of the drainage area. The forest transitions to residential land use and then to commercial land use near Lake Tahoe. Bijou Golf Course is a prominent feature in the lower- middle part of the drainage basin and along the lower reaches of Bijou Creek (Allander 2003). Recreational uses in and near the project area include activities at Bijou Community Park and informal trail access on numerous trails throughout Bijou Meadow.

Figure 31. Project Area Watersheds, Hydrography and Flood Zones



The beneficial uses of minor wetlands and meadows in the South Tahoe Hydrologic Area, as defined in Table 5.1-1 of the Lahontan Basin Plan are: municipal and domestic supply; agricultural supply; ground water recharge; freshwater replenishment; water contact recreation; non-contact water recreation; commercial and sport fishing; cold freshwater habitat; wildlife habitat; preservation of biological habitats of special significance; rare, threatened, or endangered species; migration of aquatic organisms; spawning, reproduction, and development; flood peak attenuation/flood water storage; and water quality enhancement.

Surface water quality monitoring data is not reported for Bijou Creek in the vicinity of the project area. The Tahoe-Baikal Institute (2005) report characterizes stormwater quality draining to the meadow from adjacent neighborhoods and roadways. According to the FEMA Flood Insurance Rate Map for El Dorado County, California this portion of the project area (Segment 2-70) intersects FEMA Zone A. Figure 31 illustrates the project area in reference to FEMA Zone A, which is the flood insurance zone that corresponds to the 100-year floodplain of Bijou Creek. The 100-year flood flow is estimated at 75 cfs and would deposit fine sand and gravel in the vicinity of Pioneer Trail (Katzer and Glancy 1986). The flow then spreads out at a shallow depth in the meadow downstream from Pioneer Trail because of the poorly defined channel. A diagonal levee and drainage ditch exists down gradient from the project area and up gradient from the Bijou Golf Course that tends to channelize flows prior to reaching the US Hwy 50 culvert.

The *Ground Water Reconnaissance of the Bijou Creek Watershed* (Allander 2003) reports the altitude of the groundwater table above sea level to generally increase with increasing distance from Lake Tahoe. Groundwater levels measured between June 30 and October 21, 2003 and ranged from 6,220 to 6,451 feet msl.

The Tahoe-Baikal Institute measured groundwater in Bijou Meadow in 2005 to determine the ability of the area to assimilate potential increases in stormwater runoff. Depth to groundwater was measured from 40.6 inches to 60.2 inches in the southern portion of the meadow. A restrictive clay layer was encountered 39 inches to 46 inches bgs). Mean and median infiltration rates were calculated at 1.97 and 3.94 inches bgs at 1.36 inches/hour and 0.63 inches/hour, respectively (Tahoe-Baikal Institute 2005).

The preliminary geologic hazards report (Kleinfelder 2004) states that shallow groundwater is likely to be encountered at the Bijou Creek crossing.

Bijou Park Creek. The Heavenly Mountain Resort Master Plan Amendment (Parsons 2007) included study of this watershed, which is drained by Bijou Park Creek (referred to as Blackwood Creek in prior documents). Lahontan designated this creek Bijou Park Creek in the Updated Discharge Permit (Board Order No. R6T-2003-0032) to avoid further confusion with another similarly named stream in the Lake Tahoe Basin.

The watershed includes approximately 412 acres within the Heavenly project area, encompassing nearly the entire "face" of Heavenly Mountain Resort and includes steep ski slopes (i.e., the Face), the California Base area, Wildwood-Keller Creek, and Bijou Park Creek. Development of the California Base area involved more than 10 acres of cut and fill to create the California Lodge, maintenance facilities, and parking lots. Water draining from the "face" of Heavenly Mountain Resort and the California Base Lodge is collected in a series of pipes and vaults under the parking lot, which then discharge into the defined creek channel below the California parking lot along Wildwood Ave. Prior to discharge, storm runoff is pre-treated in these vaults and off-site at a restored one-acre SEZ located above Tamarack Ave in South Lake Tahoe. The vaults include sediment basins and oil and grease traps. Bijou Park Creek surfaces northwest of the California Base area and flows through the City toward Lake Tahoe. The stream

crosses Ski Run Blvd and flows parallel to Blackwood Rd before discharging to Lake Tahoe at the Ski Run Marina.

The project area crosses Bijou Park Creek near Pioneer Trail and Ski Run Blvd over the existing culvert. Mean surface flow reported for Bijou Park Creek is 0.22 cfs for water years 2001 through 2005. Peak discharge is 1.21 cfs (Entrix 2006). No data could be located for flood frequency. No FEMA flood Hazard Zones are mapped along Bijou Park Creek.

Lahontan identifies beneficial uses of minor surface waters in the South Tahoe Hydrologic Area in Table 5.1-1 Basin Plan as: municipal and domestic supply; agricultural supply; ground water recharge; water contact recreation; non-contact water recreation; commercial and sport fishing; cold freshwater habitat; wildlife habitat; and spawning, reproduction, and development.

Abrasives and deicers applied by Heavenly and the City discharge into Bijou Park Creek within and below the Heavenly Mountain Resort. Water quality data has been collected at the outlet of the culvert below the California base area parking lot since 1987. Water quality analysis from water years 1987-1991 are referenced to the 95 Draft EIR/EIS/EIS Volume 3a (LTBMU 1996), while the Comprehensive Monitoring Report (LTBMU 2004) presents analysis from water years 1991-2003. Entrix published the Comprehensive Monitoring Report for water years 2001-2005 (Entrix 2006).

Lahontan revised the past discharge permit in 1991 to allow partial treatment of waste discharge in the underground vaults and off-site at the restored one-acre SEZ (Board Order 6-91-36), exempting Bijou Park Creek from effluent discharge requirements. Heavenly Mountain Resort deeded the SEZ treatment site, along with the obligation to maintain percolation improvements in perpetuity, to the City in 1994. An updated discharge permit was adopted in 2003, replacing the two prior board orders imposing limitations on effluent discharged to Bijou Park Creek and establishing compliance dates for Heavenly Mountain Resort to achieve these effluent limits. The permit required installation of BMP retrofits at the California Parking Lot to commence by October 15, 2006 and compliance with discharge to surface water effluent limitations by 2008.

Existing development impacts channel conditions of Bijou Park Creek. The defined channel begins at the culvert at Saddle Dr and flows west towards Ski Run Blvd through forested lands between residential neighborhoods. The channel spreads out into a SEZ area at Tamarack and Blackwood Aves and then becomes a more confined channel below this area. Segment 2-70 passes over Bijou Park Creek at Pioneer Trail, which is currently conveyed in an 18-inch diameter culvert.

Chapter 3.3 of the *Heavenly Mountain Resort Master Plan Amendment Final EIR/EIS/EIS* (Parsons 2007) presents a hydrologic analysis of Bijou Park Creek within the LTMBU special use permit boundary, which contains the headwaters of the Bijou Park Creek watershed. The analysis states that the groundwater table elevation near perennial or intermittent streams tends to equal the elevation of the local stream channel profile. Groundwater recharge occurs seasonally, which induces seasonal fluctuations in groundwater levels and groundwater discharge to streams. Year-to-year differences in precipitation induce inter-annual fluctuations in groundwater conditions. Long-term groundwater levels and discharges in Bijou Park Creek watershed do not display a temporal trend (Parsons 2007).

SEZs and Wetlands. The USACE regulates activities in wetlands and waters of the U.S. in accordance with Section 404 of the Clean Water Act. To determine the potential for impacts to this resource, HBA performed preliminary wetland delineation in the fall of 2010. Appendix G contains the draft report; Figure 8 locates the wetland areas identified. The delineation found five wetland types within the project area including: other waters, emergent floodplain, riparian wetland, montane dry meadow, and montane mesic meadow. Segment 2-50 crosses other waters, emergent floodplain, and riparian wetland at Trout

Creek. Segment 2-70 crosses montane dry meadow in Bijou Meadow. The trail also encroaches at the very edge of two wetland areas in Segment 2-70; montane mesic meadow near Herbert Ave and Aloha Rd, and riparian wetland and emergent floodplain along Pioneer Trail near Charlesworth Ct. Between Glen Rd and Van Sickle Bi-State Park, Segment 2-80 crosses two wetland areas containing montane mesic meadow and a small area of riparian wetland. Please refer to Appendix G for a full description, figures, and maps of Wetlands and Waters of the U.S. identified within the project area. Section 3.2.5 addresses potential impacts to SEZs and wetlands, specifically Questions 32, 33 and 34.

Surface Water Quality Objectives. Key regulatory agencies with respect to hydrology, water rights and supply, surface water quality and groundwater in the project area include:

- TRPA through designation by the USEPA for California and Nevada as the water quality planning agency in the region;
- State Water Resources Control Board;
- Lahontan; and
- City through the Municipal Code.

Table 29 details the state and regional water quality objectives for Trout Creek, Heavenly Valley Creek (a tributary to Trout Creek which the Greenway crosses at Meadowvale Dr via an existing culvert), Bijou Creek and Bijou Park Creek.

Table 29

State and Regional Surface Water Quality Objectives

Project Area Watersheds	TN (mg/L)	Nitrate-Nitrite (mg/L)	TP (mg/L)	DOP (mg/L)	SSC (mg/L)	TDS (mg/L)	Sp. Cond. (Umhos/cm)	Turb (ntu)	Total Iron (mg/L)	Diss. Iron (mg/L)	Cl (mg/L)	Grease & Oil (mg/L)	Sulfate (mg/L)	Boron (mg/L)	COD (mg/L)	App. Color PCU
Trout Creek																
TRPA Environmental Thresholds (a)	0.5	NS	NS	0.1	250	NS	NS	NS	NS	0.5	NS	2	NS	NS	NS	NS
Lahontan Basin Plan (b)	0.5	0.19	0.1	0.015	NS	60(a)/50(d)	NS	20	0.03	NS	0.15(d)/0.20(a)	2	(c)	(c)	(c)	(c)
Heavenly Valley Creek																
TRPA Environmental Thresholds (a)	0.5	NS	NS	0.1	250	NS	NS	NS	NS	0.5	NS	2	NS	NS	NS	NS
Lahontan Waste Discharge Permit (b)	0.19	NS	0.015	NS	60*	NS	NS	20	0.03	NS	0.20 (a)/0.15 (d)	NS	(c)	(c)	(c)	(c)
Bijou Meadow (e)																
TRPA Environmental Thresholds (a)	5	NS	1	NS	NS	NS	NS	200	4	NS	NS	40	NS	NS	NS	NS
Lahontan Basin Plan (b)	5	NS	1	NS	NS	NS	NS	200	4	NS	NS	40	(c)	(c)	(c)	(c)
Bijou Park Creek																
TRPA Environmental Thresholds (a)	0.5	NS	NS	0.1	NS	NS	NS	NS	NS	0.5	NS	2	NS	NS	NS	NS

Project Area Watersheds	TN (mg/L)	Nitrate-Nitrite (mg/L)	TP (mg/L)	DOP (mg/L)	SSC (mg/L)	TDS (mg/L)	Sp. Cond. Umhos/cm	Turb (ntu)	Total Iron (mg/L)	Diss. Iron (mg/L)	Cl (mg/L)	Grease & Oil (mg/L)	Sulfate (mg/L)	Boron (mg/L)	COD (mg/L)	App. Color PCU
Lahontan Waste Discharge Permit (b)	0.5 (a)	NS	0.1 (a)	NS	60 (a)/50(d)	NS	NS	20	0.5	NS	0.2	2	(c)	(c)	(c)	(c)

Source: TRPA Code Chapter 81; Lahontan Basin Plan; Lahontan Board Order No. R6T-2003-0032 and R6T-2004-0036

Table Notes:

(a) Based upon 90th percentile values

(b) These are the primary water quality standards. Some others are not shown on this table.

(c) Narrative Standards Basin Plan 5.1-8

(d) Annual Average

(e) Maximum concentration to discharge to Land Treatment/Infiltration Systems or Groundwater

NS = No Standard

(*) Heavenly Valley Creek TMDL for Sediment is 58 tons/yr

3.2.9.2 Environmental Analysis and Mitigation Measures

90. Would the Greenway violate any water quality standards or waste discharge requirements? (CEQA IXa)

Standard of Significance: Failure to implement effective, reasonable and appropriate measures to protect water quality and/or non-compliance with WQOs, waste discharge requirements or Board Order No R6T-2005-0007, R6T-2005-0026 or R6T-2008-0019 result in a significant impact to surface water quality and beneficial uses. TRPA Code Chapters 25, 64, and 81 and the Lahontan Basin Plan Chapter 5 disclose the applicable codified regulations and WQOs that are presented in Table 29.

Lahontan exercises control of WQOs and water quality control measures for surface waters and groundwater governed by the Lahontan Basin Plan adopted March 31, 1995. The Lahontan Basin Plan designates beneficial uses for water bodies and establishes water quality objectives, waste discharge prohibitions, and other implementation measures to protect those beneficial uses as describe in the previous section. TRPA Code Chapter 81 lists the regional WQOs. Table 29 summarizes the WQOs for project area streams.

The beneficial uses of Trout Creek, its tributaries (i.e., Heavenly Valley Creek) as set forth and defined in the Basin Plan are listed above in the Environmental Setting section. The Lahontan Basin Plan Chapter 5 lists the WQOs for Trout Creek receiving waters.

For Bijou Creek (i.e., Bijou Meadow), Lahontan Order Number R6T-2008-0019 implements the Basin Plan. This permit, adopted in 2004, amends the waste discharge requirements outlined in Board Order 6-00-82, which was originally passed in 2000 to regulate storm water runoff from municipal jurisdictions within the Lake Tahoe Basin. The permit includes effluent and receiving WQOs for surface and groundwater. The permit also outlines the effluent limits for discharge to land.

Lahontan Board Order No. R6T-2003-0032 lists the WQOs for Bijou Park Creek, the headwaters of which are contained within the base of Heavenly Mountain Resort.

Site disturbance, stormwater runoff, erosion and sedimentation during Greenway construction pose direct and indirect short-term impacts to surface water quality and beneficial uses within and downstream of the project area. Concentrated runoff from modified impervious surfaces and slopes could occur from long-term operations of the Greenway. Indirect impacts of atmospheric deposition of particulates could occur if disturbed areas are not revegetated or increased VMT occurs.

Construction of the Greenway directly affects Trout Creek, Bijou Meadow, and Bijou Park Creek. This analysis evaluates potential impacts below in the context of the compliance measures, design features and construction controls built into the project. Federal, regional, State, and/or local regulations for project permitting and approval dictate the compliance measures CM-3 through CM-9, as detailed in Sections 2.6.5.3 through 2.6.5.9. The design features and construction controls are measures incorporated into the project during planning and design intended to avoid, reduce and minimize potential effects to surface water quality and beneficial uses. These project features address direct and indirect, short-term and long-term effects to surface water quality and beneficial uses from construction runoff, urban runoff and atmospheric deposition within the project area

Short-term Construction Impacts. Construction of the Greenway involves land disturbance activities, such as vegetation removal, excavation, and backfill and stockpiling of soils. Short-term impacts to surface water quality and beneficial uses could result if precipitation events occur simultaneously with construction activities. Disturbed and compacted soils contribute to runoff and subsequently increase

peak and total runoff volumes from the project area. However, containment of soil erosion and runoff on-site during construction protects the down-gradient drainages surface water quality and beneficial uses. A small potential for accidental petroleum releases from motorized equipment during construction activities exists during construction activities, which could result in temporary effects to water quality.

During the final stages of construction plan development, project applicants and contractors prepare details and specifications that make up the TRPA ESCP and Lahontan SWPPP. These plans address construction related water quality issues to minimize, control and infiltrate runoff. The project proposal includes description of such compliance measures developed during project planning in Section 2.6.5. These are:

- CM-3/CM-4: On-site Construction Monitor (component of SWPPP and ESCP);
- CM-4: Emergency Spill Response Plan (component of the SWPPP).
- CM-3/CM-4: Properly Site Staging and Stockpiling Areas (component of SWPPP and ESCP);
- CM-4: Construction Dewatering Plan (optional component of SWPPP)
- CM-9: Fugitive Dust Control Plan (also a component of SWPPP and ESCP)
- CM-5: Revegetation and Restoration Plans for Disturbance Areas (RRPs - see Appendix D);
- CM-7: Tree Evaluation and Protection Measures (also a component of CM-18: TRPA Soils Hydrologic Approval).

At a minimum, implementation of the ESCP and SWPPP prevents debris, soil, silt, sand, rubbish, cement or concrete or washings thereof, oil or petroleum products or other organic or earthen material from project construction or operation from entering into receiving waters or their tributaries and adjacent wetlands. The SWPPP outlines erosion control measures to be taken as well as structural BMPs to control and prevent to the maximum extent practicable the discharge of pollutants to surface waters and groundwater. The SWPPP includes a plan for responding to and managing accidental spills during construction (i.e., Emergency Response Plan) as well as overall management of the construction project such as designating areas for material storage, equipment fueling, concrete washout, and stockpiles. Tree protection measures outline procedures for protection of roots and boles during construction activities. Mature tree roots play a role in slope stability and tree canopy aids in the protection of topsoil by moderating temperatures and dispersing the effects from precipitation events that could lead to erosion. A designated monitor on-site during construction activities provides professional expertise and expedited response to correct issues that could arise during construction and assures compliance with permitting conditions and fulfillment of project commitments.

The project area presents few construction challenges that could reduce the effectiveness of standard compliance measures in meeting discharge standards during construction. Most of the project area is flat, high capability land with good construction access. Available staging areas along Barbara and Aloha Aves provide ample opportunities to erect and maintain erosion controls on higher capability lands distant from streams and conveyance systems. The project description includes provisions for appropriately siting a staging area for the northern section of the trail in cooperation with the City.

Construction near Trout Creek and in other SEZ or wetland areas requires a different menu of measures to avoid water quality impacts. Analysis for Question 62 provides additional detail. Site preparation in these areas includes defining specific work zones and projection for existing vegetation through measures such as dry-season construction or use of landing plates in equipment maneuvering areas. Project boardwalk design that includes helical piers avoids significant amounts of ground disturbance for footings construction, including avoiding groundwater interception. Bridge footings will be required for the Martin Ave Bridge. Excavation for these footings and other trail features in this area will likely encounter groundwater as described above. The Dewatering Plan, a SWPPP component, requires project features to include capture, storage, and appropriate discharge for groundwater as described in Section 2.6.5.4.

This evaluation concludes these measures can reduce potential for direct and indirect water quality degradation during construction. Water quality protection directly supports the following beneficial uses: municipal and domestic supply; agricultural supply; commercial and sport fishing; cold freshwater habitat; wildlife habitat; migration of aquatic organisms, and spawning, reproduction, and development. Three beneficial uses will experience short-term disruption during construction: commercial and sport fishing, water contact recreation and non-contact water recreation. While access to recreation features in the work zone will be temporarily limited during construction, adequate public access for water contact and fishing along Trout Creek and for recreational trail use in other areas exists adjacent or near the project area along its length. Conformance with regulations and project permitting conditions reduces the direct and indirect short-term potential impacts to surface water quality and beneficial uses during the construction period to a level of less than significant.

Long-term Operational Impacts. The Greenway, as a non-motorized route, introduces little long-term potential for runoff containing hydrocarbons, heavy metals and other chemicals or toxins associated with motorized vehicles and exhaust. The project plans for no snow removal or use of deicing chemicals or sand.

To reduce potential long-term impacts to surface water quality and beneficial uses from use, operations and maintenance actions, the Greenway proposes the following compliance measures for conformance with regulations and standard project permitting conditions:

- CM-6: Permanent BMPs – shared-use trail surface options, armored cut and fill slopes; retaining walls, controlled access in SEZs, signage and physical barriers, as detailed in section 2.6;
- CM-5: Revegetation and Restoration Plans – see Appendix D;
- CM-17: Noxious Weed and Invasive Species Program;
- CM-7: Tree Evaluation and Protection Measures; and
- CM-8: Shared-use Trail Operations, Management and Maintenance Strategy.

The Greenway applies permanent BMPs as set forth in TRPA Code Chapter 25 and Sections 2.5.4 and 2.5.5, as described in Chapter 2. The Greenway removes and restores land coverage associated with informal trails to offset new land coverage that is necessary for construction of the shared-use trail. Restoration actions comply with TRPA Code Subsection 20.4.C and result in a net environmental benefit to SEZs (LCD 1b) and other low capability LCDs through removal of existing land coverage, revegetation of disturbance areas and permanent protection of these areas from future encroachment. The project proposes strategies for restoration based on the type and location of disturbance with goals of reestablishment of native hydrology and vegetation communities. For these reasons, the Greenway does not use of ornamental landscaping, fertilizer, or irrigation. Revegetation strategies use native plants and materials. Appendix D contains the RRPs for trail removal, trail BMP upgrades, disturbance in forested uplands and disturbance in SEZs. Table 30 details, by Greenway Segment, the square footage of existing land coverage that is proposed for removal and the square footage of informal trail that is identified for BMP retrofits. Evaluation for Questions 33 (SEZ), 34 (wetlands), and 66 (land coverage) provides more detail.

The RRPs include a Noxious Weed and Invasive Species Program (CM-17), implementation of which improves revegetation efforts by reducing the possibility for noxious weed introduction and establishment and the subsequent removal of these unwanted plan species if necessary. Implementation of the OMMS assures that the project continues to provide for the environmental benefits articulated by the project objectives through adequate maintenance of facilities, resource protection through education and interpretation and adaptive management strategies. Appendix E details this plan.

Table 30

TRPA Land Coverage - Proposed Land Coverage Restoration and BMP Retrofits by Segment

Segment	Land Coverage Proposed for Removal (square feet)	BMP Retrofit to Existing Trails to Remain (square feet)
Segment 2-45	27,973	2,451
Segment 2-50	8,918	873
Segment 2-70	61,075	7,092
Segment 2-80	78,358	0
TOTAL	**176,324**	**10,416**

Source: TRPA land capability verifications, South Tahoe Greenway Project Coverage Calculations Tables January 2011 – Appendix K and HBA 2011

Given the linear configuration of the Greenway, source control is more effective in preventing surface water degradation than extensive runoff collection and treatment. The Greenway installs the following design features and construction controls to avoid and minimize direct and indirect, long-term potential impacts to surface water quality and beneficial uses from operations and maintenance to a level of less than significant:

- Avoidance and minimization of encroachment in low capability LCDs 1a, 2 and 3 and 1b;
- Removal and restoration of informal trails and associated land coverage, especially those located in LCDs 1a, 2 and 3 and 1b;
- BMP retrofit of key neighborhood connector trails (includes trail corralling, trail narrowing, waterbars, native mulch);
- Boardwalk design option in SEZs;
- Raised asphalt trail on permeable fill design option in SEZs;
- Flexible grades to minimize disturbance;
- Bridge crossing Trout Creek located at existing bridge for Martin Ave;
- User management fences;
- Retaining walls to reduce disturbance areas and stabilize cut and fill slopes; and
- On-site drainage strategies and structures.

Human use of the project area will change after construction of the shared-use trail. Important considerations include; 1) some trail use, including most use during the early spring/late fall period when the SEZ and wetland areas are wet, will shift to the protected surface trail - other existing trail use will remain disbursed on the informal trails to remain; 2) the vast majority of bike trail users will remain on the trail until they reach their destination (Lake Tahoe Regional BPMP 2010) greatly reducing new impacts to the informal trails; and 3) proposal in Bijou Meadow includes protected ways to allow access to the meadow specifically to serve trail users and reduce new impacts to restored wetland/floodplain. The OMMS (Appendix E) employs adaptive management strategies to prevent new informal trails from creating impacts. These include regular monitoring to identify changing use patterns and use of increasingly restrictive measures only where necessary to prevent new disturbance.

The project contributes towards attainment of TRPA water quality thresholds and Lahontan's water quality objectives for specific water bodies and general hydrologic areas through project benefits detailed in Appendix L. One of the objectives of the project is environmental protection of air and water quality and of sensitive lands. The project provides for an incremental step in meeting the basin-wide water quality thresholds through implementation of TRPA EIP Project 752 and a project on the TRPA Air Quality Transportation Program list. The Greenway installs an essential public transportation linkage identified in the Lake Tahoe RTP (TRPA/TMPO 2008), Lake Tahoe Regional BPMP (TMPO 2010) and TRPA EIP Update, Planning Horizon 2008-2018 (TRPA 2009).

Chapter 82 of the TRPA Code identifies water quality mitigation needs associated with new public projects, which can be met through the implementation of mitigation projects or the payment of a mitigation fee. The Conservancy identifies the mitigation option in the project permit application. The direct and indirect, long-term impacts to surface water quality and beneficial uses from operation and maintenance of the Greenway is less than significant based on the potential benefits to the immediate project area and contributions towards attainment of TRPA Thresholds.

Atmospheric Deposition. Atmospheric sources can contribute to surface water quality degradation, as more than half of the nitrogen loading in Lake Tahoe is delivered by air (TRPA and NDEP 2008). Several sources of airborne pollutants include motorized vehicles, dust and particulates from unvegetated slopes, and pulverized road salts and abrasives. Fugitive dust generated during project construction could increase ambient fine particulate concentrations. Fine particulate emissions can be deposited directly in surface waters or can be transported by runoff to surface waters.

The project implements CM-9, Fugitive Dust Control Plan, for the control of dust during construction activities, described in Section 2.6.5.9 and evaluated above. The project design element and maintenance minimize long-term, potential impacts to surface water quality and beneficial from atmospheric deposition through removal of informal trails, revegetation of disturbed areas and revegetation and management of trail clear zones.

The Greenway will offer an alternative to use of private automobiles for travel. Section 3.2.16, Traffic and Circulation, reports VMT reductions after project construction with their related emission reductions, providing indirect benefits to surface water quality (see Section 3.2.16). Revegetation of disturbed areas to cover bare soils, stabilize slopes and reduce sediment sources and proper management and maintenance to identify areas of trail surface repair and additional slope stabilization and revegetation further minimize long-term, potential impacts to surface water quality and beneficial uses from atmospheric deposition.

Anti-Degradation Policy. The State anti-degradation policy (Resolution No. 68-16) is incorporated into regional water quality control plans, including the Lahontan Basin Plan. The policy applies to high quality waters only (i.e. Lake Tahoe and tributaries) and requires that existing high quality be maintained to the maximum extent possible. The Greenway implements reasonable and appropriate measures for the protection of surface water quality and beneficial uses and complies with conditions set forth in Board Order No. R6T-2005-007. Based on the stated evaluation criteria for determination of significant impacts to surface water quality and beneficial uses, the Greenway maintains beneficial uses and protects surface water quality.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigation: **None.**

91. Would the Greenway substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? (CEQA IXb)

Standard of Significance: A significant impact results if the Greenway installs improvements that intercept groundwater or otherwise cause substantial changes in existing groundwater quality, quantity, elevations or movement; requires excavations greater than 5 feet that will intercept groundwater; or fails to comply with Lahontan requirements for disposal of groundwater during construction, as outlined in TRPA Code Chapters 25, 64 and 81, Lahontan Basin Plan Chapter 5.7 and Lahontan Board Order No R6T-2005-0007.

Groundwater Quantity. No project features will increase groundwater quantity. Excavations necessary for retaining wall construction in Segment 2-80 will exceed five feet in some areas. As described for Question 69, the preliminary geotechnical report does not report soil conditions associated with shallow groundwater in this area and no groundwater interception is expected from retaining wall construction. Engineering plan development including a more detailed soils/hydrologic report required to demonstrate compliance with TRPA Code Subsection 64.7.B(1) will confirm this assessment.

Construction of supports for a bridge span across Trout Creek could intercept groundwater for a period of time during construction, reducing groundwater quantity. Depending on final engineering requirements, the supports could use pile or helical pier features or could require more intrusive concrete footings. The project description requires support design to avoid restricting flood flow and minimize SEZ and wetland intrusion and assumes a bridge span between 75 and 100 feet and use of pier or piling supports. If engineering requirements dictate a longer bridge span, larger support features may be necessary, requiring dewatering in the footing construction area. As described in Section 2.6.2.5 and for CM-4, the project addresses this effect if necessary by constructing during the driest conditions possible, developing and implementing a dewatering plan that reduces short-term impacts. No long-term reduction in groundwater quantity will result from operation of the project.

The project causes no change in the quantity of groundwater, either through direct addition or withdrawal, and thus poses no effects to local groundwater table levels.

Groundwater Movement. The Greenway design element accommodates groundwater infiltration of surface runoff along the length of the shared-use trail alignment. Infiltration of surface water to groundwater occurs in close proximity to its origin, either in the adjacent clear zones for the asphalt surface design option or in revegetated areas directly under boardwalk portions. The design element maintains the existing direction and rate of groundwater flows through use of boardwalk in portions of the project area that exhibit seasonal high groundwater levels or surface hydrology.

Implementation of compliance measure CM-4 assures compliance with Lahontan requirements for disposal of groundwater during construction, as outlined in Lahontan Basin Plan Chapter 5.7 and Lahontan Board Order No R6T-2011-0019. Depending on final engineering design, the project will submit a dewatering plan as part of the SWPPP for NPDES construction permitting. Dewatering plans identify actions to be taken should unexpected groundwater interception occur during construction. Proper planning and implementation of the dewatering plan minimizes the risk of discharge of contaminants to groundwater or alteration of groundwater movement during construction.

TRPA Code Subsection 64.7.B Findings. Segment 2-80 could require excavation up to approximately 16.5 feet in order to maintain trail grades required by AASHTO and ADA. TRPA prohibits excavations

deeper than five feet or in areas of reasonably probable high groundwater levels except under defined and permitted conditions that avoid groundwater interception or interference. Findings required for this deeper excavation rely on data to be presented in a soils/hydrologic report, described in CM-18 and evaluated for Question 69. That evaluation concludes final plan development in response to this report could include refining trail grades and wall construction details if necessary to meet Code requirements. This could include a final project design that raises the elevation of the shared-use trail surface or that modifies the trail alignment to reduce grading needed. Compliance with TRPA Code Subsection 64.7.B assures excavations avoid significant impact.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigation: **None.**

92. Would the Greenway substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? (CEQA IXc)

Standard of Significance. Alternations to drainage patterns capable of creating on-site or off-site erosion produce a significant impact. To conform to TRPA codified regulations set forth in Code Chapter 25, the 20-year, 1-hour storm runoff volume must be contained and infiltrated within the project area so that existing drainage patterns do not substantially change and result in erosion or siltation on or off-site.

The project introduces new land coverage in formerly unpaved and undisturbed areas. Evaluation for Question 66 provides full detail concerning existing and proposed land coverage. Increases in land coverage typically result in increases in runoff from imperious and compacted surfaces associated with land coverage. TRPA Code Chapter 25 requires drainage design to contain and infiltrate the 20-year, 1-hour storm runoff volume within the project area. The Greenway drainage design directs this surface flow to the edges of the trail and infiltrates it in the clear zone areas so that existing drainage patterns do not substantially change and result in erosion or siltation on or off-site. The Greenway design element also maximizes the use of existing land coverage and removes and restores land coverage associated with informal trails, further reducing the potential to alter existing drainage patterns, Portions of the shared-use trail located within public ROWs or in close proximity to ROWs (e.g., Pioneer Trail in Segments 2-70) could modify roadway drainage, causing minor increases in or redirection of stormwater runoff as further discussed in Question 93. The Greenway design element avoids alteration of stream courses. See Question 62, which analyzes potential impacts from erosion and concludes the level of impact from the project is less than significant.

Final design of Segment 2-50 requires coordination with El Dorado County because the shared-use trail is located within the Martin Ave ROW and crosses Trout Creek just down stream of the existing Martin Ave Bridge. The project description requires final design of the bridge to avoid placing pilings in or around the river course, locating the bridge soffits and pilings at or above the level of the existing Martin Ave Bridge. Parts of Segment 2-50 require location within the 100-year floodplain at the extreme edge of the existing roadway network; however, no alteration to the course of Trout Creek or the 100-year floodwaters occurs.

Final design of Segment 2-70 requires coordination with the Bijou Meadow Erosion Control Project. Segment 2-70 will cross the Bijou Meadow and floodplain and will be constructed as a 12- foot wide boardwalk with no rails. The design accommodates current and predicted flood levels and creates no substantial alteration of drainage patterns. Segment 2-70 could require coordination with the City if drainage projects occur along Aloha or Pioneer Trail between Herbert and Ski Run Blvd.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigation: **None.**

93. Would the Greenway substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? (CEQA IXd)

Standard of Significance: A significant impact occurs if project construction or operations substantially alter an existing watercourse alignment or capacities or increases in runoff occurs such that flooding occurs because the 20-year, 1-hour storm volume cannot be captured by existing or proposed stormwater drainage facilities.

As described for Question 92, the Greenway largely avoids alterations to existing drainage patterns through location of new coverage over existing foot trails wherever possible and a drainage design that relies primarily on sheet flow and infiltration along most of its length. This approach, as described above, meets requirements for containment of the 20-year, 1-hour storm runoff volume.

The paved surface portions of the Greenway are most closely associated with higher capability lands (i.e., LCDs 7, 6, 5 and 4) and existing roadway ROWs. The basic strategy for drainage from this trail surface is sheet flow and infiltration onto the two-foot wide clear zones that are immediately adjacent to the sides of the shared-use trail. The shared-use trail runs very closely to existing roadways in portions of Segment 2-50 and 2-70. The constrained project area here limits clear zones and some infiltration capacity. Coordination with County and City drainage needs will direct final design plans that capture surface runoff collected and convey and discharge to drainage facilities that meets TRPA standards as appropriate.

The impervious surface area increases within the project area; however, this increase is small in magnitude because of the project design and the removal and restoration of land coverage associated with existing informal trails. The Greenway design element incorporates design features and construction controls to promote source control, ensuring that runoff from new or modified surfaces has limited potential to combine with other modifications in the vicinity of the project area to significantly affect down gradient stream channels or existing or planned stormwater infrastructure. The project features that restore existing foot trails result in better infiltration of surface runoff within the project area as a whole.

Final design of Segment 2-45 requires coordination with the Sierra Tract Erosion Control Project along Barbara Ave Segment 2-45 aligns with the flat, forested area east of Barbara, infiltrating surface runoff to the clear zone and well-vegetated areas adjacent to the paved trail with no effect to existing surface water drainage patterns.

Final design of Segment 2-50 requires coordination with the El Dorado County because the shared-use trail is within the Martin Ave ROW and crosses Trout Creek just down stream of the existing Martin Ave Bridge. Parts of Segment 2-50 require location within the 100-year floodplain; however, no alteration to the course of flow of the 100-year floodwaters occurs because the bridge span design requires no pilings in or around the river course. The bridge soffits and pilings are at or above the level of the existing Martin Ave Bridge.

Final design of Segment 2-70 requires coordination with the Bijou Meadow Erosion Control Project. Segment 2-70 crosses Bijou Meadow and floodplain, constructed as a 12- foot wide boardwalk with no rails. The design accommodates current and proposed flood levels. Construction of Segment 2-70

requires coordination with the City for phases 1, 2 and 3 of the Bijou Erosion Control Project, as these project phases propose drainage improvements in the Glenwood Way and Aloha areas near where the Greenway alignment is proposed.

Final design of Segment 2-80 requires coordination with the Van-Sickle Bi-State Park Project in future phases, which is located at the shared-use trail terminus. The precise location and drainage controls at this terminus may change in response to future park design phases.

To avoid creating new impediments during flood events, the Greenway proposes a bridge at Trout Creek and boardwalks over Heavenly Valley, Bijou and Bijou Park Creeks. These designs respond to flood conditions expected for these waters and described in Section 3.2.9.1, Environmental Setting. At Trout Creek, the bridge will span directly downstream of the roadway fill and existing bridge along Martin Ave. These existing features create a dam across the floodplain and direct flood flow to a narrow passage at the road bridge. The shared-use trail bridge will locate supports sufficiently wider than the current approximately 20-foot stream passage width. The project description assumes a bridge span of 75 to 100 feet will avoid creating new obstacles during flood events and will be confirmed during final engineering. Boardwalk designs use helical pier footings on eight-foot centers, allowing free surface flow to pass underneath in flood conditions. Floodwaters in Bijou Creek may carry fine sediment south of Pioneer Trail as described previously; the boardwalk design will not create obstacles to this flow. The project proposes asphalt on permeable fill at the crossing for the ephemeral drainage north of Keller Dr, named in the TRPA GIS stream layer as Little Heavenly Valley Creek. Consideration of recent monitoring data collected by the City indicates more frequent surface flow in this drainage than previously considered. The trail design could, in high flow flooding conditions, create a dam and increase down gradient flooding. This has potential to create significant impacts requiring mitigation.

Temporary construction BMPs will contain runoff within the project area during precipitation events. The Greenway design element maintains existing surface water drainage patterns and proposes source control for runoff, assuring that long-term operation of the shared-use trail does not alter existing surface water drainage patterns or increase runoff rates or volumes that result in flooding or stream bank erosion or exceed the capacity of existing or planned stormwater drainage systems so that the 20-year, 1-hour storm runoff cannot be contained within the project area.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

94. Would the Greenway create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? (CEQA IXe)

Standard of Significance: See analysis for Question 93, which addresses CEQA checklist item IXd and potential impacts to existing drainage patterns and concludes the level of impact to existing or planned stormwater drainage systems is reduce to a level of less than significant by the Greenway design element.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

95. Would the Greenway otherwise substantially degrade water quality? (CEQA IXf)

Standard of Significance: Failure to implement effective, reasonable and appropriate measures to protect water quality and non-compliance with WQOs, waste discharge requirements or Board Order No R6T-2005-0007, R6T-2005-0026 or R6T-2008-0019 result in a significant impact to surface water quality and beneficial use. Table 29 presents the applicable WQOs.

See analysis for Question 90, which addresses CEQA checklist item IXa and concludes the level of impact to surface water quality and beneficial uses is less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

96. Would the Greenway place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? (CEQA IXg)

Standard of Significance: Placement of habitable structures within mapped 100-year flood hazard area creates a significant impact.

The Greenway installs no housing or habitable structures and thus places no housing within a mapped 100-year flood hazard area.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

97. Would the Greenway place within a 100-year flood hazard area structures which would impede or redirect flood flows? (CEQA IXh)

Standard of Significance: If the project places structures that impede or redirect 100-year flood flows, a significant impact results.

Because of the linear nature of the Greenway, grade constraints and key transportation linkages, the project must locate portions of Segment 2-50 within the 100-year floodplain of Trout Creek and portions of Segment 2-70 within the 100-year floodplain of Bijou Creek. The Greenway design element avoids this potential impact to the course or flow of the 100-year flood flows. In situations of floodplain encroachment the project design employs boardwalk to elevate the trail surface above the flood flow level and pin footings to avoid creating barriers for floodwaters. These actions avoid altering the course or flow of the 100-year floodwaters.

Segment 2-50 crosses the Trout Creek 100-year floodplain just down stream of the existing Martin Ave Bridge span. Segment 2-70 crosses the Bijou Creek 100-year floodplain in Bijou Meadow. Figure 31 illustrates the locations of these segments in reference to the FEMA 100-year floodplain. The following linear feet of shared-use trail segments requires location within the FEMA 100-year floodplain:

- Segment 2-50 1,229 feet; and
- Segment 2-70 669 feet.

Martin Ave crosses Trout Creek over an existing roadway bridge. The project proposes a new bridge crossing at Trout Creek (Segment 2-50) directly adjacent and downstream with bridge support locations located outside of the flood passage area allowed under the current Martin Ave bridge. The shared-use trail bridge height accommodates the existing flood stage at Trout Creek, constructed at the same or greater height of the existing Martin Ave Bridge. These design features avoid impeding or redirecting the course of flow of the 100-year flood. Segment 2-50 creates no change to the existing roadway footprint at the Trout Creek crossing and configuration of the current bridge. The project locates the bridge to accommodate the shared-use trail crossing just downstream of the existing Martin Ave Bridge crossing and does not increase existing flood damage or debris flow risk.

TRPA prohibits additional development, grading, and filling of lands within the 100-year flood plain except under conditioned project approvals that support the findings outlined in TRPA Code Subsection 28.3.D, which are presented as follows for the Greenway.

TRPA Flood Plain Findings for Public Service Facilities (TRPA Code Subsection 28.3.D):

28.3.D Prohibition of Additional Development, Grading, and Filling of Lands Within the 100-Year Flood Plain: Additional development, grading, and filling of lands within the 100-year flood plain is prohibited, except as follows:

(2) Public Service Facilities: TRPA may permit additional public service facilities within the 100-year flood plain if TRPA finds that:

(a) The project is necessary for public health, safety, or environmental protection;

The Greenway is necessary to 1) Protect health and safety. Implementation of the non-auto network envisioned throughout the Lake Tahoe Region will increase the number and diversity of trail users. Direct conflict between autos and pedestrians/bicyclists will exist without construction of a safe alternative network, including separated trails designed to AASHTO and ADA standards. Specifically, the Greenway provides the major north-south trail corridor in South Lake Tahoe. Without a protected trail, the high traffic volumes on the roadways that make this connection, i.e. Pioneer Trail, present acute safety concerns for non-auto travel. 2) Provide essential public transportation services. TRPA identifies development of non-auto trail networks, including the major Class I link provided by the Greenway, as essential transportation facilities. 3) Provide an essential public transportation linkage. TRPA includes the project in the Lake Tahoe RTP (TRPA/TMPO 2008), Lake Tahoe Regional BPMP (TMPO 2010) and TRPA EIP Update, Planning Horizon 2008-2018 (TRPA 2009). 4) Improve environmental protection. TRPA relies on alternative transportation systems, including bike trails, as important measures to improve air quality and reduce atmospheric contribution to water quality degradation. Air quality and climate change analyses determine that 4the Greenway contributes to improvements in air quality and GHG emissions. The project reduces erosion, disturbance and land coverage through removal and restoration of informal trails in designated SEZ areas and other low capability lands. The Greenway meets this finding.

(b) There is no reasonable alternative, including spans, which avoids or reduces the extent of encroachment in a flood plain; and

No alternative alignment exists that avoids new encroachment in delineated floodplains. Table 2 lists the alternatives considered but rejected from further analysis. The project proposal incorporates design features that reduce disturbance and the effects of disturbance, including alignment location, use of raised asphalt on permeable fill, boardwalk and bridge spans. Section

2.6.2 describes these features. This analysis identifies alternative alignments that reduce encroachment as described below. The findings analysis concludes with an assessment of whether these alternatives are "reasonable.

The ability to satisfy project objectives dictates the reasonableness of a segment alignment. No alignment exists that completely avoids encroachment in floodplains and meets the Greenway objectives and purpose. Compliance with Caltrans and AASHTO Class I standards is necessary to limit liability and places constraints on design elements such as minimum trail widths, separation distance from roadways, and grade. The project funding is linked to compliance with the ADA, which places additional constraints on grade. Design constraints can result in location constraints. The project constructs a public facility and as a result, the safety of the public using the facility is paramount.

Although the project team established segment alignments to avoid floodplains to the extent possible and to reduce disturbance in floodplains through design elements such as boardwalks constructed on low impact helical piers, portions of the Greenway must encroach on floodplains in some locations due to site constraints and project objectives.

The Greenway design elements minimize the extent of encroachment in floodplains through thoughtful location, removal of existing informal trails and restoration of associated land coverage, and application of boardwalk. These design options minimize disturbance in floodplains by confining users to structured trails and off of existing or restored informal trails, accommodating seasonal surface flows and high groundwater, and allowing for seasonal surface flows plus some vegetative cover under boardwalks. The determination of reasonable segment alignments considered technical feasibility, economic feasibility, existing land use patterns and the regulations and requirements of lead agencies in concert with the stated objectives and purpose and need of the project. Section 2.12 details the alternatives considered but rejected from further analysis because of their inability to reasonably meet the Greenway objectives.

- Segment 2-80 does not affect floodplains.
- No reasonable alternative exists for Segment 2-50 that also meets the project objectives and purpose and need. Segment 2-50 follows Martin Ave within the southern roadway ROW, utilizes existing land coverage and expands upon an existing bridge span that crosses the 100-year floodplain of Trout Creek. The alternative considered for this alignment, although shorter, creates greater potential for flood flow impacts because it is located further downstream from the existing bridge that constricts flood flow passage.
- No reasonable alternative exists for Segment 2-70 that also meets the project objectives and purpose and need. The alignment for Segment 2-70 was chosen because the location minimizes extent of encroachment in Bijou Meadow, while allowing for 100 percent of the proposed land coverage and disturbance within the 100-year floodplain to be located over existing soft coverage and disturbance. This portion of Segment 2-70 is boardwalked.

(c) The impacts on the flood plain are minimized.

The Greenway avoids and minimizes changes in the course or flow of surface flows, including those of the 100-year floodwaters, by locating as much of the alignment outside of floodplains as possible and by choosing boardwalk and bridges as design features. The boardwalk design option is used in areas of seasonal high groundwater and potential surface water flows. Boardwalk design allows for surface waters to flow unimpeded. In the instance of a 100-year flood stage, waters flow under and over the shared-use trail.

When further avoidance and minimization was determined to be infeasible, the project identifies land coverage and disturbance associated with existing informal trails for removal. The removal and BMP retrofit of informal trails within the project area further minimizes impacts on floodplains associated with the following segments:

- Segment 2-50 removes 415 square feet of soft land coverage within the Trout Creek floodplain;
- Segment 2-70 removes 10,918 square feet of soft land coverage within the Bijou Creek floodplain and applies BMPs to 1,466 square feet.

(3) Flood Plain Crossings: TRPA may permit projects to effect access across a 100-year flood plain to otherwise buildable sites if such projects comply with applicable development standards in Chapter 27 and if TRPA finds that:

(a) There is no reasonable alternative which avoids or reduces the extent of encroachment in the flood plain; and
(b) The impacts on the flood plain are minimized.

See findings for TRPA Code Sections 28.3.D.2.b and 28.3.D.2.c above.

Lahontan Floodplain Exemption Findings (Basin Plan 4.1). The Lahontan Basin Plan exemption amendment formalized approvals of some floodplain discharges, while setting explicit boundaries around those approvals and was directed primarily towards restoration and public projects. The exemption criteria are designed to ensure compliance with federal and State non-degradation policies for individual projects that include demonstrable public benefits in a regional context (Siller Ranch Staff Report 2006). External Trail Crossings and Utility Crossings are the Greenway project components that require exemption. External trail crossings can be permitted, as they fall under the "necessary public recreation" project type and serve entire communities. Utility crossings are necessary to provide public service to entire communities. The Basin Plan states that *"necessary* shall mean when the appropriate governmental agency finds that a project is needed to protect public health and safety, to provide essential services or for public recreation". Public recreation is limited to public outdoor recreation facilities/activities such as hiking trials, bike paths and similar activities that do not involve the construction of buildings or similar structures.

1) The project type falls within one or more of the five exemption categories listed in the Basin Plan.

The Basin Plan (p. 5.7-6) states that the Regional Board may grant exemptions to the floodplain prohibition if a new project satisfies one of five categories of projects (p.4.1-5). Depending on the final Lahontan determination of use, the public health/safety or public recreation categories may be appropriate. TRPA regulates land use determinations in the Lake Tahoe Region and identifies bike trails as linear public service transportation elements and the Greenway as a high priority transportation and EIP project (Lake Tahoe Regional BPMP Priority 1 and EIP project 752). As a public service project the Greenway meets the criteria of Category 3 (Lahontan 1995). Previous Lahontan project approvals (Siller Ranch Staff Report 2006) consider public serving bike trail segments as recreation projects, or Category 4. Evaluated in that context, Greenway project features meet the criteria established for necessary public recreation based on demonstrable public benefits towards protection of public health and safety, completion of the regional transportation system, and increase of public recreation opportunities.

2) There is no reasonable alternative to locating the project or portions of the project within the 100-year floodplain.

See findings for TRPA Code Subsection 28.3.D(2)(b) above, which discusses reasonable alternatives to avoid or reduce encroachment within a floodplain. The inability or unreasonableness to implement further avoidance of the 100-year floodplain is based on: 1) greater risks to water quality; 2) non-compliance with regulations of another agency; and 3) the impacts on floodplains are minimized.

There are no reasonable alternatives for Segments 2-50 and 2-70 within the 100-year floodplains of Trout Creek and Bijou Creek, respectively. However, these Segments cross the floodplain in areas that have been previously disturbed and currently serve as approaches and crossings.

3) The project, by its very nature, must be located within the 100-year floodplain.

By their very nature, roads, trails, and utilities traverse large areas of the landscape, following an alignment chosen to connect different locations as identified in the Lake Tahoe RTP (TMPO 2008), Lake Tahoe Regional BPMP (TMPO 2006) and TRPA EIP Update, Planning Horizon 2008-2018 (TRPA 2009). The proposed trail affecting 100-year floodplain/wetland areas is of this nature. To provide access, essential services, and necessary public recreation, the trail cannot reasonably avoid intercepting surface waters and associated floodplains. Therefore, such features by their very nature interact with 100-year floodplains and/or wetland areas at certain areas where crossings are desired.

4) The project incorporates measures, which will ensure that any erosion and surface runoff problems caused by the project are mitigated to levels of insignificance.

The project incorporates compliance measures, design features and construction controls that will ensure that erosion and surface runoff caused by the shared-use trail are first avoided, secondly minimized and thirdly mitigated to levels of insignificance. Compliance measures will be designed in greater detail during final plan development as presented in the TRPA ESCP and the Lahontan SWPPP for NPDES permitting. Current project features include: appropriately located stage and access areas; and on-site and off-site restoration mitigations for new land coverage and disturbance in LCDs 1a, 2 and 3 and 1b. Design features and construction controls include: maximum use of existing land coverage and disturbance, minimum creation of new disturbance, removal and restoration of land coverage associated with informal trails; use of boardwalk and asphalt trail on raised permeable fill in areas of seasonal high groundwater and/or evidence of surface flows; and infiltration of surface runoff in clear zones. Question 90 details how the compliance measures and the design features and construction controls reduce potential impacts to surface water quality to a level of less than significant.

5) The project will not individually or cumulatively with other projects, directly or indirectly, degrade water quality or impair beneficial uses of water.

The Greenway proposes compliance measures and design features, including temporary and permanent BMPs, which prevent degradation to water quality. See the evaluation for Question 90 for more detail. Permanent project elements include a shared-use trail that is located over existing land coverage or disturbance whenever feasible and features that discourage or prevent new disturbance from informal trail uses. The project also proposes removal and restoration of land coverage associated with informal trails, including those within the 100-year floodplain. This restoration, augmented with additional off-site restoration as described in Question 33, meets the

TRPA and Lahontan requirement of 1:1.5 offset for new disturbance. Collectively, these temporary and permanent features avoid directly degrading water quality or impairing beneficial uses. Question 90 details how the compliance measures and the design features and construction controls reduce potential impacts to surface water quality to a level of less than significant. See Section 3.2.18, Mandatory Findings of Significance, for a discussion of the potential for cumulative impacts related to the Greenway.

6) The project will not reduce the flood flow attenuation capacity, the surface flow treatment capacity, or the ground water flow treatment capacity from existing conditions. This shall be ensured by restoration of previously disturbed areas within the 100-year floodplain within the project site, or by enlargement of the floodplain within or as close as practical to the project site. The restored, new or enlarged floodplain shall be of sufficient area, volume, and wetland value to more than offset the flood flow attenuation capacity, surface flow treatment capacity and ground water flow treatment capacity lost by construction of the project. This finding will not be required for: (1) essential public health or safety projects, (2) projects to provide essential public services for which the Regional Board finds such mitigation measures to be infeasible because the financial resources of the entity proposing the project are severely limited, or (3) projects for which the Regional Board finds (based on evidence presented by the proposed discharger) that the project will not reduce the flood flow attenuation capacity, the surface flow treatment capacity, or the ground water flow treatment capacity from existing conditions.

The Greenway is a public health and safety project that will construct a public linear facility to provide essential public services for regional transportation linkages. Although this finding is not required for exemption, the Greenway Project proposes demonstrable public benefit for water pollution control, protection of public health and safety, completion of regional transportation systems and increase of public recreation opportunities.

The project is located in floodplains that have already been altered by human activities and no longer provide the level of ecological benefit of undisturbed riparian systems. Further development in these floodplains is possible without aggravating or contributing to existing water quality problems when considered in concert with the beneficial effects of on-site and off-site restoration measures (Siller Ranch Staff Report 2006). The Greenway design element assures retention of most existing flood flow attenuation capacity on-site through use of boardwalks in some locations and restoration of existing disturbance.

Although the Greenway locates short sections of shared-use trail within 100-year floodplains, exemptions from TRPA and Lahontan are adequately supported. The design element permits increases in flood elevation or inundation areas and the project does not increase flood hazards or potential damage to existing infrastructure, residences or public infrastructure. The analysis identifies no adverse changes to the 100-year floodplain storage capacity, flow routes or boundaries. The Greenway design element adequately reduces the potential impact to a level of less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

98. Would the Greenway expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? (CEQA IXi)

Standard of Significance: Exposure of people or structures to a significant risk of loss, injury or death involving flooding constitutes a significant impact.

There are no dams located within or in close proximity of the project area. An earth dam is located several miles upstream of the project area along Heavenly Valley Creek and within Heavenly Mountain Resort. This dam failed in 1995 and released flood waters and sediment downstream. The Pioneer Trail crossing impeded much of the floodwaters and sediment was deposited in the Heavenly Valley Creek SEZ west of Pioneer Trail. This dam breech represents a worst-case scenario, a scenario that would not impact the project area.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

99. Would the Greenway cause inundation by seiche, tsunami, or mudflow? (CEQA IXj)

Standard of Significance: An increase risk of inundation by seiche, tsunami or mudflow as a result of Greenway installation constitutes a significant impact.

The project area is located uphill of Lake Tahoe and based on the distance from the shoreline the project area would not likely be affected by seiches (Kleinfelder 2004). The project area topography contains no mudflow areas and no areas of increased potential for mudflows (Kleinfelder 2004). Trout Creek and Bijou Creek are mapped to have an increased potential for debris flows. The effects of the project do not add to this existing potential because the shared-use trail location is typically outside of the flood flow path or buffered by existing upstream barriers and does not significantly increase the quantity of shallow groundwater that could initiate debris flows.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

100. Will the Greenway result in changes in currents, or the course or direction of water movements? (TRPA 3a)

No. Standard of Significance: See analysis for Question 92, which addresses CEQA checklist item IXc and concludes the level of impact to existing drainage patterns of the project area is less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

101. Will the Greenway result in changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff so that a 20 yr. 1 hr. storm runoff (approximately 1 inch per hour) cannot be contained on the site? (TRPA 3b)

No. Standard of Significance: A significant impact to surface water occurs if the Greenway results in increases in runoff from disturbed area because of compaction, vegetation removal and impervious surfaces such that the 20-year, 1-hour storm volume cannot be captured by existing or proposed stormwater drainage systems, as defined by TRPA Code Chapter 25. Code Subsection 25.5.A.1 requires infiltration facilities to discharge runoff to groundwater except as provided in Section 25.7, which allows for approval of alternative BMPs to meet water quality standards under special circumstances that include bike trails.

See analyses for Questions 94 and 95, which address CEQA checklist items IXd and IXe and conclude, respectively, that the level of impact to existing drainage patterns, rate and amount of runoff from the project to existing or planned stormwater drainage systems is reduced to a level of less than significant by the Greenway design element.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

102. Will the Greenway result in alterations to the course or flow of 100-year floodwaters? (TRPA 3c)

No. Standard of Significance: See analysis for Question 97, which analyzes CEQA checklist item IXh and concludes the Greenway structures do not impede or redirect 100-yr floodwaters and the level of impact is less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

103. Will the Greenway result in change in the amount of surface water in any water body? (TRPA 3d)

No. Standard of Significance: If the Greenway results in a change in the amount of surface water in a water body, a significant impact results as defined by TRPA Code Chapter 83.

The Greenway proposes use of boardwalks or asphalt trails raised on permeable fill in SEZ to avoid interruption of existing surface water and groundwater movement towards drainages, stream channels and SEZs. The shared-use trail crossing at Trout Creek installs a bridge along Martin Ave. that parallels the existing roadway bridge at the same or greater elevation above Trout Creek. The Greenway crosses Heavenly Valley Creek and Bijou Park Creek over the existing culverts. Flows at these existing crossings are not impeded.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

104. Will the Greenway result in discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity? (TRPA 3e)

No. Standard of Significance: Failure to implement effective, reasonable and appropriate measures to protect water quality and non-compliance with WQOs, waste discharge requirements or Board Order No R6T-2005-0007, R6T-2005-0026 or R6T-2008-0019 result in a significant impact to surface water quality and beneficial use. Table 29 presents the applicable WQOs.

See analysis for Question 90, which addresses CEQA checklist item IXa and concludes the level of impact to surface water quality and beneficial uses is less than significant. Construction and operation of the Greenway does not cause alternation to surface water quality nor contribute towards non-attainment of TRPA Thresholds.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

105. Will the Greenway result in alteration of the direction or rate of flow of ground water? (TRPA 3f)

No. Standard of Significance: See analysis for Question 91, which addresses CEQA checklist item IXb and concludes the level of impact to groundwater movement is less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

106. Will the Greenway result in change in the quantity of groundwater, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations? (TRPA 3g)

No. Standard of Significance: See analysis for Question 91, which addresses CEQA checklist item IXb and concludes the level of impact to groundwater quantity and movement is less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

107. Will the Greenway result in substantial reduction in the amount of water otherwise available for public water supplies? (TRPA 3h)

No. Standard of Significance: If the Greenway creates a demand that exceeds available water supplies, a significant impact to source water occurs as defined in TRPA Code Chapter 83.

As supported by the analysis in the Lake Tahoe Regional BPMP (TMPO 2010), implementation of bikeway and pedestrian projects is not anticipated to change the amount of surface water in any body of water in the Lake Tahoe Basin or reduce the amount of water available for public water supplies. The Greenway proposal does not include features such as developed trailheads or irrigated planting beds. Construction activities require water, yet will occur in phases over several construction seasons and demand will not exceed the maximum permitted capacity of service providers (see Questions 174 and 182 for additional discussion of utilities).

108. Will the Greenway result in exposure of people or property to water related hazards such as flooding and/or wave action from 100-year storm occurrence or seiches? (TRPA 3i)

No. Standard of Significance: See analysis for Question 97, which addresses CEQA checklist item IXh and concludes the level of impact related to flooding from the 100-year storm occurrence is less than significant.

The project does not expose people or property to water related hazards such as wave action or seiches.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

109. Will the Greenway result in potential discharge of contaminants to the groundwater or any alteration of groundwater quality? (TRPA 3j)

No. Standard of Significance: See analysis for Question 91, which addresses CEQA checklist item IXb and concludes the level of impact to groundwater quality is less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

110. Is the Greenway located within 600 feet of a drinking water source? (TRPA 3k)

No. Standard of Significance: A contaminating land use within 600 feet of a drinking water source identified on TRPA Source Water Assessment Maps constitutes a significant impact as defined by TRPA Code Chapter 83.

The shared-use trail and project are not located within 600 feet of a source water or source water protection zone as depicted on TRPA Source Water Assessment Maps. The former STPUD well located along Martin Ave no longer contributes to the drinking water supply of South Lake Tahoe. Additionally, the Greenway includes no transit stations or terminals, identified by TRPA as possible contaminating activities associated with linear public facilities that could contaminate drinking water sources.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

111. Greenway effect to water resources or surface water. (NEPA)

LTBMU Forest Plan Management Practice 29 (Water Use Management) and Practice 30 (Water Quality Maintenance and Improvement)

Based on the LTBMU Forest Plan the context and intensity of an alternative's potential effect on hydrology and water quality were evaluated based on whether an alternative results in:

- Permanent land disturbance and impervious surface coverage exceeding that recommended by the land capability system;
- Soil disturbing activities from October 15 to May 1 of each year and no permanent or temporary erosion control measures are in place for the winter season;
- Disruption of naturally functioning stream environment zone (SEZ) lands;
- Permanent or long-term degradation of Lake Tahoe water clarity;
- Substantial interference with groundwater movement or reduce groundwater infiltration or groundwater quality; or
- Substantial alteration of the existing drainage pattern of the site or substantial increase the amount of surface runoff in a manner that results in flooding on- or off-site.

No Project. The no project alternative constructs no shared-use trail and creates no direct effects to the project area. Under the no project alternative, the Conservancy constructs and operates no shared-use trail and no change to the project area occurs. Portions of the project area, including locations on National Forest Lands, would continue to be used as informal trails. Indirect and direct effects from continued use of informal trails would continue. Although this alternative would result in no contribution to potential

cumulative effects related to water resources, water quality benefits associated with the removal of informal trails and associated land coverage would not occur.

Proposed Project. The project proposes no actions that threaten a violation of Federal, State or local law or requirements imposed for the protection of water resources. The project area contains no wild and scenic rivers and thus creates no direct or indirect effects to such resources.

Indirect and Direct Effects. Question 90 describes short-term construction effects and long-term operational effects to surface water quality. Question 91 describes the indirect and direct effects to groundwater. Questions 92, 93 and 94 describe the indirect and direct effects to project area drainage patterns and existing or planned stormwater drainage systems. Questions 96 and 97 describe indirect and direct effects to 100-year flood hazard areas. Analyses conclude that project proposals incorporate protective and offsetting measures sufficient to avoid potential for significant effects to National Forest Lands. The project is not expected to cause adverse indirect or direct effects to Trout Creek, Bijou Creek or Bijou Park Creek water quality.

Analysis supports the conclusion that the project is consistent with the Clean Water Act (CWA), which requires Federal agencies to comply with the provisions of the CWA. The CWA regulates forest management activities near federal waters and riparian areas. The design features associated with the Greenway ensure that the terms of the CWA are met, primarily the control of pollution caused by erosion and sedimentation.

The analysis supports the conclusion that the effects from shared-use trail construction and decommissioning/restoration of informal trails and restoration of SEZ and wetlands are not uncertain, and do not involve unique or unknown risk to water quality. The Greenway poses no direct effects to the human environment that are likely to be controversial because the project proposal addresses uncertain and unique risks through the Greenway design element and complies with federal, states and local laws for the protection of the environment.

Cumulative Effects. Section 3.2.18, Mandatory Findings of Significant, specifically Question 187, addresses cumulative effects of the Greenway and related projects, as listed in Table 60.

Environmental Analysis: *No Impact Anticipated.*

Required Mitigation: **None.**

3.2.10 Land Use and Planning

This section presents the analyses for potential impacts to land use and planning. Table 31 identifies the applicable impacts and anticipated level of impact.

Table 31

Land Use and Planning

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mit. Measures	Less Than Significant Impact	No Impact
112. Physically divide an established community? (CEQA Xa)			**X**	
113.Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? (CEQA Xb)			**X**	
114.Conflict with any applicable habitat conservation plan or natural community conservation plan? (CEQA Xc)				**X**
TRPA Initial Environmental Checklist Item	**Yes**	**No, With Mitigation**	**Data Insufficient**	**No**
115.Include uses which are not listed as permissible uses in the applicable Plan Area Statement, adopted Community Plan, or Master Plan? (TRPA 8a)				**X**
116.Expand or intensify an existing non-conforming use? (TRPA 8b)				**X**
NEPA Significance of Effects				
117.Greenway effects to conformance with Comprehensive plans and zoning. (NEPA)				
118.Greenway effects to compatibility or urban impact. (NEPA)				

3.2.10.1 Environmental Setting

The project area lies primarily within the City boundaries. The TRPA exercises planning jurisdiction over the entire Greenway. The LTBMU also manages uses along 1,395 linear feet that pass through four LTBMU urban lots.

Primary uses within the project area are public roadway ROWs, undeveloped lands and in limited areas of needed private access easements, residential. Some of the undeveloped areas contain existing informal trails. The general project area is urbanized with parks, schools, a mobile home park, and hotel/commercial core areas. Table 32 provides trail lengths by land ownership.

Table 32

Property Ownership Summary

Ownership	Length (in feet)	Percent of Trail
City of South Lake Tahoe	2,062	10%
Conservancy	209	1%
Conservancy (former Caltrans ROW)	10,968	54%
Private	830	4%
Public Roadway ROWs	3,071	15%
State of California (i.e., Caltrans)	1,562	8%
STPUD	291	1%
USFS	1,395	7%
Total	**20,388**	**100%**

Source: HBA 2011

The Greenway traverses land within residential, conservation, recreation, and commercial/public service land use classifications. Figure 32 illustrates land use classifications identified in TRPA PASs within the project area. Table 33 describes the PASs, and land use designations for the four Greenway segments.

Plan Area Statements. The TRPA Regional Plan guides decision-making as it affects growth and development within the Lake Tahoe Basin. Each PAS provides a description of land use for a plan area, identifies planning issues, and establishes specific direction for planning to meet the policy direction of the Regional Goals and Policies Plan. PASs also include plan maps that provide specific regulations for identified areas, similar to zoning maps. The Greenway is a linear public facility, a transportation route land use by TRPA definition, and classified as a special use within the following project area Plan Areas.

Plan Area 080 – Kingsbury Drainage. The northern end of the Greenway, Segment 2-80, is located in PAS 080 – Kingsbury Drainage. The Land Use Classification for PAS 080 is "Conservation" with a "Mitigation" management strategy. The Planning Statement for this area establishes, "This area should be rehabilitated to provide watershed restoration to enhance the area's natural features and qualities." In addition, the PAS targets the construction of an additional 13 miles of trail.

Plan Area 085 – Lakeview Heights. The Land Use Classification for PAS 085 is "Residential" with a "Mitigation" management strategy. The Planning Statement for this area establishes, "This area should

continue as residential area, maintaining the exiting character of the neighborhood." PAS 085 contains Segment 2-80.

Table 33

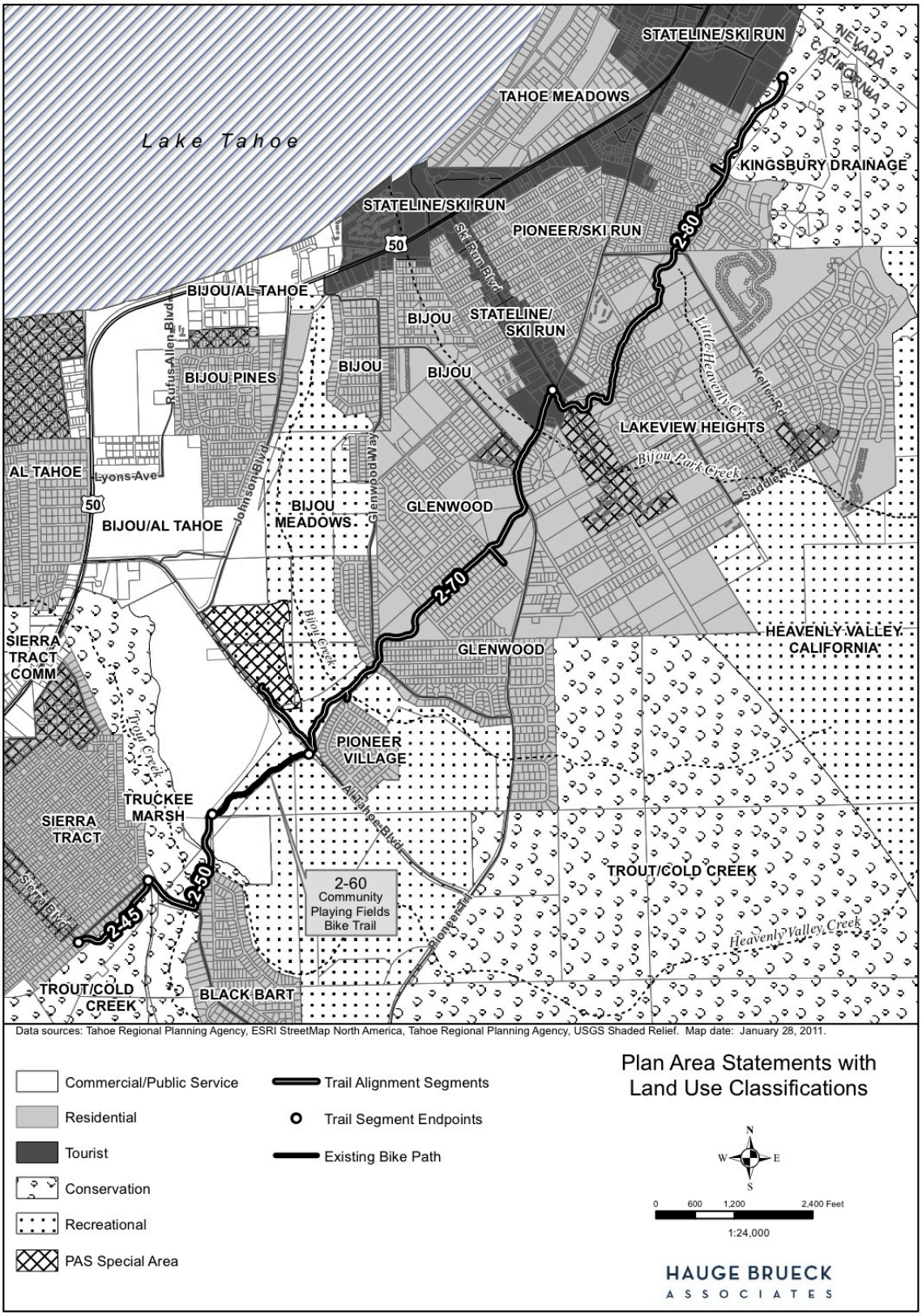
Trail Segment by Plan Area Statement and Land Use Designation

Trail Segment	PAS No.	PAS Name	Land Use Classification	Management Strategy	Permissible Uses	Segment Length - (feet)
2-45	095	Trout/Cold Creek	Conservation	Mitigation	Transportation Routes (S)	958
2-45	100	Truckee Marsh	Conservation	Maximum Regulation	Transportation Routes (S)	2
2-45	105	Sierra Tract	Residential	Redirection	Transportation Routes (S)	640
2-50	098	Bijou/Al Tahoe	Commercial/Public Service	Redirection	Transportation Routes (S)	619
2-50	100	Truckee Marsh	Conservation	Maximum Regulation	Transportation Routes (S)	1,819
2-70	091	Stateline/Ski Run	Tourist	Redirection	Transportation Routes (S)	711
2-70	093	Bijou	Residential	Mitigation	Transportation Routes (S)	349
2-70	094	Glenwood	Residential	Mitigation	Transportation Routes (S)	4,681
2-70	101	Bijou Meadow	Recreation	Mitigation	Transportation Routes (S) Transportation Routes (A – SA#1)	*2685 + (490 in SA#1) = 3,175
2-70	096	Pioneer Village	Residential	Mitigation	Transportation Routes (S)	5
2-80	080	Kingsbury Drainage	Conservation	Mitigation	Transportation Routes (S)	1,878
2-80	085	Lakeview Heights	Residential	Mitigation	Transportation Routes (S)	5,226
2-80	091	Stateline/Ski Run	Tourist	Redirection	Transportation Routes (S)	292
2-80	092	Pioneer/Ski Run	Residential	Redirection	Transportation Routes (S)	31

Source: TRPA PAS

Notes: *A – Allowable Use; S – Special Use; SA #1 – Special Area #1

Figure 32. Project Area Land Use Designations and PASs



Plan Area 091 – Stateline/Ski Run Community Plan. PAS 091 – Ski Run, which is the Stateline/Ski Run CP, contains a portion of Segment 2-80. The City and TRPA developed the Stateline/Ski Run CP in 1994. The Land Use Element of the plan classifies the area as "Tourist" with a "Redirection" management strategy and a Special Designation of "Scenic Restoration Area."

A goal of this plan is to reduce automobile dependency and improve the movement of people within the area and the Region. Areas with this management strategy are in need of environmental quality and community character improvement through relocation of facilities and rehabilitation or restoration of existing structures and uses (Chapter 13, TRPA Code). The Planning Statement establishes, "This area should continue as a major tourist center providing visitor accommodations and services. An emphasis should be placed upon redirection through redevelopment, which will provide scenic, economic and environmental improvements. These improvements will also benefit local residents, i.e. jobs, shopping, etc."

The Recreation Element of the Plan recognizes that a bike trail system should be implemented from Meyers to the Kingsbury area along the former Caltrans ROW.

Plan Area 092 – Pioneer/Ski Run. A portion of Segment 2-80 is located within Plan Area 092 – Pioneer/Ski Run. The Land Use Classification for Plan Area 092 is "Residential" with a "Redirection" management strategy. The Planning Statement for this area establishes, "This area should continue to be residential with improvements made to upgrade the character."

Plan Area 093 – Bijou. A small portion of Segment 2-70 is located within PAS 093 – Bijou. The Land Use Classification is "Residential" with a "Mitigation" management strategy. The Planning Statement for this area establishes, "This area should continue as residential, maintaining the existing character."

Plan Area 094 – Glenwood. PAS 094 contains Segment 2-70. The Land Use Classification for PAS 094 is "Residential" with a "Mitigation" management strategy. The Planning Statement for this area establishes, "This area should continue to be residential, maintaining the existing character of the neighborhood." The Special Policy provision for this area states that Pioneer Trail improvements must be compatible with the neighborhood.

Plan Area 095 – Trout/Cold Creek. PAS 095 contains Segment 2-45. The Land Use Classification for Plan Area 095 is "Conservation" with a "Mitigation" management strategy. The Planning Statement for this area establishes, "This area should continue to be managed for low to moderate resource use to include timber, grazing, recreation, and wildlife habitat management." In addition, the Plan Area targets the construction of an additional ten miles of trail; however, most likely for access to Star Lake and Freel Peak.

Plan Area 096 – Pioneer Village. A small portion of the neighborhood connector along Segment 2-70 to Friant Street enters into PAS 096 – Pioneer Village. The Land Use Classification for Plan Area 096 is "Residential" with a "Mitigation" management strategy. Riding and hiking trails are an allowable use in this PAS. The Planning Statement for this area establishes, "The Area should continue to be residential, maintaining the existing character of the neighborhood."

Plan Area 098 – Bijou/Al Tahoe Community Plan. Segment 2-50 is located within PAS 098 – Bijou/Al Tahoe. The City and TRPA developed the CP was developed for this area in 1995. A goal of this plan is to reduce automobile dependency and improve the movement of people within the area and the Region. The Plan's vision for recreation includes the implementation of a recreation/bike trail system extending to existing trails and high traffic areas. The Land Use Element of the Plan classifies this area as "Commercial/Public Service" with a "Redirection" management strategy. This Plan Area also contains a

Special Designation of "Scenic Restoration Area". The Planning Statement for this area establishes, "The area should be developed to provide regional commercial, recreational and public services for the South Shore."

Under Objective 1, Policy C: Encourage neighborhood improvement programs in each district, the Plan seeks to "provide public improvements, including street furniture, bicycle trails, enclosed bus shelters, curb/gutter/sidewalks, street lights, trash receptacles and underground utilities."

Policy A under Objective 2 of the Transportation Element requires that transportation related projects be subject to participation in mitigation programs and consistent with the Design Manual and the Community Plan Sign Ordinance. Objective 4 of the Transportation Element seeks to improve circulation and traffic by creating a network of bike trails and sidewalks. Policy A under Objective 3 of the Recreation Element requests the development of a bike trail system within the community plan area that links the area to trails outside the community plan boundaries, including Ski Run/Stateline and Sierra Tract Plan Areas.

Plan Area 100 – Truckee Marsh. Portions of Segment 2-50 are located within PAS 100 – Truckee Marsh. The Land Use Classification is "Conservation" with a "Maximum Regulation" management strategy. Areas with this management strategy are strictly regulated to ensure preservation and enhancement of the existing environment. Little additional development should occur in this area according to TRPA Code Chapter 13. The Planning Statement for this area establishes, "This area should be managed primarily for its natural values including those management practices which contribute to the quality of fish and wildlife habitat, support dispersed recreation, and maintain the nutrient catchment capacity of the stream environment zone." The PAS includes planning considerations for transportation crossings of Trout Creek. These considerations state highway crossings over the river and creek restrict the natural functioning capacity of the SEZ and that fish habitat in these waterways is degraded by sediment deposition.

Plan Area 101 – Bijou Meadow. Portions of Segments 2-60 and 2-70 are located within PAS 101 – Bijou Meadow. The Land Use Classification for Plan Area 101 is "Recreation" with a "Mitigation" management strategy. The Planning Statement for this area establishes, "The SEZ of this Plan Area should be restored through redirection of existing uses and preserved as a natural functioning stream environment zone." In addition, new roadway alignments through SEZs are discouraged in this plan area.

Plan Area 105 – Sierra Tract. Segment 2-45 and part of Segment 2-50 are located within PAS 105 – Sierra Tract. The Land Use Classification is "Residential" with a "Redirection" management strategy. The Planning Statement for this area establishes, "This area should continue to be residential, improving the character of the neighborhood." Stream restoration and drainage improvements are encouraged.

Special Uses. TRPA Code Section 18.4, defines transportation routes as "Public right-of-ways which are improved to permit vehicular, pedestrian, and bicycle travel," while riding and hiking trails are defined as "Planned paths for pedestrian and equestrian traffic, including trailheads." Accordingly, bicycle trails are reviewed as transportation routes.

Special uses are land uses that may be determined to be appropriate for an area and may be permitted if approved through a public hearing. To be approved, a special use must be of an appropriate nature, scale, density, type and intensity for the parcel; the project must not be injurious or disturbing to the health, safety, and welfare of persons or property in the vicinity or reasonable steps have been taken to protect against such injury; and the project must not change the character of the neighborhood or alter the purpose of the planning area (TRPA Code Subsection 18.1.B).

Each Plan Area or CP includes a Land Use Classification and a management strategy as defined by TRPA Code Subsection 13.5.B. As shown in Figure 32, the project area encompasses five Land Use Classifications including: Commercial/Public Service, Conservation, Recreational, Residential, and Tourist. There are three management strategies: Maximum regulation, Development with mitigation, and Redirection of development, as follow:

- Commercial/Public Service areas are areas that have been designated to provide commercial and public services to the Region or have the potential to such uses in the future. Its purpose is to concentrate services for public convenience, separate incompatible uses, and allow other non-commercial uses if they are compatible with this classification and the Regional Plan.
- Conservation areas have value as primitive or natural areas, with strong environmental limitations on use, and with a potential for dispersed recreation or low intensity resource management,
- Recreation areas are areas with good potential for developed outdoor recreation, park use, or concentrated recreation.
- Residential areas are areas having potential to provide housing for residents of the Region. This classification may also identify density patterns related to physical and manmade characteristics of the land allow accessory and non-residential uses that complement the residential neighborhood.
- Tourist areas have the potential to provide intensive tourist accommodations and services or intensive recreation.
- The maximum regulation designation applies to conservation areas that are strictly regulated to ensure preservation and enhancement of the existing environment, with little to no additional development of residential, commercial, tourist, recreational, or public service uses.
- The development with mitigation (Mitigation) designation is the predominant strategy. There areas can accommodate additional development if the impacts are fully mitigated and the land is capable of withstanding the use.
- The redirection of development (Redirection) designation is designed to improve environmental quality and community character by changing the direction of development or density through facility relocation and rehabilitation or restoration of existing structures and uses.

LTBMU Forest Plan. The project area lies within the Tahoe Valley Management Area of the LTBMU Forest Plan. This Management Area includes most of the valley bottom at the south end of Lake Tahoe. The project area is entirely within lands designated "Management Prescription 12".

Management Prescription 12 Emphasis. Urban Lots – Manage the small, environmentally sensitive lots in urbanized areas for their watershed and other environmental values as intended by Congress in PL 96-586. Resource management will be limited to that appropriate in residential neighborhoods, such as removing hazard trees, pest management, law enforcement, watershed restoration, and minor wildlife and fish projects. Occasionally, some facilities may be appropriate to reduce the impact of dispersed recreation uses or to provide access to national forest land. Most of these lots are considered too environmentally sensitive to build upon. A plan will be developed to identify which lots are appropriate to transfer to State and local agencies and to specify the kinds of uses that would be allowed on transferred lots. The VQO is Partial Retention. The preferred ROS setting is Rural.

Management Prescription 12 Description. This prescription applies to individual parcels acquired in established subdivisions by the LTBMU under the program. The prescription does not apply to acquired land that can be consolidated with other national forest land for management, such as those in Blackwood Canyon, which would not likely be transferred to local governments for management.

Allowable practices in Prescription 12 include road and trail closure and trail maintenance. Practices considered on a case-by-case basis include trail and facilities construction.

3.2.10.2 Environmental Analysis and Mitigation Measures

112. Would the Greenway physically divide an established community? (CEQA Xa)

Standard of Significance: A significant impact results if the Greenway installs a structural impediment to vehicle or pedestrian movement in the community. The TRPA Regional Plan, PASs and Code, LTBMU Forest Plan as amended by the SNFPA, and City General Plan determine this level of impact significance.

The Greenway constructs a developed trail through the community joining residential neighborhoods with commercial and community service areas in and near the South Lake Tahoe area. Section 2.6.4 lists connections from the project to other existing and proposed trails, neighborhoods, schools, employment centers, recreation areas, and transit centers. Since the Greenway provides a number of connections to services utilized primarily by the local community, the project improves the sense of community and neighborhood cohesion, as well as movement within the community.

The project installs a linear trail that is not of a size or use volume that would physically divide the community or redirect existing traffic to change circulation patterns. Much of the Greenway is along existing roadways or informal trails. Because the Greenway reduces the physical divisions caused by existing development patterns, the project results in improving connections within the urban community, thus avoiding impact.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigation: **None.**

113. Would the Greenway conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? (CEQA Xb)

Standard of Significance: A significant impact results from non-compliance of the Greenway with land use plans, goals, policies, regulations or provisions as established by the TRPA Regional Plan Element and Code Chapters 18 and 20, LTBMU Forest Plan, as amended by SNFPA and City General Plan.

TRPA. Project area PASs consider transportation routes to be a special use. The PASs list roadside trails (transportation routes) as a special land use (see Table 33). The land use is permissible but requires review and approval. Transportation routes are considered an allowable use within special area #1 of PAS 101, and no additional review or approval is necessary for the trail in this location. TRPA must hold a public hearing and make specific findings under Subsection 18.1.B of the TRPA Code before approving a special use. Findings analysis related to this project follows.

> *TRPA Code Subsection 18.1.B(1). The project, to which the use pertains, is of such a nature, scale, density, intensity and type to be an appropriate use for the parcel on which, and surrounding area in which, it will be located.*
>
> Appendix L contains the South Tahoe Greenway Shared Use Trail Neighborhood Compatibility Review (NCR), conducted to evaluate trail features and their effects on surrounding land uses. This review identifies trails in general as valued community resources compatible with developed commercial and residential neighborhoods. The Greenway alignment provides improved safety and connectivity for users of various types and abilities compared to the existing disconnected developed trail system or the current informal neighborhood trails. Appendix L considers stated

neighbor concerns related to noise, parking and traffic, property values, crime/vandalism, loss of freedom, and loss of privacy. Research presented concludes that nearby residents will experience no or very minor effects related to these issues with some exception for loss of privacy. Experience in other communities, particularly in more suburban areas such as South Lake Tahoe, identifies acute anticipation of loss of privacy prior to trail construction. Where post-construction survey results are available, however, they demonstrate the reality of living with a multi-use trail is better or much better than anticipated for the majority of adjacent residents.

TRPA Code Subsection 18.1.B(2). The project, to which the use pertains, will not be injurious or disturbing to the health, safety, enjoyment of property, or general welfare of persons or property in the neighborhood, or general welfare of the region, and the applicant has taken reasonable steps to protect against any such injury and to protect the land, water and air resources of both the applicant's property and that of surrounding property owners.

Appendix L presents research that concludes multi- use trails do not increase crime compared to their setting; instead they can reduce crime by increasing the level of activity and reducing the attractiveness of remote areas for teenagers or vagrants to congregate. The Greenway provides improved access for neighbors of various ability levels while maintaining the maximum buffer possible from adjacent land uses, maintaining more than 50-foot separation in most cases. Where the trail must run close to residential development, such as along Pioneer Trail, the design allows installation of privacy fences or increased vegetative screening. Section 3.2.16, Transportation and Traffic, concludes the Greenway will produce an overall reduction in VMT and create no significant traffic delays at nearby intersections or significant changes in neighborhood circulation patterns. Some intersection improvements, identified as mitigation measures, will occur, yet these features will not alter the general welfare of direct neighbors or the community at large. Analysis of overall environmental effects on land, air, and water resources of the project area presented throughout this document identify no effects capable of impacting surrounding property.

TRPA Code Subsection 18.1.B(3) The project, to which the use pertains, will not change the character of the neighborhood, detrimentally affect or alter the purpose of the applicable planning area statement, community plan and specific or master plan, as the case may be.

The Greenway implements a portion of the South Lake Tahoe bicycle network specifically developed to serve the neighborhoods through which it passes. Presence of improved non-auto access does not change the character of the predominately urban and suburban character of the area. Existing uses in the corridor include various trail types that will be maintained with development of the project.

Topography and other constraints require approximately 830 feet of the trail be located outside the ROW limit and onto private property. These constraints require the Conservancy to acquire or secure access easements on 10 parcels within Segments 2-70 and 2-80, as descried in Section 2.6.1 Alignment Segment Summaries. Primarily this occurs where the trail parallels an existing roadway, such as Pioneer Trail, or as a neighborhood connector. Where this occurs, the project identifies temporary or permanent easements needed from the landowners, in accordance with compliance measure CM-16. The landowners will be appropriately compensated for easements based on fair market value. Where the Greenway crosses existing driveways, reasonable access to private property will be maintained during construction and the pavement blended with the existing pavement of those driveways to avoid aesthetic or safety impacts. Affected residents or property owners will be notified in advance of construction adjacent to their property.

The Stateline/Ski Run and Bijou/Al Tahoe CPs state bike trail expansion as a desired goal, including a linkage between the Meyers and Kingsbury areas, as well as between local neighborhoods in the area. The Greenway establishes portions of these connections.

The Truckee Marsh PAS (Segments 2-45 and 2-50) has a Maximum Regulation management strategy and states the area should be managed for its natural values, including support of dispersed recreation, which includes trails. The Greenway encroaches at the edge of this PAS along the Martin Ave and Meadowcrest Dr. The project results in a developed trail connection but ultimately promotes the Maximum Regulation management strategy because the project restores trails that create an unregulated nexus of disturbance within environmentally sensitive areas. Additionally, as described in other portions of this analysis, the proposed project locates the shared use trail very near existing roadway development and avoids encroaching into undeveloped sensitive areas. Therefore, the Greenway complies with the Maximum Regulation management strategy.

The remaining PASs have either a Redirection or Mitigation management strategy. As stated in regard to the Maximum Regulation management strategy, the Greenway results in a developed trail, with decommissioning of other existing trails located within environmentally sensitive areas. The Greenway improves environmental quality through the restoration of disturbed areas in accordance with the Redirection management strategy and the Greenway is appropriately located outside sensitive areas and utilizes boardwalks and permeable fill in areas that where asphalt on impermeable fill is not appropriate.

Although no TRPA Thresholds for land use exist, the project promotes the Recreation Threshold through establishment of new recreation resources and linkages to other recreation in the area and improvement of access to and quality of the recreational experience.

TRPA Code Chapter 20 establishes land coverage limits. Land coverage is described in detail in Question 66 and Table 22, which identify coverage quantities and discuss compliance with TRPA Code Chapter 20. This evaluation concludes compliance with Chapter 20 provisions for existing and proposed coverage.

City of South Lake Tahoe. The City's Land Use Element goals and objectives seek to enhance the alpine setting (Land Use Goal 1), direct the amount and location of new land uses consistent with the carrying capacities for the Basin (Land Use Goal 2), and locate development on land suitable for construction (Land Use Goal 3). The project supports these goals and objectives through trail removal and restoration, reflecting the land use policies of each of the PASs as met with special use approval, and a design element that maximizes the use of high capability land. Although portions of the Greenway affect SEZs, installation of boardwalks and asphalt trail on permeable fill allow for continued hydrologic function and the removal and restoration of informal trails results in a benefit to overall SEZ function. Where necessary, TRPA Code allows public service projects to transfer land coverage to sensitive lands. The Greenway also supports the City's Open Space Element, which seeks to improve public access to open space areas.

LTBMU. The Conservancy must secure a Special Use Permit for construction and operation of the short section of Greenway on National Forest Lands. The Greenway follows existing informal trails in most of this area and is included in the LTBMU Management Prescriptions (see Questions 117 and 118). The Greenway, built with best management practices to control erosion and runoff, allows for the removal of informal trails and a reduction of potential sediment sources even with increased use. The environmental review and project approval process assures compliance with land use plans, policies and goals and identifies project features that avoid impacts.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigation: **None.**

114. Would the Greenway conflict with any applicable habitat conservation plan or natural community conservation plan? (CEQA Xc)

Standard of Significance: A significant impact results from noncompliance with an adopted habitat conservation plan or natural community conservation plan.

The Greenway does not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan because no such plans exist for the project area.

Environmental Analysis: *No Impact*.

Required Mitigation: **None.**

115. Will the Greenway include uses which are not listed as permissible uses in the applicable Plan Area Statement, adopted Community Plan, or Master Plan? (TRPA 8a)

No. Standard of Significance: A significant impact results from inconsistency with permissible land uses as established in PASs 080, 085, 092, 093, 094, 095, 096, 100, 101, and 105, or the Stateline Ski Run and Bijou/Al Tahoe CPs.

See analysis for Question 113, which addresses CEQA checklist item Xb and concludes the level of impact related to land use, zoning and permissible uses is less than significant.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigation: **None.**

116. Will the Greenway expand or intensify an existing non-conforming use? (TRPA 8b)

No. Standard of Significance: A significant impact results from expansion of an existing non-conforming use that is in conflict with permissible land uses as established in TRPA PASs.

Construction of an approved trail, considered a special use, will not expand or intensify an existing non-conforming use because there is no non-conforming use existing currently.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigation: **None.**

117. Greenway effects to conformance with Comprehensive plans and zoning. (NEPA)

Conformance to the LTBMU Forest Plan and Prescription 12 is required, which is a project requirement for sections of the Greenway crossing LTBMU parcels.

No Project. Under the no project alternative, the Conservancy constructs and operates no shared-use trail and no change to the project area occurs. Portions of the project area, including locations on National Forest Lands, would continue to be used as informal trails. Indirect and direct effects from continued use of informal trails would continue. This alternative would result in no contribution to potential cumulative effects related to land use on National Forest Lands.

Proposed Project. To allow Greenway construction, the LTBMU must review and approve the final project plans affecting parcels 025-203-001 (799 feet in Segment 2-70), 025-204-001 (157 feet in Segment 2-70), 027-331-003 (334 feet in Segment 2-70), and 028-090-005 (105 feet in Segment 2-80). The 1,395 linear feet of the Greenway is within LTBMU Prescription 12 – Urban Lots. LTBMU Prescription 12 allows for trail maintenance and closure and allows for road and trail construction on a case-by-case basis. The Recreation Opportunity Spectrum (ROS) for Prescription 12 is "rural". Under Section VI of Prescription 12, the LTBMU Forest Plan suggests opportunities may exist for the development of access and bicycle trails, which should be evaluated at the project level. The Greenway conforms to this statement. No conflict with the ROS results from Greenway construction and operations.

Indirect and Direct Effects. The LTBMU Forest Plan Land Uses Goal is to allow occupancy and use of the land for public and private purposes through issuance of a special use permit or easement where the use would be consistent with other goals. As discussed in Question 112, trail development is consistent with other goals, including goals for vehicle trip reduction (LTBMU Forest Plan Roads and Trails Goal), which includes measures for, "providing bicycle and pedestrian facilities along major transportation corridors and interconnecting public transportation terminal and population and activities centers" (Roads and Trails Goal, Measure e), which would be supported by development of the Greenway.

Construction of a shared-use trail that connects neighborhoods to recreation facilities, urban centers, and public lands is stated in the Forest Plan Roads and Trails Goal. The Greenway proposal includes design features that avoid and minimize potential impacts to resources and land uses so that the Greenway does not significantly impact the natural environment on National Forest Lands.

The Greenway is not located within an old forest ecosystem, and would not prevent or interfere with the protection of an old forest ecosystem. Trail design, as described in section 2.6.2 of this document, includes elements to avoid, reduce, and restore impacts to sensitive habitat. These design features include boardwalks, permeable fill to minimize hydrology impacts, utilizing existing coverage, barriers to prevent shortcuts, revegetation and restoration (See 2.6.3.1), decommissioning existing trails, and various compliance measures that address erosion and sedimentation (CM-3 and CM-4), revegetation and restoration (CM-5), BMPs (CM-6), tree protection (CM-7), trail maintenance (CM-8 and Appendix E), dust suppression (CM-9), and fire suppression (CM-15).

Cumulative Effects. Section 3.2.18, Mandatory Findings of Significant, specifically Question 187, addresses cumulative effects of the Greenway and related projects, as listed in Table 60.

Environmental Analysis: *No Impact Anticipated.*

Required Mitigation: **None.**

118. Greenway effects to compatibility or urban impact. (NEPA)

Consistency with the USFS Trails Management Handbook and Prescription 12 is required.

No Project. Under the no project alternative, the Conservancy constructs and operates no shared-use trail and no change to the project area occurs. Portions of the project area, including locations on National Forest Lands, would continue to be used as informal trails. Indirect and direct effects from continued use of informal trails would continue. This alternative would result in no contribution to potential cumulative effects related to land use on National Forest Lands.

Proposed Project. As discussed above under Question 117, the Greenway is compatible with Prescription 12. Trails and road construction are allowed on a case-by-case basis with project review. Trail closure is an allowable practice in Prescription 12. The Greenway affects no specially designated area (i.e., Research Natural Areas, Inventoried Roadless Areas, Wilderness Areas and Wild and Scenic Rivers).

National Forest Management Act requires the development of long-range land and resource management plans (i.e., Forest Plan). The LTBMU Forest Plan was approved in 1988 as required by this Act and have been amended several times, including the 2004 SNFPA. The LTBMU Forest Plan requires projects to be reviewed for consistency with natural resource management direction. As part of this project, a consistency review with the Forest Plan was completed for the project record. The Greenway, including design features (Section 2.6.X), BMPs for soils and hydrology, and measures included in the project proposal for compliance with (Section 2.6.5) are consistent with the LTBMU Forest Plan. The project area contains no Riparian Conservation Areas, as defined in the 2004 SNFPA.

Indirect and Direct Effects. LTBMU requires consistency with best practices for trail siting, as outlined in USFS Trails Management Handbook (FHS 2309.18). This handbook primarily addresses non-paved hiking trials, however, it includes guidelines for general trail accessibility, boardwalks and other features. The Greenway is designed in compliance with ADA standards and Forest Service Trail Accessibility Guidelines, meeting the accessibility guidelines in the Handbook.

Where the Greenway is located within LTBMU urban lot parcels, the trail utilizes appropriate design measures for an urban setting, and provides for restoration of disturbed areas and existing trails. SEZ exists in two locations: north of Glenwood Way and where the Greenway parallels Pioneer Trail across National Forest Lands; however, due to the proximity of the trail to roadways with heavy snow removal conditions, the Greenway utilizes permeable fill as boardwalk would not be suitable and infiltration is necessary. In other areas, the Greenway utilizes existing trail routes to minimize the creation of redundant trails and associated disturbance. Various existing trails on National Forest Lands would be restored to offset new Greenway land coverage, which is permissible within Prescription 12.

Cumulative Effects. Section 3.2.18, Mandatory Findings of Significant, specifically Question 187, addresses cumulative effects of the Greenway and related projects, as listed in Table 60.

Environmental Analysis: *No Impact Anticipated.*

Required Mitigation: **None.**

3.2.11 Mineral Resources (CEQA) and Natural Resources (TRPA)

This section presents the analyses for potential impacts to mineral resources and natural resources. Table 34 identifies the applicable impacts and anticipated level of impact.

Table 34

Mineral Resources and Natural Resources

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
119. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? (CEQA XIa)				X
120. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (CEQA XIb)				X
TRPA Initial Environmental Checklist Item	**Yes**	**No, With Mitigation**	**Data Insufficient**	**No**
121. A substantial increase in the rate of use of any natural resources? (TRPA 9a)				X
122. Substantial depletion of any non-renewable natural resource? (TRPA 9b)				X
NEPA Significance of Effects				
123. Greenway effects to mineral resources. (NEPA)				

3.2.11.1 Environmental Setting

The project area contains no mineral resources of value to the region or residents of the State of California, nor does it include the substantial use of any non-renewable natural resources.

3.2.11.2 Environmental Analysis and Mitigation Measures

119. Would the Greenway result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? (CEQA XIa)

Standard of Significance: A significant impact occurs if the project creates a loss of availability of mineral resources that are valuable to the region.

The project area contains no mineral resources areas and thus creates no impact to such resources.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

120. Would the Greenway result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (CEQA XIb)

Standard of Significance: A significant impact occurs if the project creates a loss of availability of locally important mineral resource recovery sites.

The project area contains no mineral resource recovery sites and thus creates no impact to such sites.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

121. Will the Greenway result in a substantial increase in the rate of use of any natural resources? (TRPA 9a)

Standard of Significance: A significant impact occurs if the project creates a substantial increase in the rate of use of natural resources.

The project does not create population increases or facilities that could substantially increase the rate of use of natural resources and thus creates no impact to such resources.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

122. Will the Greenway result in a substantial depletion of any non-renewable natural resource? (TRPA 9b)

Standard of Significance: A significant impact occurs if the project creates a substantial depletion of non-renewable resources.

Greenway does not include facilities or actions that cause depletion of non-renewable natural resources and thus creates no impact to such resources.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

123. Greenway effects to mineral resources. (NEPA)

No Project. Under the no project alternative, the Conservancy constructs and operates no shared-use trail and no change to the project area occurs. Portions of the project area, including locations on National Forest Lands, would continue to be used as informal trails. Indirect and direct effects from continued use of informal trails would continue. This alternative would result in no contribution to potential cumulative effects related to mineral resources on National Forest Lands.

Proposed Project. The project area contains no mineral resources on National Forest Lands.

Indirect and Direct Effects. Because the project area contains no mineral and natural resources on National Forest Lands, the Greenway would create no indirect or direct effects to such resources.

Cumulative Effects. Section 3.2.18, Mandatory Findings of Significant, specifically Question 187, addresses cumulative effects of the Greenway and related projects, as listed in Table 60.

Environmental Analysis: *No Impact Anticipated.*

Required Mitigation: **None.**

3.2.12 Noise

This section presents the analyses for potential impacts related to noise. Table 35 identifies the applicable impacts and anticipated level of impact.

Table 35

Noise

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
124. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (CEQA XIIa)			**X**	
125. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? (CEQA XIIb)			**X**	
126. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? (CEQA XIIc)			**X**	
127. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? (CEQA XIId)			**X**	
128. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? (CEQA XIIe)				**X**
129. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? (CEQA XIIf)			**X**	**X**

TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
130. Increases in existing Community Noise Equivalency Levels (CNEL) beyond those permitted in the applicable Plan Area Statement, Community Plan or Master Plan? (TRPA 6a)				**X**
131. Exposure of people to severe noise levels? (TRPA 6b)				**X**
132. Single event noise levels greater than those set forth in the TRPA Noise Environmental Threshold? (TRPA 6c)				**X**
NEPA Significance of Effects				
133. Greenway effects to community noise levels. (NEPA)				

3.2.12.1 Environmental Setting

Land uses in the project vicinity include recreation, open space, residential, and commercial uses. The main sources of noise are from vehicular traffic along residential and commercial roadways, including Pioneer Trail, Al Tahoe Blvd and neighborhood streets.

Noise. *Sound* is mechanical energy transmitted by pressure waves in a compressible medium such as air. *Noise* can be defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an ambient sound level. The decibel (dB) scale is used to quantify sound intensity. Because sound pressure can vary enormously within the range of human hearing, a logarithmic loudness scale is used to keep sound intensity numbers at a convenient and manageable level. The human ear is not equally sensitive to frequencies in the entire spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive in a process called *A-weighting,* which is written "dBA." In general, human sound perception is such that a change in sound level of 3 dB is just noticeable; a change of 5 dB is clearly noticeable; and a change of 10 dB is perceived as doubling or halving sound level.

Different types of measurements are used to characterize the time-varying nature of sound. These measurements include the equivalent sound level (L_{eq}), the minimum and maximum sound levels (L_{min} and L_{max}), percentile-exceeded sound levels (L_{xx}), the day-night sound level (L_{dn}), and the community noise equivalent level (CNEL). Below are brief definitions of these measurements and other terminology used in this analysis:

- **Sound.** A vibratory disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

- **Ambient Noise.** The composite of noise from sources near and far in a given environment exclusive of particular noise sources to be measured.
- **Decibel (dB).** A unit less measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Equivalent Sound Level (L_{eq}).** The average of sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level that in a stated period would contain the same acoustical energy as the time-varying sound that actually occurs during the same period. The 1-hour A weighted equivalent sound level (L_{eq}) is the energy average of A-weighted sound levels occurring during a 1-hour period and is the basis for noise abatement criteria (NAC) used by Caltrans and FHWA.
- **Exceedance Sound Level (L_{xx}).** The sound level exceeded XX percent of the time during a sound level measurement period. For example L_{90} is the sound level exceeded 90% of the time and L_{10} is the sound level exceeded 10% of the time.
- **Maximum and Minimum Sound Levels (L_{max} and L_{min}).** The maximum or minimum sound level measured during a measurement period.
- **Day-Night Level (L_{dn}).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the A-weighted sound levels occurring during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
- **Noise Abatement Criteria (NAC).** The Noise Abatement Criteria are used to identify traffic noise impacts under the requirements of 23CFR772. A traffic noise impact occurs at a receiver when the predicted design year noise level approaches or exceeds the NAC.

L_{dn} and CNEL values rarely differ by more than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such in this assessment.

Noise Sources. Noise sources in the City include noise from traffic traveling on roadways, aircraft overflights, and recreational activities such as hiking, biking, boating and skiing.

Stationary Sources. Existing noise sources in the project vicinity include Lake Tahoe Airport, residences, commercial uses, and parking lots. Low-density residential and commercial/parking uses are the majority along the southern portion of the trail alignment becoming higher-density near Stateline, where there are concentrated hotel and commercial facilities, and the Heavenly Valley ski lift facility.

Mobile Sources. Noise sources associated with roadways include traffic along Pioneer Trail, Al Tahoe Blvd and local streets throughout the project area. Noise levels associated with mobile sources vary seasonally with summer and winter increases in visitor activity.

Noise Sensitive Land Uses. Noise sensitive land uses are generally defined as locations where people reside or where the presence of noise could adversely affect the use of the land. Typical noise-sensitive land uses include residences schools, hospitals, and parks. Recreational activities found in the project area are not considered to be noise-sensitive land uses because they are transitory in nature with exposure of users typically being less than one hour. Noise-sensitive land uses in the project area that could be affected by the project include residences adjacent to the trail alignment.

Blasting. Blasting is unlikely, but will potentially be required to construct the Greenway. The two primary environmental effects of blasting are airblast and groundborne vibration. Blasting creates seismic waves that radiate along the surface of the earth and downward into the earth. These surface waves can be felt as ground vibration. Ground vibration can result in effects ranging from annoyance of people to damage of structures. Varying geology and distance will result in different vibration levels containing different frequencies and displacements. In all cases, vibration amplitudes decrease with increasing distance. As seismic waves travel outward from a blast, they excite the particles of rock and soil through which they pass and cause them to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity (in inches per second) at which these particles move is the commonly accepted descriptor of the vibration amplitude, referred to as the peak particle velocity (ppv).

Airblast. Energy released in an explosion creates an air overpressure (commonly called an airblast) in the form of a propagating wave. If the receiver is close enough to the blast, the overpressure can be felt as the pressure front of the airblast passes. The accompanying booming sound lasts for only a few seconds. The explosive charges used in mining and mass grading are typically wholly contained in the ground, resulting in an airblast with frequency content below about 250 cycles per second, or Hz. Because an airblast lasts for only a few seconds, use of Leq (a measure of sound level averaged over a specified period of time) to describe blast noise is inappropriate. Airblast is properly measured and described as a linear peak air overpressure (i.e., an increase above atmospheric pressure) in pounds per square inch (psi). Modern blast monitoring equipment is also capable of measuring peak overpressure data in terms of unweighted dB. Decibels as used to describe airblast, should not be confused with or compared to dBA, which are commonly used to describe relatively steady-state noise levels. An airblast with a peak overpressure of 130 dB can be described as being mildly unpleasant, whereas exposure to jet aircraft noise at a level of 130 dBA would be painful and deafening.

Vibration. Operation of heavy construction equipment, particularly pile driving and other impact devices, such as pavement breakers, create seismic waves that radiate along the surface of the earth and downward into the earth. These surface waves can be felt as ground vibration. Vibration from operation of this equipment can result in effects ranging from annoyance of people to damage of structures. Varying geology and distance will result in different vibration levels containing different frequencies and displacements. In all cases, vibration amplitudes will decrease with increasing distance. Perceptible ground-borne vibration is generally limited to areas within a few hundred feet of construction activities. As seismic waves travel outward from a vibration source, they excite the particles of rock and soil through which they pass and cause them to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity (in inches per second) at which these particles move is the commonly accepted descriptor of the vibration amplitude, referred to as the peak particle velocity (PPV).

Table 36 summarizes typical vibration levels generated by construction equipment (FTA 2006a).

Vibration amplitude attenuates over distance and is a complex function of how energy is imparted into the ground and the soil conditions through which the vibration is traveling. The equation below can be used to estimate the vibration level at a given distance for typical soil conditions (FTA 2006a). PPV_{ref} is the reference PPV from Table 36:

$$PPV = PPV_{ref} \times (25/Distance)^{1.1} \text{ (in/sec)}$$

Table 36

Vibration Source Amplitudes for Construction Equipment

Equipment	PPV at 25 feet
Vibratory roller	0.210
Large bulldozer	0.089
Caisson drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003

Source: FTA 2006a.

Tables 37 and 38 summarize typical human response to transient and continuous vibration that is usually associated with construction activity. Equipment or activities typical of continuous vibration include: excavation equipment, static compaction equipment, tracked vehicles, traffic on a roadway, vibratory pile drivers, pile-extraction equipment, and vibratory compaction equipment. Equipment or activities typical of single-impact (transient) or low-rate repeated impact vibration include: impact pile drivers, blasting, drop balls, "pogo stick" compactors, and crack-and-seat equipment (Caltrans 2004).

State, TRPA and City Noise Regulations. There are no applicable state regulations that pertain to noise in the project area.

The 1987 Regional Plan for the Lake Tahoe Basin provides for the achievement and maintenance of the adopted environmental threshold carrying capacities (thresholds) while providing opportunities for orderly growth and development. TRPA noise thresholds are contained in the Land Use Element of Regional Plan. Noise thresholds have been established for aircraft noise sources; single-event noise sources (i.e., noise from boats, motor vehicles, motorcycles, off-road vehicles, and snowmobiles that occur in a nonregular or nonrepetitive manner); and community noise levels, which are used to determine land use compatibility. The TRPA community noise threshold for high density residential and for urban outdoor recreation areas is 55 dBA and low density residential areas is 50 dBA. TRPA adopted an outdoor CNEL standard for each PAS. Table 39 shows the CNEL standards by PAS for the Greenway.

Table 37

Human Response to Transient Vibration

PPV	Human Response
2.0	Severe
0.9	Strongly perceptible
0.24	Distinctly perceptible
0.035	Barely perceptible

Source: Caltrans 2004

Table 38

Human Response to Continuous Vibration

PPV	Human Response
3.6 (at 2 Hz) to 0.4 (at 20 Hz)	Very disturbing
0.7 (at 2 Hz) to 0.17 (at 20 Hz	Disturbing
0.10	Strongly perceptible
0.035	Distinctly perceptible
0.012	Slightly perceptible

Source: Caltrans 2004

Table 39

TRPA Outdoor CNEL Noise Standards by PAS

PAS Number	CNEL Standard
080	50 (65 in Highway 50 corridor)
085	55
091 (Stateline/Ski Run CP)	55
092	55
093	55
094	50
095	50
096	50
098 (Bijou/Al Tahoe CP)	60
100	50 (65 in Highway 50 corridor)
101	55
105	55

Source: TRPA 2010

Chapter 23 (Noise Limitations) from the TRPA Code establishes noise limitations for areas within TRPA's jurisdiction. Subsection 23.2.A establishes noise level standards (expressed in CNEL) that shall not be exceeded. In addition, Subsection 23.2.A stipulates that community noise levels shall not exceed levels existing on August 26, 1982, where such levels are known. Section 23.8 stipulates that TRPA-approved construction or maintenance projects, or the demolition of structures, are exempt from TRPA's Code of Ordinances Noise Limitations (Chapter 23) if the activities occur between the hours 8:00 a.m. and 6:30 p.m.

The City is currently updating its 1999 General Plan. The Revised Public Review Draft of the General Plan was released in September 2009 (City of South Lake Tahoe 2009). The draft Health and Safety Element addresses noise issues with the Goal HS-8 and policies HS-8.1 through HS-8.10. The City's noise ordinance is found in Article 18-10.1 of the City Code.

3.2.12.2 Environmental Analysis and Mitigation Measures

124. Would the Greenway result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (CEQA XIIa)

Standard of Significance: Exceedance of CNEL limits stated in project area PAS and CPs (Table 39) or the City's General Plan and noise ordinance constitutes a significant noise impact.

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise. Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- A change in noise levels of 3 dBA is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a street with moving vehicles, typically attenuate at a lower rate, between 3 dB and 4.5 dB per doubling of distance.

Even the busiest shared-use trails in the United States are extremely quiet, with little noise created other than the occasional low volume conversation, barely audible beyond 10 or 20 feet of the trail edge. Walking, running, dog walking, and bicycling, by their nature, generate virtually no noise. Potential sources of greater volumes, such as platoons of bicyclists or congregating teenagers, are occasional and sporadic. Club cyclists normally prefer to ride where higher speeds can be achieved, such as roads like Pioneer Trail, rather than on shared use trails with many pedestrians. Trial use involves very low sound levels occurring intermittently over the 24-hour day (i.e. CNEL period), with most use falling within the +/- 12-hour period of daylight. Conformance to CNEL standards will occur throughout the length of the

project area. Additionally, a properly operated trail with the predicted use levels of the Greenway does not attract teenagers who seek areas away from the public eye (Appendix L).

The long-term operation of the Greenway results in little to no new, long-term sources of operational noise because the shared-use path is limited to non-motorized vehicle use (except that generated by occasional disabled persons with mobility devices, maintenance or emergency vehicles). Noise from recreation activities (e.g., bicycling, walking, running) is not considered nuisance noise. As described in Section 3.2.16 daily drive-to-path volumes on roads will not be substantial enough to create a noticeable change (i.e., 3 dBA) in roadside noise levels over the long-term. Table 54 documents that the Greenway, when fully constructed, results in a net reduction of 80 total daily vehicle trips from existing conditions. Table 55 shows that overall daily VMT reduces by 177 miles. As such, the Greenway could reduce vehicle-related noise levels.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

125. Would the Greenway result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? (CEQA XIIb)

Standard of Significance: 30 CFR Part 816 defines a significant impact as a vibrational increase greater than 1 inch/second peak particle velocity, as based on typical characteristics of project equipment and materials.

Trail operations do not create groundborne vibration. Construction activities associated with the operation of heavy equipment could generate localized groundborne vibration. Vibration from non-impact construction activity is typically below the threshold of perception when the activity is more than 50 feet from the receptor. Additionally, vibration from these activities is of limited duration and ends when construction is completed. The trail passes close to several residences, between 50 and 75 feet, while following the former Caltrans ROW between Glenwood Way and Becka. Along Pioneer Trail the Greenway follows the roadway ROWs and passes in front of residences and the trailer park sited close to the ROW, approximately 25-40 feet. The Greenway will pass in front of the planned Aspens development near the intersection of Pioneer Trail and Ski Run Boulevard. Near the intersection with Keller Dr. the Greenway passes within 50 feet of a residence that has an existing privacy fence. Construction groundborne vibration will be temporary and intermittent. Noise from Pioneer Trail will mask some construction noise at many of these residences. The trailer park sits below the roadway prism and trial alignment; the siting masks some roadway and construction noise.

Vibration and airblast could occur if blasting techniques are used. Based on soil analyses along the project area, only minimal blasting is likely, if at all. Most of the Greenway alignment affects alluvium, colluvium and old lake deposits. Segment 2-80 contains a few rock outcrops requiring an excavator with a thumb or hammer attachment. Blasting requirements depends on the soundness of the rock (Jennifer Roman, pers. comm., 2010).

Human response to blast vibration and airblast is difficult to quantify. Vibration and airblast can be felt or heard well below the levels that produce any damage to structures. The duration of the event has an effect on human response, as does blast frequency. Blast events are relatively short, on the order of several seconds for sequentially delayed blasts. Generally, as blast duration and vibration frequency increase, the potential for adverse human response increases. Rock outcrops areas in Segment 2-80 that potentially require blasting are of sufficient distance away from residences such that the potential for impacts to structures or residences from groundbourne vibration is reduced to a level of less than significant.

Environmental Analysis: Less than Significant Impact.

Required Mitigation: **None.**

126. Would the Greenway result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? (CEQA XIIc)

Standard of Significance: Substantial permanent increase in ambient noise levels in the project vicinity created by the Greenway constitutes a significant impact, as defined by permissible CNELs for PAS and the City noise ordinance.

As documented in Table 54, Greenway operations results in a net reduction of 80 total daily vehicle trips from existing conditions. Table 55 shows that overall daily VMT reduces by 177 miles. As described above for Question 124, operations of shared-use trails in the United States are extremely quiet. Even in the limited number of locations where existing development lies closer than 50 feet from the trail, changes in ambient noise levels will not reach the 3 dBA change in CNEL identified as "just perceivable". Walking, running, dog walking, and bicycling, by their nature, generate virtually no ambient noise. Potential sources of greater volumes, such as platoons of bicyclists or congregating teenagers, will not exist on the trail alignment because (a) club cyclists normally prefer to ride on roads like Pioneer Trail rather than on trails, and, (b) a properly operated trail will not attract teenagers—who typically seek areas away from the public eye (Appendix L).

Policy HS-8.3: Overall Background Noise Mitigation states "the City shall not allow any project to increase the overall background noise levels at receiving land uses by three or more decibels (dB) in instances when measured ambient noise levels exceed the standards contained within Table HS-1". Exterior noise standards for new projects, including non-transportation noise sources are 55 dB between 7 a.m. and 10 p.m. and 45 dB between 10 p.m. and 7 a.m. The Greenway creates a beneficial effect on vehicle-related noise levels, resulting in a less than significant impact.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

127. Would the Greenway result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? (CEQA XIId)

Standard of Significance: TRPA Code Section 23.8 stipulates that TRPA-approved construction or maintenance projects, or the demolition of structures, are exempt from TRPA's noise limitations if the activities occur between the hours 8:00 a.m. and 6:30 p.m. Construction activities occurring outside of this noise exemption time construction period or if noise levels exceed CNEL levels set for the land use categories and PAS corresponding to the project area (see Table 39) constitutes a significant impact.

Noise generated during typical construction activities is indicated in Table 40, ranging from 76 to 82 dB at distances of up to 50 feet. As described for Question 125, a few residences sit within 50 feet and as close as 25 feet of the construction area. Based on these equipment noise levels and a typical noise-attenuation rate of 6 dB per doubling of distance, noise levels at 25 feet from individual pieces of equipment typically range from between 83 to 96 dB. As such, operation of individual or multiple pieces of construction equipment could result in substantial temporary or period increases in ambient noise levels at sensitive receptors (e.g., residences, recreational locations, and hotels) during typical construction activities. However, compliance measures CM-10 and CM-11 incorporated into the project minimize noise effects related to construction. These compliance measures place noise controls on construction equipment, locate construction equipment and staging areas to minimize noise effects,

restrict construction vehicle idling during periods of non-use, and restrict noise-generating construction activities to the hours between 8:00 a.m. and 6:30 p.m., Monday through Saturday, during which such activities are exempt from the TRPA noise standards (TRPA Code Section 23.8).

Table 40

Construction Equipment Noise

Type of Equipment	Maximum Level
Backhoe	78 dB at 50 feet
Bobcat	NA
Excavator	81 dB at 50 feet
Grader	NA
Material Delivery Truck, Water Truck	76 dB at 50 feet
Paver	77 dB at 50 feet
Roller	80 dB at 50 feet

Source: FTA, 2006b

Another potentially significant project-generated noise source is truck traffic associated with transport of materials and equipment to and from construction sites. This noise increase is of short duration and under normal scheduling occurs within the TRPA construction noise limit hours primarily during daytime hours. Compliance measure CM-11, Construction Equipment Muffling, includes shrouding or shielding impact tools and muffling or shielding intake and exhaust ports on construction equipment. Although most likely unnecessary, the project plans for installation of temporary noise barriers, as needed.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

128. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? (CEQA XIIe)

Standard of Significance: Exposure of people residing or working in the project area to excessive noise levels from aircraft results in a significant impact.

Although Segments 2-45 and 2-50 are within two miles of a public use airport, the Lake Tahoe Airport operates under the Lake Tahoe Airport Comprehensive Plan and does not contain the project area. The project does not involve residences or workplaces and thus results in no impact.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

129. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? (CEQA XIIf)

Standard of Significance: Exposure of people residing or working in the project area to excessive noise levels from aircraft results in a significant impact.

Segments 2-45 and 2-50 are within two miles of Lake Tahoe Airport, an all-weather general aviation facility. The project does not establish permanent, non-transitory populations after completion of construction and does not expose people utilizing the trail to excessive noise levels. Construction personnel working on the Segments 2-45 and 2-50 will not be exposed to excessive noise levels from aircraft beyond noises levels experienced by Sierra Tract residents. Aircraft flight paths are intermittent.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

130. Would the Greenway result in increases in existing Community Noise Equivalency Levels (CNEL) beyond those permitted in the applicable Plan Area Statement, Community Plan or Master Plan? (TRPA 6a)

No. Standard of Significance: See analysis for Question 123, which addresses CEQA checklist item XIIa and concludes the level of impact related to CNELs is less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

131. Would the Greenway result in exposure of people to severe noise levels? (TRPA 6b)

No. Standard of Significance: See analysis for Question 125, which addresses CEQA checklist Item XIIc and concludes that the level of impact to exposure of people to severe noise levels (i.e., vibrational or ground Bourne noise) is less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

132. Will the Greenway result in single event noise levels greater than those set forth in the TRPA Noise Environmental Threshold? (TRPA 6c)

No. Standard of Significance: See analysis for Question 127, which addresses CEQA checklist Item XIId and concludes that the Greenway does not result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity outside of the daytime hours allowed for temporary construction activities.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

133. Greenway effects to community noise levels. (NEPA)

Under NEPA, the context and intensity of the Greenway's potential effects related to noise are evaluated based on whether the project conflicts with LTBMU land management practices and requirements in the LTBMU Forest Plan.

No Project. Under the no project alternative, the Conservancy constructs and operates no shared-use trail and no change to the project area occurs. Portions of the project area, including locations on National Forest Lands, would continue to be used as informal trails. Indirect and direct effects from continued use of informal trails would continue. The no project alternative constructs no shared-use trail and therefore

generates no short-term construction noise or change in ambient noise levels. This alternative would result in no contribution to potential cumulative effects related to noise levels on National Forest Lands.

Proposed Project. The Greenway will create temporary and intermittent construction-related noise, but would not contribute significantly to ambient noise levels due to the nature of the project.

Direct and Indirect Effects. Questions 124 through 127 address direct and indirect noise effects as they relate to TRPA and City noise standards, exposure of persons to excessive groundborne noise levels, and general construction noise. With implementation of CM-10 and CM-11, construction of the Greenway will not cause noise levels to exceed the maximum CNELs for the applicable PAS, annoy and/or disrupt the sleep of occupants of existing noise-sensitive land uses in the project vicinity, nor create a substantial temporary increase in ambient noise levels. Therefore, the Greenway does not result in direct or indirect adverse construction noise effects.

Cumulative Effects. The related projects listed in Table 60 as well as the Greenway, would result in short-term noise effects from on-site construction equipment and vehicles and off-site construction vehicle traffic. Projects would be required to include noise-reduction project design features or mitigation measures such as noise controls on construction equipment, locating construction equipment and staging areas to minimize noise effects, restricting construction vehicle idling during periods of non-use, and restricting noise-generating construction activities to the hours between 8:00 a.m. and 6:30 p.m., Monday through Saturday, during which such activities are exempt from the TRPA noise standards, and therefore, not result in adverse cumulative effects related to noise. Section 3.2.18, Mandatory Findings of Significant, specifically Question 187, further addresses cumulative effects of the Greenway and related projects, as listed in Table 60.

Environmental Analysis: *No Impact Anticipated.*

Required Mitigation: **None.**

3.2.13 Population and Housing

This section presents the analyses for potential impacts to population and housing. Table 41 identifies the applicable impacts and anticipated level of impact.

Table 41

Population and Housing

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
134. Induce substantial 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 XIIIa)			X	
135. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? (CEQA XIIIb)				X
136. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? (CEQA XIIIc)				X
TRPA Initial Environmental Checklist Item	**Yes**	**No, With Mitigation**	**Data Insufficient**	**No**
137. Alter the location, distribution, density, or growth rate of the human population planned for the Region? (TRPA 11a)				X
138. Include or result in the temporary or permanent displacement of residents? (TRPA 11b)				X

TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
139. Affect existing housing, or create a demand for additional housing? To determine if the proposal will affect existing housing or create a demand for additional housing, please answer the following questions: (1) Will the proposal decrease the amount of housing in the Tahoe Region? (2) Will the proposal decrease the amount of housing in the Tahoe Region historically or currently being rented at rates affordable by lower and very-low-income households? (TRPA 12a)				**X**
140. Will the proposal result in the loss of housing for lower-income and very-low-income households? (TRPA 12b)				**X**
NEPA Significance of Effects				
141. Greenway effects on races, cultures, and incomes (environmental justice), economic or long-term revenue effects on local and roadside businesses. (NEPA)				

3.2.13.1 Environmental Setting

Population. The 2010 Census reports the population of South Lake Tahoe as 21,403 (Table 42), down more than 10 percent from 23,609 in 2000 (US Census 2000 and 2010). The population of ZIP code 96150, including the nearby County population expected to use the Greenway, was 33,024 in 2000 (US Census 2000). U.S. Census data 2010 reveals white, Hispanic or Latino and Asian as the largest racial or ethnic groups in South Lake Tahoe. The gaming and tourism industry, as well as the urban density of some sections of the project area, encourages this more diverse population than found in other areas of South Lake Tahoe or El Dorado County.

Household Income and Employment. Median household income near the project area is lower than in El Dorado County as a whole. Census data show median income between $34,511 and $45,021 in the neighborhoods near the project area, compared with a County median income of $70,765. (www.projects.nytimes.com/census/2010, accessed in May, 2011) The project is located in an area with a developed tourist industry due to gaming and entertainment opportunities, developed year-round recreational activities, and undeveloped public land available for recreation. In 2009, the highest percentage of employment in the project area occurs within the arts, entertainment, recreation, accommodation, and food service industries (38%); however, residents are employed by a number of other industries, notably educational, health and social services (14%) particularly with the presence of

the community college and hospital, and the retail trade (10%). Other common industries in the area include construction, finance/real estate, and professional/administrative/waste management services, each capturing 6% of the employment market (City-data.com, 2009). Employment in South Lake Tahoe suffered during the recession of recent years. The March 2011 unemployment rate for South Lake Tahoe was 17.7%, considerably worse than the El Dorado County rate (13.1%). (www.labormarketinfo.edd.ca.gov, accessed in May 2011)

Housing. More than 90 percent of housing units near the project area were built before 1990. In the City a substantial portion of housing units are single-family units (65.12 percent in 2000). The 2010 Census reports the total number of housing units in South Lake Tahoe increased in the previous 10 years, rising from 14,005 to 15,087, although the occupancy rate declined from 67.2% to 59.1% (US Census 2000 and 2010). Data indicate a large presence of seasonal or recreational use units. City-data.com (accessed May 2011) identifies South Lake Tahoe median gross rent at $914 in 2009. In 2009, the estimated median house or condo value in South Lake Tahoe was $333,874, representing a drop in value similar to that seen throughout El Dorado County and California since peak prices in 2007.

Neighborhood Characteristics. Neighborhood characteristics near the majority of the project area consist of residential uses, primarily single-family homes. Multi-family residential units are also located in the area, as well as a mobile home park. Other neighborhood uses include parks and schools, commercial areas, hotels, and the high-density casino area.

Federal, TRPA and City Regulations. No regulations directly addressing population exist in the area. TRPA Regional Plan Goals and policies state, "Population growth in the Region is to be guided by the limitations on land use and other environmental threshold carrying capacities set forth in the Plan." TRPA completed an Economic Threshold Evaluation Report in 2001 (Chapter 11, Economics), but did not define specific controls on population levels.

TRPA Code and threshold restrictions limit housing growth and redevelopment of existing housing. TRPA limits new housing construction using an allocation system defined in TRPA Code Chapter 33 – Allocation of Development. Transfer of existing development rights can also occur according to TRPA Code Chapter 34 – Transfer of Development.

Table 42

2010 Census Data

Census Tract	% White	% African American	% American Indian	% Asian/ Pacific Islander	% Hispanic or Latino	% Other or Multi-Racial	Total
El Dorado County	79.9	.7	.9	3.5	12.1	2.9	181,058
South Lake Tahoe	65.7	.6	.6	5.8	25.5	1.8	21,403

Source: U.S. Census Bureau, 2010 Census (Hispanic or Latino and Race

Environmental Justice. Reviewing the location of the Greenway in relationship to non-federal land, there is no evidence to suggest that any minority or low income neighborhood would be affected disproportionately. Conversely, there is no evidence that any individual, group, or portion of the community would benefit unequally from the Greenway location.

3.2.13.2 Environmental Analysis and Mitigation Measures

134. Would the Greenway induce substantial 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 XIIIa)

Standard of Significance: A significant impact results from direct and indirect population growth in excess of the growth anticipated in the TRPA Regional Plan, as disclosed in the Land Use Element and PASs.

The project installs a shared-use trail linking existing neighborhoods to commercial centers and neighborhood facilities but proposes no new homes or businesses. A temporary increase in population due to construction activities could occur; however, considering the existing underemployed construction labor pool in the area, an increase, if present, will be minor and not permanent. With construction down in the existing economy, a sufficient local construction labor pool exists.

The addition of the Greenway to the community could increase the desirability of the adjacent neighborhoods because the shared-use trail offers an alternative transportation link to various sites within the community. However, the project provides for no long-term employment, educational opportunities, or other population-generating features known to increase local populations.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

135. Would the Greenway displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? (CEQA XIIIb)

Standard of Significance: Displacement of substantial numbers of existing housing that necessitates construction of replacement housing elsewhere creates a significant impact.

The Greenway does not displace housing or necessitate the construction of replacement housing elsewhere and thus creates no impact.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

136. Would the Greenway displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? (CEQA XIIIc)

Standard of Significance: Displacement of substantial numbers of people that necessitates construction of replacement housing elsewhere creates a significant impact.

The Greenway does not displace people and thus creates no impact.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

137. Will the Greenway alter the location, distribution, density, or growth rate of the human population planned for the Region? (TRPA 11a)

No. Standard of Significance: Alteration to land use patterns not envisioned by the Regional Plan or City General Plan constitutes a significant impact to human population planned for the Region.

The project creates no new housing units or permanent employment opportunities. Because the project improves non-motorized access between existing neighborhoods and community facilities, the desirability of residential neighborhoods benefitted by the trail has the potential to increase. No overall change in housing density or availability will occur, however, because housing is regulated and limited by TRPA. With no residential displacement, permanent employment opportunities or new housing developments, the project results in no alteration of the location, distribution, density, or growth rate of the human population planned for the Region beyond that envisioned by the Regional Plan.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

138. Will the Greenway include or result in the temporary or permanent displacement of residents? (TRPA 11b)

No. Standard of Significance: Significant temporary or permanent displacement of residents results in a significant impact.

The Greenway does not require the temporary or permanent displacement of residents and thus creates no impact.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

139. Will the Greenway affect existing housing, or create a demand for additional housing?

(1) Will the proposal decrease the amount of housing in the Tahoe Region? (2) Will the proposal decrease the amount of housing in the Tahoe Region historically or currently being rented at rates affordable by lower and very-low-income households? (TRPA 12a)

No. Standard of Significance: See the analyses for Question 134, which addresses CEQA checklist item XIIIa and concludes the level of impact to housing demand is less than significant and that no existing housing is removed by the project.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

140. Will the Greenway result in the loss of housing for lower-income and very-low-income households? (TRPA 12b)

No. Standard of Significance: See the analyses for Question 134, which addresses CEQA checklist item XIIIa and concludes the level of impact to housing availability, affordable, low-income or otherwise, is less than significant and that no existing housing is removed by the project.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

141. Greenway effects to environmental justice and economic impacts or long-term revenue. (NEPA)

Executive Order 12898 requires that federal actions consider potentially disproportionate effects on minority and low-income communities, especially if adverse effects to environmental or human health conditions are identified. This analysis addresses the effects of the Greenway on the quality of the human environment. The effects of the project are not determined to be highly controversial.

No Project. Under the no project alternative, the Conservancy constructs and operates no shared-use trail and no change to the project area occurs. Portions of the project area, including locations on National Forest Lands, would continue to be used as informal trails accessible to minority and low-income populations. Indirect and direct effects from use of informal trails would continue. This alternative would result in no contribution to potential cumulative effects related to environmental justice or long-term revenues for National Forest Lands.

Proposed Project. The Greenway project completes a 3.8-mile trail connection in South Lake Tahoe, including 1,395 linear feet on LTMBU managed urban lots. Along its length, it passes through residential neighborhoods containing a diversity of income and ethnic groups. Reviewing the location of the Greenway in relationship to non-federal land, there is no evidence to suggest that any minority or low income neighborhood would be affected disproportionately. Conversely, there is no evidence that any individual, group, or portion of the community would benefit unequally from the Greenway location.

Adjacent landowners are often concerned that trails could affect property values and safety. A number of studies in which trails are located near residences indicate that trails result in beneficial impacts to the economy and do not result in safety or property value impacts. A 1995 Study in Denver, Colorado found that 72 percent residents living adjacent to or near a trail felt that the trail would either increase the price of their home or have no effect and 93 percent felt the trail would make their homes easier to sell. In addition, 100 percent of the real estate agents working in the neighborhoods with trails identified the trail as an amenity and 82 percent used the trail as a selling point. Officers assigned to patrol the trail and adjacent residents did not identify the trail as a safety concern (www.americantrails.org 2000).

A 1992 study of the Brush Creek Trail in Santa Rosa, CA found that 77 percent of residents living near the trail thought the trail increased or had no effect on the quality of the neighborhood and 19 percent of real estate agents found that homes next to the public trail sold for slightly more, with an additional 48 percent stating the trail had no affect on home prices. Crime related to the trail was minor and consisted of litter, unleashed pets, and illegal motorized vehicles (www.americantrails.org 2000).

A real estate website for Folsom Lake near Sacramento, California features the proximity of homes to area bike trails in its listings, showing that trails are a desirable feature to potential homebuyers (folsomlakehomes.com 2009). A 2006 study of home sales near two trails in Massachusetts found that

homes near the trail sold at 99.3 percent of the list price as compared to 98.1 percent of the list price for other homes sold in the town. In addition, homes near the two Massachusetts trails sold in 29.3 days on average as compared to an average of 50.4 days for other homes in the town (Della Penna 2006).

An August 2007 report compiled by the Los Angeles County Metropolitan Transportation Authority found that the presence of slower traveling bicycles provide an "eyes on the street" presence in neighborhoods. In addition, on trails where public motor vehicle access is prohibited, crime rates were below neighborhood averages (L.A. County Metropolitan Transportation Authority 2007).

The City of Davis, California is known for its extensive neighborhood and community bike trails and an analysis of crime within the city during the past year showed no correlation to crime and trail location. Crimes such as assault, arson, petty and grand theft, residential burglary, robbery, vandalism, and drugs were more likely to occur within the downtown or central urban area of the city or near large clusters of apartments. Although some crime occurred near paths and greenbelt areas, the probability of crimes occurring in these areas was less than the central urban areas and no greater than other neighborhood areas within the city (City of Davis Crime Map 2009). Based on these findings, an increase in crime is not anticipated as a result of the Greenway. Appendix L provides additional support information.

Indirect and Direct Effects. Although the Greenway creates increase non-motorized vehicle access to commercial centers in the South Lake Tahoe area, the likelihood of the project creating significant change in commercial and retail patronage is low because the project causes no significant population increase. This project serves an existing community able to access commercial centers and public facilities using area roadways. Addition of a non-motorized access route benefits roadside businesses and commercial centers because populations can frequent businesses and facilities without the need for motorized transportation or parking. The rate of patronage, however, is not anticipated to change measurably from existing levels.

Project construction occurs primarily off-road, but primary roadways and the northern portion of the trail are near commercial areas. Construction at intersections or road crossings could delay traffic, but compliance measure CM-12, Construction Coordination, assures continued access to local businesses. Short portions of the Greenway are within public roadway ROWs in front of roadside businesses or their parking lots. Construction could affect the following businesses (by segment):

- 2-50: STPUD Offices;
- 2-70: Senior housing and SLTFD Fire Station #1; and
- 2-80: Hotels.

As discussed in Section 2.6.5.12, construction coordination efforts and traffic control measures will maintain safe access to businesses and public services during the construction period. Coordination with affected businesses and services, public notification, and the implementation of construction control measures maintains access and avoids substantial disruption. Construction noise could be audible to hotel patrons; however, construction hours will be limited and will not affect noise levels at night.

Cumulative Effects. Section 3.2.18, Mandatory Findings of Significant, specifically Question 187, addresses cumulative effects of the Greenway and related projects, as listed in Table 60.

Environmental Analysis: *No Impacts Anticipated*.

Required Mitigation: **None.**

3.2.14 Public Services

This section presents the analyses for potential impacts to public services. Table 43 identifies the applicable impacts and anticipated level of impact.

Table 43

Public Services

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
142. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?			X	
Police protection?			X	
Schools?			X	
Parks?			X	
Other public facilities? (CEQA XIVa)			X	
TRPA Initial Environmental Checklist Item	**Yes**	**No, With Mitigation**	**Data Insufficient**	**No**
Will the proposal have an unplanned effect upon, or result in a need for new or altered governmental services in any of the following areas?				
143. Fire protection? (TRPA 14a)				X

TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
144. Police protection? (TRPA 14b)				**X**
145. Schools? (TRPA 14c)				**X**
146. Parks or other recreational facilities? (TRPA 14d)				**X**
147. Maintenance of public facilities, including roads? (TRPA 14e)		**X**		
148. Other governmental services? (TRPA 14f)				**X**
NEPA Significance of Effects				
149. Greenway effects to public services. (NEPA)				

3.2.14.1 Environmental Setting

Law Enforcement. Within the City limits the South Lake Tahoe Police Department (SLTPD) provides law enforcement, code enforcement, police, paramedic, and fire dispatch and traffic patrol. This area stretches roughly from the South Lake Tahoe Airport to the California/Nevada border to just south of the Sierra Tract and north to include a portion of the lake waters. The SLTPD is located at 1352 Johnson Blvd. In 2010, the SLTPD had a staff allocation of 44 sworn officers and 22 civilians, and currently operates with 38 sworn officers and 21 civilian staff. Services are provided 24 hours daily and 365 days a year (Cpt. Mark Hewlett, SLTPD, January 29, 2010).

On LTBMU parcels, the Forest Service Law Enforcement and Investigation Department enforce federal laws protecting the land, resources, and visitors. The LTBMU office is located at 35 College Drive in South Lake Tahoe. Uniformed Law Enforcement Officers (LEOs) enforce federal laws governing National Forest Lands and resources. While they patrol for safety and provide emergency medical aid, they also investigate timber theft and wildfires, protect archaeological and biological resources, and enforce federal laws and regulations. The Law Enforcement and Investigation Department works in cooperation with local law enforcement agencies.

Fire Protection. Within the City limits the South Lake Tahoe Fire Department (SLTFD) provides fire protection and emergency service. Four fire stations are located within the area. Fire Station #1 is located at 1252 Ski Run Blvd, while Stations #2 and #3 are located at 2951 and 2101 Lake Tahoe Blvd, respectively. Stations #1 and #3 each have an engine staffed by one captain and one engineer and a medic staffed by one firefighter paramedic and one firefighter. Station #2 has an engine staffed by one captain and one engineer and a truck staffed by engine crew for extrication or commercial fires. Fire Station #4 is located at 1901 Airport Rd and staffed by three personnel and Airport Crash Rescue engines and medic vehicles. The administrative offices are located at Station #3 (www.sltfd.org, 11/19/08). LTBMU also provides fire control services; wildland fire fighting crews dispatch from the LTBMU at 35 College Drive, South Lake Tahoe.

As described in Section 3.2.8 related to wild fires, fire protection services in the project area and vicinity are provided primarily by the SLTFD. Depending on the initial location of the fire and mutual aid agreements, wildfire suppression in the project area or vicinity is also provided by the Lake Valley Fire Protection District, Calfire, or the LTBMU. A MOU between these agencies provides mutual aid and assistance to suppress wildfires and protect structures. Initial wildfire suppression responsibilities are divided into three categories based on land ownership or MOUs: Local Responsibility Areas (LRAs) include City and County areas, State Responsibility Areas (SRAs) include State lands, and Federal Responsibility Areas (FRAs) include LTBMU lands.

The LTBMU implements programs on Vegetation Management, Urban Lot Management, and Fire and Fuels Management on LTBMU lands. A goal of these programs is to reduce wildfire risks by reducing fuels and creating defensible fuel profile zones with a combination of hand and mechanical treatments and prescribed burning (LTBMU 2006a, 2006b, 2006c). The Conservancy also implements forest health projects on their lands with the goals of reducing spread of wildfire and protecting natural site values.

Schools. The project lies within the Lake Tahoe Unified School District, which provides four elementary schools, one middle school, and three high schools (together on a single campus). Each school in the District is located within four miles of the proposed alignments. The Greenway runs through the elementary school boundary area with the majority of the alignment located within the boundary of Sierra House Elementary School. School buses regularly run through the area neighborhoods between the hours of 6:45 AM and 9:30 AM and 2:00 PM and 4:30 PM Monday through Friday during the school year (Lake Tahoe Unified School District 2011). Enrollment at each of the schools for the 2010-2011 school year totaled 3,878 students (LTUSD 2011). Enrollment in the District has been decreasing over the past 12 years, which has lead to a number of school closures.

Lake Tahoe Community College. LTCC is located on 164 acres adjacent to the project alignment between Martin Ave and Al Tahoe Blvd. The college serves approximately 4,000 students quarterly and has approximately 40 full-time and 160 adjunct faculty members (LTCC 2009). Certificates and associates degrees are offered at the college in over 25 areas of study including the arts, business, computers, liberal arts, and fire science, among others. No student housing exists on the campus.

Stateline/Ski Run and Bijou/Al Tahoe Community Plan Goals, Policies, and Action Programs. The Stateline/Ski Run CP and Bijou/Al Tahoe CP establish goals and policies related to public services within the CP jurisdictions. The Stateline/Ski Run Public Services Element states that public services and facilities should be upgraded to support existing and new development and to ensure attainment of environmental targets. The Bijou/Al Tahoe Public Services Element requires that public service projects implement the City Wide Design/Sign/Parking/Lighting Standards".

City of South Lake Tahoe. The City General Plan (1999) includes a conservation element with goals and objectives requiring the continued provision of adequate water supplies and water treatment (Goal 5, Objective 1 of the Conservation Element). The safety element establishes goals and objectives directed at ensuring adequacy of fire protection, emergency response routes, wildland fire protection, and law enforcement (Goals 2, 3 and 4) within City limits.

LTBMU Forest Plan. The LTBMU Forest Plan provides goals to address public services or utilities within the management area as follows:

- Fire Protection Goal: Provide a level of fire protection to assure that property and resource losses are not excessive.

- Law Enforcement Goal: Provide information on laws and regulations to the public; establish enforcement practices to prevent violation of Federal statutes; protect the environment, life and property; and recover compensation due the government.

3.2.14.2 Environmental Analysis and Mitigation Measures

142. Would the Greenway result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: Fire protection? Police protection? Schools? Parks? Other public facilities? (CEQA XIVa)

Standard of Significance: A significant impact results to governmental and public services if the project causes an increase demand for personnel, equipment or infrastructure beyond that planned by public service entities, the TRPA Regional Plan or City General Plan.

Fire and Police Protection Services. Demand for fire protection could increase during Greenway construction. Construction equipment operation potentially increases fire risk, particularly in areas of brush or other ground-level fuel. The project includes a compliance measure for development and implementation of a Fire Suppression and Management Provisions, as presented in Section 2.6.5.15, to avoid potential of construction-related fire events. The provisions include fire precaution, pre-suppression and suppression measures and includes requirements for on-site provision of equipment devices such as spark arrestors and fire extinguishers. The Conservancy will consult with SLTFD to ensure adequacy and provisions for appropriate contact information.

Trail construction along roadways requires lane closures along some neighborhood roads and Pioneer Trail but requires no full road closures, allowing for continued emergency vehicle and general circulation during construction. Lane closures, particularly on Pioneer Trail could cause short-term traffic delays that could affect emergency response times. The project addresses this potential impact through compliance measures CM-12 and CM-13, detailed in Section 2.6.5, to coordinate construction activities and implementation of traffic control measures with emergency service personnel. This coordination will direct provisions of the Traffic Control Plan required for TRPA and City permits to maintain adequate circulation and access.

Demand for fire and police protection will remain at existing levels during trail operation. Appendix L provides research results that confirm crime rates do not rise after construction of trails; indeed some criminal activity such as vandalism and unpermitted camping/campfires will reduce with increased presence of general trail users. The Greenway design width (i.e., 10 to 12 feet) allows emergency vehicles to pass and its design load allows vehicles up to 15,000 pounds on the asphalt and boardwalk sections. This limit provides emergency access for ambulance, police vehicle, and first responder fire vehicles to respond to emergencies on the trail. The OMMS (Appendix E) specifically defines emergency vehicle access for fire and law enforcement response at trail crossings with major roadways. The project improves access to Bijou Meadow, creating emergency access to the eastern and interior portions of Bijou Community Park. The ability to use the Greenway for access allows these service providers to respond to incidents within response time goals.

The SLTPD indicate the project will not impact staffing (Captain Mark Hewlett, personal communication, January 29, 2010).

Improved and unimproved trails exist in the project area and are used by local residents as well as transients. The project retains some of these trails, applies BMPs and improves linkage to existing trail use and traffic, improving user visibility and decreasing the desirability of conducting unlawful acts. The Conservancy will provide fire and law enforcement access control of the bollard system. The Greenway warrants neither new fire protection facilities nor alterations to existing fire protection facilities.

Permanent circulation changes occur along Aloha, which becomes a one-way roadway with the Greenway on one side and the one-way travelway to the north. Emergency vehicles will be able to travel in either direction on the one-way road during an emergency situation. Aloha is a short (i.e., 1,425 feet) edge street in a well-developed grid neighborhood. As Conservancy ownership of one side of the street limits development potential, the road is not heavily traveled. In terms of distance or traffic volume, emergency vehicles will not experience delays or significant access limitations while responding to an emergency situation. Segment 2-70 crosses in front of SLTFD Station #1 at Ski Run Blvd and Pioneer Trail. Although the Greenway has the potential to increase bicycle and pedestrian traffic in this area, increases are not expected to cause delays for emergency vehicles entering or exiting the station. Communication of construction plans and the Greenway design element at this crossing with Station #1 minimizes the risk of interference.

Schools. The Greenway makes a connection to existing trails at the LTCC, but does not include new construction along LTCC access roadways. Through implementation of a key element in the South Lake Tahoe bicycle network, improved connectivity will exist for students getting to school. The Greenway extends a protected route closer to the South Tahoe Middle School, allowing a future connection to complete the link.

Recreation Areas. The Greenway makes connections to Van Sickle Bi-State Park, Bijou Community Park, the South Lake Tahoe Community Play Fields, and via the existing Class 1 trail along Ski Run Blvd, to beach areas along US Hwy 50 along Al Tahoe Blvd and across Bijou Meadow. This connection improves non-auto access for a wide diversity of users, reducing the demand for parking to these facilities. Coordination with park managers about construction scheduling will minimize disruption of park use during construction.

Other Public Services. Greenway maintenance requirements increase the need for government services. The OMMS (Appendix E) identifies increased maintenance related to trail surfaces, other facilities (e.g. fences, interpretive and directional signage), restoration planting and other revegetation. This includes maintenance activities such as sweeping the trail and repairing snow damage as well as periodic activities such as asphalt sealing. The Conservancy, as lead agency, maintains the responsibility for these activities.

Other shared-use trail management needs include user controls and law enforcement. User controls to keep trail users on the protective surface and away from areas of restoration include landscaping, signage, and fencing. The Conservancy will monitor trail use and employ adaptive management strategies as necessary to meet restoration requirements. As presented in other sections, law enforcement needs related to trail users will not substantially increase; crime rates on trails tend to mirror that in the surrounding community while increased users displace illegal activity that requires isolation to flourish.

The Greenway relies on infiltration for stormwater treatment needs for most of the alignment, reducing government maintenance services for these facilities. In the Pioneer Trail ROW, site constraints may require concentrating flow and discharge to retention basins. Little to no effect on existing City stormwater infrastructure is expected. Final engineering plans for project drainage in this area will confirm this analysis.

Current operation plans do not include snow removal from the trail, although design of trail surfaces and related facilities allows this to occur should future conditions warrant it. If snow removal does occur on the trail, clearing on a 10 foot wide path requires different equipment than roadway plows, but will not drive the need for new government facilities for storage or maintenance.

In summary, the Greenway creates no increase in public services that could drive a need for new facilities; thus the level of impact is less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

143. Will the Greenway have an unplanned effect upon, or result in a need for new or altered governmental services: fire protection? (TRPA 14a)

No. Standard of Significance: See analysis for Question 142, which addresses CEQA checklist item XIVa and concludes that the Greenway has a less than significant impact to fire protection services. The project does not reduce access, response times or other performance objectives for fire protection.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

144. Will the Greenway have an unplanned effect upon, or result in a need for new or altered governmental services: police protection? (TRPA 14b)

No. Standard of Significance: See analysis for Question 142, which addresses CEQA checklist item XIVa and concludes that the Greenway has a less than significant impact to police protection services. The project does not reduce access, response times or other performance objectives for police protection.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

145. Will the Greenway have an unplanned effect upon, or result in a need for new or altered governmental services: schools? (TRPA 14c)

No. Standard of Significance: See analysis for Question 142, which addresses CEQA checklist item XIVa and concludes that the Greenway has a less than significant impact to schools. The project maintains acceptable service ratios and other performance objectives for schools.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

146. Will the Greenway have an unplanned effect upon, or result in a need for new or altered governmental services: parks or other recreational facilities? (TRPA 14d)

No. Standard of Significance: See analysis for Question 142, which addresses CEQA checklist item XIVa and concludes that the Greenway has a less than significant impact to parks or other recreational facilities. The project improves access to Bijou Community Park, Van Sickle Bi-State Park, South Lake Tahoe Community Play Fields and other recreational facilities.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

147. Will the Greenway have an unplanned effect upon, or result in a need for new or altered governmental services in maintenance of public facilities, including roads? (TRPA 14e)

No, with mitigation. Standard of Significance: If the project creates new or altered unplanned effects to governmental services in maintenance of roads, a significant impact results.

The Greenway will affect City snow removal services in some locations. In areas where the trail runs close to roadways, the Greenway will serve as roadway snow storage. Snow removal practices are hard on roadside development, as is evident every spring during snowmelt. Features such as asphalt connections, fences, railings, signs, and pavement markings frequently sustain damage requiring repair services. These needs are generally addressed in the OMMS (Appendix E). For the project, trail sections along Martin Ave, Meadowcrest Dr, Aloha, and Pioneer Trail will experience the greatest potential for damage. Of these areas, project features along Aloha largely avoid this potential because they include no fencing or railing. In both the other locations, railings near the roadway will experience snow loads. Along Martin Ave and Meadowcrest Dr, the railing design for the bridge and boardwalk use tubular steel posts and steel rails. This design type, installed adjacent to US Hwy 50 in Meyers, holds up well to snow removal activity. The safety rail design along 750 linear feet Pioneer Trail south of Ski Run Blvd calls for cable railing to reduce its scenic effects. Public spaces in the Lake Tahoe Region commonly use cable rail, yet not directly adjacent to roadways. A more durable design is necessary to reduce the need for excessive maintenance along this section.

Environmental Analysis*: Less than Significant Impact after Mitigation.*

Required Mitigation:

PS-1. Improve Safety Railing along Pioneer Trail

The safety railing along Pioneer Trail shall be redesigned using a more durable design capable of withstanding snow storage requirements with fewer maintenance needs.

148. Will the Greenway have an unplanned effect upon, or result in a need for new or altered governmental services in other governmental services? (TRPA 14f)

No. Standard of Significance: See analysis for Question 142, which addresses CEQA checklist item XIVa and concludes that the Greenway has a less than significant impact to governmental services in treatment of stormwater. The project contributes little to no stormwater runoff to existing City stormwater infrastructure.

Environmental Analysis*: Less than Significant Impact.*

Required Mitigation: **None.**

149. Greenway effects to public services. (NEPA)

The LTBMU Forest Plan, as amended by the SNFPA, is focused on environmental resources and does not specifically address or provide a means to evaluate an action's effect on public services and utilities.

No Project. The no project alternative constructs no shared-use trail and creates no direct effects to the project area. Under the no project alternative, the Conservancy constructs and operates no shared-use trail and no change to the project area or public services occurs. Portions of the project area, including locations on National Forest Lands, would continue to be used as informal trails. Indirect and direct effects from continued use of informal trails would continue. This alternative would result in no contribution to potential cumulative effects related to public services or utilities on National Forest Lands.

Proposed Project. The Greenway would create no significant increased demand for water supply, treatment, distribution and storage, wastewater services, law enforcement services, fire protection and emergency response services. The project would slightly increase demand for electrical services to maintain functioning trail crossing signage.

Indirect and Direct Effects. Question 142 addresses CEQA checklist item XIVa and concludes that project direct and indirect effects to public services are less than significant.

Cumulative Effects. Section 3.2.18, Mandatory Findings of Significant, specifically Question 187, addresses cumulative effects of the Greenway and related projects, as listed in Table 60.

Environmental Analysis*: No Impact Anticipated.*

Required Mitigation: **None.**

3.2.15 Recreation

This section presents the analyses for potential impacts to recreation. Table 44 identifies the applicable impacts and anticipated level of impact.

Table 44

Recreation

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
150. 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 XVa)			X	
151. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? (CEQA XVa)			X	
TRPA Initial Environmental Checklist Item	**Yes**	**No, With Mitigation**	**Data Insufficient**	**No**
152. Create additional demand for recreation facilities? (TRPA 19a)				X
153. Create additional recreation capacity? TRPA 19b)				X
154. Have the potential to create conflicts between recreation uses, either existing or proposed? (TRPA 19c)				X
155. Result in a decrease or loss of public access to any lake, waterway, or public lands? (TRPA 19d)				X
NEPA Significance of Effects				
156. Greenway effects to recreation. (NEPA)				

3.2.15.1 Environmental Settings

The project area contains a variety of existing public and private recreational resources, including biking trails and routes, beaches, youth clubs, single-track trails, parks, casinos, ice rink, recreation center, senior center, and a golf course, among others. The Greenway specifically connects to the following recreation sites:

- South Lake Tahoe Community Play Fields (direct connection to facilities);
- Bijou Community Park and Municipal Golf Course (direct connections via neighborhood connector and Class 1 trail on Al Tahoe Blvd);
- El Dorado Beach, the Senior Center, Campground by the Lake, and the City of South Lake Tahoe Recreation Complex (connection via Class 1 trail on Al Tahoe Blvd with a short gap to paved trail along US Hwy 50);
- Regan Beach (via a Class II trail from El Dorado Beach);
- Boys and Girls Club of Lake Tahoe (connection along Class 1 trail on Al Tahoe Blvd with a short gap to the paved trail along US Hwy 50);
- Van Sickle Bi-state Park (direct connection into the park);
- Heavenly Ski Resort (connection to California Base Lodge on Ski Run Blvd that exceeds grade requirement for improved connections); and
- The casinos at Stateline, NV (via connection through Van Sickle Bi-State Park and Class II along Lake Parkway).

The project connects directly with Bijou Community Park, which is located on 35 acres and provides active year-round traditional urban recreational amenities. Amenities include picnic areas, a disc golf course, skateboard park, two sand volleyball courts, a basketball court, a dog park, historic railroad exhibit, a fitness course, open meadow, restrooms, a concessions facility and parking. According to Gary Moore, former Director of Parks and Recreation for the City, park layout and components ensure adequate capacity to avoid overcrowding (Gary Moore, former City of South Lake Tahoe, personal communication, 2009). Current plans for Bijou Community Park include expansion of picnic areas.

The Greenway connects to and utilizes an existing built section of bikeway at the South Lake Tahoe Community Play Fields. The Play Fields include two large multi-purpose grass areas and one small warm-up area. Other amenities include night lighting on one field, restrooms, a concession building, and paved parking.

One end of the project connects to Van Sickle Bi-State Park. Van Sickle Bi-State Park opens in summer 2011, offering day-use facilities, hiking, picnicking, mountain biking, and trailhead facilities for horseback riding. A trail connection to the Tahoe Rim Trail exists.

An adequate bicycle or pedestrian transportation system is one that allows users with varying abilities to safely and efficiently travel from origin to destination. A region-wide bikeway system should enable cyclists to bicycle from community to community and destination to destination throughout the region. A number of bike trails currently exist in the project area, creating a portion of a region-wide system. Trails connecting to the Greenway are:

- Class 2 trail at Sierra Blvd;
- Class 1 trail at the LTCC;
- Class 1 trail at Al Tahoe Blvd;
- Class 2 trail on Pioneer Trail by Herbert and at Ski Run Blvd;
- Class 1 trail at Ski Run Blvd; and

- Class 3 trail at Blackwood.

In addition, existing mountain bike routes (trails or roads) include the Spray Rd. located between the project area and Pioneer Trail and mountain bike trails located south of Barbara Ave and north of the Golden Bear subdivision, including the famed Powerline Trail and its many connections to the Pioneer Trail vicinity (at Al Tahoe Blvd, Ski Run Blvd and Cold Creek).

3.2.15.2 Environmental Analysis and Mitigation Measures

150. Would the Greenway 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 XVa)

Standard of Significance: A significant impact results if the Greenway improves access to recreation facilities or public lands used for recreation by numbers sufficient to create new disturbance.

Recreation facilities within and adjacent to the project area include: Bijou Community Park, South Lake Tahoe Community Play Fields, and Van Sickle Bi-Sate Park. The Greenway connects to other trail systems that access the lake and other area identified recreation facilities and passes through undeveloped land (e.g. Bijou Meadow) that currently supports informal trail use. The potential for indirect effects to these facilities is remote because roads and informal trails already access the areas. Providing an access mode that does not require a parking space could reduce impacts on these facilities at peak times. Allowing an alternative to the private auto reduces the pressure on existing parking supply and reduces the potential for unpermitted parking in undeveloped areas. Additionally, project features and provisions in the OMMS (Appendix E) work to keep users on the proposed trail and limit indirect impacts on undeveloped land.

Environmental Analysis: Less than Significant Impact.

Required Mitigation: **None.**

151. Would the Greenway include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? (CEQA XVb)

Standard of Significance: A significant impact results if the project requires the construction or expansion of recreational facilities that cause an adverse physical effect on the environment. The TRPA Regional Plan Recreation Element, PASs and Thresholds determine this level of impact significance.

Bike paths are an integral part of the transportation system, and at Lake Tahoe new projects are reviewed during the TRPA permitting process as transportation facilities. The 1991 U.S. Intermodal Surface Transportation Efficiency Act (ISTEA) required an intermodal approach to transportation planning by requiring that bicycle and pedestrian needs be considered along with other forms of private and public transportation and addressing the interconnectivity of various transportation modes and facilities.

Other sections of this analysis consider potential effects on the environment and conclude construction and operation of the Greenway avoids significant impacts. Trails located in environmentally sensitive areas will be restored, and essentially relocated with the development of the Greenway, which supports Goal 1, Policy 4 of the TRPA Recreation Element. Goal 2, Policy 2 of the TRPA Recreation Element,

which includes the development of bike trails to promote alternative transportation is also supported by the Greenway.

According to Gary Moore, former Director of Parks and Recreation Department for the City, the Department recognizes no negative effects associated with the Greenway. Recreation facilities connected with the Greenway have adequate capacity currently and capacity issues will not result from development of the trail (Gary Moore, personal communications, 2009). The Greenway crosses through a portion of the existing disc golf area at Bijou Community Park closest to Pioneer Village neighborhood, requiring relocation of approximately 3 disc golf holes within the existing 27-hole disc golf area of the park; however, there are current plans to improve this area of the disc golf course, separate from, but in coordination and cooperation with the Greenway, including the relocation of impacted disc golf holes. Although the project affects these disc golf holes, relocation occurs within an area already approved for disc golf use. Relocation of course markers occurs, but requires no significant changes to the environment.

Environmental Analysis: Less than Significant Impact.

Required Mitigation: **None.**

152. Will the Greenway create additional demand for recreation facilities? (TRPA 19a)

No. Standard of Significance: The Greenway does not create additional recreation demand; it meets existing recreation and transportation needs.

Separated bike paths like the Greenway provide long, continuous routes for commuting or recreation trips. When they access destinations like parks and playing fields, they provide options to use of the automobile that influence lifestyle choices for families and individuals. Trails create inexpensive and safe opportunities for outdoor exercise and healthy lifestyles, including the opportunity for people to integrate exercise into their daily activity. Trails also create opportunities for personal interaction, neighborhood socialization, and community unity that can't occur when people are utilizing their cars.

Environmental Analysis: Less than Significant Impact.

Required Mitigation: **None.**

153. Will the Greenway create additional recreation capacity? (TRPA 19b)

No. Standard of Significance: Recreation capacity at Lake Tahoe is measured by TRPA with the allocation of Persons at One Time (PAOTs).

PAOTs are not assigned to new transportation facilities, such as the Greenway.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

154. Will the Greenway have the potential to create conflicts between recreation uses, either existing or proposed? (TRPA 19c)

No. Standard of Significance: Elimination of or decreased viability of an existing or proposed recreation use caused by the construction and operation of the Greenway constitutes a significant impact.

Recreational conflicts intensify when an increasingly diverse mix of social, cultural, and political interest groups laid claim to what they perceive to be their fair share of a public resource. This can be due to perceived dissimilarity of attitudes and values associated to activities of different user groups. Four major factors have the potential to produce conflict when there is social contact between recreational users: activity style, resource specificity, mode of experience, and lifestyle tolerance. The Greenway design element promotes shared use by providing adequate width and acceptable grades capable of allowing different users simultaneous access without conflict. The project promotes "Share the Trail" and "Yield to Wheels" through interpretive and directional signage as described in Section 2.6.2.8, Signage.

There is potential for conflict identified where the trail meets Bijou Community Park, particularly the disc golf course as described above for Question 151. According to Gary Moore, former Director of Parks and Recreation for the City, plans are in process to relocate the impacted disc golf holes within the disc golf area of the park (Gary Moore, former City, personal communications, 2009). Mr. Moore states that the Greenway will be an asset to the park, despite the restructuring of the disc golf course.

A number of mountain bike trails exist through the project area. Trails located within SEZs or other sensitive habitat areas have been identified for removal and restoration, as illustrated on the plan sheets in Appendix C. The project retains trails identified through surveys and field studies as important neighborhood connectors and retrofits these trails with BMPs to reduce erosion and other environmental damage. Although the project removes and restores some trails, the continued presence and improvement of trails outside of SEZs and other sensitive habitats allows for continued mountain biking activity. While the project removes some trails for land coverage relocation and SEZ and sensitive habitat protection, the project increases access to other existing trails.

Trail conflicts can occur when users travel at greatly different speeds. AASHTO guidelines recognize this fact by linking trail widths to both the volume and speed of expected user groups. For the Greenway, the environmental sensitivity of the Lake Tahoe Region prompted use of the minimum recommended width (10 feet). As a result, the OMMS (Appendix E) bans motorized users with limited exceptions to meet state and federal laws.

Environmental Analysis: Less than Significant Impact.

Required Mitigation: **None.**

155. Will the Greenway result in a decrease or loss of public access to any lake, waterway, or public lands? (TRPA 19d)

No. Standard of Significance: A decrease or loss of public access to lakes, waterways or public lands as a result of Greenway construction and operation constitutes a significant impact.

Greenway construction and operation leads to an increase of public access to public lands and to the lake through non-motorized means, thereby supporting TRPA Recreation Threshold R-1. The project connects with existing bike trails and pathways with connections to established public access routes to the lake and beach facilities.

The project removes trails created by the public or area landowners that impact sensitive habitat areas or are so numerous as to scar the landscape and degrade the natural quality of the area. Although the project eliminates these informal, environmentally damaging trails, the Greenway does not decrease access to public resources since the project creates access and consolidates a net of informal or poorly located trails. Narrow informal trails that provide important neighborhood access and trails that can be maintained with limited environmental impacts are retained to provide access to public lands or waterways. As discussed in the NCR (Appendix L), improved access to many miles of existing hiking,

mountain biking and equestrian trails in South Lake Tahoe including the Tahoe Rim Trail, Golden Bear Trail, Power Line Loop, Corral Trail Loop, Armstrong Pass and many others as shown in Table 45.

Table 45

Access to Area Trails from the Greenway

Area Trails	Trail Length (mi)	Distance from Trail to Greenway (mi)	Approximate Trailhead Location
Armstrong Pass to Saxon Creek	17.7	6.5	Fountain Place Rd
Van Sickle Bi-State Park Van Sickle Connector to Tahoe Rim Trail	150	Connects approximately 1 mile	Van Sickle Bi-State Park
Corral Loop Trail	5.9	6.5	Fountain Place Rd at Pioneer Trail
Cold Creek Trail Loop	3.8	3	High Meadow Trail
Power Line Loop	15.0	0.25	Saddle Rd
LTCC/South Lake Tahoe Community Play Fields Bike Path	--	Connects	Al Tahoe Blvd
Golden Bear	2.7	3	Golden Bear Trail
Powerline	7.0	3	Pioneer Trail

Source: Neighborhood Compatibility Review October 2009 (trails.com, tahoemtnmilers.org/ClubRuns/HTML/MainMapIndex.html)

Environmental Analysis: Less than Significant Impact.

Required Mitigation: **None.**

156. Greenway effects to recreation uses (Forest Plan Prescription 12, Practices 1 and 47, and SNFPA Standards and Guidelines 69 and 70). (NEPA)

A conflict with the standards and guidelines for LTBMU Forest Plan Practices 1 and 47 constitutes an adverse effect.

No Project. The no project alternative constructs no shared-use trail and creates no direct effects to the project area. Under the no project alternative, the Conservancy constructs and operates no shared-use trail and no change to the project area occurs. Portions of the project area, including locations on National Forest Lands, would continue to be used as informal trails. Indirect and direct effects from continued use of informal trails would continue. This alternative would result in no contribution to potential cumulative effects related to recreation use on National Forest Lands.

Proposed Project. The Greenway would cross four LTBMU parcels, placing 1,395 linear feet of shared-use trail on National Forest Lands. In most of this length, the Greenway upgrades an existing trail.

Indirect and Direct Effects. Prescription 12 – Urban Lots allows for trail development on a case-by-case basis. In relation to recreation, the Proposed Resolution of Issues and Concerns for Urban Lots Management Area states that opportunities for bicycle trails on urban properties may exist and will be carried out at the project level.

Practice 1 addresses recreation site construction; however, this is primarily in relation to new developed recreation sites and not trails connecting recreation facilities. Since the Greenway provides opportunities for alternative transportation access to area recreational facilities, thereby reducing vehicle trips, the project would support this practice.

Practice 47 addresses trail construction and reconstruction. Trails are to be managed according to the Trails Management Handbook (see Question 118) and must use geotechnical design to minimize impacts. Most of Practice 47 addresses off-highway vehicle trails, which is not applicable to the Greenway. As discussed in Question 118, the Greenway design is compatible with the practices outlined in the Trails Management Handbook. In addition, the Greenway is designed to maintain or enhance the quality of environmentally sensitive areas.

SNFPA Standards and Guidelines 69 prohibits wheeled vehicle travel off of designated trails and routes. The Greenway provides a non-auto transportation route is not designed to encourage off-road bicycle use. Standard and Guideline 70 requires wetland and stream protection during road construction, including minimizing streamflow diversions, interceptions, and other disruptions. Standard and Guideline 70 also discourages road construction in meadows. The Greenway utilizes design features, such as boardwalks and permeable fill, to minimize disturbance to environmentally sensitive areas. Boardwalks are used in areas with abundant meadow grasses with surface flow and to minimize cut and fill requirements. Permeable fill in used in areas where the trail is located adjacent to roadways with heavy snow removal conditions.

Cumulative Effects. Section 3.2.18, Mandatory Findings of Significant, specifically Question 187, addresses cumulative effects of the Greenway and related projects, as listed in Table 60.

Environmental Analysis: *No Impact Anticipated.*

Required Mitigation: **None.**

3.2.16 Transportation and Traffic (CEQA) and Traffic and Circulation (TRPA)

This section presents the analyses for potential impacts to transpiration, traffic and circulation. Table 46 identifies the applicable impacts and anticipated level of impact.

Table 46

Transportation, Traffic and Circulation

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
157. 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 non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? (CEQA XVIa)			X	
158. 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 XVIb)			X	
159. 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 XVIc)				X
160. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (CEQA XVId)		X		

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
161. Result in inadequate emergency access? (CEQA XVIe)			**X**	
162. 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 XVIf)			**X**	
TRPA Initial Environmental Checklist Item	**Yes**	**No, With Mitigation**	**Data Insufficient**	**No**
163. Generation of 100 or more new Daily Vehicle Trip Ends (DVTE)? (TRPA 13a)				**X**
164. Changes to existing parking facilities, or demand for new parking? (TRPA 13b)				**X**
165. Substantial impact upon existing transportation systems, including highway, transit, bicycle or pedestrian facilities? (TRPA 13c)				**X**
166. Alterations to present patterns of circulation or movement of people and/or goods? (TRPA 13d)				**X**
167. Alterations to waterborne, rail or air traffic? (TRPA 13e)				**X**
168. Increase in traffic hazards to motor vehicles, bicyclists, or pedestrians? (TRPA 13f)		**X**		
NEPA Significance of Effects				
169. Prepare a traffic analysis for each new recreation site, which would produce more than 200 trips per day. Prepare a traffic analysis when existing sites that produce substantial traffic are proposed; Design facilities for service by transit operation. Integrate parking facilities with a road system at wilderness and other trailheads, viewpoints, special attractions, and recreation sites. (NEPA)				

3.2.16.1 Environmental Setting

The Environmental Setting section presents the present condition for roadways and intersections, transit and bicycle facilities, and regulations regarding transportation and circulation issues. It also provides the transportation and bike trail use data used in the analysis.

Roadway Setting. The major roadways of the analyses follow:

- Al Tahoe Blvd is a two-lane arterial roadway with a 40 mph speed limit between Pioneer Trail and College Dr, and a four-lane roadway with a 25 mph speed limit between College Dr and US Hwy 50.
- Pioneer Trail is a two-lane arterial roadway in South Lake Tahoe that provides an alternate route to US Hwy 50 between South Lake Tahoe and Meyers. The posted speed limit on Pioneer Trail varies from 30 to 45 mph.
- Ski Run Blvd is a two-lane arterial roadway with left-turn pockets at unsignalized intersections west of Pioneer Trail. The posted speed limit west of Pioneer Trail is 35 mph. East of Pioneer Trail, Ski Run Blvd is a rural, two-lane roadway. Ski Run Blvd provides access to the California Lodge at Heavenly Ski Resort.
- Glenwood Way is a two-lane, residential collector roadway with a 25 mph speed limit.
- Martin Ave is a two-lane, residential collector roadway with a 25 mph speed limit.
- Keller Rd is a two-lane, residential collector roadway with a 25 mph speed limit. Keller Rd also provides access to the California Lodge at Heavenly Ski Resort.
- Becka Dr, Walkup Rd, Herbert Ave, Woodbine Rd, Blackwood Rd, Larch Ave, Shepherds Rd, Rocky Point Rd, and Glen Rd are un-striped, two-lane, local residential roadways.

Existing Traffic Volumes. This analysis uses intersection turning movement counts collected during the summer in 2001, 2007, and 2009 during the Friday PM (4:00 PM – 6:00 PM) peak traffic periods at the intersections listed below:

- US Hwy 50/Pioneer Trail (North): August 24, 2007
- Pioneer Trail/Ski Run Blvd: July 24, 2009
- Glenwood Way/Becka Dr: October 24, 2001 (Note: Count was performed on a Wednesday in fall; however intersection location is in residential development and not expected to greatly fluctuate seasonally or between Wednesday and Friday.)
- Al Tahoe Blvd/College Dr: August 24, 2007

Typically traffic volumes within the Tahoe Basin are evaluated during the summer Friday PM peak because this is generally when peak traffic volumes occur on the roadways. Historical average daily traffic volumes on US Hwy 50 show a decrease over the last ten years; the counts collected in 2001 and 2007 have not been adjusted and are assumed to represent a conservative evaluation of the intersection operations. Table 47 shows the existing intersection turning movement counts collected at the study intersections for the Friday PM peak period during summer.

In addition to the intersection turning movement counts presented above, supplemental daily traffic volume and vehicle speed data was collected January 29 to February 4, 2011. Although the analysis relies on data collected during winter months, the selected residential streets locations experience less seasonal traffic volume fluctuations than streets that provide access to tourist destinations. Additionally, seasonably warm weather and clear pavement assured that the data precludes traffic responses to typical winter driving conditions. Table 48 displays the data collected in January/February 2011.

Table 47

Existing Intersection Turning Movement Counts – Friday PM Peak Hour (Summer)

Intersection	Turning Movement Volume											
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
US Hwy 50/Pioneer Trail (North)	13	1657	8	419	1779	4	10	4	0	75	6	400
Pioneer Trail/ Ski Run Blvd	88	466	22	13	373	53	63	78	92	8	57	17
Glenwood Way/ Becka Dr	12	32	0	9	39	1	0	0	5	1	0	6
Al Tahoe Blvd/ College Dr	3	182	60	150	280	10	18	8	20	126	6	167

Source: Fehr & Peers 2011

Notes: Count data was collected during the summer in 2001, 2007, and 2008 and balanced between intersections. Raw count data is provided in Appendix M. NB = Northbound; SB=Southbound; EB=Eastbound; WB=Westbound; L=Left; T=Through; R=Right

Table 48

Daily Traffic Volumes and Average Travel Speeds

Location	Daily Traffic Volumes and Average Travel Speed	
	Daily Traffic Volume	Average Travel Speed
Al Tahoe Blvd: Northwest of Murietta Dr*	~ 7,000	Toward US Hwy 50: 40 mph Toward Pioneer Tr: 39 mph
Ski Run Blvd: Southeast of Pioneer Trail at David Ln*	~ 2,000	Toward Pioneer Tr: 27 mph Toward Heavenly: 25 mph
Glenwood Way: Between Becka Dr and Bruce Dr	703	Toward Becka Dr: 28 mph Toward Bruce Dr: 27 mph
Martin Ave: Southeast of Barbara Ave	3,330	Toward Barbara Ave: 30 mph Toward Black Bart Ave: 31 mph
Keller Rd: East of Markoffer Way	1,126	Toward Markoffer Way: 30 mph Eastbound: 29 mph
Rocky Point Rd (North) – Glen Rd: South East of Rocky Point Rd/Glen Rd Intersection	102	--
Rocky Point Rd (South): Between Shepherds Rd and Larch Ave	403	--
Larch Ave: East of Lost Sheep Ln	79	--

Source: Fehr & Peers 2011

Notes:
Raw count data is provided in Appendix M. mph = Miles per Hour

* Daily Volume estimated using the peak hour counts presented in Table 47 and assuming that 10% of the daily traffic occurs during the peak hour.

-- Speed Data not collected at this location.

Existing Intersection Operations. Level of service (LOS) is a term used to refer to the operating performance of an intersection or roadway. LOS is measured on a scale from A to F, with A representing the best performance and F the worst and is based on the average time a vehicle's travel is delayed due to intersection control. Detailed descriptions of unsignalized and signalized LOS standards established in the Highway Capacity Manual (HCM) 2000 are provided in Table 49.

Table 49

Intersection Level of Service Criteria

Level of Service Description		Signalized Intersections (Average Control Delay) [1]	Unsignalized Intersections (Average Control Delay) [2]
A	Represents free flow. Individual users are virtually unaffected by others in the traffic stream.	0 to ≤ 10.0 sec/veh	0 to ≤ 10.0 sec/veh
B	Stable flow, but the presence of other users in the traffic stream begins to be noticeable.	>10.0 to ≤ 20.0 sec/veh	>10.0 to ≤ 15.0 sec/veh
C	Stable flow, but the operation of individual users becomes significantly affected by interactions with others in the traffic stream.	>20.0 to ≤ 35.0 sec/veh	>15.0 to ≤ 25.0 sec/veh
D	Represents high-density, but stable flow.	>35.0 to ≤ 55.0 sec/veh	>25.0 to ≤ 35.0 sec/veh
E	Represents operating conditions at or near the capacity level.	>55.0 to ≤ 80.0 sec/veh	>35.0 to ≤ 50.0 sec/veh
F	Represents forced or breakdown flow.	>80.0 sec/veh	>50.0 sec/veh

Source: Highway Capacity Manual 2000

The LOS standards for the jurisdictions with regulatory authority in the Lake Tahoe Basin are described in the Regulatory Setting below. The existing intersection LOS and delay were calculated for the study intersections for the project area using Synchro software. Table 50 presents the LOS results for the study intersections under existing conditions. Appendix M contains the LOS output sheets.

Table 50

Level of Service Results – Existing Conditions

Intersection	Control Type [1]	Summer	
		Friday PM Peak	
		Delay [2]	LOS
US Hwy 50/Pioneer Trail	Signal	29.2	C
Pioneer Trail/Ski Run Blvd	Signal	11.6	B
Glenwood Way/Becka Dr	SSSC	2.5 (8.6)	A (A)
Al Tahoe Blvd/College Dr	Signal	27.6	C

Source: Fehr & Peers 2011

Notes: [1] SSSC = Side Street Stop Control

[2] Delay is reported in seconds per vehicle for the overall intersection for signalized intersections, and for the overall intersection (worst movement) for unsignalized intersections.

Existing Ground Transit Facilities. The Tahoe Transportation District provides transit service to, from, and around South Lake Tahoe with its BlueGO service. Extreme financial conditions beginning in 2009 required substantial cuts to the number and extent of transit routes. Regular hourly service remains along US Hwy 50 and to limited destinations off the highway such as the LTCC. Current route maps and schedules can be found at www.bluego.org.

Existing Bicycle and Pedestrian Facilities. Walking and bicycling are critical and valued components to the Lake Tahoe Region's transportation system. Tahoe communities and agencies indicate that connected bicycle paths, sidewalks, and transit create a "people-oriented" transportation system that supports neighborhoods, commercial areas, and recreation areas. Promotion of non-auto transportation systems forms the basis of the transportation elements in TRPA planning, including the Thresholds, Regional Plan, EIP, TRPA/TMPO RTP and CPs. The Lake Tahoe Regional BPMP discuses existing and future facilities and identifies several benefits to improving the bicycle and pedestrian network, such as reducing VMT and GHGs. Other community efforts demonstrate the value of bike trails and pedestrian systems. The 2010 Lake Tahoe Prosperity Plan, a collaborative effort to establish a new economic and environmental vision for the Region, includes development of transportation alternatives such as completed bike paths as a priority action item.

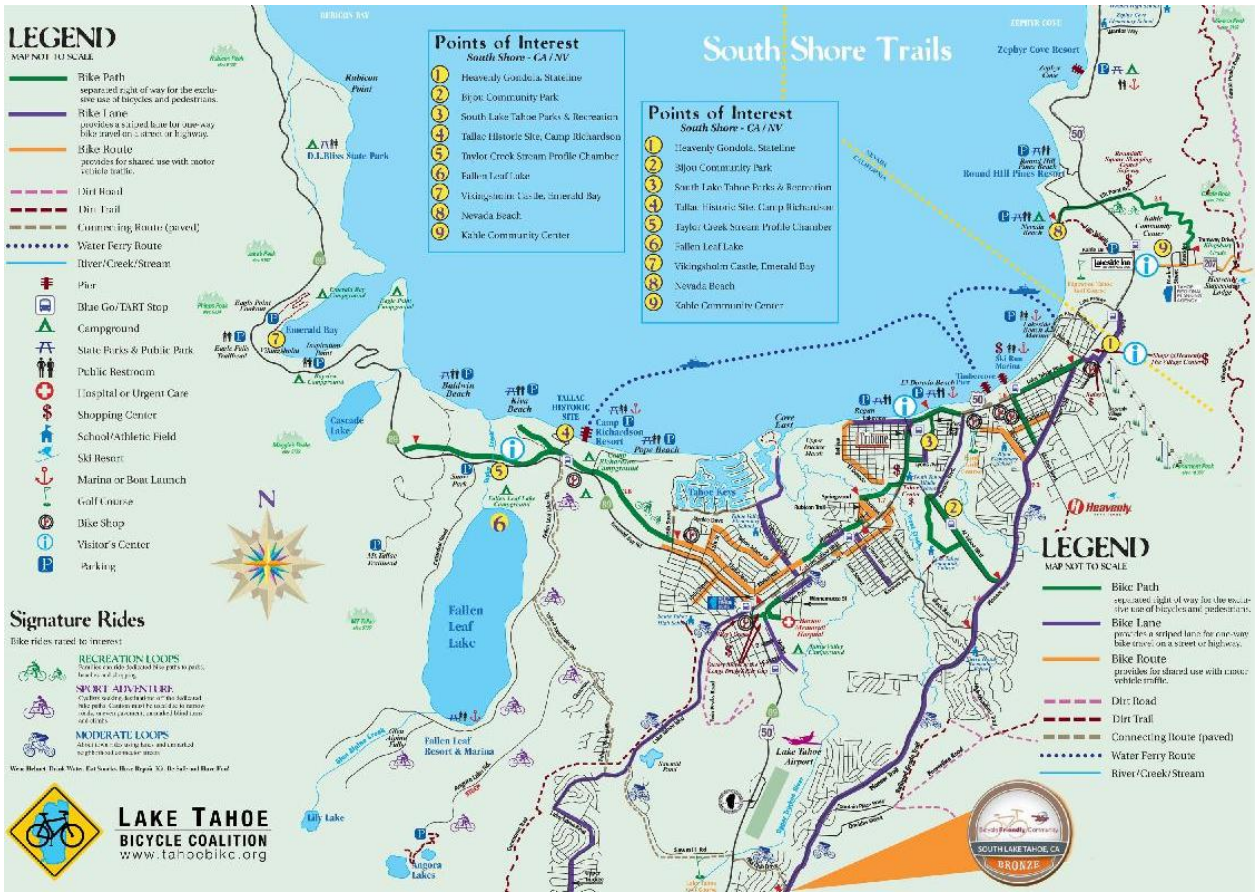
Bicycle and pedestrian facilities exist in the Lake Tahoe Region as separated bicycle paths, bicycle lanes on the roadways, and bicycle routes that share right-of-way with motor vehicle traffic. Near the Greenway, striped bicycle lanes for one-way bicycle travel on the roadways currently exist on Pioneer Trail, portions of US Hwy 50, and on local roadways in South Lake Tahoe. Separated bicycle paths exist adjacent to Al Tahoe Blvd, Ski Run Blvd, and portions of US Hwy 50, and bicycle routes that share right-of-way with vehicles and are designated by signage exist on several local and residential roadways in the area. Existing bicycle and pedestrian facilities in the South Lake Tahoe area are shown on Figure 33.

Regulatory Setting. Numerous transportation-related standards and criteria apply to the project area, reflecting the number of jurisdictions with regulatory authority over transportation conditions. Overall transportation system standards and performance targets applicable to the project area are identified in

TRPA/TMPO RTP, also called Mobility 2030. Mobility 2030 is a long range planning document approved by the TMPO that shapes the future of the Lake Tahoe Basin transportation system.

The TRPA maintains jurisdiction over aspects of transportation planning in the Lake Tahoe Basin with Caltrans overseeing California's State highway system. An overview of the transportation and circulation standards applicable to the project is identified in Table 51.

Figure 33. Existing Bicycle and Pedestrian Facilities



Source: Lake Tahoe Bicycle Coalition

Table 51

Applicable Transportation, Parking and Circulation Standards

Jurisdiction/ Plan/Policy	Standard/Criteria
Tahoe Regional Planning Compact	The goal of transportation planning shall be: (A) To reduce the dependency on the automobile by making more effective use of existing transportation modes and public transit to move people and goods within the region; and (B) To reduce to the extent feasible air pollution which is caused by motor vehicles.
Mobility 2030: Lake Tahoe Basin RTP (Mobility 2030)	The Goals and Policies of Mobility 2030 reflect the consideration of environmental, social and economic factors in making transportation-related decisions. Specific goals of Mobility 2030 include the following: 1) reduce reliance on the private automobile; 2) provide for alternative modes of transportation; 3) serve the basic transportation needs of the citizens of Lake Tahoe; 4) support the economic base of the region; and 5) minimize adverse impacts on man and the environment.
Federal Planning Guidelines	In 1999, the Lake Tahoe Basin became a federal metropolitan planning organization (MPO). Federal regulations, pertaining to transportation, require that the MPO planning process provide for the consideration of projects and strategies that will: - increase the safety and security of the transportation system for motorized and non-motorized users; - enhance the integration and connectivity of the transportation system, across and between modes, for people and freight; - promote efficient system management and operation; - emphasize the preservation of the existing transportation system.
TRPA Goals and Policies	Establish level of service criteria for various roadway categories and signalized intersections. Level of service criteria during peak periods shall be: - LOS C on rural recreational/scenic roads; - LOS D on rural developed area roads; - LOS D on urban developed area roads; - LOS D for signalized intersections; - LOS E may be acceptable during peak periods in urban areas, not to exceed four hours/day. The policies and objectives of this document also place high priority on constructing pedestrian and bicycle facilities in urbanized areas and encouraging waterborne transportation measures.
TRPA Thresholds	TRPA has nine threshold categories: water quality, air quality, noise, scenic, vegetation, soils, wildlife, recreation, and fisheries. There is no threshold for transportation; however transportation system projects in the Lake Tahoe Basin cannot degrade any of the thresholds. Rather, TRPA must make findings that the proposed projects attain or maintain existing thresholds.

Jurisdiction/ Plan/Policy	Standard/Criteria
TRPA Thresholds: Air Quality	Air Quality has two transportation related standards: VMT and traffic volumes on US Hwy 50. - AQ-5 US Hwy 50 Traffic Volumes – 7% reduction in traffic volume on the US Hwy 50 corridor from 1981 base year values, winter, 4 p.m. to 12 a.m. (25,173 vehicles at the US Hwy 50/Park Ave intersection.) - AQ-7 VMT – 10% reduction in VMT in the Lake Tahoe Basin from 1981 base year values. (1,648,466 VMT for a peak summer day.)
TRPA Code of Ordinances	Adherence to: Chapter 14 requirements for traffic considerations, including VMT reduction policies and level of service goals for street and highway traffic, and Chapter 93 requirements for traffic analyses; the Code sections require reducing significant impacts to a less than significant level.
Stateline/Ski Run and Bijou/Al Tahoe Community Plans	The Plan's overall goals for transportation are to reduce dependency on the automobile and improve the movement of people, goods, and services within the Stateline/Ski Run and Bijou/Al Tahoe areas and the Region consistent with the economic and environmental goals of the CPs.
City of South Lake Tahoe General Plan	The City General Plan states that the City shall establish a minimum LOS standard "D" for all City streets and intersections. Up to four hours per day of LOS "E" shall be considered acceptable. The City General Plan has goals to expand transit services, manage parking to accommodate reasonable auto usage and encourage use of alternative travel modes.
American Association of State Highway and Transportation Officials (AASHTO)	The AASHTO Guide for the Development of Bicycle Facilities specifies design recommendations and standards for the width, horizontal alignment, sight distance, separation distance from roadways, grades, and graded shoulders of trails. Design recommendations and standards are also specified for signage and striping, sight distance, and crossing angles at all location where paths cross a roadway.
Other	Signal warrant criteria as established by the Federal Highway Administration Manual on Uniform Traffic Control Devices.

Source: Fehr & Peers, 2011

3.2.16.2 Environmental Analysis and Mitigation Measures

157. Would the Greenway 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 non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? (CEQA XVIa)

Standard of Significance: Project conflicts with applicable plans, ordinances or policies establishing measures of effectiveness for circulation system performance results in a significant impact.

The project is consistent with existing policies, plans, and programs that encourage the promotion and use of alternative modes of transportation. The Greenway creates an alternative transportation trail for pedestrians and non-motorized transportation, which supports policies, plans, and programs for alternative transportation, such as those listed in Table 51. The Greenway creates new opportunities for alternative modes of transportation to result in a less than significant impact to circulation systems.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

158. Would the Greenway 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 XVIb)

Standard of Significance: Conflict with applicable congestion management programs, specifically LOS standards, creates a significant impact to traffic and circulation from the project.

Tahoe Region Bicycle/Pedestrian Use Model. The Greenway project constructs a separated bike trail linking Sierra Blvd to Van Sickle Bi-State Park described by Segments 2-45 (Sierra Tract Segment), 2-50 (Trout Creek Segment), 2-70 (Bijou Segment) and 2-80 (Ski Run to Van Sickle Bi-State Park Segment).

The Tahoe Region Bicycle/Pedestrian Use Model created by LSC Transportation Consultants, Inc. and Alta Planning provides "linked bicycle and pedestrian use level estimation models for travel corridors in the Tahoe Region. The model is based upon observed facility use levels in the Tahoe Region, data regarding the characteristics of individual facility users, as well as demographic and travel data for the Tahoe region." (LSC Transportation Consultants, Inc., 2009)

The usage model requires input regarding trail grade, continuity, maintenance level, recreational value, and congestion to predict the number of users. Comparison of similar, existing trails and input from agency staff determined the input factors.

Bicycle and Pedestrian Trail Trip Generation. The model calculates trail usage separately for bicyclists and pedestrians, and residents and visitors who bicycle or walk to the trail, and bicyclists and pedestrians who drive to the trail.

This analysis provides two trail usage calculations for the Greenway. The Peak Location Usage, which is the peak number of users at any one location on the trail, is calculated using the model directly. The Entire Corridor Usage is calculated using the following formula provided in Tahoe Region Bicycle and Pedestrian Use Models User Instructions (LSC Transportation Consultants, Inc., 2009):

> Total Corridor Use = Use at Peak Location X ((Total Corridor Length (miles) / Average Trip Length (miles)) X (1 + Ratio of Use at Lowest Location to Use at Peak Location[1]) / 2

Note that this equation uses: Regionwide TCORP one-way trip length was found to average 2.4 miles for bicycling and 1.5 miles for walking and assumes Ratio of Use at Lowest Location to Use at Peak Location to be 50 percent.

Table 52 presents the Greenway usage estimates based on the Tahoe Region Bicycle/Pedestrian Use Model. As the model predicts increased use in any given trail segment as the network connections improve, the table shows the number of bicyclists and pedestrians expected to use the trail if it is constructed in phases. The analysis identifies Segments 2-45, 2-50, and 2-70 as a distinct phase, and the effects of adding Segment 2-80.

Table 52

Daily Trail Usage by Bicyclists and Pedestrians

Scenario		Bicycles		Pedestrians	
		Peak Location Usage	Entire Corridor Usage [1]	Peak Location Usage	Entire Corridor Usage [1]
Phase 1[2]	Segments 2-45, 2-50, 2-70	391	391	260	304
Phase 2	Segments 2-45, 2-50, 2-70	834	972	380	709
	Segment 2-80	1,009	1,176	363	677
	All Segments	1,843	2,148	743	1,386

Source: Fehr & Peers 2009

Notes:

[1] At locations where the model prediction for Peak Location Usage was higher than Entire Corridor Usage, the Entire Corridor Usage was assumed to be the same as the Peak Location Usage.

[2] The project description identifies the likelihood of trail construction in phases. The phases considered here represent natural breaks in the trail route yet do not reflect project requirements.

For Segments 2-45, 2-50, and 2-70 as a distinct phase, the model is used to determine the number of overall trail users; however, modifications were made to the "Drive to Facility" model input to better reflect the character of Segments. The analysis estimates that five percent of trail users in Segments 2-45, 2-50, and 2-70 will drive to the facility. This is based on survey data collected by the Tahoe Coalition of Recreation Providers (TCORP), and presented in *Lake Tahoe Basin Bike Trail Survey, July 2007* for El Dorado Beach. Segments 2-45, 2-50, and 2-70 share similar characteristics with the El Dorado Beach trail due to its short distance, good mix of residential and destination land uses, and urban character. Typically, short trail segments do not attract users that drive to use the trail.

The same methodology used to estimate trail users for Segments 2-45, 2-50, and 2-70 as a distinct phase is also used for estimating trail use of the full Greenway (Segments 2-45, 2-50, 2-70, and 2-80); however, rather than five percent of users driving to the facility, it is estimated that ten percent of users drive to the facility based on the TCORP survey results and the trail's similarities to the El Dorado Beach and Elks Point trails. The addition of Segment 2-80 results in the increase in trail length, which increases the likelihood of someone driving to the trail for recreational use.

Appendix M contains the analysis spreadsheets for determining trail usage.

Vehicle Trip Generation. This analysis considers two components of vehicle trip generation for the Greenway:

1. Users who drive to the trail - The Tahoe Region Bicycle/Pedestrian Use Model provides an estimate for the number of bicyclists and pedestrians who drive to the trail. The model adjustments, described above, more accurately reflect the character of the proposed trail. The model also provides average vehicle occupancy rates for bicyclists and pedestrians. The average

vehicle occupancy rate for bicyclists who drive to the Greenway is 2.1, and the average vehicle occupancy rate for pedestrians is 2.5 based on the Tahoe Region Bicycle/Pedestrian Use Model. Vehicle trips are calculated by dividing the number of users who drive to the trail by the vehicle occupancy rates for bicyclists and pedestrians. Table 53 shows the number of vehicle trips generated by the trail.

2. Reduction in vehicle traffic associated with mode shift because of trail construction - The Greenway reduces vehicle trips by providing an alternative transportation mode for people who would normally drive to their destination. The TCORP survey data indicates that 15% of trail users would drive if the trail that they were surveyed on did not exist. Vehicle trip reduction is calculated by multiplying the number of trail users by the 15% who indicated that they would have otherwise driven, and then dividing by the vehicle occupancy rates for bicyclists and pedestrians. Table 53 shows the reduction in vehicle trips due to construction of the Greenway.

Vehicle Miles of Travel (VMT). This analysis calculates VMT for the Greenway using the trip generation and trip reduction numbers from Table 53, and average vehicle trip length estimates from the TRPA travel demand model, as documented in Tahoe Region Bicycle and Pedestrian Use Models (October 2009). A vehicle trip length of 2.4 vehicle miles is used for bicyclists, and a vehicle trip length of 1.5 vehicle miles is used for pedestrians. Table 54 provides the VMT estimates for the Greenway.

The Greenway has the potential to impact vehicle queuing, and therefore, level of service on roadways and intersections at the roadway or intersection crossings, particularly roadways or intersections with high traffic volumes. The evaluation considers vehicle queuing at arterial road crossing locations to determine if the trail causes significant impacts. Vehicle queuing caused by trail crossings is calculated based on the following methodology:

1. The peak hour vehicle volume at the street crossing is determined and converted to average vehicle arrival (1 vehicle arrives every X seconds).
2. The number of crossing events per hour is determined by first calculating the number of trail users during the peak hour. According to Tahoe Region Bicycle and Pedestrian Use Models, 15.3 percent of total daily trail use occurs during the peak hour on Tahoe facilities. According to the TCORP surveys, trail users often travel in groups. The survey results indicate an average of four trail users per group. *Crossing Events per Hour = (Total Daily Trail Users x 15.3%) / 4 Users per Group*. The number of crossing events per hour is also converted to average crossing arrival (1 crossing every X seconds).
3. The frequency of vehicles experiencing delay is determined by comparing the vehicle arrival to the crossing arrival. For example if a vehicle arrives at the crossing every 10 seconds, and bicyclist or pedestrian arrives at the crossing every 100 seconds, every tenth vehicle that arrives at the crossing will be delayed by a trail user. The total number of vehicles arriving at the crossing is multiplied by the fraction of vehicles that will experience delay to get the total number of peak hour vehicle experiencing delay at the crossing point.

Table 53

Bicyclists and Pedestrians Who Drive to Greenway

Phase	Vehicle Trip Generation					Vehicle Trip Reduction							Total Daily Trips
	Bicyclists		Pedestrians		Total Vehicle Trips	Bicyclists			Pedestrians			Total Vehicle Trip Reduction	
	Drive to Facility	Vehicle Trips[1]	Drive to Facility	Vehicle Trips[1]		Users (People)	People Who Would Otherwise Drive (15%)	Vehicle Trip Reduction[2]	Users (People)	People Who Would Otherwise Drive (15%)	Vehicle Trip Reduction[2]		
Segments 2-45, 2-50, 2-70													
2-45, 2-50, 2-70	20	10	13	5	*15*	371	56	(-27)	247	37	(-15)	*(-42)*	**(-27)**
All Segments													
2-45, 2-50, 2-70	41	20	27	11	*31*	371	56	(-27)	247	37	(-15)	*(-42)*	**(-11)**
2-80	19	9	11	4	*13*	910	137	(-65)	290	44	(-17)	*(-82)*	**(-69)**
Total	**60**	**29**	**38**	**15**	***44***	**1,281**	**193**	**(-92)**	**537**	**81**	**(-32)**	***(-124)***	**(-80)**

Source: Fehr & Peers 2011

Notes:

[1] Vehicle Trips are calculated based on an average vehicle occupancy rate of 2.1 persons per vehicle for bicyclists, and 2.5 persons per vehicle for pedestrians.

[2] Vehicle Trip Reduction is calculated based on an average vehicle occupancy rate of 2.1 persons per vehicle for bicyclists, and 2.5 persons per vehicle for pedestrians.

Table 54

Vehicle Miles of Travel

Phase	VMT Generation					VMT Reduction					Total Overall VMT
	Bicyclists		Pedestrians		Total VMT	Bicyclists		Pedestrians		Total VMT Reduction	
	Vehicle Trips	VMT[1]	Vehicle Trips	VMT[1]		Vehicle Trip Reduction	VMT Reduction[1]	Vehicle Trip Reduction	VMT Reduction[1]		
Segments 2-45, 2-50, 2-70											
2-45, 2-50, 2-70	10	24	5	8	*32*	(-27)	(-65)	(-15)	(-23)	*(-88)*	**(-56)**
All Segments											
2-45, 2-50, 2-70	20	48	11	17	*65*	(-27)	(-65)	(-15)	(-23)	*(-88)*	**(-23)**
2-80	9	22	4	6	*28*	(-65)	(-156)	(-17)	(-26)	*(-182)*	**(-154)**
Entire Greenway	29	70	15	23	*93*	(-92)	(-221)	(-32)	(-49)	*(-270)*	**(-177)**

Source: Fehr & Peers 2011

Notes:
[1] VMT and VMT Reduction is calculated based on average trip lengths of 2.4 miles for bicyclists, and 1.5 miles for pedestrians.

4. The crossing time of trail users is determined multiplying the roadway width by an average trail user speed of six seconds per foot.
5. The average vehicle queue is calculated by dividing crossing time by the average vehicle arrival (calculated in step 1). For example if a trail user takes ten seconds to cross the roadway, and a vehicle arrives at the crossing every five seconds, an average queue of two vehicles will develop.

The average delay per vehicle was also calculated, however the results found that at each crossing location, the average vehicle delay during the PM peak hour was less than one second.

Table 55 shows the average vehicle queue length at each location where the trail crosses an arterial roadway. Residential collection and local roadway locations, where vehicle volumes are low were not analyzed, as no queue is generated. Trail crossings at signalized intersections were analyzed using Synchro software.

The Greenway creates a queue of one to two vehicles at the Al Tahoe Blvd crossing every 56 seconds, but does not result in a measureable average delay increase for vehicles. The project includes construction of a signed and striped crosswalk with loop activation warning signals (not a full traffic signal with separate phases for vehicle and pedestrian traffic). The signed and striped crosswalk with warning signals will alert drivers if bicyclists and pedestrians are present at the crossing. Given the minimal vehicle queuing and no increase in average travel delay, no degradation of LOS, the Greenway does not significantly impact Al Tahoe Blvd.

Table 55

Average Vehicle Queue Generated at Trail Roadway Crossing

Location	Crossing Type	Peak Hour Vehicle Volume	Crossing Events per Hour	# of Delayed Vehicles per Hour	Crossing Time (seconds)	Average Queue Length (vehicles) [1]
Al Tahoe Blvd	Mid-Block	671	64	64	9	1-2
Pioneer Trail @ Ski Run Blvd	Signalized – Synchro was used to analyze trail crossings at signalized intersections.					1-2
Ski Run Blvd	Mid-Block	195	55	55	5	0

Source: Fehr & Peers 2011

Notes:
[1] The increase in Average Queue Length at signalized intersections is reported.

Construction traffic will occur on the roadway network. The heaviest construction period occurs during site grading, resulting in construction trips removing material from the site. If there is no approved location within the Lake Tahoe Basin, exported material will be taken out of the Tahoe Basin via US Hwy 50 as specified by TRPA.

This analysis calculated the number of truck trips associated with site grading assuming a maximum 120-day work period, based on the TRPA grading season from May 1st to October 15th.

On average, long haul trucks are capable of carrying 20 cubic yards of material. Depending on project phasing, this number could be reduced in a construction season. Table 56 provides the estimated number of trips associated with site grading for the Greenway.

The Greenway generates 14 daily construction haul trips, which will not degrade roadway or intersection LOS, and therefore, causes no significant short-term impact.

In addition to construction haul trips associated with grading, construction employees will also generate temporary trips. Each worker (10 employees on average) will generate an average of 3 daily trips based on information on employee trips (for employment uses) from the *Institute of Transportation Engineering Trip Generation*, 8th Edition.

The Conservancy will prepare a Traffic Control Plan (CM-17) for review and approval by TRPA, El Dorado County, and the City prior to construction. As described in Chapter 2, the Traffic Control Plan addresses project construction traffic and parking. At a minimum, the plan identifies truck haul routes, traffic control signage, bicycle and pedestrian traffic, restriction of hauling activities to off-peak periods (outside of the hours from 7AM-9AM and 4PM-6PM), on-site circulation and staging areas, worker parking locations and monitoring of the in-place traffic control to implement traffic control revisions, if necessary. Prior to construction, the Conservancy will obtain necessary encroachment and transportation permits.

Table 56

Site Grading Truck Trips

Project	Net Cut Material [1]	Truck Loads [2]	Trips per Day [3]
Greenway (Segments 2-45, 2-50, 2-70 and 2-80)	15,443 cubic yards	772 loads	14

Source: Fehr & Peers, 2011

Notes:

1 Approximate amount of net cut material to be hauled off-site. See Table 23 for more detail.

2 Long haul trucks would be capable of carrying 20 cubic yards of material.

3 These are two-way trips (includes loaded delivery trip and empty return trip). Trips are based on the number loads required to haul the material, and the number of work days (120).

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

159. Would the Greenway 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 XVIc)

Standard of Significance: If the project causes a change in air traffic patterns that results in substantial safety risks, a significant impact occurs.

The Greenway provides a new facility for bicycle and pedestrian traffic and does not change air traffic patterns or air traffic.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

160. Would the Greenway substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (CEQA XVId)

Standard of Significance: Substantial increases in hazards resulting from Greenway design features or incompatible use of the trail create a significant impact.

The Greenway has the potential to increase hazards to vehicles, bicycles, and pedestrians at roadway crossings with limited vehicle sight distance or where the crossing is located after a curve on the downhill direction of the roadway. Shared-use trail grades can also contribute to safety hazards.

Trail Crossing Characteristics. The trail crosses several roadways. Table 57 displays the trail crossing locations and characteristics.

Based on the roadway crossing characteristics presented in Table 57 the following crossing locations may increase hazards due to vehicle sight distance:

- Becka Dr local road mid-block crossing: The vehicle sight distance toward Glenwood Way is approximately 100 feet. Based on the speed limit of 25 mph, a vehicle sight distance of 155 feet (per AASHTO standards) is required.
- Keller Rd collector road mid-block crossing: The westbound direction is downhill with a severe curve, limiting vehicle sight distance at the trail crossing location to 200 feet to the east. The measured speed of westbound vehicle is 30 mph, which requires a vehicle sight distance of 200 feet. The project will install a marked crossing with a warning signal.
- Larch Ave local road mid-block crossing: The westbound direction is downhill with a curve. This is a low-volume residential street with low speeds (25 mph posted speed limit, low speeds observed). The vehicle sight distance is 200 feet to the east and the required vehicle sight distance is 155 feet.
- Rocky Point (South) local road mid-block crossing: The westbound direction is downhill with a curve. This is a low-volume residential street with low speeds (25 mph posted speed limit, low speeds observed). The vehicle sight distance is 170 feet to the east and the required vehicle sight distance is 155 feet.
- Glen Rd-Rocky Point (North) local road mid-block crossing: The westbound direction is downhill with a curve. This is a low-volume residential street with low speeds (25 mph posted speed limit, low speeds observed). The vehicle sight distance is 170 feet to the east and the required vehicle sight distance is 155 feet.

Because the Greenway creates potential traffic hazards at these crossings, traffic hazards potential increase, requiring implementation of mitigation measure TRAFFIC-1 to reduce potential impacts to a level of less than significant.

Table 57

Trail Crossing Characteristics

Crossing Location	Crossing Type	Vehicle Sight Distance	Notes/Field Observations
Martin Ave at Barbara Ave	Collector Road at an Intersection	To east = 400 feet To west = unlimited	Good visibility at crossing location, flat terrain, residential area with low volumes/speeds
Al Tahoe Blvd	Arterial Road Mid-block crossing	To northwest = 1,000 feet To southeast = 1,100 feet	Crossing location is at dip in roadway, good visibility, heavily traveled roadway with higher travel speeds
Glenwood Way at Becka Dr	Collector Road at an Intersection	To northwest = 225 feet To southeast = 800 feet	Unlimited visibility at crossing location for northbound trail uses, southbound trail users visibility is less (reported in sight distance column), flat terrain, residential area with low volumes/speeds
Becka Dr	Local Road Mid-block crossing	To west = 100 feet To east = unlimited	Crossing located approximately 100 feet from Glenwood intersection, minimal sight distance to west (especially for vehicles turning left from Glenwood Way onto Becka Dr), flat terrain, residential area with low volumes/speeds
Walkup Rd at Aloha Rd	Local Road at an Intersection	To northwest = 525 feet To southeast = 525 feet	Flat terrain, residential area with low volumes/speeds, good visibility
Herbert Ave at Aloha Rd	Local Road at an Intersection	To northwest = unlimited To southeast = 600 feet	Flat terrain, residential area with low volumes/speeds, good visibility
Woodbine Rd at Pioneer Trail	Local Road at an Intersection	At stop sign, good visibility of Pioneer Trail	Crossing adjacent to Pioneer Trail at stopped approach of local road (vehicles approaching Pioneer Trail on Woodbine Rd must stop before trail crossing), low volume local road
Blackwood Rd at Pioneer Trail	Local Road at an Intersection	At stop sign, good visibility of Pioneer Trail	Crossing adjacent to Pioneer Trail at stopped approach of local road (vehicles approaching Pioneer Trail on Blackwood Rd must stop before trail crossing), low volume local road
Ski Run Blvd/Pioneer Trail Intersection	Signalized intersection crossing	At signalized intersection, good visibility	Crossing at existing signalized light. Existing pedestrian island may require modification

Table 57

Trail Crossing Characteristics

Crossing Location	Crossing Type	Vehicle Sight Distance	Notes/Field Observations
Ski Run Blvd at David Ln	Arterial Road Mid-Block crossing	To north = unlimited To south = unlimited	David Ln "tee's" into Ski Run Blvd at crossing location, good visibility, Northbound vehicles are driving downhill, crossing located approximately 250 feet from Ski Run Blvd/Pioneer Trail intersection, traffic volumes in summer months are less than winter months because of Heavenly Ski Resort
Keller Rd	Collector Road Mid-block crossing	To east = 200 feet To west = unlimited	Westbound direction is downhill with a severe curve, poor visibility on crossing location for westbound vehicle traveling around the curve, down the hill. Low traffic volumes observed.
Larch Ave	Local Road Mid-block crossing	To east = 200 feet To west = unlimited	Westbound direction is downhill with a curve, residential area with low volumes/speeds
Shepherds Rd at Rocky Point Rd	Local Road at an Intersection	At stop sign, good visibility of Rocky Point Rd.	Crossing adjacent to Rocky Point Rd (south) at stopped approach of local road (vehicles approaching Rocky Point Rd on Shepherds Rd must stop before trail crossing), low volume local road
Rocky Point Rd (South)	Local Road Mid-block crossing	To east = 170 feet To west = 170 feet	Westbound direction is downhill with a curve, residential area with low volumes/speeds
Glen Rd-Rocky Point Rd (North)	Local Road Mid-block crossing	To east = 170 feet To west = 200 feet	Westbound direction is downhill with a curve, residential area with low volumes/speeds

Source: Fehr & Peers 2011

Grades on paths should be kept to a minimum and grades greater than 5 percent are undesirable because the ascents are difficult for many users and descents are steep and cause bicyclists to exceed comfortable/safe speeds. Section 2.6.2.2 identifies the grade restrictions and grade lengths from the AASHTO Guide for the Development of Bicycle Facilities to which the Greenway design element conforms.

Given the mountainous environment of the project area, the Greenway contains several trail sections of grade greater than five percent, but these sections meet the AASHTO grade restrictions and grade lengths designed to allow safe use. The most extreme grade is 10 percent for 25 feet on the shared-use trail section between Shepherds Rd and Rocky Point Rd. The segment is short and within the AASHTO Guidelines. The descent southward in Segment 2-80 parallel to David Ln presents the longest portion of the project with trail grades greater than five percent. Evaluation of the project plans shows that the sight distance on the descent of the trail adjacent to David Ln to the stop sign at Ski Run Blvd is approximately 100-feet. The Greenway provides adequate bicycle stopping sight distance with grades based on a bicycle speed of 12 mph as follows:

- 5-6%: at least 70 feet for descent and 60 feet for ascent;
- 7%: at least 75 feet for descent and 60 feet for ascent; and
- 8-11%: at least 80 feet for descent and 60 feet for ascent.

Environmental Analysis: *Less than Significant Impact after Mitigation.*

Required Mitigation:

TRAFFIC-1: Enhance Select Greenway Intersections to Reduce Vehicle Speeds and Increase Visibility

To enhance crossing treatments at specific locations and to reduce vehicle speeds and increase crossing visibility, the project shall include the following measures:

- Becka Dr local road mid-block crossing: Install all-way stop control at the Glenwood Way/Becka Dr intersection to slow vehicles approaching the crossing location from Glenwood Way. Installing all-way stop control does not change the vehicle level of service at the intersection.
- Keller Rd collector road mid-block crossing: Install the warning signal before the curve and at the trail in the westbound direction.
- Larch Ave local road mid-block crossing: Install "bike crossing ahead" pavement markings before the curve in the westbound direction.
- Rocky Point (South) local road mid-block crossing: Install "bike crossing ahead" pavement markings before the curve in the westbound direction.
- Glen Rd-Rocky Point (North) local road mid-block crossing: Install "bike crossing ahead" pavement markings before the curve in the westbound direction.

161. Would the Greenway result in inadequate emergency access? (CEQA XVIe)

Standard of Significance: Inadequate access for emergency responders during project construction and operations constitutes a significant impact.

The Greenway does not result in inadequate emergency vehicle access. Compliance measures CM-12 and CM-13 (Chapter 2, Section 2.6.5) address coordination procedures with law enforcement and fire protection agencies and a traffic control plan, respectively, to ensure that Greenway construction will not disrupt emergency services. The design accommodates emergency response vehicles needed for trail

users at trail crossing locations via removable/collapsible bollards. See evaluation for Question 166 related to emergency response along Aloha.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

162. Would the Greenway 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 XVIf)

Standard of Significance: Inconsistency with adopted policies, plans or programs regarding public transit, bicycle or pedestrian facilities constitutes a significant impact.

The Greenway enhances bicycle and pedestrian facilities by providing additional access through South Lake Tahoe and by providing connections to existing facilities and key destinations.

The Greenway makes a connection to Blue GO service at LTCC, implementing TRPA and City plans that encourage multi-modal connections. If BlueGO service expands in the future to levels seen in the recent past, these connections could increase.

The Greenway crosses BlueGO bus routes, but does not cause a significant impact to transit service.

Table 55 demonstrates that Greenway crossings produce minimal vehicle queuing with no measureable increase in average vehicle delay or vehicle level of service capable of affecting transit service. Therefore the Greenway's level of impact to transit is less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

163. Will the Greenway result in generation of 100 or more new Daily Vehicle Trip Ends (DVTE)? (TRPA 13a)

No. Standard of Significance: If the project results in the generation of 100 or more new DVTE, a significant impact results.

The Greenway will not result in generation of 100 or more new daily vehicle trips. As shown in Table 53, the project reduces daily vehicle trips by 80 due to people utilizing the Greenway instead of driving.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

164. Will the Greenway result in changes to existing parking facilities, or demand for new parking? (TRPA 13b)

No. Standard of Significance: Change in use of existing parking facilities that create of a demand for new parking as a result of project operations constitutes a significant impact.

The Greenway proposes to form the backbone of the non-auto transportation network in South Lake Tahoe by connecting accommodations to desired destinations. Thus, the project constructs no bike trail

parking. Existing use patterns in Tahoe show that shorter more urban trail segments attract few users who drive to use the trail. The trail segments evaluated here match those characteristics. While this is true, some trail users will originate from public recreation facilities such as Bijou Community Park and Van Sickle Bi-State Park and will use the parking available in those locations. In this case, trail use is part of a park experience that can also include picnicking and other leisure time activities and does not create a change in parking demand. The OMMS (Appendix E) identifies adaptive management strategies available if parking competition at these sites threatens to displace other park users.

Occasional parking for Greenway users may also occur along public streets near high visibility access points. The primary areas for this access could be along Barbara Ave and at the end of Sierra Blvd where parking for informal trail access occurs currently and where residential structures are not located nearby. Development criteria for other access points intended for neighborhood use will de-emphasize their visibility to reduce frequent use. While parking along public streets is legal in most places and will not be prohibited through this proposal, this use can create conflicts with neighbors, including trespass, littering, sanitary concerns, noise, and off leash dog activity. The proposal relies on use of adaptive management strategies to address these issues. These strategies could include (but may not be limited to) increasing outreach concerning respectful use, increased visitation by management personnel, or placement of fencing or trashcans.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

165. Will the Greenway result in substantial impact upon existing transportation systems, including highway, transit, bicycle or pedestrian facilities? (TRPA 13c)

No. Standard of Significance: If the Greenway causes delay which degrades level of service to on roadways to LOS E for more than four hours/ day, impacting vehicles and transit or hinders pedestrian or bicycle travel a significant impact results.

The Greenway will not result in substantial negative impact upon existing transportation systems but enhances and improves bicycle and pedestrian access. For analysis of roadways and transit, see the analyses for Question 158, and Question 162, and conclude that vehicle LOS on roadways is not degraded; therefore, the level of impact to existing transportation systems is less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

166. Will the Greenway result in alterations to present patterns of circulation or movement of people and/or goods? (TRPA 13d)

No. Standard of Significance: If the Greenway results in an alteration to present patterns so that circulation is substantially disrupted and/or public access cannot be met, a significant impact results.

The Greenway reduces vehicle trip generation in the project area, and does not significantly increase vehicle delay due to users on the shared-use trail. The Greenway crosses in front of residential driveways, a small number of commercial driveways, and a fire station driveway; however, shared-use trail users are continually moving and do not significantly increase delay or block access for drivers entering or exiting these uses.

The primary project feature that alters circulation patterns changes Aloha Rd. from a two-way street to a one-way, westbound street. This proposal reduces unnecessary coverage associated with a low traffic volume street and allows some of that coverage to be removed and replanted and some to be used for the new shared-use trail. Under existing conditions, three residential driveways gain access from this street; maximum development potential exists for 14 driveways. The street is approximately 1,340 feet long. TRPA identifies residential uses produce 10 vehicle trip ends/day. Assuming one trip end in each pair may need to divert to make the connection, this action moves approximately 15 trips/day onto a nearby street under present conditions. At maximum buildout, this could increase to 70 trips/day. Parallel streets that could make this connection include Warr Rd, Red Lake Rd, Hobart Rd, and Woodland Rd, decreasing the effects on any one street. The maximum length of diversion, depending on travel pattern is 2,680 feet, requiring 1.2 minutes at residential speeds (25 mph). The average length of the diversion is 1,340, resulting in an increase in travel time of 37 seconds. An increase in travel time between 37 seconds and 1.2 minutes is minimal. Access to residences on Aloha Rd is maintained and the change in travel length of 1,340 to 2,680 feet is not substantial. The increase of 15 daily trips to parallel roads will not change level of service given that they are low volume, residential roadways; therefore, the impact is less than significant.

Given the extremely low volume of traffic on Aloha Rd, emergency vehicles would continue to access the road from both directions (and travel against traffic if necessary). In addition, emergency vehicles would be originating from Pioneer Trail, which has access to both ends of Aloha Rd via Herbert Ave and Walkup Rd; therefore, access to/from Pioneer Trail is not substantially changed. Converting Aloha Rd to two-way is a less than significant impact on emergency access.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

167. Will the Greenway result in alterations to waterborne, rail or air traffic? (TRPA 13e)

No. Standard of Significance: Alternations to waterborne, rail or air traffic by project construction or operations that result in service disruptions constitutes a significant impact.

The Greenway provides a new facility for bicycle and pedestrian traffic and does not change air traffic, waterborne traffic, or rail traffic.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

168. Will the Greenway result in increase in traffic hazards to motor vehicles, bicyclists, or pedestrians? (TRPA 13f)

No, with mitigation. Standard of Significance: The Greenway may result in increases to traffic hazards at trail crossing locations. See Question 160, which addresses CEQA checklist item XVId and concludes that the level of impact from the Greenway to traffic hazards to vehicles, bicyclists, and pedestrians is reduced to a level of less than significant after implementation of mitigation measures TRAFFIC-1.

Environmental Analysis: *Less than Significant Impact after Mitigation.*

Required Mitigation:

TRAFFIC-1: Enhance Select Greenway Intersections to Reduce Vehicle Speeds and Increase Visibility

169. Greenway effects to trips per day and parking facilities with a road system at wilderness and other trailheads, viewpoints, special attractions, and recreation sites. (NEPA)

The following directives from the LTBMU Forest Plan apply to NEPA analysis:

- Prepare a traffic analysis for each new recreation site, which would produce more than 200 trips per day. Prepare a traffic analysis when existing sites that produce substantial traffic are proposed for reconstruction. TRPA criteria for a traffic analysis will be used including modeling that estimates the effects of the project upon level of service at key intersections, effects upon air quality, and effects upon traffic flow. Plan offsetting mitigation measures for the impacts.
- Design facilities for service by transit operation. Those facilities that are near the lakeshore should also be serviceable by shuttle type boats.
- Integrate parking facilities with a road system at wilderness and other trailheads, viewpoints, special attractions, and recreation sites.

No Project. Under the no project alternative, the Conservancy constructs and operates no shared-use trail and no change to the project area occurs. Portions of the project area, including locations on National Forest Lands, would continue to be used as informal trails. Indirect and direct effects from continued use of informal trails would continue. The increase in demand for bicycle/pedestrian facilities under the no project alternative would be identical to that described for the Greenway. However, as no new bicycle/pedestrian facilities would be constructed under this alternative, bicycle and pedestrian activity in the project area would remain unchanged from existing conditions and the demand for the type of facility proposed by the Greenway would be unmet at this time and VMT would not be reduced.

Proposed Project. The Greenway will not result in generation of 200 trips per day. As shown in Table 53, due to people utilizing the Greenway instead of driving, the project reduces daily vehicle trips by 80. The Greenway constructs no parking areas for shared-use trail users, but utilizes existing parking areas as listed for Question 164. Signage directs users accessing the Greenway with vehicles to parking areas other than those in residential neighborhoods.

Indirect and Direct Effects. Based on Table 53, the Greenway generates 44 daily vehicle trips, which can be accommodated by the existing parking areas, and based on data collected at similar trails in the Tahoe Basin, the majority of the Greenway users (90-95 percent) will not drive to the shared-use trail, but will access directly from their neighborhoods or from the Stateline area.

Cumulative Effects. Section 3.2.18, Mandatory Findings of Significant, specifically Question 187, further addresses cumulative effects of the Greenway and related projects, as listed in Table 60.

Environmental Analysis: *No Impact Anticipated.*

Required Mitigation: **None.**

3.2.17 Utilities and Service Systems (CEQA) and Energy and Utilities (TRPA)

This section presents the analysis for potential impacts to utilities, service systems and energy. Table 58 identifies the applicable impacts and anticipated level of impact.

Table 58

Utilities, Service Systems and Energy

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
169. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? (CEQA XVIIa)				**X**
170. 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 XVIIb)			**X**	
171. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? (CEQA XVIIc)			**X**	
172. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? (CEQA XVIId)			**X**	
173.Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? (CEQA XVIIe)				**X**

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
174. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? (CEQA XVIIf)			X	
175. Comply with federal, state, and local statutes and regulations related to solid waste? (CEQA XVIIg)			X	
TRPA Initial Environmental Checklist Item	**Yes**	**No, With Mitigation**	**Data Insufficient**	**No**
176. Use of substantial amounts of fuel or energy? (TRPA 15a)				X
177. Substantial increase in demand upon existing sources of energy, or require the development of new sources of energy? (TRPA 15b)				X
Except for planned improvements, will the proposal result in a need for new systems, or substantial alterations to the following utilities:				
178. Power or natural gas? (TRPA 15a)				X
179. Communication systems? (TRPA 15b)				X
180. Utilize additional water which amount will exceed the maximum permitted capacity of the service provider? (TRPA 15c)				X
181. Utilize additional sewage treatment capacity which amount will exceed the maximum permitted capacity of the sewage treatment provider? (TRPA 15d)				X
182. Storm water drainage? (TRPA 15e)				X
183. Solid waste and disposal? (TRPA 15f)				X

NEPA Significance of Effects	
184. Greenway effects related to utilities. (NEPA)	

3.2.17.1 Environmental Setting

Electricity. NV Energy and Liberty Energy (formerly Sierra Pacific Power) service the project area. Power for residential areas and other uses adjacent to the project area is drawn from overhead power lines as well as some underground lines. The nearest substation to the project area is off Montreal near the Van Sickle Bi-State Park (Segment 2-80). Currently there are no plans for expanding facilities. The following paragraphs list facilities in the project area by segment (Jeff Matthews, NV Energy, personal communications, October 8, 2009).

Segment 2-45: There are 200A primary 14.4kv overhead facilities from the STPUD pump facility along the access road to Barbara Ave. From Barbara Ave, the overhead facilities run along the south side of Barbara Ave to Martin Ave.

Segment 2-50: 200A primary 14.4kv overhead facilities exist on the north side of Martin Ave from Barbara Ave to Martin Ave Bridge and along the west side of Meadowcrest Dr north of the intersection with Black Bart Ave. 200A primary 14.4kv underground facilities exist between the poles on the west side of Meadowvale Dr, running north along the Class I trail to the LTCC.

Segment 2-70: 200A primary 14.4kv overhead facilities are located in the Bijou neighborhoods and along Pioneer Trail, with underground facilities located along the north side of Al Tahoe Blvd

Segment 2-80: 200A primary 14.4kv overhead facilities exist in the neighborhoods off of Larch Ave and Rocky Point Rd up to the Van Sickle Bi-State Park entrance along the east side of Montreal Rd, with underground facilities along the west side of Ski Run Blvd

According to Jeff Matthews, Senior Utility Administrator with NV Energy (personal communications, October 8, 2009), most of the poles in the project area are within the existing road ROWs and within 10 feet of the existing edge of pavement. Underground facilities are typically just in or outside the existing edge of pavement with three to four feet of coverage above the top of the conduit.

Natural Gas. Southwest Gas Corporation services the project area. Southwest Gas provides natural gas service to businesses and residences in South Lake Tahoe, including in the vicinity of the Greenway. Gas facilities are located within a majority of public ROWs. Pipelines are sized to insure adequate service during a peak-heating day and there are no current capacity issues (Matthew Helmers, Southwest Gas, personal communications, September 4, 2009).

Communications. AT&T provides communications services (telephone, cable, and internet) to the residences and businesses surrounding the project area. The local AT&T office is located at 2264 Lake Tahoe Blvd. Transmission lines are above ground on poles. Currently, there are no plans to expand or alter facilities (Carol Prince, AT&T, personal communications, October 7, 2009).

Water and Wastewater Service. The STPUD provides water and wastewater service to the project area. STPUD currently operates pipelines in the project area, and the District offices are located adjacent to Segment 2-50. The water purveyance system is also operated by STPUD. Water is pumped from

underground aquifers (22 wells) and conveyed to 12,625 homes and businesses through an underground pipeline system. The service area is organized into 16 water zones serving 2.4 billion gallons each year.

Solid Waste and Disposal. South Tahoe Refuse Company (STR) annually collects more than 100,000 tons of solid waste from businesses and residences in the South Tahoe area and contracts directly with a landfill in Nevada for waste disposal. STR operates a waste transfer station on Ruth Ave in South Lake Tahoe. This transfer station is a 4-acre, large volume permitted station that accepts mixed municipal waste as well as household hazardous waste. Recyclable materials are collected at this facility, which is inspected annually. STR recently completed a new Resource Recovery building that increases green waste and construction material recycling. Once sorted, waste materials are sent to Lockwood Regional Landfill outside of Sparks, Nevada. The 1,535 square-acre Lockwood Regional Landfill has over 100 years of capacity available (Jeff Tillman, STR, personal communications, September 9, 2009). The project area currently contains no trashcans.

3.2.17.2 Environmental Analysis and Mitigation Measures

170. Would the Greenway exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? (CEQA XVIIa)

Standard of Significance: Exceedance of wastewater treatment requirements as established by Lahontan constitutes a significant impact.

The project develops a shared-use trail that does not create population growth, as discussed in Question 134, to increase utility demand. The Greenway proposes no new housing that could increase resident populations in need of these services and does not propose fixtures or features that require connections to wastewater. Communications with STPUD indicate that Greenway construction and operation has no effect on demand for wastewater services. The Greenway would not affect wastewater quantities and would have no impact on wastewater treatment operations, treatment, or capacity.

Compliance measure CM-6 conforms to requirements for permanent BMPs as outlined in TRPA Code Chapter 25, LTBMU Management Practices, Lahontan's Basin Plan Chapter 5 and City of South Lake Tahoe Code. Section 2.6.3 provides details for permanent BMPs. Implementation of CM-4, detailed in Section 2.6.5.4, assures the project complies with Lahontan NPDES construction permit requirements.

Environmental Analysis*: Less than Significant Impact.*

Required Mitigation: **None.**

171. Would the Greenway 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 XVIIb)

Standard of Significance: Construction of new water or wastewater facilities or expansion of existing facilities as a result of the project constitutes a significant impact if new construction creates significant and immitigable environmental effects.

The project develops a shared-use trail that does not create population growth, as discussed in Question 134, to increase utility demand. The Greenway proposes no new housing that could increase resident populations in need of these services and does not propose fixtures or features that require connections to water or wastewater. The Greenway installs no permanent irrigation, restrooms, or water fountains.

Communications with STPUD indicate that Greenway construction and operation has no effect to demand for water and wastewater services.

Portions of the Greenway cross STPUD pipelines where overlap occurs with neighborhood connectors and lateral lines to residences. Perpendicular crossings typically occur at roadway intersections, where the trail matches the existing roadway grade and pavement.

The project identifies utility coordination actions in compliance measure CM-12. Design avoidance and minimization of grading in these areas minimize the potential to encounter or damage STPUD facilities during construction.

TRPA Code Chapter 27, the Stateline/Ski Run CP, Bijou/Al Tahoe CP, and the City's General Plan provide regulations for utilities and services. The Greenway complies with these regulations as no new water or wastewater utilities are required to operate the trail.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

172. Would the Greenway 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 XVIIc)

Standard of Significance: Construction of new stormwater drainage facilities or expansion of existing facilities as a result of the project constitutes a significant impact if new construction creates significant and immitigable environmental effects.

The Greenway does not directly utilize existing or planned City stormwater drainage facilities, but addresses stormwater runoff through the design element. As discussed in Question 94, the Greenway design element includes hydrologic source controls and infiltrates runoff from the impervious trail surfaces into clean zones directly adjacent to the Greenway. When grades dictate, the trail conveys runoff to infiltration trenches within the project area for infiltration and soil treatment.

Compliance measure CM-6 conforms to requirements for permanent BMPs as outlined in TRPA Code Chapter 25, LTBMU Management Practices, Lahontan's Basin Plan Chapter 5 and City of South Lake Tahoe Code. Section 2.6.3 provides details for permanent BMPs. Implementation of CM-4, detailed in Section 2.6.5.4, assures the project complies with Lahontan NPDES construction permit requirements.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigation: **None.**

173. Would the Greenway have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? (CEQA XVIId)

Standard of Significance: As significant impact occurs if the Greenway creates a demand in water supply that requires new or expanded entitlements or resources to assure continuation of sufficient water supply to the public.

As described above for Question 171, the Greenway requires no new water service and therefore avoids significant affect on water supplies, entitlements or resources.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigation: **None.**

174. Would the Greenway result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? (CEQA XVIIe)

Standard of Significance: A significant impact results if the project creates additional demand that prohibits STPUD from meeting existing provider commitments with existing wastewater treatment capacity.

As described above for Question 171, the Greenway requires no new wastewater service. Communications with STPUD indicate that Greenway construction and operation has no affect to demand for wastewater services.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

175. Would the Greenway be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? (CEQA XVIIf)

Standard of Significance*:* A significant impact results if the project creates demand for a new landfill or is unable to be served by existing landfills.

Although the project places trash receptacles at some trail access points, large quantities of trash will not be generated as the project serves as a transportation route with primarily through-travel users. The location of receptacles will avoid their misuse as public dumpsters. Therefore, new collection equipment, personnel, or infrastructure is not needed. In addition, the Lockwood Regional Landfill, which serves the solid waste landfill needs of the community, has over a 100-year capacity. The Greenway does not require the development of a new landfill. The Conservancy, as project proponent, retains the responsibility for maintenance and management of the trail and associated facilities as discussed in Appendix E (OMMS). In addition, the STR indicated its existing capacity and personnel can sufficiently serve the project (Jeff Tillman, STR, personal communications, September 9, 2009).

Environmental Analysis: *Less than Significant Impact*.

Required Mitigation: **None.**

176. Would the Greenway comply with federal, state, and local statutes and regulations related to solid waste? (CEQA XVIIg)

Standard of Significance: Noncompliance with statutes and regulations regarding solid waste results in a significant impact as defined by TRPA Regional Plan Goals and Policies, the City General Plan and state (Title 14 and 27 CCR) and federal solid waste handling and disposal regulations.

As discussed for Question 175, STR and the Lockwood Regional Landfill will receive limited solid waste from operations of the Greenway and have sufficient capacity to serve the needs. STR resource recovery operations provide recycling of various materials, including green waste and construction material, which further reduces the quantity of waste sent to the landfill. The City General Plan Land Use Element Goal

3, Objective 2 requires the continued export of solid waste out of the Basin. TRPA Regional Plan Land Use Element Goal 5, Policy 1 and Public Services Element Goal 3, Policy 2 also requires the transport of solid waste outside the Basin in compliance with California state laws. The Greenway complies with these goals and policies. To reduce littering on the land surrounding the Greenway, trash receptacles proposed along the trail will be managed by the Conservancy.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

177. Will the Greenway result in use of substantial amounts of fuel or energy? (TRPA 15a)

No. Standard of Significance: Use of substantial amounts of fuel or energy by the project results in a significant impact as defined by TRPA Regional Plan Conservation Element.

Fuel consumption will occur during construction of the Greenway to power equipment and machinery. This fuel consumption will be temporary and typical of a construction project of this size and nature. Substantial fuel consumption will not occur during regular trail operations. Limited fossil fuels will be consumed during periodic maintenance. Although flashing pedestrian crossings will connect to existing electrical services, the fixtures will draw only minimal quantities of energy, and will not affect existing service or capacity. No other lighting or connections to electrical or natural gas service is proposed for the Greenway. As discussed in Question 163, use of the Greenway reduces daily vehicle trips. Reductions in vehicle trips reduce long-term fuel consumption in accordance with TRPA Regional Plan Conservation Element Energy Goal 1, Policy 5 and the goals and policies of the Air subelement.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

178. Will the Greenway result in substantial increase in demand upon existing sources of energy, or require the development of new sources of energy? (TRPA 15b)

No. Standard of Significance: A substantial increase in demand upon existing sources of energy or requirement of the development of new sources of energy by the project results in a significant impact as defined by TRPA Regional Plan Conservation Element.

The Greenway creates no substantial increase in energy demand and results in no new energy development. Operation and use of the trail reduces daily vehicle trips by 80, which reduces fuel consumption in accordance with TRPA Regional Plan Conservation Element Energy Goal 1, Policy 5 and the goals and policies of the Air subelement.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

189. Except for planned improvements, will the Greenway result in a need for new systems, or substantial alterations to power or natural gas? (TRPA 15a)

No. Standard of Significance: Substantial alteration to power or natural gas or the requirement for new systems by the project results in a significant impact as defined by TRPA Regional Plan Conservation Element**.**

Utility infrastructure within the project area consists of electrical lines, natural gas pipelines, communications lines, and water and wastewater pipelines. Communications with utility and service providers indicate trail construction and operation has no effect on demand for natural gas service or electrical service.

Electricity. Although the project avoids service poles where feasible, some poles require relocation. Greenway plan sheets in Appendix C identify eight, potentially nine, poles for relocation: potentially one pole at Sierra Blvd and Barbara Ave in Segment 2-45; five poles along Aloha, one pole at Herbert and Aloha, and one pole at Woodbine and Pioneer Trail in Segment 2-70; and one pole at Ski Run Blvd and Pioneer Trail in Segment 2-80. Relocation of the poles and lines to the nearest feasible location will occur prior to trail construction to avoid construction hazards and service disruption. Since these facilities are above ground, they are easily detected and can be safely relocated in coordination with NV Energy and Liberty Energy, as described in compliance measures CM-12 in Section 2.6.5.

Some underground facilities exist within the project area, typically located at the edge of existing pavement buried at a depth of three to four feet. Although it is unlikely they will be encountered during project grading, compliance measure CM-12 serves to prevent damage to these lines. Costs associated with relocation of facilities are the responsibility of the project (Jeff Matthews, NV Energy, personal communications, October 8, 2009 and February 4, 2010).

TRPA Code Chapter 27, the Stateline/Ski Run CP, Bijou/Al Tahoe CP, and the City General Plan provide regulations for electrical utilities. Although these regulations guide future actions to underground utilities where feasible, relocating only a few poles underground within an overhead series is not feasible.

Natural Gas. In a letter dated September 4, 2009, Matthew Helmers, Southwest Gas Corporation, states there is potential for natural gas facilities to be encountered when Greenway construction occurs within existing roadway ROROWWs. Although there is potential to encounter buried pipeline during excavation, construction coordination with utility providers as detailed in compliance measure CM-12 reduces the potential for a significant impact to occur.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigations: **None.**

180. Except for planned improvements, will the Greenway result in a need for new systems, or substantial alterations to communication systems? (TRPA 15b)

No. Standard of Significance: The need for new systems or substantial alteration to communication systems as a result of the project constitutes a significant impact.

Correspondence with utility and service providers indicate Greenway construction and operation has no effect on demand for communication service. Communication lines within the project area are above ground on existing power poles. The project intercepts power poles and requires relocation of up to nine power poles outside the Greenway alignment. Since facilities are above ground, detection and relocation in coordination with AT&T, Liberty Energy and NV Energy is anticipated. This coordination effort is established in compliance measure CM-12.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigations: **None.**

181. Except for planned improvements, will the Greenway result in a need for new systems, or substantial alterations to utilize additional water which amount will exceed the maximum permitted capacity of the service provider? (TRPA 15c)

No. Standard of Significance: Construction of new water facilities or expansion of existing facilities as a result of the project constitutes a significant impact if new construction creates significant and immitigable environmental effects.

See analyses for Questions 171, 173 and 174, which address CEQA checklist items XVIIb, XVIId and XVIIe related to water and wastewater systems and conclude that the Greenway creates no impacts. The project creates no demand to water or wastewater systems requiring alterations to STPUD systems.

Environmental Analysis: *No Impact*.

Required Mitigation: **None.**

182. Except for planned improvements, will the Greenway result in a need for new systems, or substantial alterations to utilize additional sewage treatment capacity which amount will exceed the maximum permitted capacity of the sewage treatment provider? (TRPA 15d)

No. Standard of Significance: Construction of new wastewater facilities or expansion of existing facilities as a result of the project constitutes a significant impact if new construction creates significant and immitigable environmental effects.

See analyses for Questions 171, 173 and 174, which address CEQA checklist items XVIIb, XVIId and XVIIe and conclude that the Greenway creates no impact to wastewater systems. The project creates no demand to wastewater systems requiring alterations to STPUD systems.

Environmental Analysis: *No Impact*.

Required Mitigation: **None.**

183. Except for planned improvements, will the Greenway result in a need for new systems, or substantial alterations to storm water drainage? (TRPA 15e)

No. Standard of Significance: Construction of new stormwater drainage facilities or expansion of existing facilities as a result of the project constitutes a significant impact if new construction creates significant and immitigable environmental effects.

See analysis for Question 172, which addresses CEQA checklist item XVIIc and concludes that the Greenway creates no impact to wastewater systems. The Greenway does not directly utilize existing or planned City stormwater drainage facilities, but addresses stormwater runoff through the design element, which includes hydrologic source controls and infiltrates runoff from the impervious trail surfaces into clean zones directly adjacent to the Greenway. When grades dictate, the trail conveys runoff to infiltration trenches within the project area for infiltration and soil treatment. The Greenway creates no direct or indirect environmental effects because the project requires no construction of new or expansion of existing stormwater drainage facilities,

Compliance measure CM-6 conforms to requirements for permanent BMPs as outlined in TRPA Code Chapter 25, LTBMU Management Practices, Lahontan's Basin Plan Chapter 5 and City of South Lake

Tahoe Code. Section 2.6.3 provides details for permanent BMPs. Implementation of CM-4, detailed in Section 2.6.5.4, assures the project complies with Lahontan NPDES construction permit requirements.

Environmental Analysis: *No Impact*.

Required Mitigation: **None.**

184. Except for planned improvements, will the Greenway result in a need for new systems, or substantial alterations to solid waste and disposal? (TRPA 15f)

No. Standard of Significance: Construction of new solid waste systems or disposal sites constitutes a significant impact.

See analysis for Questions 175 and 176, which address CEQA checklist items XVIIf and XVIIg and conclude that the Greenway creates no substantial alterations to solid waste services and disposal and does not require the development of new landfills.

Environmental Analysis: *Less than Significant Impact*.

Required Mitigation: **None.**

185. Greenway effects related to utilities.

The LTBMU Forest Plan and SNFPA focus on environmental resources and do not specifically address utilities or an action's effect on utilities. Practice 36 discusses utility development on LTBMU land and Practice 49 discusses facility construction and reconstruction; however, neither specifically provides standards or guidelines to assess an action's effect on utilities. These practices discuss undergrounding utilities and locating new utilities outside of viewsheds, making facilities subordinate to the surrounding environment. They also discuss joint use of roadway ROWs where possible.

An action's effect on utilities would be adverse in terms of its context and intensity if it would result in the need for new systems or result in substantial alteration of the following:

- Power or natural gas facilities;
- Communication systems;
- Additional water, the amount of which would exceed the maximum permitted capacity of the service provider;
- Additional sewage treatment capacity, the amount of which would exceed the maximum permitted capacity of the sewage treatment provider;
- Additional storm water drainage; or
- Additional solid waste disposal, the amount of which would exceed the capacity permitted at the disposal facility.

No Project. The no project alternative constructs and operates no shared-use trail and creates no direct effects to the project area. Portions of the project area, including locations on National Forest Lands, would continue to be used as informal trails. Indirect and direct effects from continued use of informal trails would continue. This alternative would result in no contribution to potential cumulative effects related to public services on National Forest Lands.

Proposed Project. Resident concern about visitors who may not comply with existing laws is an important consideration in project design, although the topic of crime is not included among those

covered as an environmental effect under NEPA or TRPA regulations. The Greenway design element addresses the potential for trespass and vandalism with design features to discourage users from leaving the path in sensitive locations. Relevant design measures, as described in Section 2.6.2, include site-specific privacy screening, the placement of user management fencing adjacent to the shared-use trail, increased directional signage, and placement of the shared-use trail within the project area. Also, the paved surface allows for emergency vehicle access, if needed in response to complaints.

Indirect and Direct Effects. As discussed in Questions 170 through 184, the Greenway will not result in population growth requiring new or expanded utility systems. The Greenway results in shared roadway ROWs in some locations, requiring the relocation of up to nine powerpoles, none of which are located on National Forest Lands. Analysis identifies no indirect, direct adverse project effects to public services associated with LTBMU parcels.

Cumulative Effects. Section 3.2.18, Mandatory Findings of Significant, specifically Question 187, addresses cumulative effects of the Greenway and related projects, as listed in Table 60.

Environmental Analysis: *No Impact Anticipated*.

Required Mitigation: **None.**

3.2.18 Mandatory Findings of Significance

This section presents the analyses for mandatory findings of significance. Table 59 identifies the applicable impacts and anticipated level of impact.

Table 59

Mandatory Findings of Significance

CEQA Environmental Checklist Item	Potentially Significant Impact	Less Than Significant with Mitigation Measures	Less Than Significant Impact	No Impact
186. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? (CEQA XVIIIa)		X		
187. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? (CEQA XVIIIb)			X	
188. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? (CEQA XVIIIc)				X

TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
189. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California or Nevada history or prehistory? (TRPA 21a)				**X**
190. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time, while long-term impacts will endure well into the future.) (TRPA 21b)				**X**
191. Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environmental is significant?) (TRPA 21c)			**X**	
192. Does the project have environmental impacts which will cause substantial adverse effects on human being, either directly or indirectly? (TRPA 21d)				**X**

NEPA Significance of Effects
193. Greenway impacts that may be both beneficial and adverse. (NEPA)
194. The degree to which the Greenway may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration. (NEPA)
195. Whether the Greenway is related to other actions with individually insignificant but cumulatively significant impacts. (NEPA)

3.2.18.1 Environmental Analysis and Mitigation Measures

186. Does the Greenway have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? (CEQA XVIIIa)

As discussed in this IS/IEC/EA, the Greenway may result in potentially significant impacts to SEZ and wetlands, wildlife nests and nursery sites, sensitive habitats and individuals, old growth trees, and historical resources. However, project compliance measures and implementation of proposed mitigation measures will reduce the effects of such impacts to a point that clearly no significant impacts occur.

Environmental Analysis: *Less than Significant after Mitigation*.

Required Mitigation (See Questions 35, 42, 49 and 51 for descriptions):

BIO-1. Active Raptor and Migratory Bird Nest Site and Wildlife Nursery Site Protection Program
BIO-2. Avoid Sensitive Plants or Prepare Sensitive Plant Protection Program
BIO-3. Wildlife Protection Program
CUL-1. Cultural Resource Monitoring Plan

187. Does the Greenway have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? (CEQA XVIIIb)

When the Greenway's incremental contribution is "cumulatively considerable", the following analysis addresses the environmental resource of concern. The projects that could have a cumulative impact on the resources in the project area when considered incrementally with the Greenway are referred to as "related projects".

Table 60 identifies a list of past, present, and reasonably foreseeable future projects that have occurred or are planned to occur in the vicinity of the project area. The table identifies the name of the related project, the Greenway segment that is considered in context of the action, a brief description, and the status. Agencies contacted and documents referenced for development of Table 60 include: TRPA; Conservancy; LTMBU; El Dorado County; City; STPUD; Caltrans; TRCD; Entrix; AECOM (Draft Upper Truckee River and Marsh Restoration Project EIR/EIS/EIS – December 2009); California State Parks and Nevada State Parks.

Those projects that are currently under construction, approved for construction, or in various stages of formal planning are present and reasonably foreseeable, probable future projects. Some of the projects could be constructed concurrently with the Greenway (2012–2016). Greenway construction phasing recognizes the potential for concurrent projects and overlapping project area to avoid a number of potential cumulative impacts.

The present or reasonably foreseeable, probable future projects considered in this cumulative analysis are those projects located within the Trout Creek, Heavenly Valley Creek, Bijou Creek and Bijou Park Creek watersheds and the South Shore of the Lake Tahoe Basin and that have been identified as having potential effects on environmental resources that could also be affected by the Greenway. Table 60 identifies the related projects in the cumulative effects analysis based on these following criteria:

(1) The project is reasonably foreseeable, because it has an identified lead agency, and has initiated CEQA, TRPA, and/or NEPA environmental review or other regulatory procedures.
(2) The information available defines the project in adequate detail to allow meaningful analysis.
(3) The project could affect resources potentially affected by the Greenway.

The Greenway is closely tied to several projects listed in Table 60, including the Van Sickle Bi-State Park, which is the northern terminus of the Greenway shared-used trail, the Rocky Point Erosion Control Project, and Bijou Erosion Control Project. Van Sickle Bi-State Park provides a trail connection from the Greenway to the Stateline commercial core area and provides greater opportunity for convenient and safe access to the Greenway. Use of these facilities support each other and will increase for each as development proceeds. Predicted impacts of the two projects considered together related to use, however, will not exceed that described in the attendant environmental analyses because of user management strategies described for each. Van Sickle Bi-State Park includes similar effects to habitats and SEZs as the Greenway and includes similar mitigation strategies to reduce the potential habitat effects to a less than significant level. No site conditions or project features create unforeseen conditions that could produce increased risk of environmental impact from cumulative actions.

The Rocky Point and Bijou Erosion Control Projects are developed to improve water quality from urban runoff. The Greenway travels through areas served by these facilities; its drainage controls will infiltrate storm water from trail surfaces, however, and avoid contributing unplanned discharge to these systems. As a result of proposed restoration and mitigation measures included for potential impacts, the Greenway will not contribute to significant water quality impacts from other past, current or future projects in the project vicinity. Habitat improvements related to the erosion control projects will compliment those related to the on-site restoration proposals for the Greenway.

Table 60

List of Related Projects in Vicinity of the Greenway Project Area - South Lake Tahoe Basin Area

Project Name	Greenway Project Segment	Project Description	Status
Past Actions			
Fire Suppression	All Segments	Prior to the late-1800s, fires in the Lake Tahoe Basin were frequent and 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 Lake Tahoe Basin (Barbour et al. 2002, pages 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. (Source: AECOM 2009)	Past
Historic Timber Harvests	All Segments	Most forests within the Trout Creek, Bijou Creek and Bijou Park Creek watersheds were grazed and logged during the past 150 years, and an associated network of skid trails, flumes, logging roads, and railroads was constructed during that time (Murphy and Knopp 2000). This extensive grazing, logging and road construction altered biologic, hydrologic, geomorphic, and other resources in these watersheds. (Source: AECOM 2009)	Past
Species Introductions	All Segments	Non-native species have been accidentally or deliberately introduced into the aquatic and terrestrial ecosystems of the Lake 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 2003). These species have been altering the resources of the project vicinity and south shore of Lake Tahoe. (Source: AECOM 2009)	Past
Urban Development	All Segments	During the past 150 years, portions of the Trout Creek, Heavenly Valley Creek, Bijou Creek and Bijou Park Creek watersheds have been converted to developed land uses. (Source: AECOM 2009).	Past
***Cumulative Analysis*.** These past actions produce the conditions found today and described in the setting sections of this analysis. No additional cumulative impacts result.			

Table 60

List of Related Projects in Vicinity of the Greenway Project Area - South Lake Tahoe Basin Area

Project Name	Greenway Project Segment	Project Description	Status
TRPA			
Nevada Stateline-to Stateline Bikeway Project	Segment 2-80	The Nevada Stateline-to-Stateline Bikeway Project is a joint proposal of local, state, and federal agencies with responsibilities on the Nevada side of the Lake Tahoe Basin. The TRPA is the lead agency in this planning effort. The primary purpose of the Nevada Stateline-to-Stateline Bikeway Project is to provide non-auto transportation opportunities that link recreation areas, community centers, transportation facilities, and neighborhoods in the bikeway corridor to expand recreational access and transportation choices for residents and visitors to the Tahoe Basin. This project proposes bike trail within the Nevada portion of the Lake Tahoe Basin to connect north and south shores. Majority of the trail would be Class I or better, separated from public highways. Where a separated trail is not feasible, segments of the trail would be located on highways as a bike lane. (Source: LTBMU and TRPA Webpages)	Proposed – The Draft EA released January 2011 with a Final EA issued in the Summer 2011.
Additional Urban Development	All Segments	This urban development would consist of numerous small residential, commercial, industrial, and infrastructure projects in the project vicinity and elsewhere in the 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). (Source: AECOM 2009)	Proposed, Approved, On-going – Additional urban development is on-going, and anticipated to be on-going
***Cumulative Analysis*.** Additional connectivity and increased development will increase use on the Greenway. Effects will be additional reduced VMT, improved access to existing destinations. These outcomes may offset increased conflicts at roadway crossings including safety and vehicle delay. Cumulative effects will not increase minor impacts to a level of significance.			
State of California – Conservancy, State Parks, Tahoe Resource Conservation District, Caltrans			
Van Sickle Bi-State Park	Segment 2-80	Phase IA construction of Van Sickle Bi-State Park began in 2009 and will extend into 2011. Phase IA includes infrastructure improvements, a relocated trailhead, restrooms and parking areas on the Nevada side, and interim parking and restroom facilities at the barn complex in California.	Approved – Construction began in 2009
***Cumulative Analysis*.** Use will increase for both recreation activities as a result of park and trail development. These effects are included in the use estimates produced for the Greenway and trail connections were assumed in the evaluation for Van Sickle Bi-State Park. Cumulative effects of increased human use on natural systems will not exceed the user management strategies of the two projects to address.			

Table 60

List of Related Projects in Vicinity of the Greenway Project Area - South Lake Tahoe Basin Area

Project Name	Greenway Project Segment	Project Description	Status
South Tahoe Public Utility District			
STPUD SEZ Restoration	All	The Conservancy awarded grants to the STPUD to plan improvements and develop some SEZ restoration components within El Dorado County. When completed, the projects will control sediment sources and treat stormwater runoff at 18 different STPUD facilities. Data for sensitive species, cultural, and wetland studies have been collected. Topographic surveys, basemap development, and pervious delineations for sites have been performed. Draft BMP Toolbox and Streamlined Alternative Analysis and draft site-specific alternatives have been developed. LTBMU and STPUD funding allows progress on some projects in 2011. (Source: Conservancy 2011)	Proposed - Draft site-specific alternatives have been developed and are under review.
Headworks Replacement Project: Phase I Demolition	Segment 2-50	STPUD proposes to replace the headworks portion of the wastewater treatment plant located at Meadow Crest Drive. All work will be located within the confines of the existing treatment plant.	Approved – Construction to begin Spring 2011.
***Cumulative Analysis*.** SEZ restoration on STPUD parcels compliments the restoration components of the Greenway. No cumulative effect related to construction will occur, as construction periods do not overlap.			
City of South Lake Tahoe			
Sierra Tract Erosion Control Project	Segments 2-45, 2-50	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 the City. It entails construction of a stormwater conveyance and treatment system, and stabilization of roadsides with vegetation. This project has been structured into 5 phases. (Source: AECOM 2009)	Approved – Construction of Phases 1 and 2 are complete. Phase 3 is in process. Planning and design of future Phases continues, construction is expected in 2011..
Al Tahoe Erosion Control Project	Segment 2-70	This project by the City with funding from the Conservancy and LTBMU would be implemented in 320 acres of the Al Tahoe neighborhood in the Trout Creek watershed in the City. Using a variety of measures, the project would treat runoff from 41–77% of the project area, depending on the project alternative implemented. Treatment measures differ among project alternatives and may include discouraging	Proposed – Project alternatives are under development. Construction began in 2010 and continues until

Table 60

List of Related Projects in Vicinity of the Greenway Project Area - South Lake Tahoe Basin Area

Project Name	Greenway Project Segment	Project Description	Status
		parking, local revegetation, placement of riprap, curb and gutter, protection of road shoulders with permeable pavement, and other measures. (Source: AECOM 2009)	2014 or 2015.
El Dorado Beach to Ski Run Blvd Bike Path	Segments 2-70, 2-80 and Greenway Connectors	The project involves construction of an approximately 1-mile long Class 1 bike path (paved bike path in dedicated right-of-way separated from roadway rights-of-way) on the north side of US Hwy 50) in the City between El Dorado Beach and Ski Run Blvd	Proposed – Mitigated Negative Declaration released March 2011
Rocky Point 3 and 4 Erosion Control Project	Segment 2-80	Phases 1, 2, 3, and 4 are complete.	Complete
Bijou Erosion Control Project	Segment 2-70	Conservancy grants were provided for the planning of the project. Consensus has been reached on elements of the Recommended Alternative. A detailed analysis of these components will be developed in the environmental document. The focused study of the Commercial Core Area is continuous, and the comprehensive monitoring effort of the project area began in September 2008 due to the complexities of the project, Conservancy Senior Management and the City Council are being kept apprised of all developments as they occur. (Source: Conservancy 2008)	Proposed – Decision expected 2011 and construction in 2012
East Pioneer Erosion Control Project	Segment 2-80	Conservancy grants have been authorized for this project. An intensive monitoring effort has been initiated on the Keller Canyon portion of the project. (Source: Conservancy 2008)	Proposed
Cumulative Analysis. The Greenway restoration and revegetation measures (Appendix D) will compliment restoration elements of the erosion control projects. Greenway design features have potential to improve erosion control success by providing paved or boardwalked passage through sensitive LCDs for avoidance of disturbance in these areas.			
USDA Forest Service, LTBMU			
LTBMU South Shore Fuel Reduction and Healthy Forest Restoration EIS/EIR	All Segments	The LTBMU proposes to reduce the risk of high intensity wildfire on National Forest Lands in the urban wildland intermix in order to provide a defense zone between Forest and urban and/or suburban development. (LTBMU 2009)	Proposed – Decision expected July 2011 with implementation

Table 60

List of Related Projects in Vicinity of the Greenway Project Area - South Lake Tahoe Basin Area

Project Name	Greenway Project Segment	Project Description	Status
			beginning Aug 2011.
Erosion Control Projects	All Segments	Grants administered by LTBMU to local agencies and organizations to plan and implement erosion control projects. (Source: LTBMU Webpage)	Approved-Ongoing
Cumulative Analysis. The Greenway will provide new or improved emergency access to some urban/suburban development areas. The Greenway restoration and revegetation measures (Appendix D) will compliment restoration elements of the erosion control projects.			
El Dorado County			
Montgomery Estates Phases 1, 2, and 3 Water Quality Project	Segment 2-50	This project proposed by El Dorado County with funding from the Conservancy and LTBMU would be located in the watershed of Trout Creek in the City. 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 or Trout Creeks. (Source: AECOM 2009)	Proposed – Phase 1 Implementation 2011-2012 Phase 2 Implementation 2013 Phase 3 Implementation beyond 2013
Cold Creek SEZ Restoration	Segment 2-50	This project by El Dorado County and the Conservancy would be located at and upstream from the intersection of Pioneer Trail with Cold Creek, which is in the watershed of Trout Creek. Within this area, the project would restore slopes and enhance SEZ while stabilizing the site, possible replacing an existing bridge.	Proposed – Implementation to begin summer 2011.
Cumulative Analysis. Upland and SEZ restoration on El Dorado County parcels compliments the restoration components of the Greenway. No cumulative effect related to construction will occur, as construction periods do not overlap.			

Source: USFS Quarterly Project Report, 2011, City of South Lake Tahoe Capital Improvement List, 2010, HBA 2011

The South Shore Fuel Reduction and Healthy Forest Restoration project is designed to reduce the risk of high intensity wildfire on National Forest Lands in the urban wildland areas and involves tree removal. A majority of the tree removal required for the Greenway occurs along public rights of way or in residential neighborhoods where opportunities do not exist to relocate the Greenway to avoid the tree removal. In other areas comprised of large publicly owned parcels, meandering the trail alignment to avoid tree removal reduces effects. Greenway project area adjacent to existing public roadway ROWs and within residential neighborhoods do not currently provide suitable habitat for sensitive wildlife species because of existing disturbance. As such, the Greenway will not contribute to significant wildlife impacts from other past, current or future projects in the project vicinity (e.g., fuels reduction projects).

The Stateline to Stateline Bikeway, Van Sickle Bi-State Park and El Dorado Beach to Ski Run Blvd Bike Path projects provide a safe alternative to the use of the private automobile and help complete the planned trail network serving the south shore of the Lake Tahoe Basin. The completion of the Greenway and these other proposed trails will improve the overall South Shore trail network, making the network more desirable as an alternative to automobiles. This is a beneficial cumulative impact.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

188. Does the Greenway have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? (CEQA XVIIIc)

Standard of Significance: Project environmental effects that cause direct or indirect substantial adverse effects to humans create a significant impact.

As discussed in this IS/IEC/EA, the Greenway does not adversely affect humans. The Greenway will positively affect humans through improvement of the non–automobile transportation network, providing safer and more convenient alternatives to the automobile.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

189. Does the Greenway have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California or Nevada history or prehistory? (TRPA 21a)

No, with mitigation. Standard of Significance: Refer to the analysis for Question 186, which addresses CEQA checklist Item XVIIIa and concludes the level of impact is less than significant after mitigation.

Environmental Analysis: *Less than Significant Impact after Mitigation.*

Required Mitigation: (See Questions 35, 42, 49 and 51 for descriptions)

BIO-1. Active Raptor and Migratory Bird Nest Site and Wildlife Nursery Site Protection Program
BIO-2. Avoid Sensitive Plants or Prepare Sensitive Plant Protection Program
BIO-3. Wildlife Protection Program
CUL-1. Cultural Resource Monitoring Plan

190. Does the Greenway have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (TRPA 21b)

No. Standard of Significance: A short-term impact on the environment is one that occurs in a relatively brief, definitive period of time, while long-term impacts will endure well into the future.

The Greenway includes additional development in sensitive soils and vegetation communities that cannot be avoided based on the linear nature of the transportation facility. The Greenway also provides opportunity for the restoration (approximately 25,000 square feet on-site and 105,000 square feet off-site) of SEZ lands. The success of proposed SEZ restoration will not be known in the short-term. However, with monitoring and management strategies, the project has the potential to achieve long-term environmental goals through the overall reduction in land coverage and disturbance of sensitive vegetation communities and soils.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None**.

191. Does the Greenway have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environmental is significant?) (TRPA 21c)

No. Standard of Significance: Refer to the analysis for Question 187, which addresses CEQA checklist Item XVIIIb and concludes the level of impact is less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

192. Does the Greenway have environmental impacts which will cause substantial adverse effects on human being, either directly or indirectly? (TRPA 21d)

No. Standard of Significance: Refer to the analysis for Question 188, which addresses CEQA checklist Item XVIIIc and concludes the level of impact is less than significant.

Environmental Analysis: *Less than Significant Impact.*

Required Mitigation: **None.**

193. Does the Greenway result in impacts that may be both beneficial and adverse? (NEPA)

As documented in the analysis of checklist questions 1 through 192, the Greenway does not result in adverse impacts. Beneficial impacts include restoration of informal trails in stream zone and other sensitive lands and a reduction in overall vehicle trips and associated VMT (e.g., reduced air quality emissions).

Environmental Analysis: *No Impact Anticipated.*

Required Mitigation: **None.**

194. What is the degree to which the Greenway may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration? (NEPA)

The Revised South Tahoe Greenway project constructs a separated, shared-use trail in the core of South Lake Tahoe linking Sierra Blvd to Van Sickle Bi-State Park. The alignment lies within the former Caltrans ROW in most of its length, deviating in some locations to reduce impact on SEZs or improve travel or roadway crossing safety.

The former Caltrans ROW obtained in 2000 by the Conservancy extends approximately 10 miles from the Stateline to Meyers, CA. Regional planning for bicycle trails identifies using this corridor to make this longer connection and early planning for the Greenway evaluated a 9.6-mile trail in three phases. Phases1 and 2 link mid-town at the Sierra Tract northward to the Stateline, as studied in this IS/IEC/EA. Phase 3 considered in the earlier planning efforts would make the southern link between Meyers and Sierra Tract, passing through the edge of the Upper Truckee River meadows. Concern related to bike trail development in this area prompted extensive investigation of alternative alignments. In 2006, the Conservancy considered a potentially feasible alternative to the proposed route. The US Hwy 50 Alternative crossed the river on a bridge north of the airport, making a trail connection near the South Y and continued to Meyers along US Hwy 50. This alignment makes its most critical connections through a large private ownership encompassing the Upper Truckee River and its associated floodplain between US Hwy 50 and the Lake Tahoe Airport. The property owner opposed this trail alternative in 2006 and it was dropped from detailed study. Another alternative choice following Pioneer Trail was considered in 2008.

As time elapsed, several conditions changed related to extension of the trail southward from the Sierra Tract. The private property owner involved in the 2006 alternative has indicated willingness to consider public acquisition to allow that alternative to be reconsidered. Public acquisition would enhance opportunities for restoration of the river and related wetlands and habitats, improve outdoor recreation opportunities, and allow consideration of this bike trail alternative. However, the funding opportunities for acquisition or bike trail construction have changed since 2000. This change requires focus on projects within the current capacity of the project proponent to complete. This southern trail extension, following any of the potential alternative alignments, remains an important link in the bicycle network, yet one that necessarily falls in priority.

The Conservancy intends to proceed at this time with environmental analysis, funding procurement, and project permitting for the core of the Greenway, linking mid-town to the Stateline. Implementing this project provides critical network connections at either end and along its length and can function as a completely stand-alone project. The Conservancy also retains full options for future consideration of the southern extension, including the future study of alternatives identified to date.

Environmental Analysis: *No Impact Anticipated.*

Required Mitigation: **None.**

195. Is the Greenway related to other actions with individually insignificant but cumulatively significant impacts? (NEPA)

Refer to the analysis for Question 187, which addresses CEQA checklist Item XVIIIb and concludes the level of impact is less than significant.

Environmental Analysis: *No Impact Anticipated.*

Required Mitigation: **None.**