

Martis Valley Trail Right-of-Way

Environmental Assessment

U.S. Army Corps of Engineers

Sacramento District

Martis Creek Lake and Dam Project

Placer County, California

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TABLE OF CONTENTS

SECTION		PAGE NO.
1	INTRODUCTION	1-1
1.1	PROPOSED ACTION AND PROJECT AUTHORITY	1-1
1.2	PROJECT LOCATION	1-1
1.3	PROPOSED TRAIL CHARACTERISTICS	1-2
1.4	PROJECT PURPOSE AND NEED	1-3
1.5	PREVIOUS ENVIRONMENTAL DOCUMENTS	1-4
1.6	PURPOSE OF THE ENVIRONMENTAL ASSESSMENT	1-4
1.7	DECISIONS TO BE MADE	1-5
2	ALTERNATIVES	2-1
2.1	INTRODUCTION	2-1
2.2	NO ACTION ALTERNATIVE	2-1
2.3	PAVED TRAIL WITHIN THE MCLDP ALTERNATIVE	2-1
2.4	PAVED TRAIL WITHIN THE CALTRANS EASEMENT ALTERNATIVE	2-3
2.5	COMBINED PAVED TRAIL ALTERNATIVE	2-4
2.6	UNPAVED TRAIL ALTERNATIVE	2-6
2.7	ALTERNATIVES CONSIDERED AND ELIMINATED FROM FURTHER ANALYSIS	2-6
2.8	ELEMENTS OF THE ACTION ALTERNATIVES	2-7
2.9	COMPARISON OF ALTERNATIVES	2-10
3	INTRODUCTION TO THE ENVIRONMENTAL EFFECTS	3-1
3.1	EFFECTS EVALUATED	3-1
3.2	RESOURCES NOT CONSIDERED IN DETAIL	3-1

4	BIOLOGICAL RESOURCES	4-1
4.1	INTRODUCTION	4-1
4.2	AFFECTED ENVIRONMENT	4-1
4.3	PROJECT EFFECTS	4-6
4.4	MITIGATION MEASURES	4-21
4.5	REFERENCES	4-22
5	CULTURAL RESOURCES	5-1
5.1	INTRODUCTION	5-1
5.2	AFFECTED ENVIRONMENT	5-1
5.3	PROJECT EFFECTS	5-11
5.4	MITIGATION MEASURES	5-17
5.5	REFERENCES	5-18
6	HYDROLOGY AND WATER QUALITY	6-1
6.1	INTRODUCTION	6-1
6.2	AFFECTED ENVIRONMENT	6-1
6.3	PROJECT EFFECTS	6-3
6.4	MITIGATION MEASURES	6-10
6.5	REFERENCES	6-11
7	LAND USE AND RECREATION	7-1
7.1	INTRODUCTION	7-1
7.2	AFFECTED ENVIRONMENT	7-1
7.3	PROJECT EFFECTS	7-5
7.4	MITIGATION MEASURES	7-13

7.5	REFERENCES	7-13
8	VISUAL RESOURCES	8-1
8.1	INTRODUCTION	8-1
8.2	AFFECTED ENVIRONMENT	8-1
8.3	PROJECT EFFECTS	8-4
8.4	MITIGATION MEASURES	8-9
8.5	REFERENCES	8-10
9	CUMULATIVE EFFECTS	9-1
9.1	CUMULATIVE DEVELOPMENT SCENARIO	9-1
9.2	CUMULATIVE EFFECTS ANALYSIS	9-3
9.3	REFERENCES	9-9

FIGURES

FIGURE		PAGE NO.
1-1	REGIONAL MAP	1-7
1-2	VICINITY MAP	1-9
1-3	REGIONAL TRAILS MAP	1-11
2-1	PAVED TRAIL WITHIN THE MCLDP SEGMENTS	2-23
2-2	PAVED TRAIL WITHIN THE CALTRANS EASEMENT SEGMENTS	2-25
2-3	COMBINED PAVED TRAIL SEGMENTS	2-27
2-4A	SEGMENT 1B ALIGNMENT	2-29
2-4B	SEGMENT 3A ALIGNMENTS PART 1	2-31
2-4C	SEGMENT 3A ALIGNMENTS PART 2	2-33
2-5	STAGING AREAS	2-35

2-6	UNDERDRAIN LOCATIONS	2-37
2-7	SEGMENT 3A MARTIS CREEK CROSSING	2-39
2-8	CULTURAL RESOURCES INTERPRETIVE EXHIBIT	2-41
4-1	HABITAT MAP	4-23
8-1	SITE PHOTOS (1)	8-11
8-2	SITE PHOTOS (2)	8-13

TABLES

TABLE		PAGE NO.
2-1	COMPARISON OF ALTERNATIVES	2-9
4-1	MIGRATORY BIRD SPECIES WITH POTENTIAL TO OCCUR IN THE STUDY AREA	4-5
4-2	PAVED TRAIL WITHIN THE MCLDP ALTERNATIVE STUDY CORRIDOR AND IMPACTED AREA HABITAT TYPES	4-7
4-3	CALTRANS EASEMENT STUDY CORRIDOR AND IMPACTED AREA HABITAT TYPES AND RELATIVE ACREAGES	4-12
4-4	COMBINED PAVED TRAIL STUDY CORRIDOR AND IMPACTED AREA HABITAT TYPES AND RELATIVE ACREAGES	4-15
5-1	POTENTIALLY SIGNIFICANT CULTURAL RESOURCES	5-9
6-1	PRE- AND POST- PROJECT RUNOFF IN WARM STORM EVENT	6-8
7-1	ESTIMATED MARTIS VALLEY TRAIL USE	7-6
9-1	MARTIS VALLEY COMMUNITY PLAN GROWTH PROJECTIONS	9-1
9-2	TOWN OF TRUCKEE GENERAL PLAN GROWTH PROJECTIONS	9-2
9-3	CURRENT AND REASONABLY FORESEEABLE PROJECTIONS	9-2

APPENDICES

APPENDIX

- Appendix A BIOLOGICAL RESOURCES ASSESSMENT
- Appendix B PROJECT HYDROLOGY STUDY
- Appendix C VISUAL IMPACTS ANALYSIS
- Appendix D HAZARDOUS MATERIALS DATABASE SEARCH
- Appendix E PUBLIC COMMENT SUMMARY TABLE

1 INTRODUCTION

1.1 Proposed Action and Project Authority

Acting as an agent for Placer County, the Northstar Community Services District (NCSD) has requested a right-of-way (ROW) from the U.S. Army Corps of Engineers (Corps) to construct and maintain a portion of the Martis Valley Trail (MVT) across the lands managed by the Corps at the Martis Creek Lake and Dam Project (MCLDP). Placer County would own the trail, but NCSD would be responsible for operating and maintaining it.

The construction and continuation of the greater MVT would be constructed in two segments. Both the first segment through the MCLDP, Segment 1B-2, and the second segment, Segment 3A, are proposed for construction in 2018; however, it is expected that they would be undertaken as separate construction projects. The ROW for the MVT would allow Placer County and NCSD, as the County's agent, to use a 50-foot-wide corridor temporarily during construction. Once construction is completed, the ROW would be reduced to a 15-foot-wide corridor centered on the trail centerline for the long-term maintenance of the MVT.

Granting the requested issuance of a ROW to Placer County for the trail is considered a federal action and therefore the Corps' consideration of this request triggers requirements under the National Environmental Policy Act (NEPA) to consider the environmental effects of the proposed action. Given the potential impacts of trail construction use and maintenance of the proposed MVT within the MCLDP, the Corps has prepared this Environmental Assessment (EA). If the EA analysis demonstrates that an Environmental Impact Statement (EIS) is not required, a Finding of No Significant Impact (FONSI) would be prepared for the proposed action. The district commander is responsible for determining whether to issue a FONSI and whether to grant the requested ROW. Other actions of the Corps covered in this EA include the issuance of a 404 permit under the Clean Water Act (CWA) as required, if and when the real estate action is completed.

The trail being proposed for construction at the MCLDP is part of the larger MVT project. All segments of the trail (both within and outside the MCLDP) are proposed as a multiple-use trail with a 10-foot-wide paved section and 2-foot-wide unpaved shoulders on both sides. Within the proposed ROW through the MCLDP, Segment 1B-2 is proposed to begin at the MCLDP western boundary and travel southeast, generally parallel to State Route (SR-) 267, ending at the existing MCLDP Wildlife Viewing Area. Proposed trail Segment 3A would begin at the Wildlife Viewing Area and travel east, generally parallel to SR-267, crossing Martis Creek and ending at the MCLDP eastern boundary near the Northstar California golf course. The total proposed trail length would roughly be 1.5 miles.

1.2 Project Location

The MCLDP is located in the Martis Valley, which is on the east side of the Sierra Nevada crest and north of Lake Tahoe, as shown on Figure 1-1. The low-point of the valley, which is in the vicinity of the Martis Creek Dam, is at an elevation of approximately 5,700 feet. The rugged mountains that surround three sides of the valley reach heights of about 8,500 feet. Martis Creek flows northerly and joins the Truckee River about 3 miles below the Town of Truckee.

The proposed portion of the MVT through the MCLDP is within the Truckee and Martis Peak U.S. Geological Survey 7.5-minute quadrangles, as shown on Figure 1-2. Latitude and longitude coordinates of the western terminus of Segment 1B-2 are 39°18'22.62" north and 120°08'16.26" west. The elevation at this point is approximately 5,870 feet above mean sea level. The eastern terminus of Segment 3A coordinates are at 39°18'7.85" north and 120°7'14.55" west, and the elevation at this location is approximately 5,822 feet above mean sea level. SR-267 provides the primary vehicular access through the

project area. The proposed alignment of the proposed ROW through the MCLDP is generally parallel to SR-267.

In the vicinity of the proposed ROW, land uses adjacent to the MCLDP include the Northstar California Community (to the east and south) and the Lahontan residential development and golf club (to the south/southwest). The Tompkins Memorial Trail consists of 14.6 miles of existing unpaved trails within the MCLDP and the Northstar California community. These existing trails are maintained and operated by NCSO. The Truckee-Tahoe Airport and residential subdivisions are located adjacent to the MCLDP on the north side of SR-267.

The topography in Martis Valley is gently rolling to generally flat. The climate in the area is characterized by mild, dry summers and cold, wet winters, during which most precipitation falls as snow. Annual temperatures range from -28 degrees Fahrenheit to 101 degrees Fahrenheit.

1.3 Proposed Trail Characteristics

The proposed trail through the MCLDP is a portion of the larger MVT project. The MVT would be constructed and maintained by the NCSO, but owned by Placer County. The trail is planned to extend from the southern limits of the Town of Truckee at the Nevada/Placer County line to a junction with Forest Route 73 (a paved Forest Service Road) near Sawmill Flat Reservoir. Figure 1-1 provides a regional map of the project area, and Figure 1-2 provides a map of the project vicinity. The trail would provide a regional connection between existing trails in the Town of Truckee and trails in the Lake Tahoe Basin. As stated previously, the Corps' proposed issuance of a ROW to Placer County for the trail is considered a federal action and therefore triggers the requirement under NEPA to conduct an assessment of environmental impacts. The Corps is the federal lead agency for preparation of this EA to evaluate the environmental effects of construction, use, and maintenance of the proposed MVT within the MCLDP. It is noted that the full project was subject to environmental review under the California Environmental Quality Act (CEQA). The Environmental Impact Report (EIR) for the MVT (State Clearinghouse No. 201022057) was certified by NCSO, as the agency primarily responsible for the full project and therefore the lead agency under CEQA, on February 21, 2013. A Mitigation Monitoring and Reporting Program prepared and adopted in accordance with Section 21081.6 of the California Public Resources Code is included in Chapter 12 of the Draft EIR. The MVT EIR evaluated two potential trail alignments (project alternatives) and identified the "Highway Alignment" as the environmentally superior alternative.

Through the CEQA process, the NCSO determined to proceed with implementation of the MVT project under the Highway Alignment evaluated in the EIR. This alignment includes Segments 1A, 1B-1, 1B-2, 3A, 3B, 3F and 4. Segments 1B-2 and 3A are proposed to be constructed within the MCLDP subject to the Corps' issuance of a ROW and are evaluated in this EA, while the other segments are proposed outside of the MCLDP and are not subject to analysis in this EA.

Trail Design

The trail is proposed to allow for pedestrian and bicycle use and is proposed to be constructed to meet the standards of the Americans with Disabilities Act. The maximum grade of the trail would be 5%. The width of the paved trail surface would generally be 10 feet, with 2-foot unpaved shoulders on either side.

Landscaping would consist of vegetating all disturbed areas with native drought-tolerant vegetation. Other landscape elements include signage and a split-rail fence along the trail. No lighting is proposed with this project. Drainage design incorporates sheet flow as much as possible to reduce point source erosion issues. The proposed trail would avoid the use of cross drains insofar as possible. Specific trail cross-sections have been developed by the geotechnical engineer based on soil types and infiltrative

capacities, to mitigate stormwater runoff. Trail heads and rest areas would be constructed with permeable pavers.

Access

The proposed trail would be accessible from existing MCLDP trails and planned trails in the surrounding area and the local community. Under any of the three paved trail alternatives, the project would also include relocating the existing Wildlife Viewing Area parking lot. Potential parking lot locations within the MCLDP, would be on the south side of SR-267 near Martis Dam Road (Figure 2-1). The effects of constructing a parking lot at either of the two potential locations within the MCLDP are evaluated in this EA. Portions of the existing parking area would be revegetated and a small area would be maintained for access by the Corps and NCS D for land management and trail maintenance activities. No public access would be permitted in this area.

Maintenance

Acting as an agent to Placer County, NCS D would construct and maintain a portion of the MVT on land owned and managed by the Corps. The Corps would issue a ROW to Placer County and/or NCS D to authorize long-term maintenance and operation of the trail. While construction, maintenance, and operation of the trail would be the responsibility of the NCS D, the trail would be owned by Placer County. Maintenance such as sweeping, crack sealing, surface restoration, vegetation control, and cleaning the trail would be conducted by NCS D through an agreement between Placer County and NCS D.

1.4 Project Purpose and Need

At completion, the proposed MVT would be part of a regional multiple-use trail system connecting the communities of Truckee, Northstar, Kings Beach, and Tahoe City (Figure 1-3). Segments of the regional trail system are currently being planned along the Truckee River between Squaw Valley and Truckee, and between Tahoe City and Kings Beach. In addition, the Town of Truckee is in the process of implementing their Trails Master Plan, one element of which will connect their downtown core to the Placer County line near the Truckee-Tahoe Airport.

The proposed portion of the MVT through the MCLDP (designated in the MVT planning documents as Segments 1B-2 and 3A) would connect segments of the MVT to the west (Segment 1B-1, which is already constructed) and east (Segment 3B, which is anticipated for construction in 2018). As noted previously, NCS D, as an agent of Placer County, is pursuing construction of the MVT through the MCLDP in 2018. Completion of the MVT outside of the MCLDP would occur as funding is available, generally between 2018 and 2020. In the near term, construction of the portion of the MVT through the MCLDP would connect the recently constructed Segments 1A and 1B-1 (west of the MCLDP) with existing segments of the Tomkins Memorial Trail in the MCLDP and in Northstar California.

The following planning, recreation, transportation, and regional trail documents identify specific goals that encourage recreation and trails, including the following: Goals 7A, 7B, 7C, and 7E of the Placer County Martis Valley Community Plan (2003); Goal 5A and 5C of the Placer County General Plan (2013); the Placer County Regional Bikeway Plan (2002) prepared by the Placer County Transportation Planning Agency and adopted by the Placer County Board of Supervisors with the overall goal “to promote safe, convenient, and enjoyable cycling by establishing a comprehensive system of regional bikeways that links the communities of Placer County” ; Goal 1 and 2 of the Town of Truckee Trails and Bikeways Master Plan (2007); and the Lake Tahoe Region Bicycle and Pedestrian Plan (2010) prepared by the Tahoe Regional Planning Agency and Tahoe Metropolitan Planning Organization.

The following objectives have been developed for the proposed MVT project:

- Provide a convenient, safe, and accessible nonmotorized connection between the Town of Truckee and the surrounding community.
- Expand the community, recreational, and transportation opportunities available in Martis Valley by providing a trail with the highest possible recreation values.
- Ensure respect and protection for scenic, natural, and cultural resources in the area during trail construction and use.
- Highlight the natural, cultural, and social context of the region through interpretive opportunities.
- Expand and complement existing and planned regional trails; facilitate connections to existing and planned trail systems.
- Provide safe passage for all users, avoiding interface with automobiles to the greatest extent possible.
- Provide a trail that is accessible to the widest variety of potential users during all seasons of the year.

1.5 Previous Environmental Documents

As noted previously, an EIR for the MVT was certified by NCSO on February 21, 2013. NCSO also adopted Findings of Fact and a Mitigation Monitoring and Reporting Program as required under CEQA. The EIR and the associated technical studies provide much of the background information relied upon in this EA.

The following biological resources assessments were used to complete this EA:

- U.S. Army Corps of Engineers. *Draft Preliminary Wetland Delineation Report*. September 2013
- North Fork Associates. *Biological Resources Assessment and Wetland Delineation*. 2009.
- North Fork Associates. *Revised Wetland Delineation*. 2011.

In addition, the following archeological resources assessments were used to complete this EA:

- EDAW and Dr. Lindstrom. *Cultural Resources Inventory and Evaluation Report for the Martis Valley Trail Project*. 2013.
- Dr. Lindström. *Heritage Resource Inventory Martis Valley Trail Project Segment 1B*. 2011
- Dr. Lindström. *Heritage Resource Inventory Martis Valley Trail Project Segment 2*. 2011.
- Dr. Lindström. *Heritage Resource Inventory Martis Valley Trail Project Segment 3A*. 2011.

1.6 Purpose of the Environmental Assessment

This EA includes an assessment of the impacts that reasonably could be expected should the Corps grant a ROW through the MCLDP to allow construction, use, and maintenance of a portion of the MVT. This EA identifies mitigation measures that would minimize potentially significant effects and considers alternatives to the proposed action. As discussed in Section 3.2, Resources not Considered in Detail, the scope of this EA is focused on effects determined to have a potentially significant adverse environmental effect, and serves as an informational document to provide public disclosure of potential impacts of the project, identify ways to minimize those effects, and consider alternatives to the proposed action.

Preliminary trail plans for Segments 1B-2 and 3A are shown in Figures in Chapter 2. The plans show trail surface, trail amenities, locations of wetland crossings, grading and vegetation removal, and portions of existing trails that would intersect with the proposed trail. For the three paved trail alternatives, project impacts have been calculated based on the area of disturbance shown in the preliminary trail plans, which is generally an approximately 25-foot corridor around the trail centerline but in some locations

the disturbance area would widen to as much as 50 feet, as described further in Chapter 2. The area of disturbance is also referred to throughout this document as the project site.

Fieldwork and resource mapping conducted to evaluate conditions within the project area focused on a 50-foot-wide corridor around the preliminary trail centerline. The land included in the corridor where fieldwork and resource mapping occurred is referred to in this EA as the study area and/or the study corridor. The results of the fieldwork and resource mapping were used to inform and develop the proposed alignment for each trail segment.

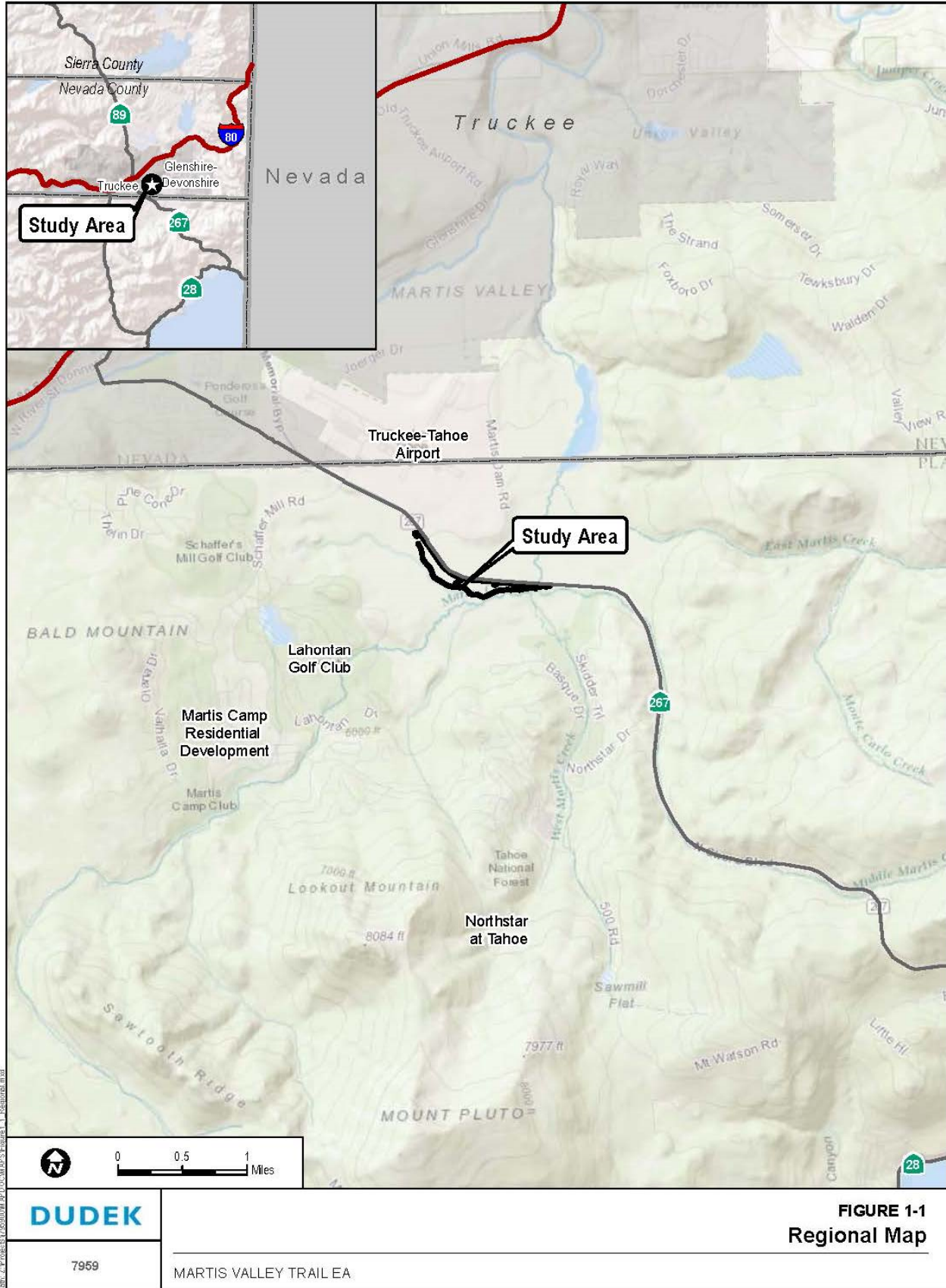
For the Unpaved Trail Alternative, project impacts have been evaluated based on an 8-foot-wide area of disturbance centered on the trail centerline.

1.7 Decisions to be Made

The following entitlements, permits, and approvals are required from the Corps and from other responsible agencies to issue a ROW authorizing construction, maintenance, and operation of proposed MVT through the MCLDP.

- **Construction ROW:** The Corps is requested to issue NCS D and/or Placer County a ROW to allow for construction of each segment within a 50-foot-wide corridor. Construction of the trail is anticipated to occur in 2018.
- **Operational ROW:** The Corps is requested to issue Placer County and/or NCS D a ROW to allow for operation and maintenance of the portion of the MVT that passes through Corps property.
- **National Historic Preservation Act Section 106 Consultation:** Prior to issuing a ROW, the Corps will consult with the California State Historic Preservation Officer to determine whether the project could adversely affect cultural or historic resources.
- **Clean Water Act Section 404 Department of Army Permit:** At the time that construction of Segment 3A is proposed, if construction of the trail crossing at Martis Creek would require discharge of fill material to Martis Creek, NCS D would apply for a Section 404 permit from the Corps's Regulatory Division to authorize such discharge of fill material proposed .
- **Clean Water Act Section 408 Department of Army Permit:** At the time of construction for any portion of the trail within the gross pool of Martis Creek Lake, the proposed section shall be reviewed by the Corps' Section 408 permit team of the Flood Protection and Navigation Section within Sacramento District's Operations and Readiness Branch. To authorize any alteration to U.S. Army Corps of Engineers public works projects the team must review the proposal to insure no effect to the primary mission of MCLDP.
- **Water Quality Certification:** At the time that construction of Segment 3A is proposed, if construction would require discharge of fill material to Martis Creek, NCS D would apply for a Water Quality Certification from the Lahontan Regional Water Quality Control Board to authorize construction of the trail crossing of Martis Creek.
- **Streambed Alteration Agreement:** At the time that construction of Segment 3A is proposed, if construction of the trail crossing of Martis Creek would require disturbance to riparian vegetation or within the banks of Martis Creek, NCS D would request a Streambed Alteration Agreement from the California Department of Fish and Wildlife to authorize such disturbance.

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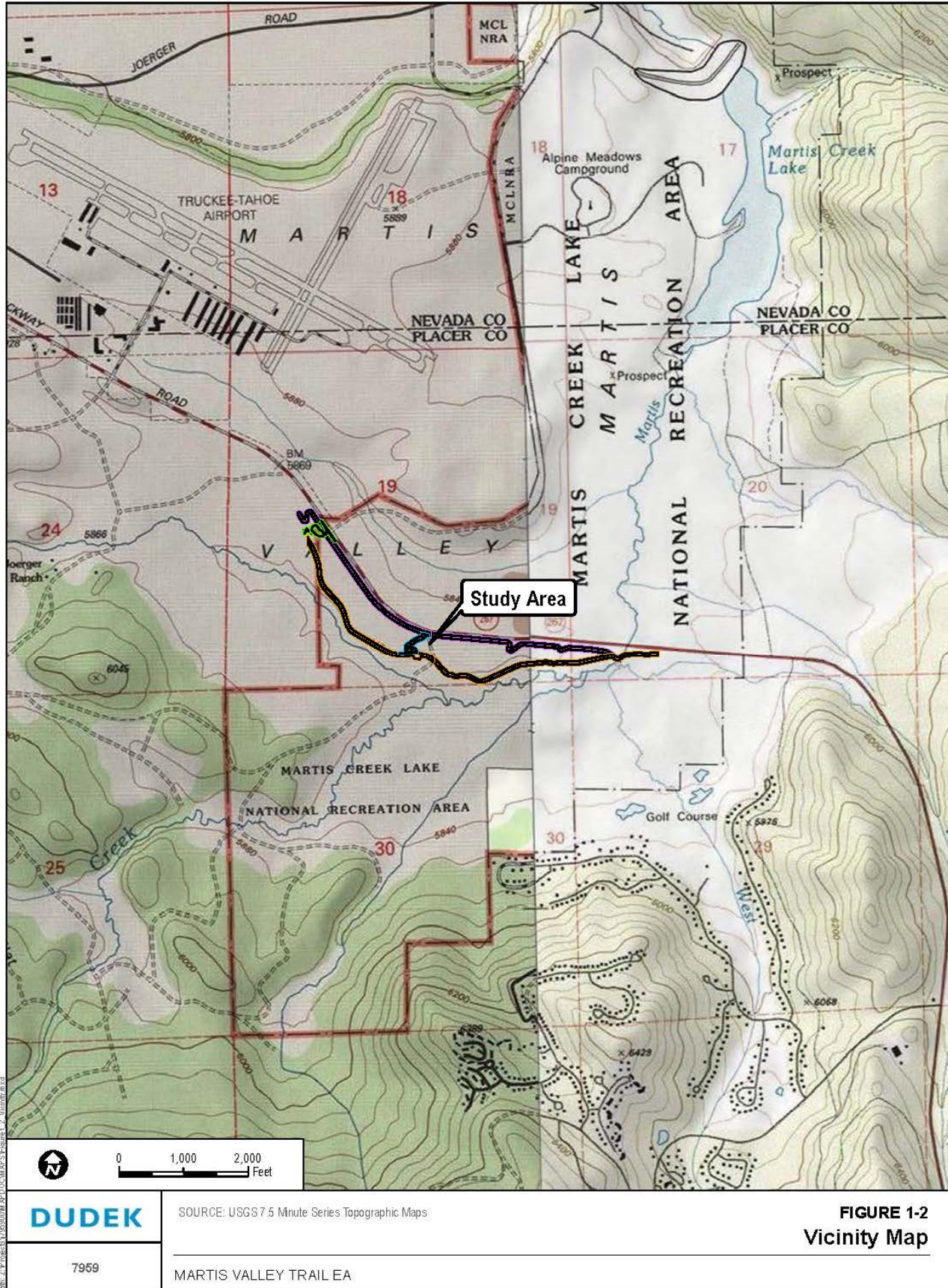
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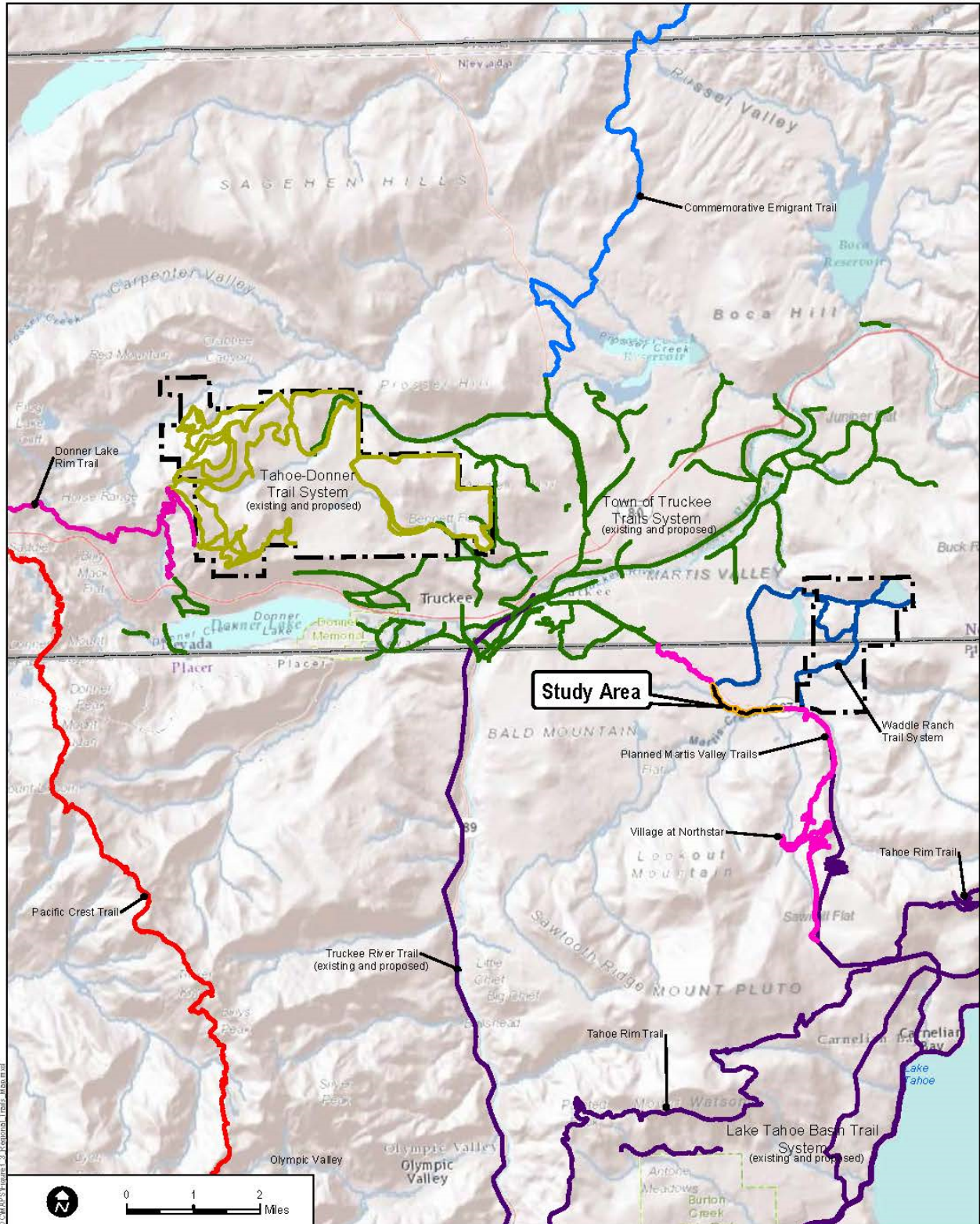
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FIGURE 1-1
Regional Map

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	<p>FIGURE 1-3 Regional Trails Map</p>
<p>7959</p>	<p>SOURCE: ESRI 2013, Auerback Engineering Corp., USFS Lake Tahoe Basin Management Unit, Truckee Trails Foundation, Town of Truckee, Tahoe Regional Planning Agency</p> <p>MARTIS VALLEY TRAIL EA</p>

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2 ALTERNATIVES

2.1 Introduction

As described in Chapter 1, Introduction, the Northstar Community Services District (NCS), as an agent of Placer County, has requested a right-of way (ROW) from the U.S. Army Corps of Engineers (Corps) to construct and maintain a continuing portion of the Martis Valley Trail (MVT) system across the lands managed by the Corps at the Martis Creek Lake and Dam Project (MCLDP). Three paved trail alternatives are evaluated in this Environmental Assessment: the Paved Trail within the MCLDP Alternative, the Paved Trail within the Caltrans Easement Alternative, and the Combined Paved Trail Alternative. As shown in Figure 2-1, the Paved Trail within the MCLDP Alternative would construct a paved trail that meanders roughly parallel to the highway but separated from the highway for aesthetic and safety reasons and follows topographic and other natural features. East of the Wildlife Viewing Area parking lot, the paved trail in this alternative would be constructed along the existing Tomkins Memorial Trail segment in this area. As shown in Figure 2-2, the Paved Trail within the Caltrans Easement Alternative would construct a paved trail closer to State Route (SR) 267 within the Caltrans easement. As shown in Figure 2-3, the Combined Paved Trail Alternative would construct the first segment along the alignment for the Paved Trail within the MCLDP Alternative and the second segment within the Caltrans easement. Under all three of these paved trail alternatives the existing Wildlife Viewing Area parking lot would be removed and the area revegetated and a new parking lot would be constructed.

The No Action Alternative would leave the existing trail as is with no additional trails. The Unpaved Trail Alternative would extend the existing trail along the Paved Trail within the MCLDP Alternative's alignment. No new parking lot would be constructed and the existing parking lot would remain open for both the Unpaved Trail Alternative and the No Action Alternative.

2.2 No Action Alternative

The No Action Alternative assumes that the Corps would not issue a ROW to Placer County, and no development would take place. The project site would remain as is and no new trail would be constructed. Additionally, the unpaved trail that currently exists in the area proposed for segment 3A would continue to be used.

The MCLDP is located outside of the city limits for the Town of Truckee and outside the boundaries of other recreation districts and providers in the region. It is not expected that there would be trail development proposals for the project site, other than the proposed MVT. Further, based on the land use controls in the Martis Creek Lake Master Plan, no proposals for other types of development in this area are considered reasonably foreseeable or predictable for the project site. Therefore, the No Action Alternative assumes that no trail or other land development would occur. This alternative does not meet any of the project objectives, but is included in the analysis as required by the National Environmental Policy Act (NEPA) and its implementing regulations.

2.3 Paved Trail within the MCLDP Alternative

The alignment for the Paved Trail within the MCLDP Alternative was developed based on consideration of topography, natural and cultural resources, property ownership, and the existing built environment in the vicinity. NCS worked with their consulting engineers to conduct field reconnaissance, review aerial photos, and evaluate constraints to trail construction and use. To meet the requirements of the Americans with Disabilities Act, the design team analyzed potential alignments to ensure that, to the extent feasible, trail grades would be less than 5%. Through this work, NCS identified a preliminary trail alignment from which further analysis could proceed. Biologists and archeologists then surveyed a 50-foot-wide corridor

centered on that preliminary trail centerline to delineate wetlands and other sensitive habitats, identify any rare plant populations, and identify and evaluate potential archeological and historic resources. This work was used to refine the preliminary trail alignment. Throughout this EA, the term “study corridor” refers to the 50-foot wide corridor in which resource surveys were conducted, while the term “project site” refers to the actual area of disturbance associated with construction of the trail under this alternative.

This Paved Trail within the MCLDP Alternative assumes that the MVT would be constructed through the MCLDP under the alignment proposed by NCSA based on the resource survey work described above. The trail segments for the Paved Trail within the MCLDP Alternative are shown on an aerial photograph in Figure 2-1. Figures 2-4A through 2-4C provide preliminary trail designs for both of the paved trail alternatives, as well as the area of disturbance associated with each alignment. In most locations, trail construction would occur within an approximately 25-foot wide corridor, however there would be some variation to the width of the construction corridor based on site specific considerations such as topography, grading, and drainage. All areas temporarily disturbed during trail construction but not part of the paved trail or its shoulders would be revegetated with native drought tolerant vegetation.

The trail would consist of a 10-foot-wide paved section with a 2-foot-wide unpaved shoulder on each side. The proposed trail would begin at the western Corps boundary of the MCLDP and travel southeast, generally parallel to SR-267. It would pass by the existing MCLDP Wildlife Viewing Area and continue east, generally parallel to SR-267 in the location of the existing unpaved Tompkins Memorial Trail. The trail would cross Martis Creek and end at the MCLDP eastern boundary near the Northstar California golf course. The existing Wildlife Viewing Area parking lot would be relocated to the northwest, to a location near or directly across from Martis Dam Road, as shown on Figure 2-1 and Figure 2-4A. After construction of Segments 1B-2 and 3A, the existing Wildlife Viewing Area parking lot would be closed and then revegetated with native drought tolerant vegetation. Access for maintenance vehicles would be retained.

The proposed project components include the following, as shown on Figures 2-1 and 2-4A through 2-4C:

Segment 1B-2: Western MCLDP boundary to the existing Wildlife Viewing Area (±0.58 miles, ±3,040 linear feet)

Segment 1B-2 would extend from a junction with the current MVT Segment 1B-1 at the western boundary of the MCLDP to a junction with Segment 3A near the existing MCLDP Wildlife Viewing Area and parking lot. This segment of trail may include a Native American Interpretive Exhibit and trail rest area. This trail segment would also extend 730 linear feet to the west, beyond the MCLDP boundaries, to connect to the existing trail segment 1B-1.

Segment 3A: Existing Wildlife Viewing Area east to junction with Segment 3B (±0.89 miles, ±4,715 linear feet)

This segment would junction with Segment 1B-2 at the existing MCLDP Wildlife Viewing Area parking lot. This segment would then follow a portion of the existing Tompkins Memorial Trail in the area near the toe of the slope between SR-267 and Martis Creek. The trail would cross over Martis Creek, replacing the existing bridge (known locally as Frank’s Fish Bridge) with a stronger structure 12 feet in width. One junction with existing trails would be included in this segment. The paved trail would continue roughly parallel to SR-267, just outside the California Department of Transportation (Caltrans) ROW. Segment 3A would end at a junction with Segment 3B at the eastern MCLDP boundary with the Northstar California golf course.

Parking Lot

Following construction of Segments 1B-2 and 3A, the existing Wildlife Viewing Area parking lot would be closed to the public and a new parking lot would be constructed in one of two potential locations on the south side of SR-267 either directly across from Martis Dam Road or offset approximately 300 to 400 feet to the west. The parking lot would include approximately 18 parking spaces. The existing parking lot requires access at the curve on SR-267 where there are limited shoulders and no turn lanes. This is less safe than having the parking lot access along a straighter section and where there is more width to accommodate turning movements. Further, the current parking lot is located within a known major archeological site and the continued use of this parking lot would expose the site to additional erosion, artifact collection by the public, and other disturbances. The new parking lot would be located on the south side of SR-267 near Martis Dam Road, as shown on Figures 2-1 and 2-4A. A short trail spur would be constructed to connect the parking lot with MVT Segment 1B-2. The parking lot relocation would not substantially alter public access to the proposed trail or to the existing segments of the Tomkins Memorial Trail and therefore would not adversely affect recreation. The new parking lot would contain approximately 18 parking spaces, a 5-foot walkway around the lot, and stormwater runoff improvements including a vegetated swale and rain garden/detention basin. An area adjacent to the parking lot containing an information kiosk and trail map would be constructed with a pervious surface. A driveway of approximately 150 feet accessing SR-267 and site improvements covering approximately 0.5 acre are anticipated. A portion of the parking lot may be located outside of Corps property, as shown on Figure 2-4A. The site improvements within the Corps property would consist of approximately 26,739 square feet (0.61 acre).

Grading, vegetation clearing, and construction activities would occur within the project site corridor that would range from 25 to 50 feet wide. The paved trail would add approximately 1.78 acres of impervious surfaces to the MCLDP, and the parking lot would add approximately 0.61 acre of impervious surfaces. Disturbed areas outside of the trail would be revegetated. Trailheads and trail amenities (such as rest stops and trail junctions) would be constructed with pervious surfaces, such as permeable pavers.

2.4 Paved Trail within the Caltrans Easement Alternative

The Paved Trail within the Caltrans Easement Alternative assumes that a portion of the MVT would be constructed within the existing easement granted by the Corps to Caltrans for SR-267. As shown in Figure 2-2, the trail segments for the Paved Trail within the Caltrans Easement would be located within the Caltrans easement. Consistent with the Paved Trail within the MCLDP Alternative, the trail would consist of a 10-foot-wide paved section with a 2-foot-wide unpaved shoulders on each side. The trail would begin at the western boundary of the MCLDP and continue southeast generally parallel to SR-267. This alternative provides for the trail to be constructed within the Caltrans easement while maintaining a minimum 80-foot setback from the current SR-267 centerline. This would accommodate Caltrans' planned widening of SR-267 in the future. The trail would cross Martis Creek at the location of the existing Frank's Fish Bridge (replacing this structure the same as would occur under the Paved Trail within the MCLDP Alternative) and end at the MCLDP eastern boundary near the Northstar California golf course. Similar to the Paved Trail within the MCLDP Alternative, this alternative would result in the closure of the current Tompkins Memorial Trail trailhead at the Wildlife Viewing Area parking lot. The existing Wildlife Viewing Area parking lot would be relocated to the northwest, to a location near or directly across from Martis Dam Road, as shown on Figures 2-2 and 2-4A. After construction of Segments 1B and 3A, the existing Wildlife Viewing Area parking lot would be closed and then revegetated with native drought tolerant vegetation, with a small area retained as-is to accommodate vehicle access for maintenance and property management. Additionally, the portion of the existing Tomkins Memorial Trail east of and visible from the Wildlife Viewing Area parking lot would be abandoned and revegetated to preclude ongoing use of this trail segment.

The project components under this alternative are as follows:

Segment 1B-2: Western MCLDP boundary to the existing Wildlife Viewing Area access road (±0.48 miles, ±2,532 linear feet)

Segment 1B-2 would extend from a junction with MVT Segment 1B-1 at the western boundary of the MCLDP and follow a switchback feature to climb the hill between the terminus of Segment 1B-1 and the Caltrans easement. The trail would then head easterly generally parallel to SR-267 to junction with Segment 3A near the driveway to the existing MCLDP Wildlife Viewing Area parking lot. Construction of an interpretive exhibit along this trail segment would not be feasible because it would create a visual obstruction for travelers on SR-267, which is designated by Placer County as a scenic roadway due to the expansive views of Martis Valley available from this roadway. This trail segment would also extend 518 linear feet to the west, beyond the MCLDP boundaries, to connect to the existing trail segment 1B-1.

Segment 3A: Existing Wildlife Viewing Area east to junction with Segment 3B (±0.97 miles, ±5,121 linear feet)

This segment would junction with Segment 1B-2 at the existing MCLDP Wildlife Viewing Area access driveway. This segment would then continue within the Caltrans easement and generally parallel to SR-267 before linking into the Tompkins Memorial Trail in the area between SR-267 and Martis Creek. The trail would cross over Martis Creek, replacing the existing bridge (known locally as Frank's Fish Bridge) with a stronger structure 12 feet in width. The trail would continue roughly parallel to SR-267, just outside the highway easement along the current Tompkins Memorial Trail. Segment 3A would end at a junction with Segment 3B at the eastern MCLDP boundary.

Parking Lot

Following construction of Segments 1B-2 and 3A, the existing Wildlife Viewing Area parking lot would be closed to the public and a new parking lot would be constructed, as shown on Figures 2-2 and 2-4A. As under the Paved Trail within the MCLDP Alternative, this potential parking lot location is on the south side of SR-267 either directly across from Martis Dam Road or offset approximately 300 to 400 feet to the west. The parking lot would include approximately 18 parking spaces. A short trail spur would be constructed to connect the parking lot with MVT Segment 1B-2.

Grading, vegetation clearing, and construction activities would occur within an approximately 25 to 50-foot-wide area of disturbance. The paved trail would add approximately 1.75 acres of impervious surfaces to the MCLDP and the parking lot would add 0.61 acres of impervious surfaces within the MCLDP.

Disturbed areas outside of the trail and its shoulders would be revegetated. Trailheads and trail amenities (such as rest stops and trail junctions) would be constructed with pervious surfaces, such as permeable pavers.

2.5 Combined Paved Trail Alternative

The Combined Paved Trail Alternative assumes that a portion of the MVT would be constructed within the MCLDP (outside of the Caltrans easement) and another portion would be constructed within Caltrans easement. As shown in Figure 2-3, under this alternative, the alignment of Segment 1B-2 would be the same as the alignment under the Paved Trail within the MCLDP Alternative, beginning at the western MCLDP boundary and extending for approximately 2,300 linear feet, at which point this segment would diverge from Paved Trail within the MCLDP Alternative alignment. This alternative would then climb the hill slightly west of the existing Wildlife Viewing Area parking lot to transition into the Caltrans easement while maintaining a maximum 5% grade. The alignment of Segment 3A would be the same as the Paved Trail within the Caltrans Easement Alternative. Consistent with the Paved Trail within the MCLDP Alternative, the trail would consist of a 10-foot-wide paved section with a 2-foot-wide

unpaved shoulder on each side. Like the Paved Trail within the Caltrans Easement Alternative, this alternative provides for Segment 3A to be constructed within the Caltrans easement while maintaining a minimum 80-foot setback from the current SR-267 centerline. The trail would cross Martis Creek at the location of the existing Frank's Fish Bridge (replacing this structure the same as would occur under the Paved Trail within the MCLDP Alternative) and end at the MCLDP eastern boundary near the Northstar California golf course. Similar to the Paved Trail within the MCLDP Alternative and the Paved Trail within the Caltrans Easement Alternative, this alternative would result in the closure of the current Tompkins Memorial Trail trailhead at the Wildlife Viewing Area parking lot. The existing Wildlife Viewing Area parking lot would be relocated to the northwest, to a location near or directly across from Martis Dam Road, as shown on Figures 2-3 and 2-4A. After construction of Segments 1B-2 and 3A, the existing Wildlife Viewing Area parking lot would be closed and then revegetated with native drought tolerant vegetation. Additionally, the portion of the existing Tompkins Memorial Trail east of and visible from the Wildlife Viewing Area parking lot would be abandoned and revegetated to preclude ongoing use of this trail segment.

The project components under this alternative are as follows:

Segment 1B-2: Western MCLDP boundary to the existing Wildlife Viewing Area (±0.55 miles, ±2,896 linear feet)

Segment 1B-2 would extend from a junction with the current MVT in Segment 1B-1 at the western boundary of the MCLDP to a junction with Segment 3A near the existing MCLDP Wildlife Viewing Area and parking lot. For approximately 2,300 linear feet, this alignment would be the same as the alignment of Segment 1B-2 under the Paved Trail within the MCLDP Alternative. This segment would diverge from Paved Trail within the MCLDP Alternative alignment near the Wildlife Viewing Area allowing the trail to transition into the Caltrans easement while maintaining a maximum 5% grade. A cultural resources Interpretive Exhibit and trail rest area may be included in this segment. This trail segment would also extend 730 linear feet to the west, beyond the MCLDP boundaries, to connect to the existing trail segment 1B-1.

Segment 3A: Existing Wildlife Viewing Area east to junction with Segment 3B (±0.97 miles, ±5,121 linear feet)

This segment would junction with Segment 1B-2 at the existing MCLDP Wildlife Viewing Area access driveway. This segment would then continue easterly within the Caltrans easement and generally parallel to SR-267 before linking into the Tompkins Memorial Trail in the area between SR-267 and Martis Creek. The trail would cross over Martis Creek, replacing the existing bridge (known locally as Frank's Fish Bridge) with a stronger structure 12 feet in width. The trail would continue roughly parallel to SR-267, just outside the highway easement along the current Tompkins Memorial Trail. Segment 3A would end at a junction with Segment 3B at the eastern MCLDP boundary.

Parking Lot

Following construction of Segments 1B-2 and 3A, the existing Wildlife Viewing Area parking lot would be closed to the public and a new parking lot would be constructed, as show on Figures 2-3 and 2-4A. As under the Paved Trail within the MCLDP Alternative, this potential parking lot location is on the south side of SR-267 either directly across from Martis Dam Road or offset approximately 300 to 400 feet to the west. The parking lot would include approximately 18 parking spaces. A short trail spur would be constructed to connect the parking lot with MVT Segment 1B-2.

Grading, vegetation clearing, and construction activities would occur within an approximately 25- to 50-foot-wide area of disturbance. The paved trail would add approximately 1.84 acres of impervious surfaces to the MCLDP and the parking lot would add 0.61 acres. Disturbed areas outside of the trail and its

shoulders would be revegetated. Trailheads and trail amenities (such as rest stops and trail junctions) would be constructed with pervious surfaces, such as permeable pavers.

2.6 Unpaved Trail Alternative

The Unpaved Trail Alternative assumes that Segment 1B-2 would be developed as a 3-foot-wide unpaved, native earth trail in the Paved Trail within the MCLDP Alternative alignment described previously and shown on Figure 2-4A. Grading, vegetation clearing, and construction activities would occur within an approximately 8-foot-wide area of disturbance. Disturbed areas outside of the trail would be revegetated. Under this alternative the existing Wildlife Viewing Area parking lot would remain in use and no trail amenities would be constructed. Because a native earth trail already exists in the alignment of Segment 3A, no new construction or trail development in that portion of the project site would occur under the Unpaved Trail Alternative. A slight increase in the frequency of maintenance activities could occur, but the maintenance routine would be similar to what is currently provided for the Tomkins Memorial Trail.

2.7 Alternatives Considered and Eliminated from Further Analysis

Alternatives that have been considered and eliminated from further analysis are briefly discussed below. These include alternatives evaluated in the MVT Environmental Impact Report (EIR) completed by the NCSA in compliance with the California Environmental Quality Act and others suggested by the public or responsible agencies through the environmental review process for the trail.

Shift the alignment of Segment 3A to the south: This alternative would construct Segment 1B-2 as proposed and construct Segment 3A in an alignment closer to Martis Creek and further from cultural resources in the CA-PLA-5 resource site, which is discussed in Chapter 5, Cultural Resources, of this EA. To fully avoid the CA-PLA-5 site, the full length of Segment 3A would be located within the wet meadow habitat identified in the Corps' Draft Preliminary Wetland Delineation Report (September 2013). This alternative would result in greater impacts to biological and hydrologic resources than the proposed project. A boardwalk could be used to minimize the trail's impact on the wet meadow habitat. While the proposed paved trail width is 10 feet with 2-foot-wide unpaved shoulders on each side (a total of 14 feet), use of a boardwalk would require a narrower trail. With a 10-foot-wide boardwalk, this alternative would impact 0.78 acre (33,790 square feet) of wet meadow habitat. In comparison, as discussed in Chapter 4, Biological Resources, the proposed paved trail alternatives would result in impacts to 0.17 acre (7,405 square feet) of wet meadow habitat. In addition, this alternative would require relocating the existing trail crossing of Martis Creek, known as Frank's Fish Bridge.

A variation of this alternative that would avoid the need to relocate Frank's Fish Bridge would shift the trail alignment to the south to avoid the lower western edge of the CA-PLA-5 site, while still encroaching into the eastern portion of the site. With a 10-foot-wide boardwalk, this variation would result in impacts to 0.20 acre (8,512 square feet) of wet meadow habitat. The alignment would reduce impacts to cultural resources but would not avoid all disturbances to those resources.

In addition, for either variation, more of the trail could be exposed to potential flooding by being located within the gross pool elevation of Martis Creek Lake. This alternative would place the trail much closer to Martis Creek, which would increase the visibility of the trail and the degree of visual change that the trail would create within the Martis Valley landscape as viewed from the other trails in the vicinity and the Wildlife Viewing Area, thus increasing the visual impacts of the project. This alternative would not alter the project's impacts related to land use. In total, this alternative would increase impacts of the project in several resource areas while lessening impacts to one other resource area. Because this

alternative would not be capable of reducing or avoiding the project's impacts overall, it was not selected for further analysis.

Routes on the north side of SR-267: This alternative would construct the MVT, including Segments 1B-2 and 3A, in a new alignment located primarily on the north side of SR-267. Land within MCLDP on the north side of SR-267 supports biological and cultural resources similar to those present in the proposed project site and does not support existing nature-interpretive trails. Relocating the proposed trail to the north side of SR-267 would not avoid impacts to biological or cultural resources and could reduce the habitat and aesthetic values of an area that is not currently used for recreation activities. Further, this alternative would require that the trail cross SR-267 in two locations, which would likely require a bridge structure over the highway to avoid creating vehicle–pedestrian conflicts. Such bridges would adversely affect the visual conditions of Martis Valley as viewed from many viewpoints, including SR-267, the existing Wildlife Viewing Area, and existing trails on the north-facing slopes in the Northstar California community. Since this alternative would not be capable of reducing or avoiding impacts of the project, it was not selected for further analysis.

Providing a paved alignment for bicycles and a separate unpaved alignment for other users: This alternative would require creating two new trail routes instead of a single route. This could reduce impacts related to recreation (conflicts between user groups), but would likely increase impacts related to most other resources since it would result in a greater total area of disturbance. This alternative was not selected for further analysis because it would increase rather than decrease project impacts.

Connections through Lahontan or Martis Camp developments: This alternative would adjust the proposed action to connect trails in the Town of Truckee to the Northstar California community via Schaffer Mill Road and through nearby residential areas. However, after contact by the NCSD, the owners of these developments have indicated that access through these developments is not available. These properties are private properties and the owners have indicated that they are not willing to allow a public trail on their private land. This alternative was not selected for further analysis because it would not be feasible.

2.8 Elements of the Action Alternatives

Trail Construction Techniques

Both hand and mechanical construction techniques would be used to build the proposed trail under either the paved trail alternatives or the Unpaved Trail Alternative. In addition, the paved trail alternatives would include construction of trail amenities, the interpretive exhibit, and a bridge. The trail surface would be excavated using a small bulldozer, mini excavator, hand construction, and/or other machinery capable of conforming to the dimensional requirements of the trail. Dips and undulations in the design would follow the natural drainage patterns to facilitate effective surface flow of water off the trail surface.

Under each of the three paved trail Alternatives, the trail would consist of a paved section that is generally 10 feet wide, but the width may vary slightly based on geologic and safety considerations. Unpaved shoulders on each side of the trail would generally be 2 feet wide but may be less in some areas to reduce grading and impacts to resources.

Under the Unpaved Trail Alternative, the trail would consist only of a 3-foot-wide unpaved, native earth trail, and vegetation clearing in the trail corridor would occur only within an 8-foot-wide area within Segment 1B. Under the Unpaved Trail Alternative, there would be no construction in the Segment 3A alignment.

Under each alternative, vegetation removal adjacent to the paved trail section and shoulders would be minimized to the extent possible. Vegetation near the trail alignment currently consists primarily of sagebrush scrub. All cut vegetation would be chipped and broadcast, or lopped and scattered, within the

project area. Areas adjacent to the trail and its shoulders that are disturbed by grading would be revegetated with native plants.

Except for the specific areas under construction, public areas around the site would remain open during construction, where possible, subject to public health and safety considerations. Restricted areas would be secured or fenced to deter unauthorized entry. Construction periods and activities may be limited in biologically and culturally sensitive areas as dictated by the results of surveys and mitigation measures identified in Chapter 4, Biological Resources, and Chapter 5, Cultural Resources.

Equipment used in trail construction, revegetation, and bridge installation would include the following: small bulldozers, motorized wheelbarrows, hand-operated compactors, hand-held power augers, small front-end loader, small tracker, hand-held power tools and hand tools (e.g., Pulaskis, McLeods, shovels, hammers, and saws). Construction activities would occur between the hours of 7:00 a.m. and 6:00 p.m. Monday through Friday and between 8:00 a.m. and 6:00 p.m. on Saturdays. As noted previously, NCS D currently proposes to construct Segment 1B-2 and Segment 3A in 2018. Other segments outside of the MCLDP are anticipated to be constructed between 2018 and 2020.

Staging Areas

The disturbed area located between the MCLDP Wildlife Viewing Area parking lot and SR-267 would be used for a construction staging area, as shown in Figure 2-5. The staging area does not currently support vegetation, and no improvements would be necessary to utilize this area for staging. Any fencing needed would be placed on top of the ground surface. The staging area would be used to store equipment, construction supplies, and landscaping materials. No fuels or other fluids would be stored here. The construction staging would occur outside of the designated parking area but would reduce the area available for overflow parking, which typically occurs between SR-267 and the parking lot. Use of this area for construction staging would also introduce construction vehicle traffic to the parking area. Traffic controls, signage, and flagging would be used as necessary to minimize conflicts between construction traffic and vehicles accessing the parking lot. The staging area would be protected with construction best management practices to avoid erosion and tracking of materials away from the area. Best management practices could include construction fencing, silt fences, fiber rolls, and placing tarps over material stockpiles, in addition to other measures, as discussed in Chapter 6, Hydrology and Water Quality.

Creek Crossing and Drainage Features

Under each of the three paved trail alternatives, construction of Segment 3A would require crossing Martis Creek. This crossing would be accomplished by replacing the existing Frank's Fish Bridge with a new bridge, as shown in Figure 2-6. Under the Unpaved Trail Alternative, no creek crossings would be constructed and the existing Frank's Fish Bridge would be used. Drainage design for each of the paved trail alternatives incorporates sheet flow as much as possible, to reduce point source erosion issues. Use of underdrains would be limited to the locations shown in Figure 2-7. Specific trail sections have been developed by the geotechnical engineer based on soil types and infiltrative capacities, to mitigate stormwater runoff. Under the paved trail alternative, trail heads and amenities would be constructed with pervious surfaces, such as permeable pavers.

Best Management Practices for Prevention of Erosion and Siltation

Under each alternative, NCS D would implement a Stormwater Pollution Prevention Plan (SWPPP) to minimize potential impacts from soil transportation, erosion, and siltation during trail construction and operation. The SWPPP would be prepared in accordance with Lahontan Regional Water Quality Control Board procedures and requirements and in compliance with the California Construction General Permit under the National Pollutant Discharge Elimination System. The SWPPP would provide the plans and

specifications for best management practices intended to prevent and control erosion and siltation to the extent feasible. The SWPPP for this project is discussed in more detail in Chapter 6, Hydrology and Water Quality.

Under each of the paved trail alternatives, trail design features to provide long-term management of stormwater would include a rain garden retention basin and pervious surfaces at the Native American interpretive exhibit, trailheads, and other trail amenities. These features would not be included in the Unpaved Trail Alternative.

Interpretive Program

Under the Paved Trail within the MCLDP Alternative and the Combined Paved Trail Alternative, the trail may include an interpretive exhibit to inform area visitors of biological, hydrologic, cultural landscape, and physical features. The display would be combined with seating and an observation area. Final design of the exhibit has not been determined. The interpretive features would be developed through a design process that includes the Corps, the Washoe Tribe, property owners, and local historians and residents. Figure 2-8 provides an example of potential interpretive exhibit design. Under the Paved Trail within the Caltrans Easement Alternative and the Unpaved Trail Alternative, no new interpretive elements would be provided.

Public Access

Primary access to the proposed trail would come from the existing Tompkins Memorial Trail to the south and east and MVT Segments 1A and 1B-1 to the west, which were constructed in 2014 and 2015. Segment 1A extends from the Town of Truckee/Placer County boundary to a point approximately 1,000 feet east of the intersection of Schaffer Mill Road and SR-267 and Segment 1B-1 extends from that point to the western MCLDP boundary.

Long-Term Maintenance and Management

NCSD would construct and maintain the trail on land owned and managed by the Corps. The Corps would issue a property ROW to Placer County and/or NCSD to authorize long-term maintenance and operation of the trail. While construction, maintenance, and operation of the trail would be the responsibility of the NCSD, the trail would be managed by Placer County. Maintenance such as sweeping, crack sealing, surface restoration, vegetation control, and cleaning the trail would be conducted by NCSD through an agreement between Placer County and NCSD. Maintenance activities would occur annually or as needed. It is expected that minimal trail surface maintenance would be needed for the first 3 years of use.

Additional maintenance may be required as a result of weather-related events (e.g., removal of downed trees and slide removal) and unauthorized activities such as vandalism. Depending on the bridge materials used (i.e., wood, steel, or fiberglass), the bridge on Segment 3A would require routine maintenance about every 8 to 10 years.

2.9 Comparison of Alternatives

Table 2-1 identifies the project effects identified in this EA and the mitigation measures applicable to each project alternative.

**Table 2-1
Comparison of Alternatives**

Impact	Mitigation Measure	Project Alternatives Requiring this Mitigation			
		Paved Trail within MCLDP	Paved Trail within Caltrans Easement	Combined Paved Trail	Unpaved Trail
Biological Resources					
Vegetation and Wildlife	<p>Mitigation Measure 4A.1: Northstar Community Services District (NCSD) shall incorporate best management practices (BMPs) to control erosion and sedimentation of waterways during and following construction. BMPs shall be identified on Improvement Plans and subject to approval by the Placer County Planning Department, the Placer County Engineering and Surveying Department, and the U.S. Army Corps of Engineers (Corps). BMPs to minimize indirect impacts to wetlands shall include the following mitigation measures:</p> <ul style="list-style-type: none"> A. Implement Mitigation Measure 6A.1 which identifies requirements for design of BMPs. B. Implement Mitigation Measure 6A.2 which requires NCSD to prepare a Stormwater Pollution Prevention Plan (SWPPP) and project Grading or Improvement Plans that include detailed provisions for all construction BMPs. C. Implement Mitigation Measure 6A.3 which requires permanent BMPs to be included in the SWPPP and project Grading or Improvement Plans and identifies minimum requirements for permanent BMPs. D. Implement Mitigation Measure 6A.4 which identifies design standards for trail amenities to manage stormwater. 	X	X	X	—
	<p>Mitigation Measure 4A.2: Prior to commencement of any construction activities, including site clearing and/or grading, NCSD shall retain a</p>	X	X	X	X

**Table 2-1
Comparison of Alternatives**

Impact	Mitigation Measure	Project Alternatives Requiring this Mitigation			
		Paved Trail within MCLDP	Paved Trail within Caltrans Easement	Combined Paved Trail	Unpaved Trail
	qualified botanist to conduct a survey of the construction area, staging areas, and access routes to identify invasive plant species in any portion of the project site. These surveys shall be carried out during appropriate blooming periods of invasive plant species of importance to the region. Should any invasive plant species be located, NCS D shall implement a management plan that is consistent with the California Invasive Plant Council's "Preventing the Spread of Invasive Weeds: Best Management Practices for Transportation and Utility Easements." Management measures for invasive plant species shall include measures to stop movement of plant materials and seeds (especially as associated with movement of workers, materials, and equipment throughout the construction area), minimize soil and vegetation disturbance, maintain healthy plant communities, and provide for monitoring and early response to future establishment of invasive plant species.				
Fish Species and Fisheries	No adverse effects to fish and fisheries resources would occur under any of the project alternatives, and no mitigation measures are necessary	—	—	—	—
Special-Status Wildlife Species and	Mitigation Measure 4C.1: To avoid potential adverse effects on migratory birds, and on their associated habitat, the following measures shall be implemented:	X	X	X	X

**Table 2-1
Comparison of Alternatives**

Impact	Mitigation Measure	Project Alternatives Requiring this Mitigation			
		Paved Trail within MCLDP	Paved Trail within Caltrans Easement	Combined Paved Trail	Unpaved Trail
Migratory Birds	<ol style="list-style-type: none"> 1. Prior to any work within 500 feet of any riparian or sagebrush scrub habitat, a qualified biologist shall conduct a habitat assessment to identify areas of potential migratory birds nesting habitat. Work may proceed in areas determined to not provide migratory birds nesting habitat. 2. Except as provided under item 3, no heavy equipment shall be used and no vegetation shall be altered within 300 feet of potential migratory birds nesting habitat, as identified above in MM 4C.1.1, during the critical breeding season, which extends from May 1 to August 31. 3. Disturbance and removal of vegetation within riparian areas shall be minimized to the extent possible by clearly field marking the limits of vegetation removal requirements prior to any site disturbance. Vegetation removal from riparian or sagebrush scrub areas shall be kept to the minimum required to allow for construction of the proposed improvements. CDFW shall be contacted prior to any vegetation removal within riparian areas to determine appropriate impact minimization strategies and compensation measures for impacts to vegetation that could occur. Compensation could include revegetation or habitat restoration at a ratio to impacts determined appropriate by CDFW, but no less than 1:1.. 				

**Table 2-1
Comparison of Alternatives**

Impact	Mitigation Measure	Project Alternatives Requiring this Mitigation			
		Paved Trail within MCLDP	Paved Trail within Caltrans Easement	Combined Paved Trail	Unpaved Trail
Cultural Resources					
Historically Significant Resource and Human Remains	<p>Mitigation Measure 5A.1: During construction of any of the trail alternatives and the new parking lot, the following best management practices shall be implemented:</p> <ol style="list-style-type: none"> 1. The limits of the area of disturbance in the vicinity of all known archaeological resource sites shall be flagged or otherwise demarcated in the field prior to commencement of construction. 2. The trail alignment shall be kept as close as possible to already disturbed areas, minimizing additional disturbance in areas of special archaeological concern. 3. Grading and other subsurface disturbance shall be restricted to 8 inches below existing grade where the trail crosses areas of special archaeological concern. 	X	X	X	X
	<p>Mitigation Measure 5A.2: If artifacts, exotic rock, unusual amounts of shell or bone, or other buried archaeological resources are encountered during earth-disturbance associated with the proposed action, all soil-disturbing work shall be halted within 100 feet of the discovery and the U.S. Army Corps of Engineers (Corps) must follow the procedures outlined in the Section 106 implementing regulations at 36 CFR 800.13(b). This includes requiring NCSA to retain a qualified archaeologist to complete a significance evaluation of the finds pursuant to Section 106 of the National Historic Preservation Act and submit the significance evaluation to the Corps to support the Corps in determining if the finds are historically</p>	X	X	X	X

**Table 2-1
Comparison of Alternatives**

Impact	Mitigation Measure	Project Alternatives Requiring this Mitigation			
		Paved Trail within MCLDP	Paved Trail within Caltrans Easement	Combined Paved Trail	Unpaved Trail
	<p>significant resources and if subsurface testing must be conducted. Subsurface testing procedures shall involve shovel testing, augering, or other such techniques designed to identify and/or characterize subsurface cultural deposits. All subsurface testing and other evaluation efforts shall be conducted by a qualified professional archaeologist.</p> <p>If data recovery excavation is required, a qualified archaeologist shall prepare a data recovery plan that provides for recovering the scientifically consequential information from and about the resource. The data recovery plan must be prepared prior to commencing any excavation activities within 100 feet of the resource discovery. The data recovery plan must be approved by the Corps if the excavation will occur within the Martis Creek Lake and Dam Project (MCLDP). The data recovery excavation shall include recovery of a statistically significant sample of the archaeological deposit. During the excavation, any features identified shall be drawn and photographed. Recovered cultural material (artifacts) shall be cleaned and catalogued, and a professional analytical report shall be prepared on the findings. The report shall be filed with appropriate agencies and the North Central Information Center of the California Historical Resources Information System.</p> <p>The recovered artifact collection and catalogue shall be placed in a permanent curation facility for use by future researchers.</p>				
	<p>Mitigation Measure 5A.3: Under any of the paved trail alternatives, following construction of the new parking lot, the</p>	X	—	X	—

**Table 2-1
Comparison of Alternatives**

Impact	Mitigation Measure	Project Alternatives Requiring this Mitigation			
		Paved Trail within MCLDP	Paved Trail within Caltrans Easement	Combined Paved Trail	Unpaved Trail
	Wildlife Viewing Area parking lot will be closed to the public to reduce degradation of natural and archaeological resources due to human disturbance of the area. The driveway and parking lot will be accessible to the Corps and NCSD for MCLDP management and trail maintenance as needed.				
	<p>Other Potential Mitigation Measures: During the consultation process under Section 106 and the development of the MOA and/or HPTP, as necessary, other mitigation measures that may be pursued could include but are not limited to:</p> <ol style="list-style-type: none"> 1. An interpretive display for public outreach and education regarding the cultural significance of the region. Information to be presented could include: Native American history, Native American resources and the laws that protect them, early exploration/settlement, logging, and/or the gold rush. 2. Installing a low rail fencing system or other type of barrier with trail signage intended to keep people from roaming off designated trails into sensitive areas throughout MCLDP. 3. Closure and restoration of the existing TMT section from the current Wildlife Viewing Area parking lot east to Frank’s Fish Bridge. Restoration could include vegetation along sight lines and barriers (fencing or boulders). 	X	X	X	—

**Table 2-1
 Comparison of Alternatives**

Impact	Mitigation Measure	Project Alternatives Requiring this Mitigation			
		Paved Trail within MCLDP	Paved Trail within Caltrans Easement	Combined Paved Trail	Unpaved Trail
	4. Installing a sustainable and reversible cap in the form of a trail.				

**Table 2-1
Comparison of Alternatives**

Impact	Mitigation Measure	Project Alternatives Requiring this Mitigation			
		Paved Trail within MCLDP	Paved Trail within Caltrans Easement	Combined Paved Trail	Unpaved Trail
Hydrology and Water Quality					
Adversely Affect Surface and Groundwater Sources and Their Beneficial Uses	<p>Mitigation Measure 6A.1: Northstar Community Services District shall prepare a Stormwater Pollution Prevention Plan (SWPPP) and obtain coverage under the State Water Resources Control Board’s National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activities. The project applicant shall provide to Placer County Engineering and Surveying Division evidence of a state-issued Waste Discharge Identification number or filing of a Notice of Intent and fees prior to issuance of a grading permit/approval of a grading or improvement plan. The SWPPP and project Grading or Improvement Plans shall identify specific construction best management practices (BMPs) for all components of the construction project, including equipment and material staging areas. For each BMP, the SWPPP shall identify provisions for design, implementation, management, and monitoring. BMPs are expected to include the following or equally effective measures:</p> <ul style="list-style-type: none"> • Fiber wattles, silt fences, and or water bars; • Sediment basins; • Mulching of disturbed soil areas; • Channel linings and drainage inlet protection; • Staging areas perimeter barriers; • Temporary stabilized construction entrances; • Covering exposed materials stockpiles; and • Leak or spill response plans. 	X	X		X

**Table 2-1
Comparison of Alternatives**

Impact	Mitigation Measure	Project Alternatives Requiring this Mitigation			
		Paved Trail within MCLDP	Paved Trail within Caltrans Easement	Combined Paved Trail	Unpaved Trail
	<p>Mitigation Measure 6A.2: Water quality treatment facilities shall be designed according to the guidance of the California Stormwater Quality Association Stormwater Best Management Practice Handbook for New Development/Redevelopment and the Erosion and Sediment Control for Development Areas of the Sierra Foothills and Mountains. In addition, BMPs shall be designed to mitigate (minimize, infiltrate, filter, or treat) stormwater runoff in accordance with Attachment 4 of Placer County’s NPDES Municipal Stormwater Permit (State Water Resources Control Board NPDES General Permit No. CAS000004), pursuant to the NPDES Phase II program.</p>	X	X		X
	<p>Mitigation Measure 6A.3: Trail amenities shall be constructed using pervious surfaces. These features shall either be designed to provide full infiltration of runoff from the 10-year storm event within 12 hours or include an underdrain system that collects filtered stormwater and releases the runoff downslope as sheet flow at a rate that is a maximum of 90% of pre-project conditions.</p> <p>The covered Native American Interpretive Area trail amenity shall be constructed using pervious surfaces in areas that will receive direct rainfall. Runoff from the roof of this amenity shall be routed to an adjacent rain garden sized to detain and infiltrate rainfall from a 10-year event and that includes an overflow system to route runoff from larger events as sheet flow to the downslope areas at a maximum rate of 90% of pre-project rates.</p>	X	X		—

**Table 2-1
Comparison of Alternatives**

Impact	Mitigation Measure	Project Alternatives Requiring this Mitigation			
		Paved Trail within MCLDP	Paved Trail within Caltrans Easement	Combined Paved Trail	Unpaved Trail
	<p>Mitigation Measure 6A.4: Permanent BMPs shall be identified in the SWPPP and included on project Grading or Improvement Plans, which are subject to approval by Placer County. BMPs shall be designed to mitigate (minimize, infiltrate, filter, or treat) stormwater runoff. Flow or volume based post-construction BMPs shall be designed at a minimum in accordance with the Placer County Guidance Document for Volume and Flow-Based Sizing of Permanent Post-Construction Best Management Practices for Stormwater Quality Protection. Post-construction BMPs for the project may include, but are not limited to, rock slope protection, vegetated swales, rain gardens, detention basins, rock energy dissipaters, and vegetation of disturbed soil areas. Northstar Community Services District shall provide monitoring, irrigation where necessary, and remedial actions to ensure that vegetation in vegetated swales, rain gardens, and revegetated disturbed areas those areas that are disturbed during construction but not part of the 10-foot wide trailbed or 2-foot shoulders on each side and the location of the existing parking lot) becomes established within 3 years following construction. All BMPs shall be maintained as required to ensure effectiveness. Placer County shall maintain records providing proof of ongoing maintenance.</p>	X	X		X

**Table 2-1
Comparison of Alternatives**

Impact	Mitigation Measure	Project Alternatives Requiring this Mitigation			
		Paved Trail within MCLDP	Paved Trail within Caltrans Easement	Combined Paved Trail	Unpaved Trail
Substantially Alter Drainage, Runoff, or Flooding Patterns or Create Flood Hazards	No adverse effects and no mitigation necessary.				
Land Use and Recreation					
Effects to Use of Recreational Facilities	Mitigation Measure 7A.1: The operating agreement between the U.S. Army Corps of Engineers (Corps) and the Northstar Community Services District (NCS D) and/or Placer County shall determine potential costs associated with use of the Martis Valley Trail (MVT) and identify funding sources to meet these costs. These shall include maintenance and operations at the Martis Creek Lake and Dam Project (MCLDP) Wildlife Viewing Area parking lot and/or the relocated parking lot, ongoing maintenance of the trail system on the south side of State Route (SR-) 267, enforcement and monitoring of responsible trail behavior, monitoring and maintenance of revegetated areas, monitoring and protection of cultural resources, and increased demand for emergency services.	X	X		X
Create Conflicts between Trail User Groups	Mitigation Measure 7B.1: The operating agreement between the Corps and the Northstar Community Services District and/or Placer County described in Mitigation Measure 7A.1 shall address enforcement and monitoring of responsible trail behavior, including enforcement of Corps regulations related to dog control. The following standards for use	X	x		X

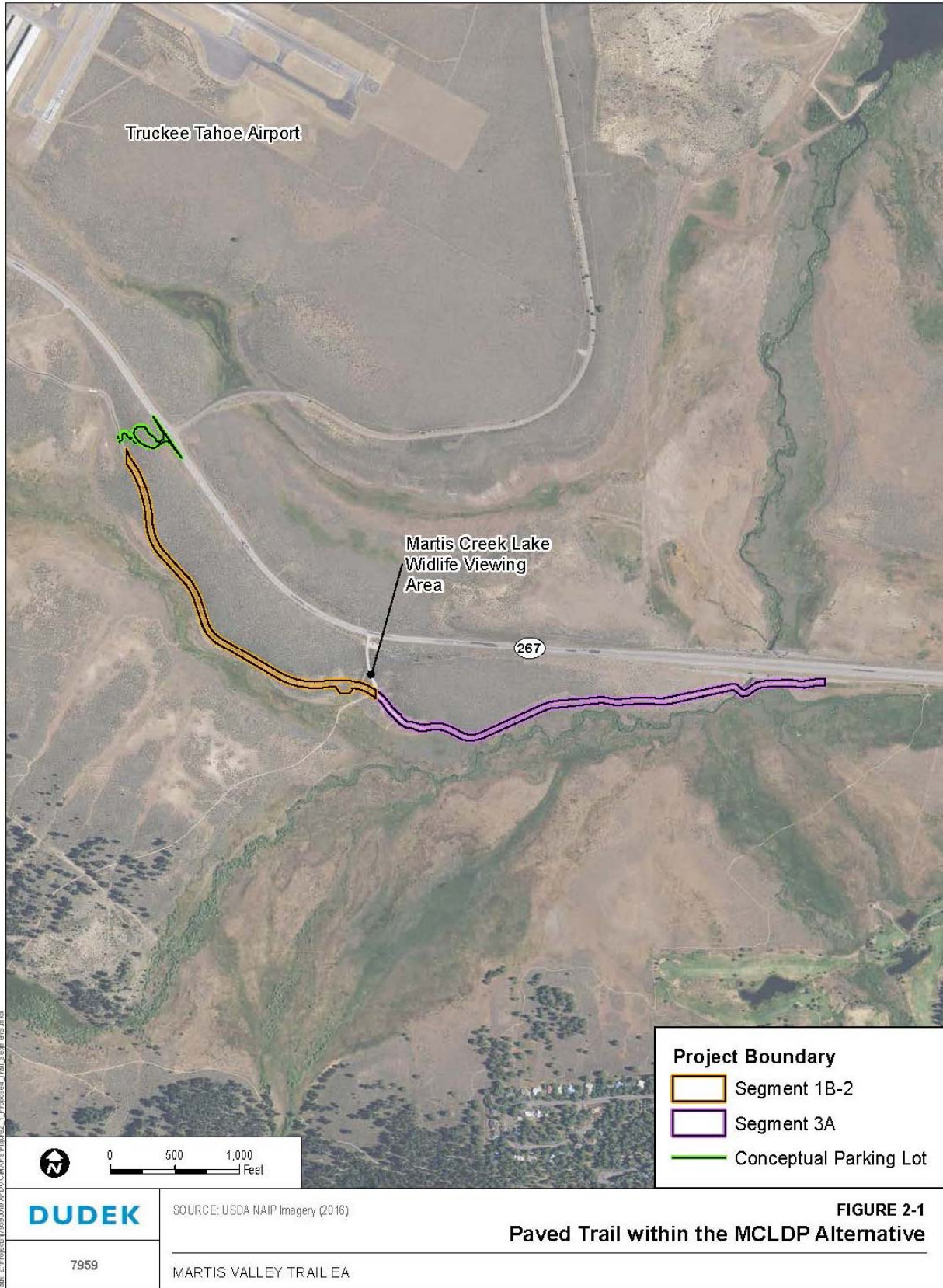
**Table 2-1
Comparison of Alternatives**

Impact	Mitigation Measure	Project Alternatives Requiring this Mitigation			
		Paved Trail within MCLDP	Paved Trail within Caltrans Easement	Combined Paved Trail	Unpaved Trail
	<p>of the trail by dogs shall be included in the operating agreement and MCLDP Recreation Use Rules:</p> <ul style="list-style-type: none"> • All dog walkers must have a functional 6-foot leash that is attached to a collar or harness on the dog, for each dog under their care and is simultaneously held by the dog walker. • Dog walkers must keep dogs on leash in parking lots and on paths. • Dog walkers must keep dogs out of any area closed by fence or sign for restoration, habitat protection, or safety concerns. • Dog walkers must pick up their dogs' feces immediately and dispose of it in a garbage container. • 				
Visual Resources					
Create Increased Levels of Visual Contrast	<p>Mitigation Measure 8A.1: All areas of the project site that are subject to vegetation removal and/or grading but are not included within the final footprint of the trail (which includes the trailbed and any shoulders) shall be revegetated following construction. If one of the paved trail alternatives is selected for construction, at the time that the existing parking lot at the Wildlife Viewing Area is relocated, the existing parking lot shall be revegetated with the exception of an area sufficient to allow for access for maintenance and property management. Plantings shall be of native species.</p>	X	X		X

**Table 2-1
 Comparison of Alternatives**

Impact	Mitigation Measure	Project Alternatives Requiring this Mitigation			
		Paved Trail within MCLDP	Paved Trail within Caltrans Easement	Combined Paved Trail	Unpaved Trail
	Mitigation Measure 8A.2: Stockpiling of materials on site shall be minimized during construction. Construction staging areas and stockpile storage locations shall be identified on project plans and located within existing disturbed areas or as close to or within the areas of construction as possible.	X	X		X

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SOURCE: USDA NAIP Imagery (2016)

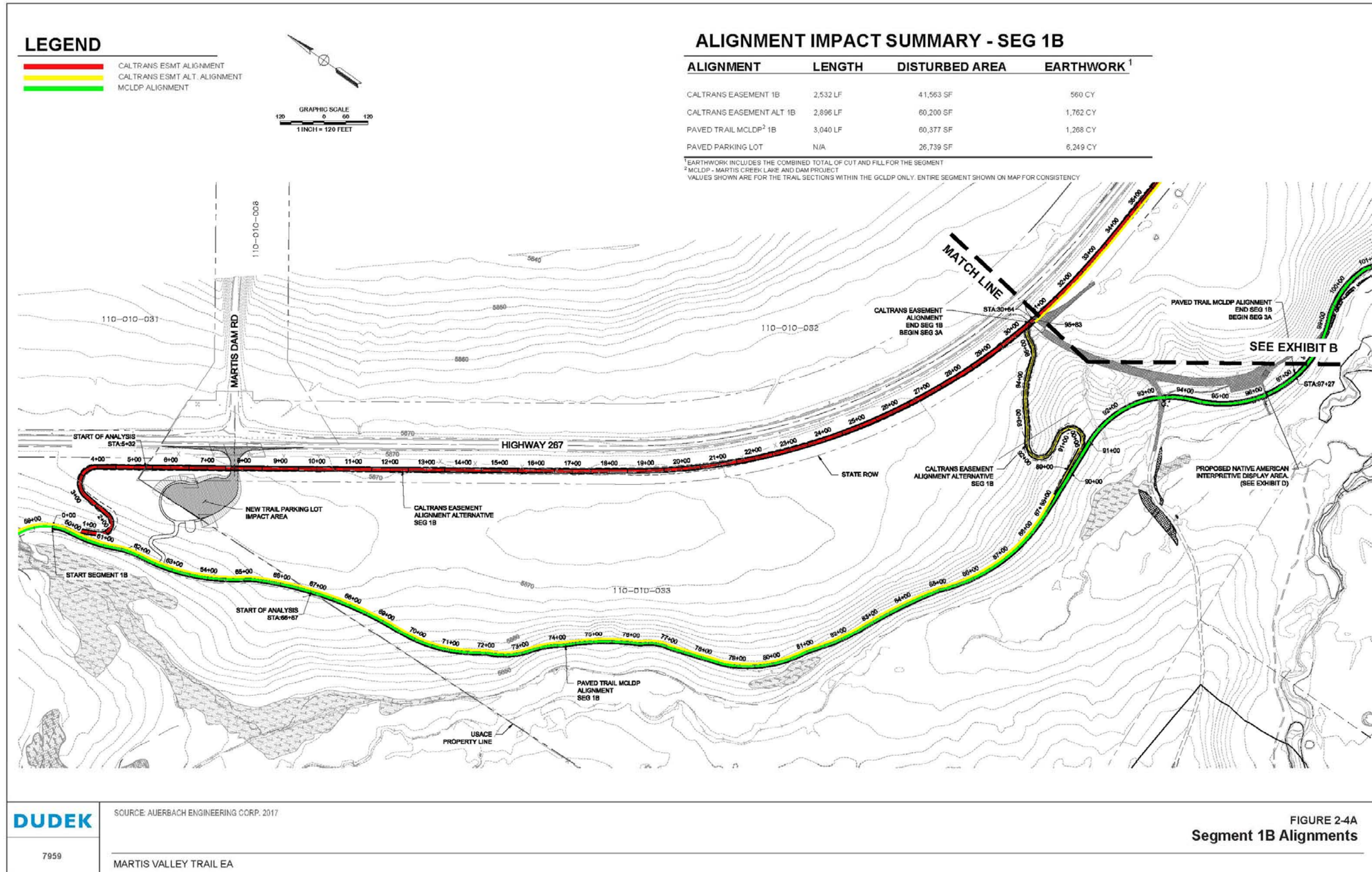
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MARTIS VALLEY TRAIL EA

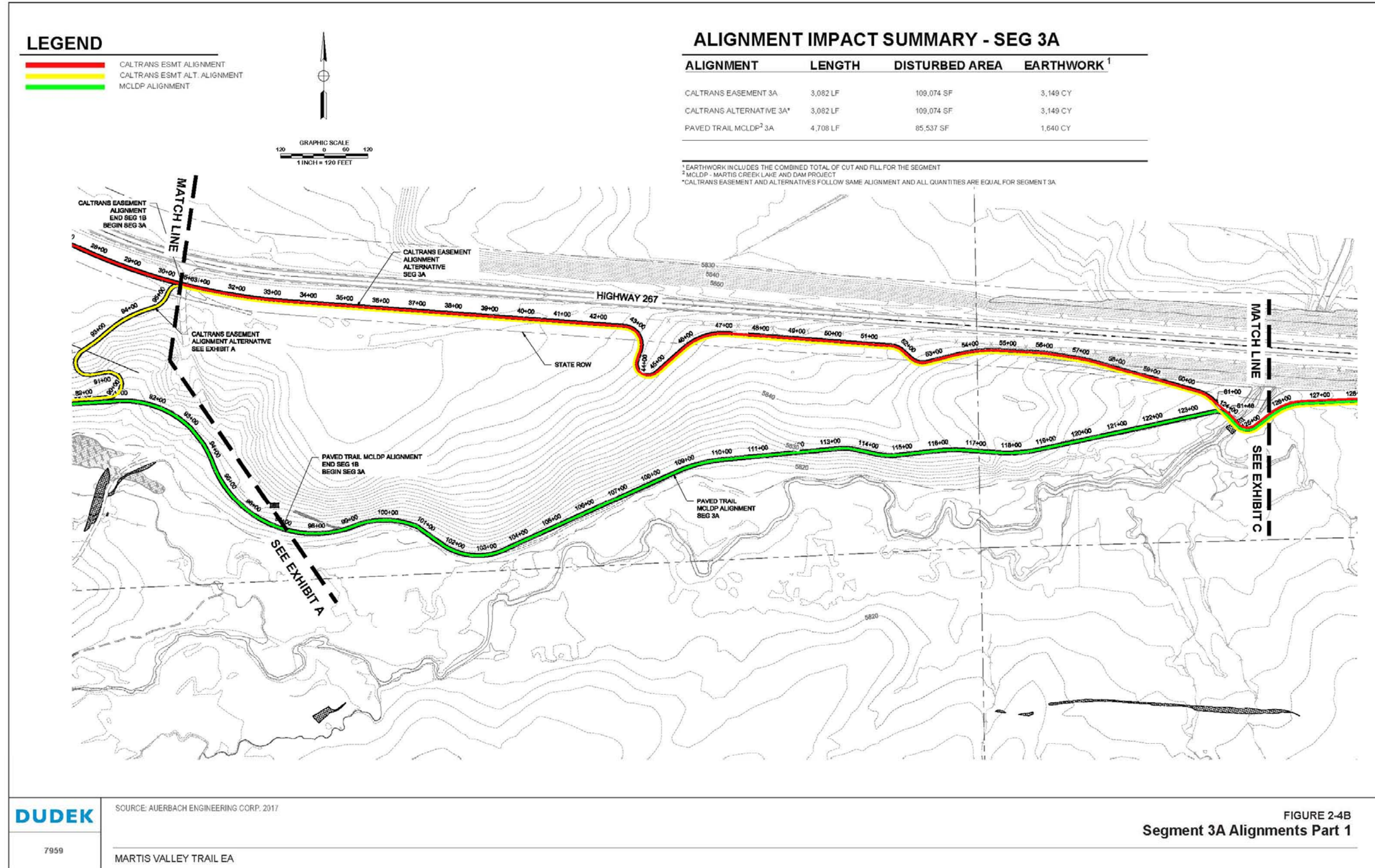
- Conceptual Parking Lot
- Project Boundary**
- Segment 1B-2
- Segment 3A

**FIGURE 2-3
 Combined Paved Trail Alternative**

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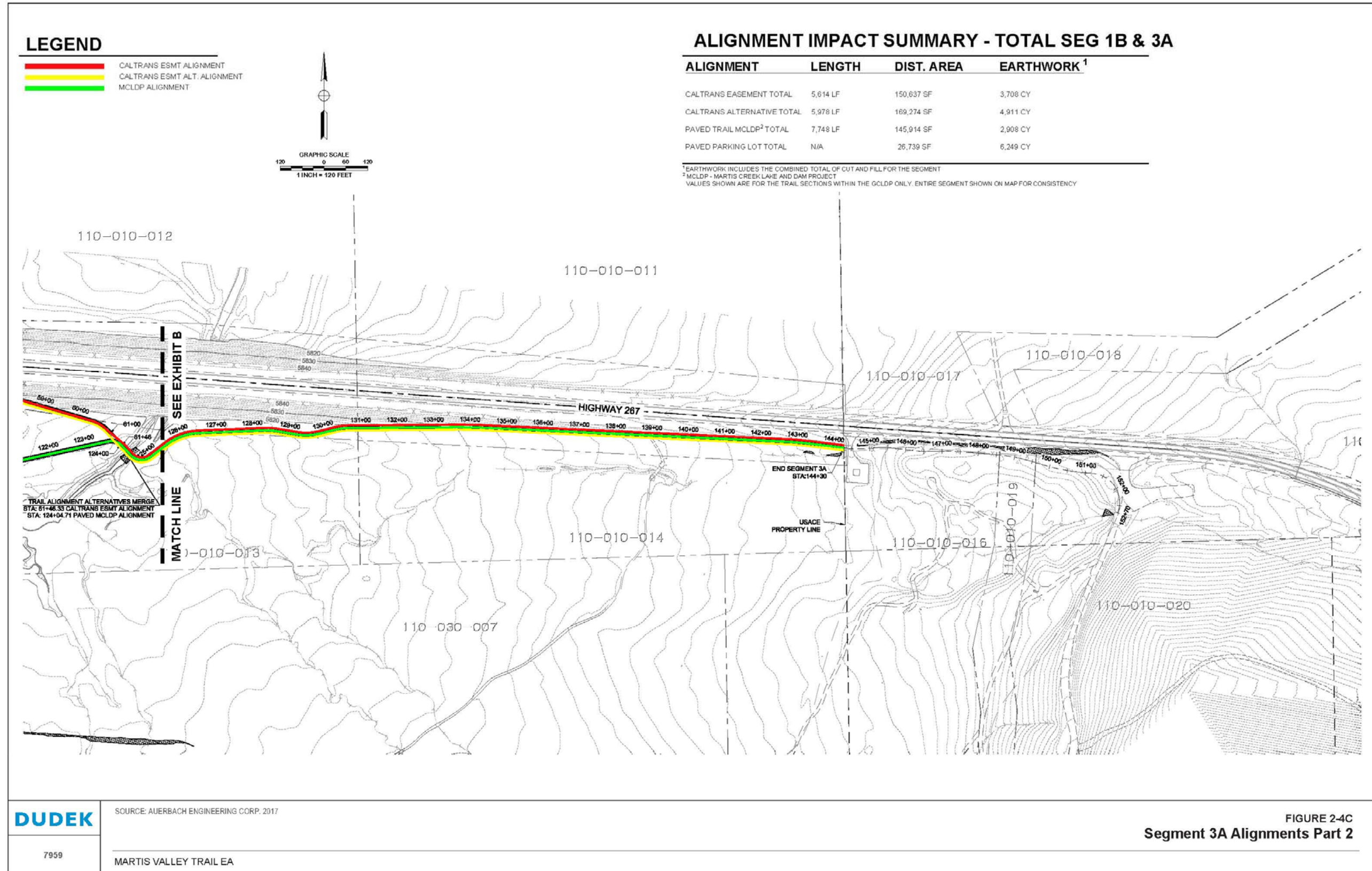


DUDEK SOURCE: AUERBACH ENGINEERING CORP. 2017

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FIGURE 2-4B
Segment 3A Alignments Part 1

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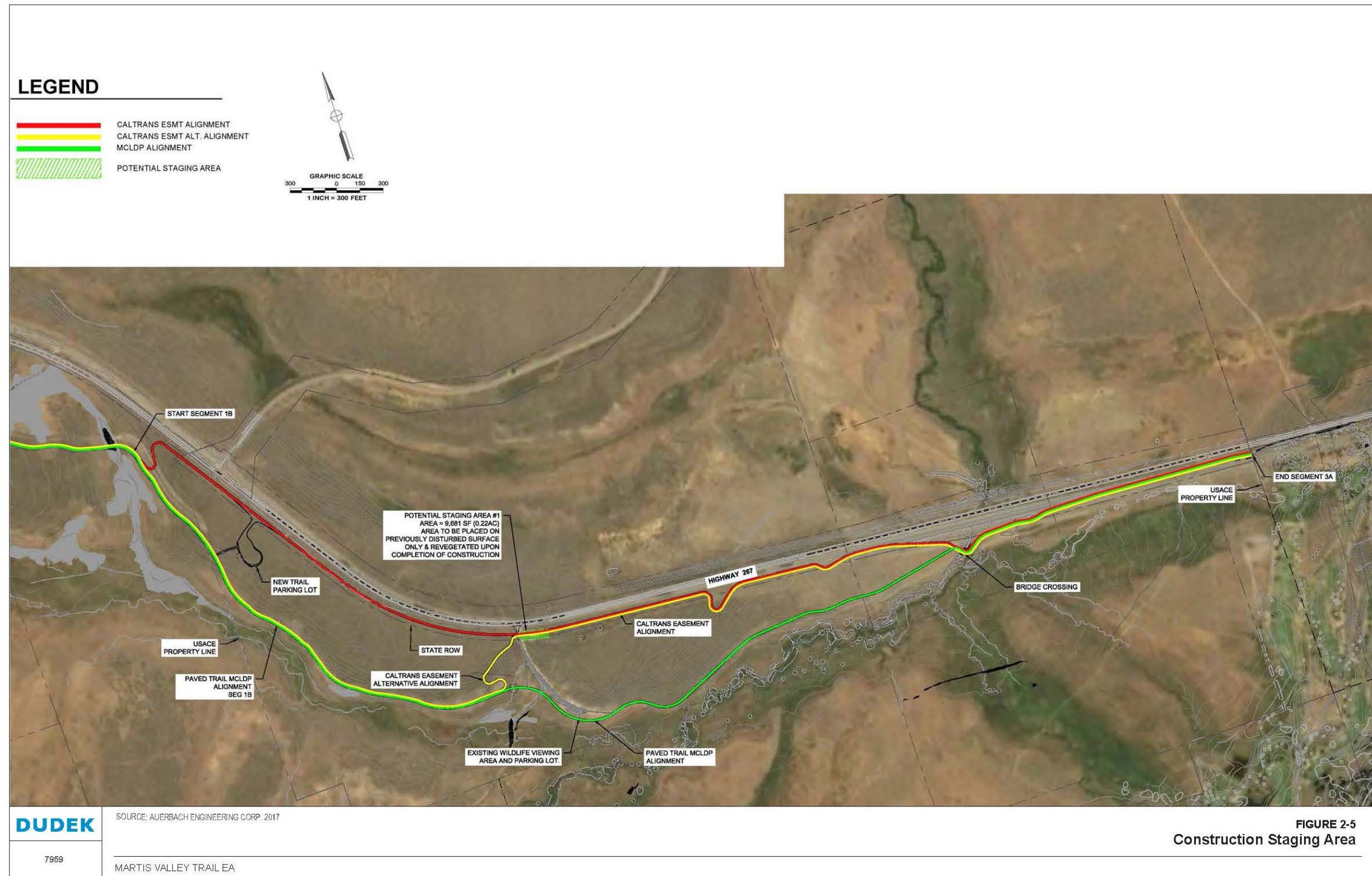


SOURCE: AUERBACH ENGINEERING CORP., 2017

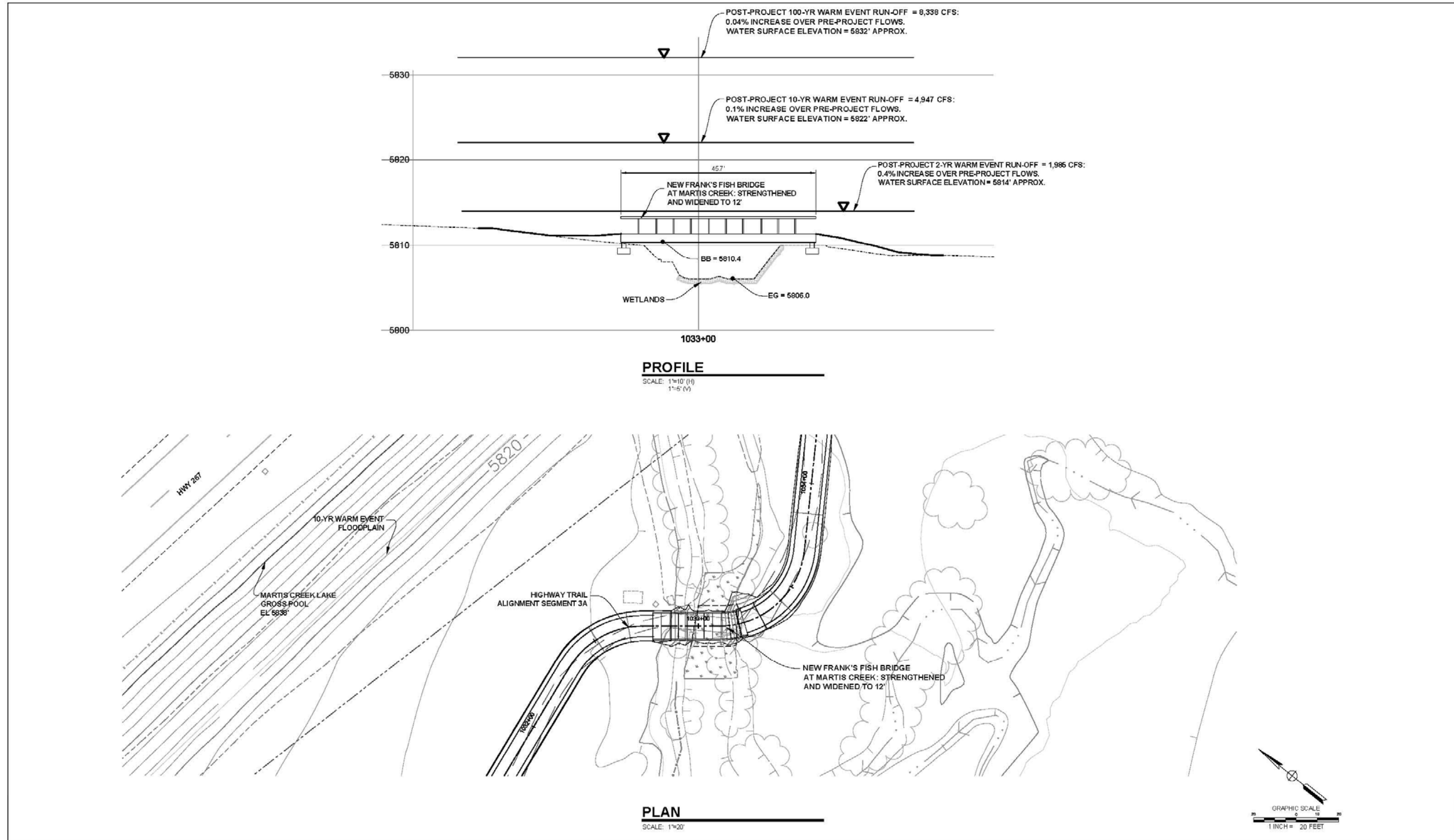
MARTIS VALLEY TRAIL EA

FIGURE 2-4C
Segment 3A Alignments Part 2

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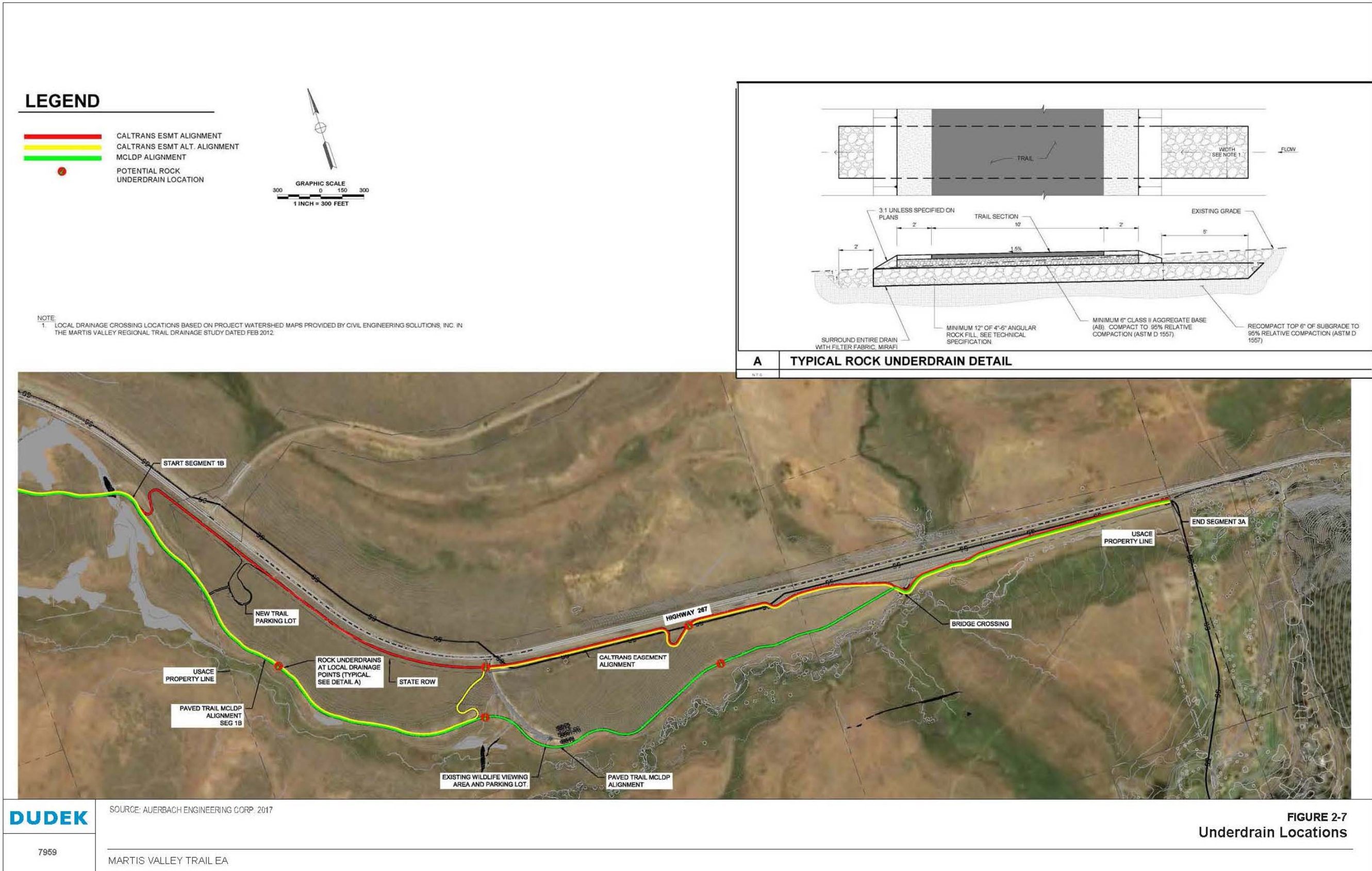
SOURCE: AUERBACH ENGINEERING CORP. 2012

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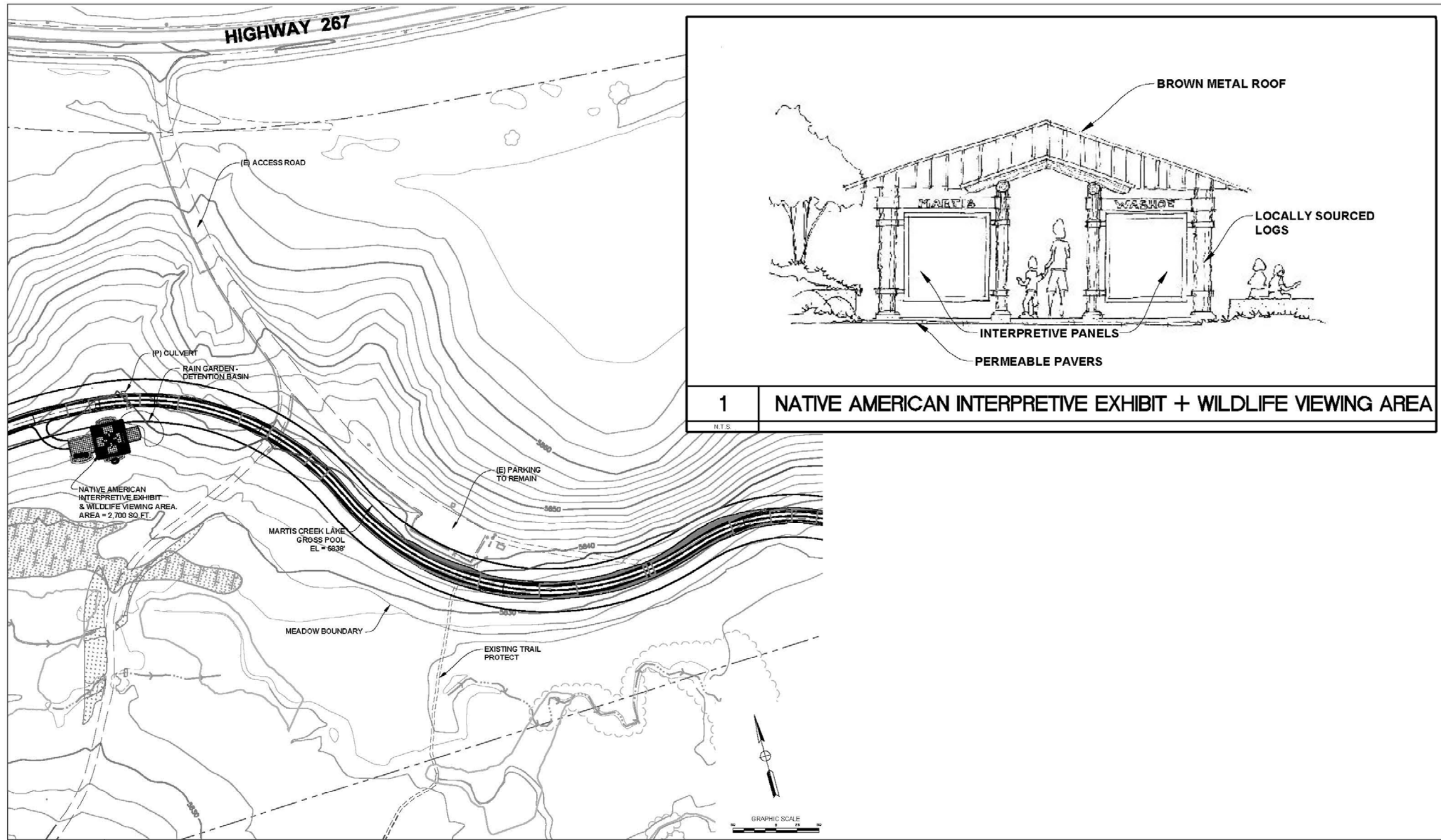
MARTIS VALLEY TRAIL EA

FIGURE 2-6
Segment 3A Martis Creek Crossing

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1 NATIVE AMERICAN INTERPRETIVE EXHIBIT + WILDLIFE VIEWING AREA
N.T.S.

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SOURCE: AUERBACH ENGINEERING CORP. 2017

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MARTIS VALLEY TRAIL EA

FIGURE 2-8
Native American Interpretive Exhibit

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3 INTRODUCTION TO THE ENVIRONMENTAL EFFECTS

3.1 Effects Evaluated

This Environmental Assessment (EA) evaluates the environmental effects that would result should the U.S. Army Corps of Engineers (Corps) grant a request for a right-of-way (ROW) to construct and maintain a portion of the Martis Valley Trail (MVT) across the lands managed by the Corps at the Martis Creek Lake and Dam Project (MCLDP). The trail would be owned by Placer County while the Northstar Community Services District (NCSD) would have responsibility for construction, operation, and maintenance of the trail. As the County's agent, NCSD has requested that the Corps issue a ROW to authorize construction and maintenance of the proposed trail through the MCLDP. The analysis in this EA is focused on the resource areas where the proposed action has potential to result in adverse effects, specifically including:

- Biological Resources
- Cultural Resources
- Hydrology and Water Quality
- Land Use and Recreation
- Visual Resources

3.2 Resources Not Considered in Detail

For each resource topic that is excluded from detailed evaluation in this EA, the discussion below demonstrates that the proposed construction, maintenance, and operation of the MVT through the MCLDP would have no effect or would not have the potential to result in adverse effects to the applicable resources.

The discussion is based in part on the prior analysis of environmental effects completed during the California Environmental Quality Act compliance process for the MVT, which resulted in certification of an Environmental Impact Report (EIR) and adoption of a Mitigation Monitoring and Reporting Program. As part of that process, NCSD prepared a detailed Initial Study to evaluate potential environmental effects of the overall trail project. The Initial Study analysis concluded that the project does not have the potential to result in adverse effects in several resource areas. The Initial Study was publicly circulated from December 17, 2010, to January 17, 2011. The discussion also considers the "context" and "intensity" of the proposed action in accordance with 40 CFR §1508.27, which, among other things, includes consideration of whether or not the proposed action would violate Federal, state, or local law or requirements for the protection of the environment.

Agricultural Resources

No agricultural activities or resources are present within the MCLDP. Granting a ROW to allow construction, maintenance, and operation of the MVT through the MCLDP under any of the paved trail alternatives or the Unpaved Trail Alternative would not affect any agricultural resources.

Air Quality

The project site is located within the Mountain Counties Air Basin and within the jurisdiction of the Placer County Air Pollution Control District (APCD) ozone. Ozone is formed by chemical reactions between volatile organic compounds (VOC) and oxides of nitrogen (NO_x). The project's construction VOC and NO_x emissions would result primarily from diesel-powered grading and paving equipment, trucks hauling building supplies, worker vehicle exhaust, and surfacing activities.

Construction of the trail would generate air pollutant emissions, but those emissions are expected to remain below the standards set by the Placer County APCD for NO_x and VOC emissions of 82 pounds per day. Compliance with the requirements of the Placer County APCD would ensure that construction emissions do not impair implementation of the air quality plan for the region. Placer County APCD requires that the heavy-duty off-road vehicles in the construction fleet attain average fleet-wide NO_x emissions that are 20% lower than the latest statewide heavy-duty fleet average. The APCD also requires implementation of standard best management practices to minimize construction emissions, including dust and particulate matter. Placer County APCD Rule 228 applies to construction activities and requires that no visible dust emissions carry to off-site areas and requires implementation of minimum dust control measures specified in Rule 228 Section 400. Section 400 dust control requirements are typically included on project plans and specifications to ensure implementation. Compliance with the APCD's requirements listed above would ensure construction emissions and dust would have no adverse effect on air quality in the region. Operation of the trail would not result in substantial air pollutant emissions or generation of odors.

Climate and Precipitation

Construction of the trail would generate small amounts of greenhouse gas emissions through the use of small bulldozer, mini excavator, hand construction, and/or other machinery capable of conforming to the dimensional requirements of the trail. Use of the trail is not expected to generate substantial traffic volumes and would not require consumption of energy or water or generate wastewater. Therefore, operation of the trail would not generate substantial new greenhouse gas emissions. The project is not expected to conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing greenhouse gas emissions or result in adverse effects associated with climatic conditions.

Environmental Justice

As shown in the aerial photograph in Figure 2-1, there are no residential communities adjacent to the proposed trail through the MCLDP. The trail would extend onto private land to the west of the MCLDP and onto the Northstar California Golf Course to the east of the MCLDP. No low-income, minority, or disadvantaged populations would be disproportionately exposed to adverse environmental consequences or conditions as a result of grading a ROW to allow construction, maintenance, and operation of these proposed trail through the MCLDP.

Geology/Soils

The MCLDP is not located within any designated earthquake zones, but, like all of California, the area is subject to seismic activity. The Polaris Fault is located east of the project area. It runs generally from the south near State Route (SR-) 267 and Northstar Drive in Placer County, in a north-northeasterly direction, on the east side of Martis Valley, then further north to the west of Prosser Creek and Stampede Reservoirs, and terminates near SR-267 and Henness Pass Road in Sierra County. According to the California Department of Conservation, the Polaris is a Holocene fault with evidence of displacement in the last 11,700 years, but with no historical record of fault activity. Additionally, the Polaris Fault is not designated as an Alquist-Priolo fault zone.

Use of the trail is not expected to expose individuals to adverse effects related to seismic hazards. Soil erosion during construction would be minimized by the use of best management practices required under grading permits issued for each construction phase and under the requirements of the National Pollutant Discharge Elimination System. Control of erosion to protect water quality is evaluated in Chapter 6, Hydrology and Water Quality, of this EA. The project is not expected to result in any adverse effects related to geology and soils.

Hazards/Hazardous Materials/Toxics/Human Health and Safety

Under the Unpaved Trail Alternative or the paved trail alternatives, construction and maintenance of the proposed trail would include the use of small amounts of hazardous materials associated with the operation and maintenance of vehicles and equipment. Construction activities would include the use of hazardous materials such as paint, hydraulic fluids, fuels, oils, or other materials associated with the operation and maintenance of vehicles and equipment. These materials are generally contained within vessels engineered for safe storage. Large quantities of these materials would not be stored at or transported to the construction site. In compliance with the State Water Resources Control Board National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction Activity, hazardous materials would be stored in accordance with state and federal regulations and standard best management practices as prescribed in the Stormwater Pollution Prevention Plan prepared for the project. Hazardous materials management during construction would include routine equipment inspections to ensure there are no fluid leaks; maintaining a spill kit on site; and designating specific locations for construction staging areas and equipment refueling, lubrication, and maintenance. This would ensure that the project would not result in adverse effects associated with potential releases of hazardous materials during construction.

Granting a ROW to allow construction, maintenance, and operation of the proposed trail would result in no effects related to the disturbance of any listed hazardous materials site, and there are no recognized environmental conditions (i.e., presence of hazardous materials) or toxic materials known to occur along the proposed trail. A search of available State databases of hazardous materials sites also found that there are no listed sites within the proposed trail alignment (DTSC, 2017;SWRCB, 2017). The nearest site identified by the records searches conducted is a leaking underground storage tank (LUST) cleanup site associated with the Northstar at Tahoe Gas Station, approximately 400 feet south of the trail alignment along Northstar Drive. The proposed project would result in no impacts related to disturbance of any listed hazardous materials site. The project would not expose trail users to adverse health risks.

The project area is in proximity to the Truckee-Tahoe Airport, but the proposed dispersed recreational uses are consistent with the Airport Land Use Compatibility Plan, and the project would not result in adverse safety effects related to the airport.

Indian Trust Assets

Indian Trust Assets are generally considered to be property interests held in trust by the United States for the benefit of Indian tribes or individuals. Indian reservations, rancherias, and public domain allotments are examples of common Indian Trust Assets. While the project area is known to support cultural resources associated with Native American occupation of the region, there are no Indian Trust Assets within the MCLDP. The project would not adversely affect any Indian Trust Assets.

Noise

The proposed project does not include any components that would generate substantial noise in the operational phase. Use and maintenance of the proposed trail would not generate substantial increases (temporary or permanent) in ambient noise levels in the vicinity and would not generate ground-borne vibration. The area of the proposed trail is influenced by noise from traffic on SR-267. Common wildlife that occurs within this area is routinely exposed to traffic noise, and is expected to have reduced sensitivity to noise associated with trail construction. Equipment used during trail construction would generally be small and relatively quiet, and would include a small bulldozer, mini excavator, and other similar machinery capable of conforming to the dimensional requirements of the trail. Hand construction techniques would also be required. These factors would limit the noise generated during construction. Paving activities are likely to generate the greatest amount of noise, but it would occur during a brief

period. The trail is expected to be paved in two phases, with each phase lasting approximately 1 week. Construction would result in a temporary increase in noise levels in the immediate vicinity of the active construction site, which could reduce the habitat value of the construction area temporarily. This temporary disturbance is not expected to impair wildlife survival in the area.

There are no residences in proximity to the site that could be exposed to noise levels that exceed the noise level limits specified in Article 9.36 of the Placer County Code. Additionally, the County Code restricts construction activities to daytime hours, Monday through Friday from 7 a.m. to 6 p.m., Saturday from 8 a.m. to 6 p.m., with no construction permitted on Sundays (9.36.030 Exemptions). Construction activities that occur during these days/hours are exempt from the noise standards contained in the Placer County Code. Compliance with the County's noise standards would ensure the project would not result in an adverse effect on noise conditions in the project area.

Public Services

No new public services would be necessary to support the project, and the project would not increase the intensity of use of existing services. Services related to operation and maintenance of the trail, enforcement of trail-use rules, and emergency responses to trail users are evaluated in Chapter 7, Land Use and Recreation, of this EA.

Socioeconomic Effects

The project would not create or displace any housing or jobs. By contributing to regional recreational opportunities, the project could indirectly support increased tourism and associated economic activity. The project would not result in adverse socioeconomic effects in the region.

Transportation and Circulation

Construction, maintenance, and use of the proposed trail through the MCLDP is not expected to generate substantial increases in vehicle traffic in the project area, alter the mix of vehicle traffic on existing roadways, or conflict with transportation plans in the region. The project would not adversely affect transportation and circulation in the area.

Utilities/Service Systems

No new utilities or services would be necessary to support the project, and the project would not increase the intensity of use of existing utilities and services.

4 BIOLOGICAL RESOURCES

4.1 Introduction

This chapter identifies the habitats, vegetation, and wildlife that may be supported within the study area for the proposed right-of-way (ROW) for the Martis Valley Trail (MVT) through the Martis Creek Lake and Dam Project (MCLDP). The proposed trail would pass through the MCLDP area, which includes approximately 1,800 acres owned and managed by the U.S. Army Corps of Engineers (Corps). As previously discussed in section 2.3, The alignment for the Paved Trail within the MCLDP Alternative was developed based on consideration of topography, natural and cultural resources, property ownership, and the existing built environment in the vicinity. NCS D worked with their consulting engineers to conduct field reconnaissance, review aerial photos, and evaluate constraints to trail construction and use. To meet the requirements of the Americans with Disabilities Act, the design team analyzed potential alignments to ensure that, to the extent feasible, trail grades would be less than 5%. Through this work, NCS D identified a preliminary trail alignment from which further analysis could proceed. Biologists and archeologists then surveyed a 50-foot-wide corridor centered on that preliminary trail centerline to delineate wetlands and other sensitive habitats, identify any rare plant populations, and identify and evaluate potential archeological and historic resources. This work was used to refine the preliminary trail alignment. Throughout this EA, the term “study corridor” refers to the 50-foot wide corridor in which resource surveys were conducted, while the term “project site” refers to the actual area of disturbance associated with construction of the trail under this alternative.

The proposed alignments for the trail were developed based on the results of the field work and resource mapping. The trail plans shown in Figures 2-4A through 2-4C identify the area that would be disturbed by trail construction under each of the three paved trail alternatives. Project effects identified in this section are based on the area of disturbance shown in the trail plans provided in Figures 2-4A through 2-4C. The area of disturbance for each alternative is referred to as the project site in the analysis of each alternative’s effects on biological resources presented in this section of the EA.

The Corps prepared a Draft Preliminary Wetland Delineation Report (September 2013) for the MCLDP area. The analysis in this section is based on the information in that report as well as a Biological Resources Assessment and Wetland Delineation prepared by North Fork Associates (NFA). The original NFA reports were prepared in 2009 in support of the California Environmental Quality Act review for the project. Revisions to the Wetland Delineation were prepared in 2011 based on consultation with the Corps. These reports are provided in Appendix A.

4.2 Affected Environment

Regional Environment

As shown in Figures 1-1 and 1-2, the study area is within Martis Valley, which is located in the Sierra Nevada Geomorphic Province, east of the Sierra Nevada crest and part of the larger Tahoe–Truckee River Basin of California and Nevada. Martis Valley is located north of Lake Tahoe and southeast of the town of Truckee and is generally bounded by the Truckee River to the north and west, the Lake Tahoe Basin to the south, and the western reaches of Waddle Ranch on the east.

Geographically, Martis Valley encompasses an area of approximately 70 square miles (44,800 acres), while the Martis Creek watershed covers an area of approximately 42.7 square miles and drains to the Truckee River in the town of Truckee.

Martis Creek originates in the southwestern portion of the watershed near Sawtooth Ridge and is met by four perennial and primary tributaries where it crosses Martis Valley: (1) West Martis Creek, (2)

Middle Martis Creek, (3) East Martis Creek, and (4) Dry Lake Creek. Significant smaller first- and second-order tributary streams are present in each of these sub-watersheds and areas along Martis Valley proper (Truckee River Watershed Council 2012).

According to the *Martis Valley Community Plan* (Placer County 2003), habitats in the region include mixed coniferous forest, Great Basin sage scrub, red fir forest, montane chaparral, montane meadow, and riparian scrub. Mixed coniferous forest is the dominant habitat type in the region. These vegetation communities provide cover, foraging, and breeding habitat for a variety of fish and wildlife species, including several special-status species. As discussed in Chapter 9, Cumulative Effects, ongoing development within Martis Valley has incrementally reduced wildlife movement corridors in the area. Several organizations are involved in efforts to preserve and restore natural areas within Martis Valley.

Topography within the study area ranges from generally flat to gently rolling on the floor of Martis Valley. Land uses in the vicinity of the trail alignment include existing trails and wildlife viewing in the MCLDP, the continuation of the existing trails to the south and east through the Northstar California community, the Northstar Golf Course, and Martis Creek Lake (a flood-control reservoir north of the project site within the MCLDP). Other land uses adjacent to the MCLDP include the residential communities of Lahontan and Martis Camp, the Truckee Tahoe Airport, Teichert Aggregates, and the Waddle Ranch Conservation Area, which is part of the Truckee Donner Land Trust.

The existing trail along Martis Creek through the MCLDP Transportation Corridor Management Area is heavily used. This has led to water quality impacts from sediment generated by erosion of the trail and streambanks, and impacts to wildlife resulting from the presence of humans and dogs in the area (Truckee River Watershed Council 2009). Restoration activities undertaken by the Watershed Council and the Corps include “rerouting some portions of the existing trails away from stream banks, meadows and wetlands, restructuring and rebuilding portions of trails, and stabilizing stream banks through extensive revegetation” to reduce sedimentation and enhance natural habitat (Truckee River Watershed Council 2009).

Habitats

The Biological Resources Assessment documents that the proposed ROWs under each of the alternatives consist primarily of sagebrush scrub habitat, although Segment 3A under each of the paved trail alternatives has small areas of wet meadow, dry meadow, and open water habitats. These habitat types are described below. Figure 4-1 identifies the location of each habitat type within the three paved trail alternatives.

Sagebrush Scrub

This habitat is dominated by big sagebrush; secondary shrub dominants include antelope brush and rubber rabbitbrush. Sagebrush scrub is the dominant habitat type in the project site for both of the paved trail alternatives. The sagebrush scrub varies from dense intertwining branches of big sagebrush and antelope brush to more open areas that also support herbaceous vegetation, such as Parish’s yampah (*Perideridia parishii*), thickstem aster (*Eurybia integrifolia*), mountain tarweed (*Madia glomerata*), cryptantha (*Cryptantha affinis*), locoweed (*Astragalus purshii* var. *tinctus*), dwarf lupine (*Lupinus lepidus* var. *confertus*), clustered broomrape (*Orobanche fasciculata*), blue-eyed Mary (*Collinsia parviflora*), sulfur flower (*Eriogonum umbellatum* var. *dumosum*), navarretia (*Navarretia intertexta* ssp. *propinqua*), onion, cheatgrass (*Bromus tectorum*), bulbous bluegrass (*Poa bulbosa*), and squirreltail (*Elymus elymoides*). Embedded within the sagebrush scrub are areas dominated by low sagebrush.

Wet Meadow

As documented in the Corps’ *Draft Environmental Assessment for the Martis Creek Lake Master Plan Update* (Corps 2014), the wet meadow in the study area is dominated by Lemmon’s willow (*Salix lemmonii*), widefruit

sedge (*Carex angustata*), beaked sedge (*Carex rostrata*), annual hairgrass (*Deschampsia danthonioides*), meadow barley (*Hordeum brachyantherum*), and spike bentgrass (*Agrostis exarata*) the wetter areas, and Kentucky bluegrass (*Poa pratensis*), Near navarretia (*Navarretia intertexta ssp. propinquity*), and Mexican rush (*Juncus mexicanus*) were observed in the transitional areas. Redox dark surface, a primary hydric soil indicator, was observed in all sample points. Other hydrology indicators observed include surface soil cracks, oxidized rhizospheres along living roots, drainage patterns, geomorphic position, and the FAC-neutral (facultative-neutral) test. Several secondary channels meander through the wet meadow; these are tributaries to the main channel of Martis Creek and likely change position from season to season and year to year. These wetlands may be classified, according to the Cowardin Classification System, as a palustrine emergent wetland with persistent vegetation.

The Draft Environmental Assessment also indicates that wet meadow habitat can provide valuable foraging habitat for waterfowl, shorebirds, and some larger mammals such as mule deer (*Odocoileus hemionus*). Wet meadow can also provide valuable foraging and breeding habitat for reptiles and amphibian species, such as mountain gartersnake (*Thamnophis elegans elegans*) and Pacific chorus frog (*Pseudacris regilla*), and resting and foraging habitat for migrating species, such as sandhill crane (*Canadensis tabida*) (Corps 2014).

Dry Meadow

The dry meadow habitat type is typically found in the transition zone between wet meadow or riparian and upland sage scrub and coniferous forest habitat types. The dry meadow habitat type is dominated by many of the same plant species found in wet meadow habitats, but with a species composition trending toward plants that are more tolerant of dryer conditions. Perennial species of rushes and grasses comprise most of the vegetation in these areas.

Open Water

In the Corps' wetland delineation for the MCLDP, Martis Creek was delineated as open water that is characterized by inundation from 1 to over 6 feet deep. Martis Creek is a perennial creek with pool and riffle complexes, which flows into Martis Creek Lake. The creek fluctuates seasonally and flows through wet meadows, seasonal wetlands, and some uplands. Vegetation observed along the channel of Martis Creek includes Lemmon's willow, beaked sedge, widefruit sedge, longanther rush (*Juncus macrandrus*), and clustered field sedge (*Carex praegracilis*). The channel varies from approximately 5 to 20 feet wide, and flowing water was observed during the fall field investigation.

Special-Status Plant Species

Research through the U.S. Fish and Wildlife Service (USFWS) indicates that there are no plant species designated under the federal Endangered Species Act as threatened or endangered that may occur in the project vicinity.

Wildlife

Martis Valley provides suitable habitat for a large diversity of wildlife. No critical habitat for endangered or threatened species has been identified within the project area (USFWS 2015). Habitat features available in the area include nesting sites for a variety of bird species, escape and thermal cover, and abundant food sources. However, habitat features within the MVT ROW study area are more limited.

Aquatic habitats in the area, including Martis Creek and its tributaries, provide year-round and seasonal sources of water for wildlife and habitat for various aquatic and semi-aquatic species. Historic occurrences of Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*), listed as a threatened species under the federal Endangered Species Act, are documented from Martis Creek. The California Department of Fish and Wildlife (CDFW) has been stocking this species in Martis Creek Lake for several

years (Thomas, pers. comm. 2011). During field surveys for the full MVT project, numerous small trout were observed in pools along Martis Creek just upstream of the State Route (SR-) 267 crossing and in an unnamed drainage south of the project area. While the species of trout observed was not determined, the presence of these fish indicates Martis Creek has potential Lahontan cutthroat trout habitat. However, in consultation regarding this project, the USFWS has concurred that Lahontan cutthroat trout is not expected to occur in the project area (USFWS 2017). No Essential Fish Habitat has been designated within the study area.

Forest communities, such as those located west, south, and east of the Segments 1B-2 and 3A study corridor, are important for animal cover and provide high quality roosting and nesting opportunities for birds and shelter for numerous mammals. Snags located within the forested areas provide nesting cavities for birds such as owls and woodpeckers. Taller trees located on hillsides overlooking foraging areas provide good nesting habitat for raptors such as great horned owl (*Bubo virginianus*) and red-tailed hawk (*Buteo jamaicensis*). Animals that roost, nest, and shelter in the nearby forest habitats may use the sagebrush, wet meadow, and dry meadow habitats within the study corridor for foraging.

Because of the elevation of the Martis Valley, many species occur in the area seasonally either for nesting purposes or during migration, while there are fewer year-round residents. Species observed in sagebrush scrub habitat during field surveys included Brewer's sparrow (*Spizella breweri*), cliff swallow (*Petrochelidon pyrrhonota*), and chipping sparrow (*Spizella passerina*). The small area of wet meadow habitat at the Segment 3A crossing of Martis Creek could provide important seasonal nesting habitat for numerous migratory songbirds, including a variety of special-status species, as discussed further below.

During field surveys for the full MVT project, three raptors – two American kestrels (*Falco sparverius*) and a solitary osprey (*Pandion haliaetus*) – were observed in the vicinity. The kestrels were observed emerging from a cavity in a snag located just up-slope of Martis Creek and foraging in adjacent sagebrush scrub. It is expected that the pair of kestrels had been recently, or were currently, using the snag for nesting.

Mammals either observed or detected during field surveys for the full MVT project included: mountain pocket gopher (*Thomomys monticola*), Douglas squirrel (*Tamiasciurus douglasii*), and golden-mantled ground squirrel (*Spermophilus lateralis*). Tracks, scat, or other sign of mule deer, coyote (*Canis latrans*), and raccoon (*Procyon lotor*) were found in various locations throughout both forest and sagebrush communities of the study area. Deer occurring within Martis Valley are part of the Loyalton-Truckee Deer Herd. The study area is within the summer range for the Loyalton-Truckee Deer Herd (Kahre and Fowler 1982).

Special-Status Wildlife Species and Migratory Birds

Research through the USFWS indicates that there are two special-status animal species that could occur in the project region. However, based on site conditions and the habitat needs of these species, there is no potential for either to occur within the project study area, as discussed in the 2016 supplement to the Biological Resources Assessment provided in Appendix A and the concurrence letter from USFWS (USFWS 2017). Neither the Lahontan cutthroat trout nor the Sierra Nevada yellow-legged frog are known to occur in the project area. As stated in the USFWS concurrence letter, while the area contains suitable habitat for Lahontan cutthroat trout and marginally suitable habitat for the Sierra Nevada yellow-legged frog, “these species are not currently known to occur within the upper reaches of Martis Creek. Multiple field surveys conducted since 2009 by North Fork Associates and Dudek have not detected [either species]. In addition, these field surveys reported occurrences of non-native trout species within Martis Creek, thus greatly reducing the likelihood that [either species] occur within the proposed project area.” Martis Creek is a part of the Short-term Action Plan for Lahontan Cutthroat

Trout in the Truckee River Basin, and when it is reconnected to the Truckee River it has the potential to benefit the recovery of the species (USFWS 2003).

Migratory Bird Species

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the USFWS. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured. Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

Table 4-1 identifies the 24 species of migratory birds that could potentially be affected by activities in this location:

**Table 4-1
Migratory Bird Species with Potential to Occur in the Study Area**

Migratory Bird Species	Season
Bald eagle <i>Haliaeetus leucocephalus</i>	Year-round
Black rosy-finch <i>Leucosticte atrata</i>	Year-round
California spotted owl <i>Strix occidentalis occidentalis</i>	Year-round
Fox sparrow <i>Passerella iliaca</i>	Year-round
Greater sage-grouse <i>Centrocercus urophasianus</i>	Year-round
Lewis’s woodpecker <i>Melanerpes lewis</i>	Year-round
Peregrine falcon <i>Falco peregrinus</i>	Year-round
Pinyon jay <i>Gymnorhinus cyanocephalus</i>	Year-round
Short-eared owl <i>Asio flammeus</i>	Year-round
Western grebe <i>Aechmophorus occidentalis</i>	Year-round
Williamson’s sapsucker <i>Sphyrapicus thyroideus</i>	Year-round
Brewer’s sparrow <i>Spizella breweri</i>	Breeding
Calliope hummingbird <i>Stellula calliope</i>	Breeding
Flammulated Owl <i>Psiloscoops flammeolus</i>	Breeding
Green-tailed towhee <i>Pipilo Chlorurus</i>	Breeding

**Table 4-1
Migratory Bird Species with Potential to Occur in the Study Area**

Migratory Bird Species	Season
Long-billed curlew <i>Numenius americanus</i>	Breeding
Olive-sided flycatcher <i>Contopus cooperi</i>	Breeding
Sage thrasher <i>Oreoscoptes montanus</i>	Breeding
Snowy plover <i>Charadrius alexandrinus</i>	Breeding
Swainson's hawk <i>Buteo swainsoni</i>	Breeding
Virginia's warbler <i>Vermivora virginiae</i>	Breeding
Willow flycatcher <i>Empidonax traillii</i>	Breeding

4.3 Project Effects

Basis of Significance Determinations

The analysis of potential effects is based on the basic project characteristics described in Chapters 1 and 2. The project would significantly affect biological resources if it would:

- Reduce the amount of native vegetation and wildlife habitat in the project area to a point that native wildlife could not live or survive in the project area;
- Permanently remove or disturb sensitive native communities, including waters of the United States;
- Substantially interfere with the movement of any resident or migratory fish or permanently remove or diminish essential fish habitat;
- Involve discharges of material into waterways that would pose a hazard to fish or lead to sedimentation and loss of sensitive native communities;
- Result in direct or indirect reduction in the growth, survival, or reproductive success of species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act or species protected under the Migratory Bird Treaty Act; or
- Result in an adverse effect on a species' designated critical habitat.

Project Effect 4A: Vegetation and Wildlife

No Action Alternative

Continued use of unpaved trails in the area would continue to contribute to erosion and gradual widening of the trails, which would incrementally decrease natural habitats adjacent to the trails. There is an existing unpaved trail in the area of Segment 3A under the Paved Trail within the MCLDP Alternative, but no existing trail in the area of Segment 1B-2. Habitat adjacent to the unpaved trail in the area of Segment 3A is predominantly sagebrush scrub, with areas of wet meadow downslope from the trail that could be adversely affected by continued erosion and trail widening. This would incrementally reduce the habitat value of the affected areas.

Paved Trail within the MCLDP Alternative

Table 4-2 below identifies the amount of each of four habitat types that occur within the study corridor and the amount of each habitat that would be impacted within the project site. (Note that the study corridor is 50 feet wide while effects would occur in an area of disturbance that ranges from 25 to 50 feet wide. Thus, direct effects to habitats would affect less than total amount of habitat present within the study corridor.) As shown in Figure 4-1, the primary habitat within the corridor is sagebrush scrub, while small amounts of dry meadow, wet meadow, and open water habitats are also present in the Segment 3A portion of the study corridor. These habitats support a wide diversity of wildlife, due to the availability of important habitat features including nesting sites, escape and thermal cover, abundant food sources, and year-round and seasonal sources of water.

**Table 4-2
Paved Trail within the MCLDP Alternative Study Corridor and Impacted Area Habitat Types**

Habitat Type	Amount within Segment 1B-2 Corridor (acres)	Amount within Segment 3A Corridor (acres)	Total Habitat Area (acres)	Impacted Area (acres)	Amount of Impacted Area to be Revegetated
Sagebrush Scrub	3.49	5.18	8.67	2.94	0.46
Dry Meadow	0	0.02	0.02	0.01	0
Wet Meadow	0	0.17	0.17	0.17	0.08
Open water	0	0.03	0.03	0.009	0
Total	3.49	5.40	8.89	3.13	0.54

The approximate area of each habitat type within the study corridor for each trail segment in the Paved Trail within the MCLDP alternative identified in Table 4-2 reflects the habitats within the 50-foot corridor surrounding the trail centerline. The impacted area was determined based on the area of disturbance for each trail segment as shown in Figures 2-4A through 2-4C and Figure 4-1.

The wet meadow and open water habitats within the Segment 3A portion of the study corridor are associated with Martis Creek.

Direct Effects

The following paragraphs evaluate the direct effects to each habitat type from construction of the Paved Trail within the MCLDP Alternative.

Wet Meadow and Open Water

Under this alternative, the existing bridge structure that crosses Martis Creek at the eastern end of Segment 3A would be replaced. This analysis is based on the site plans provided in Figures 2-4A through 2-4B, which show that replacement of this bridge with a wider bridge would result in direct impacts to wet meadow and open water habitats. According to the Corps' Draft Preliminary Wetland Delineation Report, construction of the Segment 3A crossing of Martis Creek could result in permanent fill within 0.09 acre of wet meadow habitat and 0.009 acre of open water at the Segment 3A crossing of Martis Creek. Construction of the trail would include replacing the existing bridge with one that is slightly wider, within a maximum 50-foot-wide area of disturbance. This could require removal of riparian vegetation at this crossing and placement of material within waters of the United States. It is expected that, at maximum potential impact, the project would result in the discharge of fill material within an approximately 0.009 acre (407-square-foot) area of open water and grading and discharge of fill within approximately 0.09 acre of wet meadow habitat. Construction activities could result in vegetation

removal and grading within an additional 0.08 acre of wet meadow habitat totaling a potential 0.17 acres of disturbance.

The construction activities at the Segment 3A crossing of Martis Creek could result in a loss of cover and potential nesting habitat for a variety of wildlife species as a result of these direct effects to wet meadow habitat, with a maximum area of disturbance of 0.17 acres. Following trail construction, 0.08 acres of disturbed wet meadow habitat would be revegetated. Effects to specific special-status wildlife species associated with this loss of habitat are evaluated in Project Effect 4C below.

To ensure compliance with federal and state laws, prior to construction of Segment 3A, if the final creek crossing design involves direct temporary or permanent impacts to open water or wet meadow habitats and/or riparian vegetation, NCSO would be required to obtain permits under Sections 401 and 404 of the federal Clean Water Act and a Streambed Alteration Agreement with CDFW. The terms and conditions of the Clean Water Act permits and Streambed Alteration Agreement will include measures to ensure that unavoidable adverse effects on the riparian habitat are minimized and mitigated. Measures would likely include a requirement to provide replacement habitat at a minimum ratio of 1:1 to ensure that “no net loss” of wetlands occurs, construction best management practices (BMPs) for erosion and sediment control, limited operating periods, revegetation and restoration of areas disturbed during construction, and monitoring. Obtaining these permits and complying with federal and state laws would ensure that adverse impacts to wildlife and vegetation are avoided or minimized to a maximum extent feasible during habitat disturbance and would ensure the effects of project construction on riparian habitat and associated plant and wildlife populations would be less than significant.

Dry Meadow Habitat

The dry meadow habitat on Segment 3A occurs south of the trail adjacent to Martis Creek, in the area of an existing segment of the Tomkins Memorial Trail. As shown in Figure 2-4B, the Paved Trail within the MCLDP Alternative alignment and grading in this area generally would not extend into the dry meadow habitat in this area, however, grading could affect up to a maximum of 0.01 acre of this dry meadow habitat along Segment 3A.

Vegetation removal in dry meadow habitat would result in small and temporary reduction in the dry meadow habitat available for a variety of wildlife species. Some common species that may use dry meadows are mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), and raccoon (*Procyon lotor*). Dry meadows are of particular importance for many ground nesting waterfowl including green-winged teal (*Anas crecca*), cinnamon teal (*Anas cyanoptera*), mallard (*Anas platyrhynchos*), gadwall (*Anas strepera*), and Northern pintail (*Anas acuta*). The Northern harrier (*Circus cyaneus*) is another ground nesting bird that may use dry meadows for nesting and foraging habitat. The effects to specific special-status wildlife species associated with this vegetation removal are evaluated in Project Effect 4C below. Outside of those effects, removal of 0.01 acres or less of dry meadow habitat as a result of project construction would have a less-than-significant impact on wildlife or plant populations in the area because substantial habitat areas would remain available for use by wildlife and to support plant populations. Areas subject to grading but that are outside the trailbed and shoulders would be revegetated after trail construction.

Sagebrush Scrub Habitat

This habitat occurs throughout dry areas in Martis Valley on the valley floor at a slightly elevated position in relation to meadow areas. A total of 14.3 acres of sagebrush scrub habitat was identified within the 50-foot-wide project study corridor. As shown in Figure 2-3C, construction of the Paved Trail within the MCLDP alternative would result in disturbance to 145,914 square feet of land within the MCLDP (3.35 acres). As discussed above, 0.109 acres (4,748) of the disturbance area are within open

water, wet meadow, and dry meadow habitats. The remaining 2.94 acres (126,759 square feet) of disturbance area would occur within sagebrush scrub habitat, and of this amount, 0.46 acres would be revegetated after trail construction. This alternative would result in a permanent loss of 2.48 acres of sagebrush scrub habitat within the MCLDP as well as the loss of 0.23 acres of sagebrush scrub habitat immediately west of the MCLDP.

The habitat value to wildlife of the sagebrush scrub along both Segments 1B-2 and 3A is reduced due to the project site's proximity to SR-267 and noise, visual, and air pollution disturbances associated with that roadway. Further, a portion of the sagebrush scrub habitat through which Segment 3A passes (approximately 0.5 acre) was previously disturbed during construction and ongoing disturbance from use of the existing TMT. The loss of 2.93 acres of sagebrush scrub habitat resulting from construction of the Paved Trail within the MCLDP Alternative would not substantially reduce the total amount of sagebrush scrub habitat in the project area, diminish existing habitat values, or result in native wildlife being unable to live or survive in the project area. Therefore this effect would be less-than-significant.

Construction Staging Areas

Construction equipment and materials would be stored at a construction staging area located in the disturbed area adjacent to the MCLDP Wildlife Viewing Area parking lot, as shown in Figure 2-5. This area has been heavily disturbed and contains no natural habitat areas. No improvements to the staging area would be needed to accommodate use of this area for staging and no habitat loss would result from use of the staging area as proposed. Any fencing needed for security would be placed on top of the ground surface. No fuel or other fluids would be stored on-site. Rather, fuel service trucks will visit once per day to fill up equipment. The staging area would be used to stage equipment and road building materials, such as aggregate base, storm drain pipe, and BMP materials.

Wildlife Movement Corridors and Nursery Sites

There are no known active and defined important wildlife nursery sites within the project area, although riparian, meadow, and aquatic habitat areas may support wildlife movement and nesting activities. Although the Truckee-Loyalton Deer Herd seasonally migrates from winter range in the Loyalton area to summer range in the Martis Valley area, SR-267 is a significant barrier to their historical movements.

Wildlife movement activities generally fall into one of three movement categories: (1) dispersal (e.g., of juvenile animals from natal areas or individuals extending range distributions), (2) seasonal migration, and (3) movement related to home range activities (foraging for food or water; defending territories; or searching for mates, breeding areas, or cover). While the Truckee-Loyalton Deer Herd and migratory birds move in and out of Martis Valley seasonally, the most common type of wildlife movement in the project area is expected to be movement related to home range activities of resident species.

In a developed environment, wildlife movement is facilitated by corridors linking areas of suitable wildlife habitat. In the absence of these corridors, wildlife populations may become isolated and may be affected by reduced availability of food, water, and other resources as well as reduced ability to escape from fire, predators, and human disturbances. Riparian zones often serve as wildlife movement corridors because they offer vegetative cover and a variety of water and food sources.

Development of the proposed MVT through the MCLDP would not adversely affect wildlife movement and wildlife nursery sites. Constructing a narrow linear feature through the sagebrush scrub habitat in the Segment 1B-2 and the sagebrush scrub and dry meadow habitat in the Segment 3A portion of the project site would not limit wildlife movement. The loss of 2.48 acres of sagebrush scrub habitat within the MCLDP and 0.23 acres of sagebrush scrub habitat immediately west of the MCLDP would not remove a substantial area of potential nesting habitat, and large expanses of sagebrush scrub habitat would remain within the MCLDP and in the project vicinity. The proposed recreational use represents

little threat of mortality for species crossing the trail during either daylight or nighttime hours. The bridge on Segment 3A would span the creek and would not introduce a physical barrier to wildlife movement through and along the creek.

The proposed project could affect aquatic and riparian habitat as a result of erosion and sedimentation during construction. This potential effect would be controlled by BMPs as required by Mitigation Measure 4A.1 for erosion control and water quality maintenance as well as any BMPs required by the terms and conditions of the Clean Water Act permits that would be issued by the Corps and Streambed Alteration Agreement that would be obtained from CDFW if the final design of the Segment 3A crossing of Martis Creek involves any disturbance within the riparian vegetation and/or placement of fill within the creek. With implementation of requirements of the terms and conditions of these permits and agreements and implementation of Mitigation Measure 4A.1, the Paved Trail within the MCLDP Alternative would not result in significant adverse effects to aquatic habitat and associated riparian areas that are important as wildlife movement corridors.

Outside of the riparian area at the Segment 3A crossing of Martis Creek, the Paved Trail within the MCLDP Alternative would result in a flat paved surface that would create no substantial barriers to wildlife movement or substantial discontinuity or fragmentation of important wildlife habitat. The project would not substantially alter vegetation communities or habitat in the area, result in habitat fragmentation, or urbanize a non-urban area. While this alternative would increase the amount of recreational use in the area, this would be an expansion of the existing recreational use of the area and is not expected to represent a deterrence to wildlife movement that could lead to decreases in wildlife populations in the area.

Indirect Effects

To address the potential for indirect effects to wetlands and waters of the United States adjacent to the site, Mitigation Measure 4A.1 identifies BMPs that must be implemented to control erosion and maintain water quality. These measures would ensure that vegetation is retained and water quality is maintained sufficient to continue to support wildlife in the area. Additional discussion of effects on water quality is included in Chapter 6, Hydrology and Water Quality.

To address the potential for trail construction to lead to indirect effects to the existing habitats through the introduction and spread of invasive weeds, Mitigation Measure 4A.2 identifies management measures that must be implemented to control the spread of invasive weeds.

The trail would be paved and designed to be accessible to a wide range of trail users. Further, the proposed segments would connect to other trail segments in the local trail network, and ultimately in the regional trail network. By improving accessibility, increasing the local trail network, and connecting the existing Tomkins Memorial Trail network in the MCLDP to other trails, completion of the proposed paved trail through the MCLDP and connecting to trail segments outside the Corps' property is expected to lead to increased recreational use of the MCLDP facilities. Current visitation to the MCLDP has ranged from less than 50,000 people per year prior to 2000, to close to 100,000 people per year in 2010 and 2011, and reaching a high of 107,600 in 2009. As discussed in more detail in Chapter 7, Land Use, modeling of future trail use indicates that trail would support approximately 66,000 person-trips per year under current conditions and this would increase to 168,000 person-trips per year by 2025. This increase reflects assumed levels of ongoing growth and development in the region.

The trail would receive little to no use during nighttime hours, and no lighting is proposed along the trail. Thus there would be no potential for this alternative to interfere with nocturnal movement, cause disorientation that would make individuals more vulnerable to predation, or affect hunting success.

The project area is subject to existing recreational use, and the proposed bicycle and pedestrian uses would be similar to these existing uses. Wildlife in the area is generally adapted to low-intensity human activity. The sagebrush scrub habitat through which the Paved Trail within the MCLDP Alternative Segment 1B-2 passes is already characterized by moderate to high disturbance associated with the proximity of SR-267 and historic ranching activities. Further, the sagebrush scrub, dry meadow, and wet meadow habitats through which Segment 3A passes are also characterized by moderate to high disturbance associated with the same sources and with construction and use of the existing native earth trail in this portion of the project site.

Segments 1B-2 and 3A are located within the MCLDP Transportation Corridor Management Area. The Martis Creek Master Plan identifies nature trails and wildlife observation uses as compatible with the management goals for this area. While the project would increase the disturbance to wildlife and vegetation, primarily as a result of increased human presence in the area, this disturbance would not substantially reduce the habitat value of these areas and would not lead to native wildlife being unable to live or thrive in the project area. Therefore, indirect effects of this paved trail alternative on vegetation and wildlife in the project area would be less than significant.

Paved Trail within the Caltrans Easement Alternative

Direct Effects

This section evaluates the direct effects to each habitat type from construction of Segments 1B-2 and 3A under the Paved Trail within the Caltrans Easement Alternative. Although this alternative would follow a different alignment than the Paved Trail within the MCLDP Alternative for the majority of its length, it would use the same alignment at the Segment 3A crossing of Martis Creek. Thus, this alternative would still require replacing the existing bridge over Martis Creek with a wider bridge and would have the same impacts to wet meadow and open water habitats as the Paved Trail within the MCLDP Alternative.

Table 4-3 below identifies the amount of each of three habitat types that occur within the study corridor for the Paved Trail within the Caltrans Easement alternative and the amount of each habitat that would be impacted within the project site for this alternative. (Note that the study corridor is 50 feet wide while effects would occur in an area of disturbance that ranges from 25 to 50 feet wide. Thus, direct effects to habitats would be less than total amount of habitat present within the study corridor.) The primary habitat within the corridor is sagebrush scrub, while small amounts of wet meadow and open water habitat are also present in the Segment 3A portion of the study corridor. These habitats support a wide diversity of wildlife, due to the availability of important habitat features including nesting sites, escape and thermal cover, abundant food sources, and year-round and seasonal sources of water.

**Table 4-3
Caltrans Easement Study Corridor and Impacted Area Habitat Types and Relative Acreages**

Habitat Type	Amount within Segment 1B-2 Corridor (acres)	Amount within Segment 3A Corridor (acres)	Total Habitat Area (acres)	Impacted Area (acres)	Amount of Impacted Area to be Revegetated
Sagebrush Scrub	2.91	3.34	6.25	3.26	1.24
Dry Meadow	0	0	0	0	0
Wet Meadow	0	0.17	0.17	0.17	0.08
Open water	0	0.03	0.03	0.009	0
Total	2.91	3.54	6.45	3.459	1.40

Wet Meadow and Open Water

According to the Corps' Draft Preliminary Wetland Delineation Report, construction of the crossing of Martis Creek on Segment 3A would result in removal of riparian vegetation within 0.09 acre of wet meadow habitat and placement of permanent fill within 0.009 acre of open water at the Segment 3A crossing of Martis Creek. Construction would also result in temporary disturbance (vegetation removal and grading) to approximately 0.08 acre of wet meadow habitat. These effects would be the same as would occur under the Paved Trail within the MCLDP Alternative.

The construction activities at the Segment 3A crossing of Martis Creek could result in a small loss of cover and potential nesting habitat for a variety of wildlife species as a result of the direct effects to wet meadow habitat, with a maximum area of disturbance of 0.17 acres. Following construction, 0.08 acres of disturbed wet meadow habitat would be revegetated. Effects to specific special-status wildlife species associated with loss of riparian habitat are evaluated in Project Effect 4C below.

To ensure compliance with federal and state laws, prior to construction of Segment 3A, if the final creek crossing design involves direct temporary or permanent impacts to open water or wet meadow habitats and/or riparian vegetation, NCSD would be required to obtain permits under Sections 401 and 404 of the federal Clean Water Act and a Streambed Alteration Agreement with CDFW. The terms and conditions of the Clean Water Act permits and Streambed Alteration Agreement will include measures to ensure that adverse effects on the riparian habitat are minimized and compensation is provided for unavoidable impacts. Measures would likely include a requirement to provide replacement habitat at a minimum ratio of 1:1 to ensure that "no net loss" of wetlands occurs, construction BMPs for erosion and sediment control, limited operating periods, revegetation and restoration of areas disturbed during construction, and monitoring. Obtaining these permits and complying with federal and state laws will ensure that adverse impacts to wildlife and vegetation are avoided or minimized to a maximum extent feasible during habitat disturbance and would ensure that the effects of project construction on riparian habitat and associated plant and wildlife populations would be less than significant.

Sagebrush Scrub Habitat

Both Segments 1B-2 and 3A under this alternative would run generally parallel to SR-267 within or near the California Department of Transportation (Caltrans) easement. Construction of the trail under this alternative would result in disturbance to a total of 3.46 acres of land (150,637 square feet) within the MCLDP and 0.22 acre of land (9,379 square feet) immediately west of the MCLDP. Of the amount of disturbance within the MCLDP, 4,103 square feet have been disturbed previously due to the construction of the highway, and 4,312 square feet of the total disturbance area is within open water and wet meadow habitats as discussed above. This alternative would result in disturbance to 3.26 acres (142,877 square feet) of sagebrush scrub habitat within the MCLDP. There would be a permanent loss of 2.02 acres of sagebrush scrub habitat within the MCLDP. The additional 1.24 acres of impacted habitat would be revegetated after trail construction.

The habitat value to wildlife of the sagebrush scrub within the disturbance area for this alternative is reduced by the existing levels of disturbance in the area and proximity to the traffic on SR-267. Further disturbance associated with construction of the Paved Trail within the Caltrans Easement Alternative would not be expected to substantially diminish existing habitat values or result in native wildlife being unable to live or survive in the project area.

Construction Staging Areas

Construction equipment and materials are proposed to be stored at a construction staging area located in the disturbed area adjacent to the MCLDP Wildlife Viewing Area parking lot, as shown in Figure 2-5. This area has been heavily disturbed and contains no natural habitat areas. This is also the same staging

location as would be used under the Paved Trail within the MCLDP Alternative. No improvements to the staging area would be needed to accommodate use of this area for staging and no habitat loss would result from use of the staging area as proposed. Any fencing needed would be installed on top of the ground surface. No fuel or other fluids would be stored on-site. Rather, fuel service trucks will visit once per day to fill up equipment. The staging area would be used to stage equipment and road building materials, such as aggregate base, storm drain pipe, and BMP materials.

Wildlife Movement Corridors and Nursery Sites

As discussed previously, SR-267 represents a major barrier for migratory land animals. Under this alternative, Segments 1B-2 and 3A would be constructed between 80 and 250 feet from the existing centerline of SR-267. The trail would not represent an additional impediment for terrestrial migrating populations. There are no known active and defined important wildlife nursery sites within the project area, although riparian, meadow, and aquatic habitat areas may support wildlife movement and nesting activities. The Truckee-Loyalton Deer Herd seasonally migrates from winter range in the Loyalton area to summer range in the Martis Valley area. Development of the Paved Trail within the Caltrans Easement would not adversely affect wildlife movement and wildlife nursery sites. Constructing a narrow linear feature through the sagebrush scrub habitat in the study corridor would not limit wildlife movement and would not remove a substantial area of potential nesting habitat. The proposed recreational use represents little threat to mortality of species crossing the trail during either daylight or nighttime hours. The bridge on Segment 3A would span the creek at the location of an existing bridge and would not introduce a physical barrier to wildlife movement through and along the creek.

Construction of the trail could adversely affect aquatic and riparian habitat as a result of erosion and sedimentation. Mitigation Measure 4A.1 for erosion control and water quality maintenance as well as any BMPs required by the terms and conditions of the Clean Water Act permits that would be issued by the Corps and Streambed Alteration Agreement that would be obtained from CDFW if the final design of the Segment 3A crossing of Martis Creek involves any disturbance within the riparian vegetation and/or placement of fill within the creek. With implementation of the required terms and conditions of these permits and agreements, and Mitigation Measure 4A.1, the project would not result in significant adverse effects to aquatic habitat and associated riparian areas that are important as wildlife movement corridors.

Indirect Effects

To address the potential for indirect effects to wetlands and waters of the United States adjacent to the site, Mitigation Measure 4A.1 identifies BMPs that must be implemented to control erosion and maintain water quality. These measures would ensure that vegetation is retained and water quality is maintained sufficient to continue to support wildlife in the area. Chapter 6, Hydrology and Water Quality, provides additional discussion of effects on water quality.

The trail would be paved and designed to be accessible to a wide range of trail users. Further, the proposed segments would connect to other trail segments in the local trail network, and ultimately in the regional trail network. By improving accessibility, increasing the local trail network, and connecting the existing Tomkins Memorial Trail network in the MCLDP to other trails, completion of the proposed paved trail within the Caltrans easement and connecting to trail segments outside the Corps' property is expected to lead to increased recreational use of the MCLDP facilities. No lighting is proposed along the trail or in the parking lot.

The project area is subject to existing recreational use, and the proposed bicycle and pedestrian uses would be similar to these existing uses. Wildlife in the area is generally adapted to low-intensity human activity. The sagebrush scrub and wet meadow habitats through which Segments 1B-2 and 3A pass are

already characterized by moderate to high disturbance associated with the proximity of SR-267 and historic ranching activities.

The Paved Trail within the Caltrans Easement Alternative is located within the MCLDP Transportation Corridor Management Area. The Martis Creek Master Plan identifies nature trails and wildlife observation uses as compatible with the management goals for this area. While the project would increase the disturbance to wildlife and vegetation, primarily as a result of increased human presence in the area, this disturbance would not substantially reduce the habitat value of these areas and would not lead to native wildlife being unable to live or thrive in the project area. Therefore, indirect effects of the Caltrans Easement Alternative on vegetation and wildlife in the project area would be less than significant.

Combined Paved Trail Alternative

Direct Effects

This section evaluates the direct effects to each habitat type from construction of Segments 1B-2 and 3A under the Combined Paved Trail Alternative. This alternative would use the same alignment for Segment 3A as the Paved Trail within the Caltrans Easement Alternative, including replacing the existing bridge over Martis Creek with a wider bridge. Thus this alternative would have the same impacts to wet meadow and open water habitats as the Paved Trail within the MCLDP Alternative and the Paved Trail within the Caltrans Easement.

Table 4-4 below identifies the amount of each of three habitat types that occur within the study corridor for the Combined Paved Trail Alternative and the amount of each habitat that would be impacted within the project site for this alternative. (Note that the study corridor is 50 feet wide while effects would occur in an area of disturbance that ranges from 25 to 50 feet wide. Thus, direct effects to habitats would be less than total amount of habitat present within the study corridor.) The primary habitat within the corridor is sagebrush scrub, while small amounts of wet meadow and open water habitat are also present in the Segment 3A portion of the study corridor. These habitats support a wide diversity of wildlife, due to the availability of important habitat features including nesting sites, escape and thermal cover, abundant food sources, and year-round and seasonal sources of water.

**Table 4-4
Combined Paved Trail Study Corridor and Impacted Area Habitat Types and Relative Acreages**

Habitat Type	Amount within Segment 1B-2 Corridor (acres)	Amount within Segment 3A Corridor (acres)	Total Habitat Area (acres)	Impacted Area (acres)	Amount of Impacted Area to be Revegetated
Sagebrush Scrub	3.32	3.34	6.66	3.51	1.63
Dry Meadow	0	0	0	0	0
Wet Meadow	0	0.17	0.17	0.17	0.08
Open water	0	0.03	0.03	0.009	0
Total	3.32	3.54	6.86	3.69	1.71

Wet Meadow and Open Water

According to the Corps’ Draft Preliminary Wetland Delineation Report, construction of the crossing of Martis Creek on Segment 3A would result in removal of riparian vegetation within 0.09 acre of wet meadow habitat and placement of permanent fill within 0.009 acre of open water at the Segment 3A crossing of Martis Creek. Construction would also result in temporary disturbance (vegetation removal

and grading) to approximately 0.08 acre of wet meadow habitat. These effects would be the same as would occur under the Paved Trail within the MCLDP Alternative and the Paved Trail within the Caltrans Easement Alternative.

The construction activities at the Segment 3A crossing of Martis Creek could result in a small loss of cover and potential nesting habitat for a variety of wildlife species as a result of the direct effects to wet meadow habitat, with a maximum area of disturbance of 0.17 acres. Following construction, 0.08 acres of disturbed wet meadow habitat would be revegetated. Effects to specific special-status wildlife species associated with loss of riparian habitat are evaluated in Project Effect 4C below.

To ensure compliance with federal and state laws, prior to construction of Segment 3A, if the final creek crossing design involves direct temporary or permanent impacts to open water or wet meadow habitats and/or riparian vegetation, NCS D would be required to obtain permits under Sections 401 and 404 of the federal Clean Water Act and a Streambed Alteration Agreement with CDFW. The terms and conditions of the Clean Water Act permits and Streambed Alteration Agreement will include measures to ensure that adverse effects on the riparian habitat are minimized and compensation is provided for unavoidable impacts. Measures would likely include a requirement to provide replacement habitat at a minimum ratio of 1:1 to ensure that “no net loss” of wetlands occurs, construction BMPs for erosion and sediment control, limited operating periods, revegetation and restoration of areas disturbed during construction, and monitoring. Obtaining these permits and complying with federal and state laws will ensure that adverse impacts to wildlife and vegetation are avoided or minimized to a maximum extent feasible during habitat disturbance and would ensure that the effects of project construction on riparian habitat and associated plant and wildlife populations would be less than significant.

Sagebrush Scrub Habitat

Under this alternative, Segment 1B-2 would be the same as the alignment under the Paved Trail within the MCLDP Alternative, beginning at the western MCLDP boundary and extending for approximately 2,300 linear feet, at which point this segment would diverge from Paved Trail within the MCLDP Alternative alignment. This alternative would then climb the hill slightly west of the existing Wildlife Viewing Area parking lot to transition into the Caltrans easement while maintaining a maximum 5% grade. Segment 3A would run generally parallel to SR-267 within or near the California Department of Transportation (Caltrans) easement, in the same alignment as the Paved Trail within the Caltrans Easement Alternative. Construction of the trail under this alternative would result in disturbance to a total of 3.51 acres of sagebrush scrub habitat within the MCLDP and 0.23 acres of sagebrush scrub habitat immediately west of the MCLDP. There would be a permanent loss of 1.88 acres of sagebrush scrub habitat within the MCLDP. The additional 1.63 acres of impacted habitat would be revegetated after trail construction.

The habitat value to wildlife of the sagebrush scrub within the disturbance area for this alternative is reduced by the existing levels of disturbance in the area and proximity to the traffic on SR-267. Further disturbance associated with construction of the Combined Paved Trail Alternative would not be expected to substantially diminish existing habitat values or result in native wildlife being unable to live or survive in the project area.

Construction Staging Areas

Construction equipment and materials are proposed to be stored at a construction staging area located in the disturbed area adjacent to the MCLDP Wildlife Viewing Area parking lot, as shown in Figure 2-5. This area has been heavily disturbed and contains no natural habitat areas. This is also the same staging location as would be used under the Paved Trail within the MCLDP Alternative and the Paved Trail within the Caltrans Easement Alternative. No improvements to the staging area would be needed to

accommodate use of this area for staging and no habitat loss would result from use of the staging area as proposed. Any fencing needed would be installed on top of the ground surface. No fuel or other fluids would be stored on-site. Rather, fuel service trucks will visit once per day to fill up equipment. The staging area would be used to stage equipment and road building materials, such as aggregate base, storm drain pipe, and BMP materials.

Wildlife Movement Corridors and Nursery Sites

As discussed previously, SR-267 represents a major barrier for migratory land animals. Under this alternative, Segment 1B-2 would be constructed generally 300 to 400 feet from the existing centerline of SR-267 while Segment 3A would be constructed between 80 and 250 feet from the existing centerline. The trail would not represent an additional impediment for terrestrial migrating populations. There are no known active and defined important wildlife nursery sites within the project area, although riparian, meadow, and aquatic habitat areas may support wildlife movement and nesting activities. The Truckee-Loyalton Deer Herd seasonally migrates from winter range in the Loyalton area to summer range in the Martis Valley area. Development of the Combined Paved Trail Alternative would not adversely affect wildlife movement and wildlife nursery sites. Constructing a narrow linear feature through the sagebrush scrub habitat in the study corridor would not limit wildlife movement and would not remove a substantial area of potential nesting habitat. The proposed recreational use represents little threat to mortality of species crossing the trail during either daylight or nighttime hours. The bridge on Segment 3A would span the creek at the location of an existing bridge and would not introduce a physical barrier to wildlife movement through and along the creek.

Construction of the trail could adversely affect aquatic and riparian habitat as a result of erosion and sedimentation. Mitigation Measure 4A.1 for erosion control and water quality maintenance as well as any BMPs required by the terms and conditions of the Clean Water Act permits that would be issued by the Corps and Streambed Alteration Agreement that would be obtained from CDFW if the final design of the Segment 3A crossing of Martis Creek involves any disturbance within the riparian vegetation and/or placement of fill within the creek. With implementation of the required terms and conditions of these permits and agreements, and Mitigation Measure 4A.1, the project would not result in significant adverse effects to aquatic habitat and associated riparian areas that are important as wildlife movement corridors.

Indirect Effects

To address the potential for indirect effects to wetlands and waters of the United States adjacent to the site, Mitigation Measure 4A.1 identifies BMPs that must be implemented to control erosion and maintain water quality. These measures would ensure that vegetation is retained and water quality is maintained sufficient to continue to support wildlife in the area. Chapter 6, Hydrology and Water Quality, provides additional discussion of effects on water quality.

The trail would be paved and designed to be accessible to a wide range of trail users. Further, the proposed segments would connect to other trail segments in the local trail network, and ultimately in the regional trail network. By improving accessibility, increasing the local trail network, and connecting the existing Tomkins Memorial Trail network in the MCLDP to other trails, completion of the proposed paved trail within the Caltrans easement and connecting to trail segments outside the Corps' property is expected to lead to increased recreational use of the MCLDP facilities. No lighting is proposed along the trail or in the parking lot.

The project area is subject to existing recreational use, and the proposed bicycle and pedestrian uses would be similar to these existing uses. Wildlife in the area is generally adapted to low-intensity human activity. The sagebrush scrub and wet meadow habitats through which Segments 1B-2 and 3A pass are

already characterized by moderate to high disturbance associated with the proximity of SR-267 and historic ranching activities.

The Combined Paved Trail Alternative is located within the MCLDP Transportation Corridor Management Area. The Martis Creek Master Plan identifies nature trails and wildlife observation uses as compatible with the management goals for this area. While the project would increase the disturbance to wildlife and vegetation, primarily as a result of increased human presence in the area, this disturbance would not substantially reduce the habitat value of these areas and would not lead to native wildlife being unable to live or thrive in the project area. Therefore, indirect effects of the Combined Paved Trail Alternative on vegetation and wildlife in the project area would be less than significant.

Parking Lot Relocation

Direct Effects

The existing Wildlife Viewing Area parking lot would be decommissioned and the area would be revegetated and restored. A new parking lot would be constructed on the south side of SR-267 either directly across from Martis Dam Road or approximately 400 feet northwest of Martis Dam Road (in this location, a portion of the parking lot would be placed outside of the MCLDP). Construction of the parking lot in either location would result in removal of approximately 0.61 acre of sagebrush scrub habitat within the MCLDP. This habitat was disturbed previously due to construction of the highway. The habitat value to wildlife is reduced by the existing levels of disturbance in the area and proximity to SR-267 traffic. Further disturbance associated with construction of the parking lot would not be expected to substantially diminish existing habitat values or result in native wildlife being unable to live or survive in the project area.

Indirect Effects

While the relocated parking lot would increase the disturbance to wildlife and vegetation in the immediate vicinity of the new parking lot, this disturbance would not substantially reduce the habitat value of these areas and would not lead to native wildlife being unable to live or thrive in the project area. Therefore, indirect effects of the parking lot relocation on vegetation and wildlife in the project area would be less than significant. Construction of the new parking lot would allow for the existing parking lot to be closed to the public and restored and revegetated, which would restore a portion of the sagebrush scrub habitat in the vicinity and reduce indirect effects to wildlife and habitat in the immediate vicinity of the existing parking lot by reducing human activity in that location.

Unpaved Trail Alternative

Direct Effects

The Unpaved Trail Alternative would involve construction within an 8-foot-wide area of disturbance on Segment 1B-2. This would affect approximately 0.7 acre of sagebrush scrub habitat based on a disturbance area of 3,770 feet in length (see Figure 2-4A) and 8 feet in width. No improvements would be made within the Segment 3A portion of this alternative. Instead, the project would rely on continued use of the Tomkins Memorial Trail segment in this location. No direct effects to riparian habitat, waters of the United States, or dry meadow habitat would occur.

As with the Paved Trail within the MCLDP Alternative, the direct loss of less than 0.7 acre of sagebrush scrub habitat proximate to SR-267 is not expected to significantly impair the continued survival of native wildlife and vegetation in the project area.

Indirect Effects

Completion of the Unpaved Trail Alternative would increase the extent of the trail network in the MCLDP and would connect the existing trails to the local and regional trail network. While the Unpaved Trail Alternative would not improve the ease of use of the trail for new user groups, the increased connectivity to other trail networks would likely increase the recreational use and human presence in the MCLDP, though to a lesser extent than under the Paved Trail within the MCLDP Alternative. However, as with the Paved Trail within the MCLDP Alternative and Paved Trail within the Caltrans Easement Alternative, the Unpaved Trail Alternative would affect areas that are already subject to disturbance and effects of human presence. The increased human presence resulting from the Unpaved Trail Alternative is not expected to significantly impair the continued survival of native wildlife and vegetation in the project area.

Expanding the unpaved trail system in the area could contribute to long-term habitat degradation in the vicinity. Ruts may form in the trail surface as water runoff occurs across the trail surface. To avoid those ruts, trail users may walk along the trail edges, leading to a gradual widening of the trail surface. This would lead to additional encroachment on the adjacent sagebrush habitat and degradation of riparian and stream habitat as the wider trail surface leads to greater erosion and sedimentation.

Project Effect 4B: Fish Species and Fisheries

No Action Alternative

There would be no changes to existing fish and fisheries resources in the project area.

Paved and Unpaved Trail Alternatives

Direct Effects

Martis Creek Lake provides recreational fishing opportunities and was the first “catch and release trophy trout” lake established in California. Martis Creek Lake is stocked with fish by CDFW; varieties include rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), and Lahontan cutthroat trout. No fishing is allowed in the portion of Martis Creek south of SR-267. The proposed project would have no direct effects on the Martis Creek Lake fishery under any of the paved trail alternatives or the unpaved trail alternative.

Indirect Effects

Lahontan cutthroat trout are not expected to occur in the project area, and any potential indirect effects would not adversely affect the species according to consultation between the Corps and USFWS (USFWS 2017). The project’s potential effects on water quality in Martis Creek and hydrologic resources downstream of the project site are evaluated in Chapter 6, Hydrology and Water Quality.

Parking Lot Relocation

Direct Effects

Neither of the potential parking lot locations include any aquatic habitat. Construction of the parking lot would have no direct effects on fish and fisheries resources in the project area.

Indirect Effects

The potential effects of a new parking lot on water quality in Martis Creek and downstream hydrologic resources are evaluated in Chapter 6 Hydrology and Water Quality.

Mitigation Measures

No adverse effects to fish and fisheries resources would occur under any of the project alternatives, and no mitigation measures are necessary.

Project Effect 4C: Special-Status Wildlife Species and Migratory Birds

No Action Alternative

There would be no effects on special-status wildlife species in the project area under the No Action alternative.

Paved Trail within the MCLDP Alternative, Paved Trail within the Caltrans Easement Alternative, and Combined Paved Trail Alternative

As discussed on pages 4-3 through 4-6, there are no threatened or endangered species within the study area that could be affected by the proposed project. As shown in Table 4-1, the Biological Resources Assessment found that there are 24 migratory birds that are considered likely to occur or to have a possibility of occurring within the study corridor due to the presence of suitable habitat or recorded occurrences from nearby locations. In addition, nesting habitat for raptors is located in forested areas near the project site, and the study corridor provides raptor foraging habitat. There is no raptor nesting habitat within the study area.

The following discussion evaluates potential project effects on the local and migratory birds that could occur within the project corridor.

Direct Effects

The project site provides suitable nesting and foraging habitat for several bird species. As discussed in Project Effect 4A above, the project is expected to have no adverse effects on the sagebrush scrub, riparian, open water, and dry meadow habitats within the study corridor. Specifically, under the Paved Trail within the MCLDP Alternative, the project would permanently remove a total of approximately 2.59 acres of these habitat types. Under the Paved Trail within the Caltrans Easement Alternative, the project would permanently remove 2.06 acres of sagebrush scrub, riparian, and open water habitats. Under the Combined Paved Trail Alternative, the project would permanently remove 1.98 acres of sagebrush scrub, riparian, and open water habitats. Under any of the paved trail alternatives, the loss of natural habitat would not substantially reduce foraging opportunities in the Martis Valley, and the project would not result in a reduction in the survival of bird species, including raptors, in the area. Neither of the paved trail alternatives would have a significant adverse effect on birds in the area.

To ensure that no adverse effects to nesting birds occur, Mitigation Measure 4C.1 requires that work in or adjacent to potential nesting habitat, which includes both the riparian habitat near the Segment 3A crossing of Martis Creek and the sagebrush scrub habitat along the majority of the paved trail alignments, be conducted following the typical breeding season for the willow flycatcher, which is the most likely species to occur in the vicinity (nesting season is spring and early summer; construction during fall would avoid effects). Construction would occur outside of the May to July breeding season, thus disturbance of breeding habitat would not occur and no take permits under the Migratory Bird Treaty Act would be required.

Indirect Effects

Completion of the Paved Trail within the MCLDP Alternative, or the Paved Trail within the Caltrans Easement Alternative, or the Combined Paved Trail Alternative, any of which would connect to other trail segments outside the Corps' property, would likely lead to increased recreational use of the MCLDP facilities. The Martis Creek Master Plan identifies nature trails and wildlife observation uses as compatible with the management goals for the MCLDP Transportation Corridor Management Area, which contains both Segments 1B-2 and 3A. The project would increase disturbance to wildlife and vegetation, primarily as a result of increased human presence in the area. There are potential indirect effects to raptor foraging due to this increased human presence; however, Segment 3A follows an

existing trail and the expected increase of human traffic along the trail would not substantially increase disturbance to raptor foraging habitat. Proposed Segment 1B-2 would connect existing trails on either side of this segment (Martis Valley Trail Segment 1B-1 to the west and outside of the MCLDP and existing Tomkins Memorial Trail within the MCLDP to the east). This segment is proposed to be placed within sagebrush scrub habitat that is proximate to SR-267. This placement would locate the new trail segment in lower quality foraging habitat compared to foraging habitat available elsewhere in the MCLDP and throughout Martis Valley. Construction of a linear recreational facility in this area that is already subject to human disturbance would not result in adverse indirect effects to raptor foraging habitat. Given the location of these Segments, the increase in human disturbance would not have a significant impact, such as reducing raptor nesting success in the area. Under both paved trail alternatives, the trail would be compatible with the Management Unit 8: Transportation Corridor management goals, trail usage would not substantially reduce the habitat value of these areas and would not lead to native wildlife being unable to live or thrive in the project area. Therefore, indirect effects on special-status species would remain less than significant under the paved trail alternatives.

Parking Lot Relocation

Direct Effects

Construction of the new parking lot would result in a loss of approximately 0.61 acre of sagebrush scrub habitat within the MCLDP in addition to the between 2 and 3 acres of this habitat that would be lost due to construction of any of the three paved trail alternatives. This would not substantially reduce foraging opportunities in the Martis Valley, and the project would not result in a reduction in the survival of species in the area. Neither of the potential parking lot locations includes any riparian or aquatic habitat and construction of the parking lot would have no effect on local and migratory birds or raptors that rely on riparian or aquatic habitats.

Indirect Effects

The potential effects of a new parking lot on water quality in Martis Creek and downstream hydrologic resources are evaluated in Chapter 6, Hydrology and Water Quality. With use of appropriate design and stormwater management measures, relocation of the parking lot is not expected to result in adverse effects on water quality that could impair species survival in the area.

Further, usage of the relocated parking lot would not substantially reduce the habitat value of the area and would not lead to native wildlife being unable to live or thrive in the project area. The area that supports the existing parking lot would be restored and revegetated, which would restore some of the sagebrush scrub habitat in the project area. For these reasons, indirect effects on special-status species associated with parking lot relocation would remain less than significant.

Unpaved Trail Alternative

As discussed above, the Unpaved Trail Alternative could contribute to long-term habitat degradation in the vicinity. Ruts may form in the trail surface as water runoff occurs across the trail surface. To avoid those ruts, trail users may walk along the trail edges, leading to a gradual widening of the trail surface. This would lead to additional encroachment on the adjacent sagebrush habitat and degradation of riparian and stream habitat as the wider trail surface leads to greater erosion and sedimentation. This could diminish the value of riparian habitat for local and migratory birds, including raptors. However, the reductions in habitat value would be limited to portion of riparian habitat nearest to the trail and would not substantially reduce foraging opportunities for birds in the project region. In addition, under the Unpaved Trail Alternative, the project would permanently remove a total of approximately 0.7 acre of sagebrush scrub habitat, which provides foraging opportunities for birds, including raptors, which may occur in the area. The minimal loss of foraging habitat due to degradation of riparian habitat and loss of

sagebrush scrub habitat would not substantially reduce foraging opportunities in the Martis Valley, and the project would not result in a direct or indirect reduction in the survival of raptor species in the area. The effect of the Unpaved Trail Alternative on special-status species would be less than significant.

4.4 Mitigation Measures

The following mitigation measure would be necessary to ensure that construction and operation of any of the paved trail alternatives does not have a significant adverse effect on wetlands and waters of the United States by leading to sedimentation or other impairment of water quality.

Mitigation Measure 4A.1: Northstar Community Services District (NCSD) shall incorporate best management practices (BMPs) to control erosion and sedimentation of waterways during and following construction. BMPs shall be identified on Improvement Plans and subject to approval by the Placer County Planning Department, the Placer County Engineering and Surveying Department, and the U.S. Army Corps of Engineers (Corps). BMPs to minimize indirect impacts to wetlands shall include the following mitigation measures:

- A. Implement Mitigation Measure 6A.1 which identifies requirements for design of BMPs.
- B. Implement Mitigation Measure 6A.2 which requires NCSD to prepare a Stormwater Pollution Prevention Plan (SWPPP) and project Grading or Improvement Plans that include detailed provisions for all construction BMPs.
- C. Implement Mitigation Measure 6A.3 which requires permanent BMPs to be included in the SWPPP and project Grading or Improvement Plans and identifies minimum requirements for permanent BMPs.
- D. Implement Mitigation Measure 6A.4 which identifies design standards for trail amenities to manage stormwater.

Under any of the paved trail alternatives, the following mitigation measures would be necessary to ensure the project has no significant adverse effects on special-status wildlife species. No mitigation measures would be necessary under the No Action Alternative or Unpaved Trail Alternative.

Mitigation Measure 4A.2: Prior to commencement of any construction activities, including site clearing and/or grading, NCSD shall retain a qualified botanist to conduct a survey of the construction area, staging areas, and access routes to identify invasive plant species in any portion of the project site. These surveys shall be carried out during appropriate blooming periods of invasive plant species of importance to the region. Should any invasive plant species be located, NCSD shall implement a management plan that is consistent with the California Invasive Plant Council's "Preventing the Spread of Invasive Weeds: Best Management Practices for Transportation and Utility Easements." Management measures for invasive plant species shall include measures to stop movement of plant materials and seeds (especially as associated with movement of workers, materials, and equipment throughout the construction area), minimize soil and vegetation disturbance, maintain healthy plant communities, and provide for monitoring and early response to future establishment of invasive plant species.

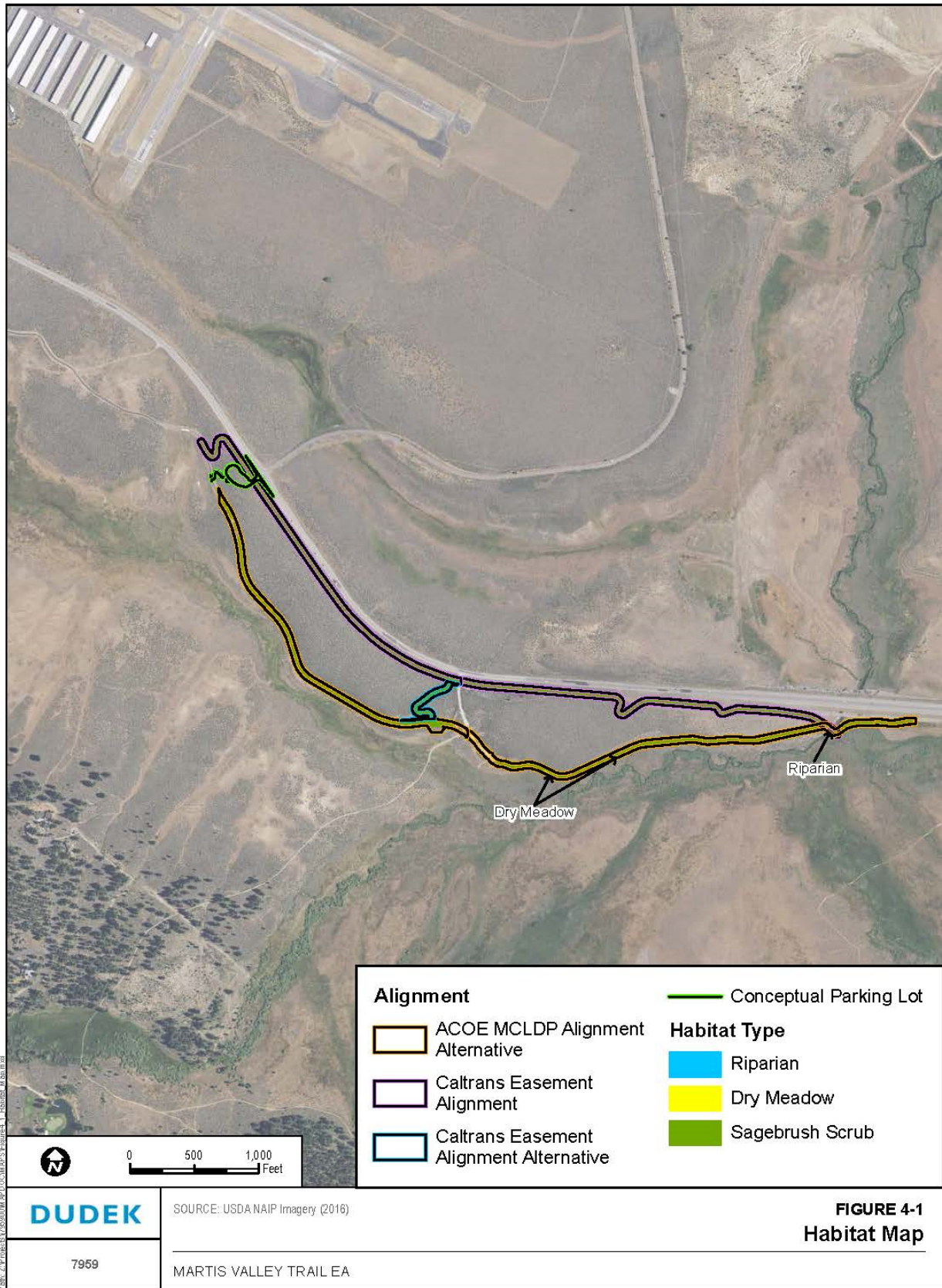
Mitigation Measure 4C.1: To avoid potential adverse effects on migratory birds, and on their associated habitat, the following measures shall be implemented:

1. Prior to any work within 500 feet of any riparian or sagebrush scrub habitat, a qualified biologist shall conduct a habitat assessment to identify areas of potential migratory bird

- nesting habitat. Work may proceed in areas determined to not provide migratory bird nesting habitat.
2. Except as provided under item 3, no heavy equipment shall be used and no vegetation shall be altered within 300 feet of potential migratory bird nesting habitat, as identified above in MM 4C.1.1, during the critical breeding season, which extends from May 1 to August 31.
 3. Disturbance and removal of vegetation within riparian areas shall be minimized to the extent possible by clearly field marking the limits of vegetation removal requirements prior to any site disturbance. Vegetation removal from riparian or sagebrush scrub areas shall be kept to the minimum required to allow for construction of the proposed improvements. CDFW shall be contacted prior to any vegetation removal within riparian areas to determine appropriate impact minimization strategies and compensation measures for impacts to vegetation that could occur. Compensation could include revegetation or habitat restoration at a ratio to impacts determined appropriate by CDFW, but no less than 1:1.

4.5 References

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5 CULTURAL RESOURCES

5.1 Introduction

This chapter reports on the information provided in the cultural resource assessments that were completed for the Martis Valley Trail (MVT) project. The Northstar Community Services District (NCSD), as an agent of Placer County, has requested a right-of-way (ROW) from the U.S. Army Corps of Engineers (Corps) through the Martis Creek Lake and Dam Project (MCLDP) to allow construction, use, and maintenance of a portion of the MVT (designated in the MVT project planning documents as Segments 1B and 3A). Consulting archaeologist Susan Lindström, PhD, completed several Heritage Resource Inventory reports between 2009 and 2012. An additional survey and report was prepared by EDAW | AECOM (EDAW) in 2007. Individual reports were prepared for Segment 1B (Lindström 2012a) and Segment 3A (Lindström 2012b). The Corps has completed a comprehensive archaeological resurvey of Martis Valley lands under their jurisdiction, which includes a portion of the MVT proposed ROW study corridor. The Lindström work included review of interim Corps survey findings and discussion with Corps archaeology staff.

The *Cultural Resources Inventory and Evaluation Report for the Martis Valley Trail Project* completed by EDAW and Dr. Lindström evaluated a preliminary trail alignment through the MCLDP. Portions of the reports by Dr. Lindström and EDAW are available for review from the Corps (portions of the reports that identify and map sensitive cultural resources are not available for public release). Unless otherwise noted, the information in this chapter comes from the reports prepared by Dr. Lindström. In addition to the reports prepared for Segments 1B and 3A, the *Heritage Resource Inventory Martis Valley Trail Project Segment 2* report (Lindström 2011) is a key resource for the background information presented this chapter. Similarly, this report was a key resource for the information and impact analysis presented in the Environmental Impact Report prepared for the overall MVT project, as noted in Chapter 1.

The project area is known to support historic and archaeological resources. The cultural landscape is located within territory commonly attributed to the Washoe people. The north–central Sierra Nevada region as a whole was also heavily affected by historic activities, including emigrant travel into California and logging. Martis Valley contains a large number of prehistoric and historic resources. The prehistoric resource sites are part of an extensive prehistoric site complex. While the integrity of many of the prehistoric and historic sites has been reduced by later activities, many of the sites across the entire region retain sufficient integrity and potential resource value to be potentially eligible for listing on the National Register of Historic Places (NRHP) and/or the California Register of Historic Resources (CRHR). The trail alternatives are based on route layouts described in Chapter 2.

5.2 Affected Environment

Cultural Chronology

A cultural chronology for the north–central Sierra Nevada region has been developed based on many different research efforts. This chronology identifies six distinct phases, as summarized below. In general terms, archaeological resources and research in the Truckee Basin demonstrate that populations in earlier times were hunting-based societies and that by the time of historic contact, populations were increasingly reliant on a diverse resource base (Elston 1982, Elston, Davis, Leventhal and Covington 1977, Elston, Storetta, Dugas and Mires 1994, and Elston et al. 1995, as cited in Lindström 2011).

Tahoe Reach, 10,000 to 8,000 years Before Present (BP) – This is an ill-defined period generally equated with small, highly mobile groups who relied on game hunting. Very little physical evidence for this phase has been found in the Sierra Nevada, although sites of this age have been identified at lower elevations.

Spooner (or Early Archaic), 8,000 to 5,000 BP – This period is also poorly defined because little physical evidence from this period has been identified in the region. General cultural patterns of this period include small game hunting, with increased milling of hard seeds (compared to the Tahoe Reach phase) and a forager-collector subsistence strategy.

Early Martis, 5,000 to 3,000 BP, and Late Martis, 3,000 to 1,300 BP – The Martis Complex period, also referred to as the Middle Archaic, combines the Early Martis and Late Martis phases. During this period, there was a heavy reliance on flaked basalt implements and milling stones and slabs for grinding seed foods. The use of these types of tools reflects a focus on hunting and seed-gathering. The Martis Complex was first identified in 1953 as a result of research done at the CA-PLA-5 site, which the proposed trail segments and ROW crosses.

Early Kings Beach, 1,300 to 700 BP, and Late Kings Beach, 700 to 150 BP – Together these phases make up the Late Archaic period and represent a significant transition from the Middle Archaic period. During this period, the population of the area began increasing. New tools used in this period include the bow and arrow. There was also an increased use of bedrock mortars and simple flake tools. The use of basalt materials for tool manufacture decreased in favor of an increased use of obsidian and chert. Evidence of the Kings Beach period are present within the project area.

Native American Occupation

The project region is the ethnographic territory of the Washoe people. Their territory centered on Lake Tahoe and included the area around the upper reaches of the Truckee and Carson Rivers. The Washoe were a hunting and gathering society that followed a seasonal subsistence cycle. In spring and summer, they moved to higher elevations to take advantage of cooler mountain temperatures and to exploit mountain resources. The frequent movement throughout their range was facilitated by development of small and temporary camps. Additionally, it is possible that some groups wintered in Martis Valley in some years.

The Washoe had a large range that allowed them to rely on a variety of resources, including seasonal fish runs in the Truckee River and tributaries such as Martis Creek, rabbits and antelope hunted in valleys, harvesting pinon nuts in the Pine Nut Mountains in Nevada, and harvesting acorns in the Honey Lake Valley in northern California. Basalt rock was commonly used to create stone tools, and the presence of basalt suitable for this purpose in the Truckee Basin influenced the prehistoric occupation of the region. There are multiple high-quality sources of basalt in Martis Valley. Further, the large variety of predictable resources throughout the region supported development of smaller ranges for many individual Washoe groups, and “relatively rich environment afforded the Washoe a degree of isolation and independence from neighboring peoples and may account for their long tenure in their known area of historic occupation” (Lindström 2011 citing d’Azevedo 1986:466, 471; Price 1962).

According to Dr. Lindström, Martis Valley is renowned for its large number of prehistoric archaeological sites, some of which exhibit relatively unique characteristics as compared to other sites in the region. There is a high density of surface remains and some sites contain midden (i.e., subsurface cultural deposit) that is visible to the eye (Lindström 2011). Archaeological evidence of small camps, such as flake stone and broken tools, is found along mountain flanks. In the high valleys, such as Martis Valley, more permanent base camps along water courses are represented by flake stone, tools, grinding implements, and house depressions (Lindström 2011).

Lindström also notes that “Washoe ethnography hints at a level of technological specialization and social complexity for Washoe groups, non-characteristic of their surrounding neighbors in the Great Basin. Semi-sedentism and higher population densities, concepts of private property, and communal

labor and ownership are reported and may have developed in conjunction with their residential and subsistence resource stability” (Lindström 2011 citing Lindström 1992).

The earliest Euro-American influence on the Washoe may have occurred in the early 1800s as Spanish missionaries exploring interior valleys in California interacted with tribes that were in contact with the Washoe. More direct Euro-American influence occurred as early trappers and explorers traversed the project region. This influence expanded greatly after the discovery of gold in California’s Mother Lode in 1848 led large numbers of miners and settlers into California, particularly through trails and passes in the Sierra Nevada. The Washoe likely encountered the Donner Party: “Washoe legends abound concerning ancestors who witnessed the [Donner Party] ordeal while trekking or hunting on snowshoes from nearby encampments. They were too frightened of the strange people to make themselves known. They did, however, leave food in sight of the party and took back tales of death and cannibalism to their people” (Lindström 2011 citing d’Azevedo 1984:147 and quoted in Nevers 1976:44-45).

“Washoes survived by trading goods and services to the Euro-American population (selling baskets, catching fish and game, and working as domestic laborers, wood cutters, ice harvesters, caretakers, game guides, etc.). In exchange, Washoes arranged for camping privileges on traditional lands with access to the limited remaining resources. Many established patronage relationships on ranches in the Carson Valley, Truckee Meadows and even Martis Valley” (Lindström 2011). While the Washoe lived relatively peacefully alongside Euro-American immigrants who settled in their territory, they were often blamed for depredations instigated by others (D’Azevedo as cited by EDAW). Gaps in the continuous chain of Washoe occupation in the region were likely a result of early mining events (ca. 1863) and intense logging activities (1860s-1920s), which may have been very disruptive to the maintenance of traditional camps. Cattle ranching and dairying was practiced in Martis Valley from the late 1850s well into the 20th century. It is likely that at least some aspects of these ranching enterprises may have been more accommodating to continued land use by Washoe Indians, and oral history accounts suggest that a kind of symbiotic relationship prevailed in terms of mutual resource management and trade relations.

The contemporary Washoe have developed a Comprehensive Land Use Plan (Washoe Tribal Council 1994) that includes goals of reestablishing a presence within the Tahoe Sierra and re-vitalizing Washoe heritage and cultural knowledge, including the harvest and care of traditional plant resources and the protection of traditional properties within the cultural landscape (Lindström 2011 citing Rucks 1996:3).

Historic Context

The area was heavily affected by historic activities, including emigrant travel into California and logging, starting in the mid-nineteenth century. Key historic activities in Martis Valley include tribal occupation, transportation, mining, logging, ranching and early settlement, ice production, and recreation and residential development. Wood, water, and recreational resources became the essential economic bases of the Truckee Basin.

Little is known about early settlement of the Truckee Basin after the passage of emigrant wagons during the mid-1840s and 1850s. Mining, logging, and agricultural operations led to the Truckee Basin becoming a major frontier “urban” center by the late 1860s. By the 1920s a recreation-based economy began to develop in place of the declining industrial economy.

Transportation

Emigrant parties entered or traveled through the area. The route through the Sierra Nevada along the Truckee and Bear Rivers became known as the California Trail or the Truckee Pass Emigrant Road. One of the earliest of these parties was the Steves–Murphy party, which crossed the California Trail in 1844. John Charles Fremont entered California along this trail the following year. The most famous use of this

route was by the Donner Party. In November 1846, approximately half of the original party of 89 people died while snowed-in along the pass.

The area near the Martis Creek confluence with the Truckee River, historically known as Martis Creek Station, was located on an historic transcontinental and trans-sierra transportation and communications corridor. The first emigrant trans-sierra crossings in the 1840s and 1850s, the first transcontinental railroad in the 1860s, and the first transcontinental auto road in the 1910s passed by Martis Creek Station. Extension of the transcontinental railroad to Truckee in 1868 and completion of it across the nation in 1869 led to increases in activity and innovations in the transportation, lumbering, ice, agriculture, and dairying industries.

State Route (SR) 267 provides a major transportation link between Lake Tahoe and Truckee. Since it was first designated as a State Route in 1965, this roadway and the improvements to it have been critical to development in the area. The road passes through Martis Valley and over Brockway Summit, ending at Kings Beach. This route follows the alignment of a historic route known as the Old Brockway Road, Truckee-Hot Springs Road, or Old Tahoe Road. The road was first shown on a General Land Office survey plat from 1861/1865. At Middle Martis Creek, the historic route junctioned with a road spur that later served the Richardson Brothers' sawmill. George Schaffer, who arrived in the Truckee area sometime in the mid-1860s, built the first toll bridge over the Truckee River near the present day alignment of SR 267, facilitating transportation to and from communities south of the river (Town of Truckee 2013).

SR 267 was realigned in 2002 into a two-lane expressway bypass that heads south from Interstate 80 in Truckee and passes over the Union Pacific Railroad, Glenshire Drive, and the Truckee River. The bypass cost \$33.6 million. Construction began in August 1999, and the facility opened on October 24, 2002. The old alignment is now known solely as Brockway Road and does not carry a business designation. Prior to 2002, Brockway Road carried SR 267 into downtown Truckee, then turned northeast to meet Interstate 80 and California 89 (AA Roads 2009).

Mining

Discovery of several quartz ledges in the area brought hundreds of miners to Martis Valley during the summer of 1863 (Scott 1973, p. 150, as cited in Lindström 2011). By July 1863, 700 miners had populated the district, initiating a brief mining strike (Richards 2004, p. A4, as cited in Lindström 2011). Settlements were established along the Truckee River near the Squaw Creek confluence and near Brockway Summit on the trail that became SR-267. A settlement located near the Middle Fork of Martis Creek and the entrance to today's Northstar California Resort had a population of 50 people, several saloons, an eating house, barber shop and butcher shop, and makeshift shelters of small logs and canvas-covered brush.

Although mining was carried out on an exploratory basis, no ore bodies of any economic importance were found (USGS: Geological Atlas, Truckee Folio 1897, as cited in Lindström 2011). By the end of 1863, the strike was over and mining towns were deserted (Scott 1973, pp.147–150, as cited in Lindström 2011), and the settlement at the entrance to Northstar was described as deserted as early as 1874. The miners shifted their attentions to the other resources of the Truckee and Tahoe Basins which led to settlement of Lake Tahoe's north and west shores. Evidence of mining activities, including several mine exploration pits (representative of hard rock mining during this early era) have been recorded in Martis Valley and the surrounding hills (Ludwig 2001, as cited in Lindström 2011).

Logging

Logging activities originally began in support of mining activities, later transitioning to support construction of the Transcontinental Railroad, and then to production of other wood products. This allowed for self-sufficient communities to establish around the larger mills, and logging remained a significant commercial activity in the region into the middle of the twentieth century.

As mining decreased, so did lumbering, until construction of the Transcontinental Railroad provided a new market for lumber. When the railroad reached Donner Summit in the late 1860s, several mills established operations in the area to provide cordwood for fuel, lumber for construction, and ties for the railroad bed. From this time through the beginning of the 20th century, logging activities primarily focused on pine species and the provision of large saw logs and cordwood for the mines and the railroad. With completion of the Transcontinental Railroad and continued declines in mining activities, production of other wood products was emphasized. This allowed for self-sufficient communities to establish around the larger mills, and logging remained a significant commercial activity in the region into the middle of the 20th century. In addition, due to the distance between logging sites and the point of consumption of the wood resource, the increase in logging activity prompted the innovation of a variety of transport techniques and a series of wood camps and mills that functioned as staging points along this transport system.

George Schaffer was one of the earliest lumbermen in the Truckee Basin. He built Truckee's first sawmill on the Truckee River in 1867 and established timber holdings in Martis Valley in 1871. The Richardson brothers also operated two mills in Martis Valley. The historic land ownership pattern shown on the 1897 Map of Placer County indicates that Schaffer may have logged the west-central portion of the proposed Valley Alignment project area and the Richardson brothers may have logged the east-central portion of the project area (Lindström citing Knowles 1942:9, 16).

Mill sites, including those established by George Schaffer and the Richardson brothers, were served by a series of wood camps, where wood processing and transport occurred. A large base camp would typically include an office/store, cookhouse, and bunkhouse with outbuildings consisting of stables, storehouses, and blacksmith shops. Residential furnishings were sparse: bedding consisted of straw or hay mattresses, with cedar incorporated to deter insects. Tools needed to be stored inside at night to prevent rodents from gnawing on the wooden handles, as the handles were salty with sweat. Smaller camps might include only a single domestic structure or temporary structures. Buildings were roughly constructed and provided few comforts.

By the turn of the century, timber tracks in Martis Valley were largely stripped of pine. Fir and other species remained in the area because they were considered unsuitable for the production of ties and timbers. With the introduction of paper mills, stands were re-entered to harvest fir for use as pulpwood for paper mills.

Harvesting also occurred within the project vicinity during 1950, 1954 and 1970. A marked increase in logging roads constructed sometime after 1952 and before 1966 is shown on aerial photographs, USGS quadrangles (1969) and U.S. Forest Service maps (1976).

Ranching and Dairying

The dairy business in the Truckee Basin flourished on a large scale from the 1860s until about 1930 (McGlashan 1982, pp. 13–17, as cited in Lindström 2011). Martis Valley's rich meadowlands became a center for dairying operations. During the 1880s, up to 20 dairy farms had been established around Truckee (Edwards 1883, pp. 69–70, as cited in Lindström 2011). Butter was the chief product, since milk would spoil without refrigeration.

Shepherding

Shepherding occurred in Martis Valley from the 1850s through the 1960s (Lindström 2011). Most of the herding was done by Basque shepherds. Carved aspens and domed rock ovens marking base camps provide physical evidence of the Basque activities in the area. Grazing was curtailed in the last half of the twentieth century due to stricter government regulation and competition for grazing lands by recreational and residential/commercial development in the Sierra Nevada.

Ice Industry

From 1868 through the 1920s, ice harvesting rivaled the economic importance of the lumber industry (Earl 2004, Hansen 1987, Itogowa 1974, and Lord 1994, p. 36 as cited in Lindström 2011). Eastern ice and Alaskan ice were costly and undependable so closer sources were sought. With the completion of the first transcontinental railroad across Donner Pass in 1869, ice could be harvested and transported cost-effectively, and Truckee-Donner ice soon dominated the industry (Macaulay 2002, p. 2, as cited in Lindström 2011). Sierra ice was noted for its superior quality and crystal purity, and it was served in grand hotels throughout the nation. However, the Truckee ice industry targeted commercial demands for cooling rather than the market for domestic consumption. In addition, Truckee ice was used to provide ice-cooled chambers in mines in Virginia City (Earl 1996, p. 12; Lord 1994, p. 36, and Meschery 1978, p. 48, as cited in Lindström 2011) and was used in iced box cars to ship produce to eastern markets. This enabled the growth of California's agricultural industry.

Recreation and Community Development

Construction of the first transcontinental railroad and the first transcontinental highway through the area allowed development of the region's summer and winter recreation and tourism opportunities. However, the new population base impacted traditional lifeways in Martis Valley, as expressed in the oral histories of some of its pioneer residents.

Martis Valley's first airfield was completed in 1929 on the former Joerger family ranch. The 1-mile-long airstrip was enlarged after the late 1950s (Scott 1973, pp. 155–156, as cited in Lindström 2011). Joseph E. Joerger donated and sold land along SR-267 for the construction of the airport and tractor-cleared the land so planes could land (Gladys Joerger Gray n.d., p. 2; McMills 1994, p. 11, as cited in Lindström 2011). However, airport development virtually divided the Joerger ranch in half and rendered the parts at the creek barely usable (Barte 1982, p. 6; Carter 1983, as cited in Lindström 2011). In addition, ranchers struggled with the high cost of cattle shipment and increasing property taxes and with the construction of the Truckee-Tahoe Airport, cattle-raising in Martis Valley was ultimately phased out (Barte 1982, p. 6, as cited in Lindström 2011).

Martis Valley ranchers were further discouraged by the influx of visitors and the growing emphasis on recreation and subdivision development, which made the wanderings of stock particularly unwelcomed (Barte 1982, p. 6, as cited in Lindström 2011).

Construction on the Martis Dam and Martis Creek Lake by the Corps commenced around 1970, with completion in 1972. To facilitate dam construction, the Corps acquired approximately 1,800 acres in Martis Valley in the mid-1960s (Barte 1982, as cited in Lindström 2011), including ranchlands owned by the Joergers and Cavitts, where some structures were demolished.

Technical Studies

Native American Consultation

Both EDAW and Dr. Lindström conducted Native American consultation in association with preparation of the cultural resource assessments for the project. Additional consultation between Corps staff and the Washoe tribal representatives has occurred through the preparation of the Research Design and Testing Plan and is continuing to occur as part of development of a Treatment Plan.

EDAW began the consultation process by sending a letter to the Native American Heritage Commission (NAHC) requesting a search of the Sacred Lands files and a list of appropriate Native American contacts for the project area. The NAHC did not identify the presence of any sacred lands or areas of cultural interest within or in the immediate vicinity of the EDAW study area. The NAHC identified the Washoe

Tribe of Nevada and California as the main point of contact for the study area. EDAW sent letters to two individuals from the Washoe tribe, but did not receive any responses.

To follow up on Native American consultation initiated by archaeologists involved with the EDAW study, Dr. Lindström contacted Darrel Cruz, Director of the Washoe Tribe Historic Preservation Office to incorporate the Tribe's opinions, knowledge, and sentiments regarding any potential concerns in the Cultural Resources Assessment. In addition, Ms. JoAnne Nevers, Washoe Tribal Historian and trained archaeological technician, participated as a Native American Consultant in some of the field reconnaissance conducted by Dr. Lindström.

Washoe tribal representatives and Corps staff agree that Martis Valley represents a rich and diverse cultural landscape, including the CA-PLA-05 site. The Martis Valley supports significant and important Native American resources and heritage.

Research

EDAW conducted a record search at the North Central Information Center of the California Historical Resources Information System at California State University, Sacramento. The search was conducted to determine whether previous cultural resource studies have been completed in the project vicinity and to identify whether any previously recorded resources could be adversely affected by construction and use of Paved Trail within the MCLDP Alternative. EDAW also consulted with Corps archaeologist Richard Perry to obtain additional information regarding cultural resources known to be present within the project vicinity. EDAW noted that the presence of known cultural resource sites noted on Corps' maps "indicates the general high level of sensitivity within the [project area] for historic-era and in particular, early Native American-related sites, features, and artifacts" (EDAW 2007).

Through their research efforts and review of in-house files, EDAW identified 10 previous cultural resource investigations that have been completed in the project vicinity, which identified several cultural resources that could be affected by the proposed project.

Dr. Lindström also conducted research for the project study area which entailed a literature review of prehistoric and historic themes for the project area, review of historic maps (dating from 1865) and aerial photographs (dating from 1939), and a records search at the North Central Information Center. Records were reviewed to identify any properties listed on the NRHP, CRHR, and other listings, including the files of the California State Historic Preservation Office among various other sources.

Oral History Interviews

Oral histories are referenced in the Lindström report and include the recollections of Cavitt, Joerger, and Waddle family members. Dr. Lindström also gleaned personal recollections from various newspaper interviews.

Field Assessment

As noted above, several separate cultural resource assessments were conducted for the full MVT project. The following discussion provides an overview of the type and extent of cultural resources identified within the full MVT project area and discusses the resources identified within the MVT ROW study corridor. As noted above, specific details of cultural resource sites are withheld from this discussion for the protection of the resources.

Identified Resources within the Full MVT

As discussed in section 5.1, the trail alternatives evaluated within this EA would comprise a portion of a larger trail project. NCS and Placer County have already constructed portions of the MVT to the west of the MCLDP and plan to construct additional portions of the MVT to the southeast of the MCLDP between

2018 and 2020. Thus, archaeological surveys were conducted for the full MVT route. Additionally, these surveys considered two potential alignments of the MVT: the Valley Alignment, a route that would travel south through the valley and into the Northstar community, and the Highway Alignment, that would keep the trail generally parallel to SR-267. The archeological surveys were conducted within a 50-foot wide study corridor centered on each potential alignment, while disturbance for construction is expected to be limited to generally 20 to 25 feet in width. Disturbance areas for both of the paved trail alternatives evaluated in this EA are identified in Figures 2-3A through 2-3C. After completion of the environmental review process required under the California Environmental Quality Act, the NCSB Board of Directors selected the Highway Alignment as the preferred project. The alignment identified as the preferred project by the NCSB Board through the California Environmental Quality Act process is used in this EA to define the alignments for both the Paved Trail within the MCLDP Alternative and the Unpaved Trail Alternative. The archaeological surveys for the entire MVT project area (the portions both within and outside of the MCLDP and considering both of the potential alignments evaluated by the NCSB Board under the California Environmental Quality Act) identified 37 archaeological sites or features, and 11 isolated finds.

Based on Dr. Lindström's findings, all of these resources appear to be prehistoric or historic in origin (i.e., older than 50 years). Further, based on preliminary analysis, four of the archaeological sites that would be affected by the MVT are considered potentially eligible for listing in the NRHP or CRHR, while none of the isolated features and all of the linear features are considered to meet the definition of a unique archaeological resource.

Each of the four archaeological sites that could be affected by the MVT are associated with Native American occupation of the area, and two are also associated with historic settlement and economic activity in the region (primarily logging and mining). The largest of the Native American sites is known as CA-PLA-5, which is centrally located relative to many individual prehistoric sites in the region. This site has been surveyed, evaluated, recorded, and inventoried multiple times in the past. This work has demonstrated that there is a subsurface component to this site, which is considered the type site of the Martis prehistoric complex. Through this prior work, the CA-PLA-5 site has been characterized as a large prehistoric encampment consisting of an extensive scatter of flaked and groundstone artifacts and midden, with a historic component that includes refuse, fence posts, and road traces. Despite disturbance from road and sewer line construction, quarrying, recreation, and construction of the Wildlife Viewing Parking Area, the CA-PLA-5 site is considered eligible for listing on the NRHP (Ataman 1999, as cited in Lindström 2011).

The Native American sites in the MVT area of potential effect include prehistoric lithic scatters, flaked and groundstone artifacts, midden, and milling slabs and milling handstones. Stone artifacts include basalt tools and flakes, and flakes of obsidian, cryptocrystalline (white and red chert), and quartz. Historic artifacts associated with the primarily Native American sites include fragments of a variety of historic glass and ceramics, beverage and tobacco cans, nails, barbed wire and baling wire, pieces of metal such as railroad spikes, milled board pieces, and high-cut stumps (which are considered remnants of historic logging). Historic features include wells, ditches, and roads. Dr. Lindström noted that the concentration of historic artifacts is greater outside the project's area of potential effect compared to the concentration within the trail alignment proposed by Placer County and NCSB.

Linear features include historic roads, irrigation ditches, and fence lines. Some of the historic roads are currently used as segments of the Tompkins Memorial Trail. The irrigation ditches are in-filled.

Isolated finds include items like basalt flakes and small debris scatters, a bottle, a Prince Albert tobacco can that could date ca. 1915 to 1930, mine prospect pits, and high cut stumps associated with historic logging. Dr. Lindström notes that unless truly exceptional, isolated finds are not typically considered

significant and therefore are not eligible in terms of NRHP or CRHR criteria (Lindström 2012b). These resources are not considered any further in this chapter’s analysis.

Identified Resources Within the Alternative Trail Alignments

The resource sites within the study corridor that are potentially eligible for listing in the NRHP and/or CRHR include one archaeological site and one historic mining site. Characteristics of each site are identified in Table 5.1 and described below.

**Table 5.1
Potentially Significant Cultural Resources**

Resource Site	Site Components				Notes
	Midden	Lithic Scatter (stone artifacts)	Milling Tools	Historic Artifacts	
CA-PLA-5	X	X	X	X	Type site of Martis complex, large site, disturbed by prior construction activity
MVT3A-1				X	Mining-related resource, possibly a contributing element to a larger site, likely dating to 1863, making it one of the earliest archaeological finds associated with Euro-American occupation of the Truckee Basin

Through extensive field evaluations, archaeologists have characterized the CA-PLA-5 site as a large prehistoric encampment consisting of an extensive scatter of flaked and groundstone artifacts and midden. Historic features, including refuse, fence posts, and road traces, are also present. Within the Segment 3A study corridor, there is a noticeable variation in the density of basalt flake concentration. Over the years, the site has been disturbed by road and sewer line construction, quarrying, ranching, and recreation activities, as well as construction of the Wildlife Viewing Area parking lot. In addition, the site has been a target of vandals and artifact collectors. Despite the prior and ongoing disturbance, a high concentration of archaeological material remains. Two key factors likely contribute to the richness of this site: radiocarbon and obsidian hydration data suggest that the site was occupied for thousands of years, and the site is very near Alder Hill, which was a very popular source of andesite toolstone. Prior evaluation efforts at the site have identified three layers, or stratum, of archaeological deposits within this site.

To assess the sensitivity of the portion of the CA-PLA-5 site west of the Wildlife Viewing Area, Corps staff conducted an assessment of surface debitage and artifact density. A 20 x 20 meter grid was established over the area and Corps staff tallied debitage and artifacts within 1 x 1 meter sample squares, recording data in the field using GPS. The Corps then digitized the map and imported the data into GIS. Surface artifact density in the CA-PLA-5 site is highest along the southern SR-267 ROW and lowest along the toe of the slope. The higher density of artifacts nearest the highway is primarily attributed to exposure due to multiple ground disturbance events in the area.

Federal and state guidelines require that heritage resources subject to project effects be evaluated to determine their significance according to criteria established by the National Historic Preservation Act. NCS D retained Far Western Anthropological Research Group, Inc., (Far Western) and Dr. Lindström to prepare a Research Design and Testing Plan and conduct archaeological evaluations of four archaeological

sites and six linear features within the proposed MVT alignment. The *Research Design and Testing Plan* (Waechter and Lindström 2013) provides a summary of background information; field reconnaissance; site recordation that has already occurred within the project area; discusses the archaeological sensitivity of the region; identifies the important questions that could be addressed by the kind of data that is likely to be contained at each affected site; describes the cultural context of each affected site; presents a testing program (which identifies specific areas for subsurface exploration and specific methods for conducting that exploration); and outlines methods for evaluation of affected sites (including assessing the integrity and research potential of each affected site). The 2013 Research and Design Plan determined the extent and nature of the site leading to the determination of potential adverse effects to the CA-PLA-5 site. The testing plan does not provide for treatment. If the Corps determines that the project would result in adverse effects, a memorandum of agreement (MOA) and historic properties treatment plan (HPTP) would be developed to resolve those adverse effects.

The Testing Report (Waechter and Lindström 2014) provides additional background information about the regional chronography and important areas for future research. In evaluating the CA-PLA-5 site with respect to its eligibility for listing on the National Register, the Testing Report found that the site clearly meets the requirements of Criterion A at the state level, but not the national level noting that the Martis concept has been important to archaeologists working in California and western Nevada, but that the association is not significant on a nationwide scale. However, the site is eligible for the National Register under Criterion D, which includes sites “that have yielded, or may be likely to yield, information important in prehistory or history.”

In implementing the Research Design and Testing Plan, Waechter and Lindström were guided by a series of research issues and associated data requirements important to advancing a broader regional perspective on the archaeology and prehistory of Martis Valley. Specifically, the Testing Plan notes that “of particular interest in the Tahoe-Truckee region and in the geography to the east and west is clarification of temporal variations within and between so-called Martis and Kings Beach assemblages” (Waechter and Lindström 2014). Additional research issues include understanding changes in subsistence activities and land use patterns over time and seasonally, inter-regional movement of people and resources, and the geographic and cultural affiliation(s) of the prehistoric people who occupied Martis Valley. The Testing Report identified two areas of relatively intact archaeological deposit within the CA-PLA-5 site that could provide information that would help answer the identified research issues.

With the information provided by the Research Design and Testing Plan and the Testing Report, review of prior evaluations of the CA-PLA-5 site, and completion of the artifact density analysis, Corps staff have determined that the most significant data potential from CA-PLA-5 would likely exist in one of three circumstances:

- In any intact features that may exist on the surface or may be shallowly buried within Stratum I on the top of the terrace,
- Any minor substrata within Stratum I that may have escaped detection in the 1990s, and/or
- The middle Holocene deposits identified within Stratum II.

The MVT3A-1 site is characterized as a historic ground sluice placer mining complex. As discussed above, there was a brief mining strike in the area, during the summer of 1863. Exploratory mining in the area did not identify or locate any ore bodies or placer deposits of any economic importance. The mining complex at site MVT3A-1 is part of a larger mining landscape and could be a contributing element to the overall significance of the mining complex. The mining features at this site reflect characteristics of surface hand mining and rudimentary ground sluicing techniques. Lindström concludes that “while the tailings do not in and of themselves represent exceptional or unique aspects of [hand mining

techniques], they do possess the special quality of being one of only three examples documenting this method of mining in the region” (Lindström 2011) This quality indicates this resource site is potentially eligible for listing in the NRHP, however, the additional data recovery completed under the Research Design and Testing Plan indicated that the site lacks temporal indicators and contains only a narrow range of artifacts. These factors greatly limit the potential for this site to provide information relevant to the research issues identified, such as land use, inter-regional movements, and cultural affiliations. The Testing Report concludes with a recommendation that this site is not eligible for either the National or California Registers.

5.3 Project Effects

Basis of Significance Determinations

The analysis of potential project effects is based on the basic project characteristics described in Chapters 1 and 2. The proposed action would significantly affect cultural resources if it would:

- Cause substantial adverse change in the significance of a historically significant resource (i.e., a resource eligible for the NRHP or CRHR), such as by demolishing, destroying, relocating, or altering a resource or its immediate surroundings such that the significance of the resource would be materially impaired;
- Disturb any human remains, including those interred outside of formal cemeteries (i.e., where the project would disturb or destroy burials).

Environmental Impacts

No Action Alternative

There would be no direct changes to existing historically significant resources or their surroundings in the project area although ongoing use of existing trails would continue to erode the integrity of the archaeological record of the Martis Valley. The popularity of the Martis Valley for outdoor enthusiasts and artifact collectors is unlikely to wane. Therefore, impacts associated with these activities will continue to erode the integrity of the archaeological record of the Martis Valley (Corps 2015). The area will continue to be a target for vandals and artifact collectors to roam the area.

Paved Trail within the MCLDP Alternative

Direct Effects

Construction Staging Areas

Construction equipment and materials would be stored at a construction staging area located in the disturbed area between the MCLDP Wildlife Viewing Area parking lot and SR-267. This area has been heavily disturbed, and use of it for staging presents the lowest potential to adversely affect cultural resources.

Trail Construction

As noted previously, both Segments 1B-2 and 3A would pass through the CA-PLA-5 site; and both would be constructed as a 10-foot wide paved trail with 2-foot wide unpaved shoulders on each side. The width of the area of disturbance during construction would vary from approximately 18 feet to 30 feet in most locations. Wider areas of disturbance may occur in certain locations where necessary due to existing topography and other features, as indicated in Figures 2-4A through 2-4C. Segment 1B-2 is proposed to be 3,040 feet long within the MCLDP, and construction would result in a disturbance area of 60,377 square feet, as determined by the consulting engineers based on preliminary grading and construction plans. Segment 3A is proposed to be 4,708 feet long, and construction would result in a disturbance area of 85,537 square feet, as determined by the

consulting engineers based on preliminary grading and construction plans. In total, the Paved Trail within the MCLDP Alternative would result in disturbance to 157,565 square feet of land within the MCLDP.

The Memorandum of Record documenting the Corps staff artifact density assessment notes that the primary potential impacts from this Alternative would be to buried archaeological deposits, as the surface artifact density within this alignment is generally low. However, construction of the proposed trail could directly affect the cultural resources present within the MCLDP. Direct impacts could include removal or damage to resources from the Martis and Kings Beach phases (5,000–150 BP) present in the CA-PLA-5 site, thus reducing the data potential of the site. The Testing Report finds that construction of the MVT would be unlikely to adversely affect the qualities that make the site eligible for the California Register under Criterion A. Following completion of the Testing Report, a *Historic Properties Treatment Plan* (Waechter and Lindström 2015) was prepared to identify mitigation measures necessary to protect the archaeological resources within the Area of Potential Effect. Although the this trail alternative traverses an area of lesser surface artifact densities, it nonetheless crosses a portion of the site determined to have intact subsurface deposits, and is expected to have the most impacts on the archaeological and research values for which CA-PLA-5 is eligible under Criterion D.

The *Historic Properties Treatment Plan* recommends excavation during construction be limited to no more than eight inches to limit impacts to the data potential of the CA-PLA-5 site. These measures necessary to protect resources during trail construction are identified in Mitigation Measure 5A.1. In addition to the resources known to occur in the project study corridor, there is a potential for presently unidentified historic or archaeological resources to be uncovered during project construction. The project region is considered to have high sensitivity and potential for cultural resources. Destruction and/or disturbance of previously unknown cultural sites would constitute a significant effect of the proposed action. Mitigation Measure 5A.2 specifies the procedures that must be implemented if unknown subsurface cultural resources are encountered during project construction. The procedures identified in Mitigation Measure 5A.2 are consistent with state and federal requirements, including the requirements of the National Historic Preservation Act, for treatment of such resources. Implementation of this measure would ensure that the project would have less-than-significant adverse effects on currently undiscovered cultural sites.

Further, although the project area is not known to support any cemeteries or areas that supported human burial, construction activities could lead to the discovery of human remains. If any human remains are encountered during project construction, the Corps would comply with federal law requirements expressed in the Native American Graves Protection and Repatriation Act (NAGPRA, Public Law 101–601; 25 U.S.C. 3001–3013) and the procedures required by the Archaeological Resources Protection Act (Sec. 3 (c)(1)), as applicable. The NAGPRA requires that Indian tribes be consulted whenever archaeological investigations encounter, or are expected to encounter, Native American cultural items or when such items are unexpectedly discovered on federal or tribal land, including Native American human remains, funerary objects, sacred objects, and items of cultural patrimony. At this time, it is not expected that human remains would be encountered during project construction, and no Plan of Action under the NAGPRA is required. However, should human remains be encountered, specific procedures that must be followed include the following:

- Stop all work in the vicinity of the find and secure the site;
- Report the find to the County Coroner, Medical Examiner, or local sheriff to determine if the find is a crime site;
- Through consultation with a qualified archaeologist, determine if the human remains are those of a Native American;

- Contact the Native American tribe or groups that may be affiliated with those remains within three days of the find; and
- Consult with the Tribe(s) on treatment of the discovered artifacts.

With compliance with federal law and implementation of the above measures, it is expected that construction of the project would not have a significant adverse effect on human remains should any be encountered during project construction. NCS and their contractors will also be required to immediately notify the Corps of any discovery of human remains.

Use and maintenance of the proposed trail would not include any activities, such as excavation, that would be likely to expose any currently undiscovered cultural sites or human remains.

Indirect Effects

Construction of the trail in the alignment proposed under the Paved Trail within the MCLDP Alternative could indirectly impair the significance of resources by altering the physical and aesthetic qualities of the area, and the ongoing use of the trail would contribute to ongoing disturbance or degradation of the archaeological resources and cultural value of the valley. As noted above, the portion of the valley around the Segment 3A alignment has been subject to ongoing disturbance and degradation due to use of the existing unpaved Tomkins Memorial Trail.

Paved Trail within the Caltrans Easement Alternative

Direct Effects

Construction Staging Areas

As with the Paved Trail within the MCLDP Alternative, construction equipment and materials for the Paved Trail within the Caltrans Easement Alternative would be stored at a construction staging area located in the disturbed area between the MCLDP Wildlife Viewing Area parking lot and SR-267. This area has been heavily disturbed and presents the lowest potential to adversely affect cultural resources.

Trail Construction

Under this alternative, both trail segments would pass through the CA-PLA-5 site. Portions of each segment have been subject to prior disturbance associated with construction of SR-267 and other infrastructure. Segment 1B-2 is proposed to be 2,532 feet long, and construction would result in a disturbance area of 41,563 square feet as determined by the consulting engineers based on preliminary grading and construction plans. Segment 3A is proposed to be 3,082 feet long, and construction would result in a disturbance area of 109,074 square feet, as determined by the consulting engineers based on preliminary grading and construction plans. In total, the Paved Trail within the Caltrans Easement Alternative would result in disturbance to 150,637 square feet within the MCLDP.

The Corps surface density assessment found that there is a relatively high surface density of archeological artifacts (debitage surface scatters) within the alignment for the Paved Trail within the Caltrans Easement Alternative, particularly in the area east of the Wildlife Viewing Area. The surface and subsurface integrity of this portion of the site has been compromised by previous disturbance ascribed to historic and recent roadway construction, right of way fencing, a parking area, an access road, and at least three underground utilities. The disturbed context along the transportation corridor has contributed to exposure of artifacts, in part due to decreased vegetation and improved the ground visibility (Corps 2017).

Previous disturbances within the Paved Trail within the Caltrans Easement is assumed to have compromised the subsurface integrity of intact cultural deposits within the site based on the events listed above. Due to the level of prior disturbance along the Caltrans Alignment it is expected to have

the least impacts on the archaeological and research values, for which CA-PLA-5 is eligible under Criterion D. Subsurface integrity within the remaining CA-PLA-5 site would remain unchanged under this alternative, thus preserving the data recovery potential identified during the 2014 testing (Waechter and Lindström 2014).

As discussed below, implementation of Mitigation Measure 5.A.2 would ensure that subsurface remains encountered during project construction would be evaluated and managed consistent with the requirements of Section 106 of the National Historic Preservation Act.

Construction of the proposed trail could directly affect the cultural resources present within the MCLDP. Direct impacts could include removal or damage to resources from the Martis and Kings Beach phases (5,000–150 BP) present in the CA-PLA-5 site, reducing the data potential of the site. Measures necessary to protect resources during trail construction are identified in Mitigation Measure 5A.1.

In addition to the resources known to occur in the project study corridor, there is a potential for presently unidentified historic or archaeological resources to be uncovered during project construction. Mitigation Measure 5A.2 specifies the procedures that must be implemented if unknown subsurface cultural resources are encountered during project construction. Further, compliance with federal law requirements expressed in the NAGPRA and National Historical Preservation Act would require notification to appropriate parties (such as the County Coroner and the Native American Heritage Commission in cases of discovery of human remains), consultation with Tribal representatives and qualified professional archaeologists, and protection of the cultural resource. Implementation of any recommendations resulting from these consultations, would ensure that any significant adverse effect on human remains as a result of construction of the project would be minimized to the maximum extent possible. Implementation of this measure would ensure that the project would have less-than-significant adverse effects on currently undiscovered cultural sites.

Use and maintenance of the proposed trail would not include any activities, such as excavation, that would be likely to expose any currently undiscovered cultural sites or human remains.

Indirect Effects

Construction of the trail in the Caltrans easement could indirectly impair the significance of resources by altering the physical and aesthetic qualities of the area, and the ongoing use of the trail would contribute to the ongoing disturbance or degradation of the archaeological resources and cultural value of the valley. The Paved Trail within the Caltrans Easement Alternative would be located closer SR 267 than the Paved Trail within the MCLDP Alternative and therefore the indirect effects of this alternative on the area's physical and natural landscape qualities may be less than under the Paved Trail within the MCLDP Alternative, however, the new use of the paved trail as well as ongoing use of the unpaved Tomkins Memorial Trail throughout the MCLDP would increase the overall degree of indirect effects in the area.

Combined Paved Trail Alternative

Direct Effects

Construction Staging Areas

As with the Paved Trail within the MCLDP Alternative and the Paved Trail within the Caltrans Easement Alternative, construction equipment and materials for the Combined Paved Trail Alternative would be stored at a construction staging area located in the disturbed area between the MCLDP Wildlife Viewing Area parking lot and SR-267. This area has been heavily disturbed and presents the lowest potential to adversely affect cultural resources.

Trail Construction

Under this alternative, both trail segments would pass through the CA-PLA-5 site. The alignment of Segment 1B-2 would be the same as the alignment under the Paved Trail within the MCLDP Alternative for the first approximately 2,300 linear feet, and would diverge from Paved Trail within the MCLDP Alternative alignment near the Wildlife Viewing Area allowing the trail to transition into the Caltrans easement while maintaining a maximum 5% grade. The alignment of Segment 3A under this alternative would be the same as the alignment under the Paved Trail within the Caltrans Easement Alternative. Portions of Segment 3A have been subject to prior disturbance associated with construction of SR-267 and installation of underground utilities. Segment 1B-2 is proposed to be 2,896 feet long, and construction would result in a disturbance area of 60,200 square feet. Segment 3A is proposed to be 3,082 feet long, and construction would result in a disturbance area of 109,074 square feet. In total, this easement would result in disturbance to 169,274 square feet.

The Corps surface density assessment found that resources occur in a relatively high surface density within Segment 3A of the Combined Paved Trail Alternative. Thus, this alternative would be likely to result in greater impacts to surface resources at the site compared to the Paved Trail within the MCLDP Alternative. Under this alternative, Segment 1B-2 would be located within the CA-PLA-5 site and construction of this segment could result in impacts to surface and subsurface artifacts. Depths of grading cuts would be similar along all three alternatives. There is not sufficient data at this time to determine which alternative would have a greater impact to potential intact subsurface cultural deposits. Depths of grading cuts would be similar along all three alternatives. There has been prior subsurface disturbance within the Caltrans easement, but the likely extent of subsurface cultural deposits under each alignment is not known.

Construction of the proposed trail could directly affect the cultural resources present within the MCLDP. Direct impacts could include removal or damage to resources from the Martis and Kings Beach phases (5,000–150 BP) present in the CA-PLA-5 site, reducing the data potential of the site. Measures necessary to protect resources during trail construction are identified in Mitigation Measure 5A.1.

In addition to the resources known to occur in the project study corridor, there is a potential for presently unidentified historic or archaeological resources to be uncovered during project construction. Mitigation Measure 5A.2 specifies the procedures that must be implemented if unknown subsurface cultural resources are encountered during project construction. Further, compliance with federal law requirements expressed in the NAGPRA and National Historical Preservation Act would require notification to appropriate parties (such as the County Coroner and the Native American Heritage Commission in cases of discovery of human remains), consultation with Tribal representatives and qualified professional archaeologists, and protection of the cultural resource. Implementation of any recommendations resulting from these consultations, would ensure that any significant adverse effect on human remains as a result of construction of the project would be minimized to the maximum extent possible.

Parking Lot Relocation

Direct Effects

The existing Wildlife Viewing Area parking lot would be closed to the public and relocated to the south side of SR-267 either directly across from Martis Dam Road or approximately 400 feet southeast of Martis Dam Road, as required under Mitigation Measure 5A.3. Construction of the parking lot in either location would require a disturbance area of approximately 0.61 acre. Although both sites have been previously disturbed during the construction of SR-267, they each are located within a known archaeological resource site. Paving the parking lot would act as a cap on any archaeological resources

below the parking lot, preserving them in place. Implementation of the mitigation measures discussed above would be necessary to ensure that parking lot construction does not lead to direct effects on subsurface archaeological resources.

Indirect Effects

Construction and use of the parking lot would not result in any new indirect impacts to archaeological resources and cultural values. It would replace the existing parking lot and thus would not represent a new trail amenity that could increase use of the trail. By itself, relocation of the parking lot would not lead to an increase in degradation of cultural resources and values. By requiring the relocation of the public parking area, Mitigation Measure 5A.3 is intended to shift the area of more intense public use to a less sensitive portion of the Martis Valley, outside of the heart of the CA-PLA-5 site.

Unpaved Trail Alternative

Direct Effects

Construction Staging Areas

As with the Paved Trail within the MCLDP Alternative, construction equipment and materials for the Paved Trail within the Caltrans Easement Alternative would be stored at a construction staging area located in the disturbed area, the MCLDP Wildlife Viewing Area parking lot. This area has been heavily disturbed and presents the lowest potential to adversely affect cultural resources.

Trail Construction

The Unpaved Trail Alternative would create a new trail in the Segment 1B-2 alignment and would make no changes to the existing native earth trail in the Segment 3A study corridor. Segment 1B-2 would consist of a 3-foot-wide unpaved native earth trail with no shoulders. Grading, vegetation clearing, and construction activities would occur within an approximately 8-foot-wide area of disturbance. Disturbed areas outside of the trail would be revegetated.

As stated above, Segment 1B-2 would pass through one historically significant archaeological site. Construction of the trail in this segment could impair the significance of resources by adversely affecting physical or aesthetic qualities inherent in the sites and/or causing physical changes (such as destroying, relocating, or altering components of the sites) that would affect unique ethnic (including Native American) cultural values or traditional uses.

The protection measures under Mitigation Measure 5A.1 would be required to be implemented during construction of the unpaved trail to ensure the project would have less-than-significant adverse effects on known historically significant resources. Further, implementation of Mitigation Measure 5A.2 would be required to ensure that the project would have less-than-significant adverse effects on currently undiscovered cultural sites; and compliance with state and Federal laws would ensure that the project would not have a significant adverse effect on human remains should any be encountered during project construction.

Indirect Effects

Use and maintenance of the Unpaved Trail Alternative could result in indirect effects on this site and to other sites within the MCLDP by allowing continued resource disturbance and by increasing the amount of use of the area. Continued use of the trail would contribute to the ongoing erosion of the archaeological integrity of the valley. However, these effects would be somewhat lessened under the Unpaved Trail Alternative because it would be expected that fewer people would use the unpaved trail compared to use of the paved trail as proposed.

5.4 Mitigation Measures

Under the Paved Trail within the MCLDP Alternative, Paved Trail within the Caltrans Easement Alternative, the Combined Paved Trail Alternative, or the Unpaved Trail Alternative, Mitigation Measures 5A.1 and 5A.2 would be necessary to ensure that construction of the proposed trail does not have a significant, adverse effect on known or currently undiscovered cultural sites:

Mitigation Measure 5A.1: During construction of any of the trail alternatives and the new parking lot, the following best management practices shall be implemented:

1. The limits of the area of disturbance in the vicinity of all known archaeological resource sites shall be flagged or otherwise demarcated in the field prior to commencement of construction.
2. The trail alignment shall be kept as close as possible to already disturbed areas, minimizing additional disturbance in areas of special archaeological concern.
3. Grading and other subsurface disturbance shall be restricted to 8 inches below existing grade where the trail crosses areas of special archaeological concern.

Mitigation Measure 5A.2: If artifacts, exotic rock, unusual amounts of shell or bone, or other buried archaeological resources are encountered during earth-disturbance associated with the proposed action, all soil-disturbing work shall be halted within 100 feet of the discovery and the U.S. Army Corps of Engineers (Corps) must follow the procedures outlined in the Section 106 implementing regulations at 36 CFR 800.13(b). This includes requiring NCSA to retain a qualified archaeologist to complete a significance evaluation of the finds pursuant to Section 106 of the National Historic Preservation Act and submit the significance evaluation to the Corps to support the Corps in determining if the finds are historically significant resources and if subsurface testing must be conducted. Subsurface testing procedures shall involve shovel testing, augering, or other such techniques designed to identify and/or characterize subsurface cultural deposits. All subsurface testing and other evaluation efforts shall be conducted by a qualified professional archaeologist.

If data recovery excavation is required, a qualified archaeologist meeting Secretary of the Interior Standards shall prepare a data recovery plan that provides for recovering the scientifically consequential information from and about the resource. The data recovery plan must be prepared prior to commencing any excavation activities within 100 feet of the resource discovery. The data recovery plan must be approved by the Corps if the excavation will occur within the Martis Creek Lake and Dam Project (MCLDP). The data recovery excavation shall include recovery of a statistically significant sample of the archaeological deposit. During the excavation, any features identified shall be drawn and photographed. Recovered cultural material (artifacts) shall be cleaned and catalogued, and a professional analytical report shall be prepared on the findings. The report shall be filed with appropriate agencies and the North Central Information Center of the California Historical Resources Information System.

The recovered artifact collection and catalogue shall be placed in a permanent curation facility for use by future researchers.

Mitigation Measure 5A.3: Under any of the paved trail alternatives, following construction of the new parking lot, the Wildlife Viewing Area parking lot will be closed to the public to reduce degradation of natural and archaeological resources due to human disturbance of the area.

The driveway and parking lot will be accessible to the Corps and NCS D for MCLDP management and trail maintenance as needed.

Other Potential Mitigation Measures: During the consultation process under Section 106 and the development of the MOA and/or HPTP, as necessary, other mitigation measures that may be pursued could include but are not limited to:

1. An interpretive display for public outreach and education regarding the cultural significance of the region. Information to be presented could include: Native American history, Native American resources and the laws that protect them, early exploration/settlement, logging, and/or the gold rush.
2. Installing a low rail fencing system or other type of barrier with trail signage intended to keep people from roaming off designated trails into sensitive areas throughout MCLDP.
3. Closure and restoration of the existing TMT section from the current Wildlife Viewing Area parking lot east to Frank's Fish Bridge. Restoration could include vegetation along sight lines and barriers (fencing or boulders).
4. Installing a sustainable and reversible cap in the form of a trail.

5.5 References

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6 HYDROLOGY AND WATER QUALITY

6.1 Introduction

This chapter evaluates the effects on water quality and stormwater runoff that would result should the U.S. Army Corps of Engineers (Corps) grant a request for a right-of-way (ROW) to construct and maintain a portion of the Martis Valley Trail (MVT) across the lands managed by the Corps at the Martis Creek Lake and Dam Project (MCLDP). The analysis is based on the *Martis Valley Regional Trail Project Hydrology Study* (Civil Engineering Solutions 2012), *Stormwater Management & Water Quality Plan* (Auerbach Engineering Corporation 2012), and *Preliminary Soil Evaluation and Stormwater BMP Design Report* (Holdrege & Kull 2012). These documents are provided in Appendix B to this Environmental Assessment (EA).

6.2 Affected Environment

The proposed MVT would be located on the eastern side of the Sierra Nevada Mountains, north of Lake Tahoe and southeast of the Town of Truckee. General geographic boundaries of the Martis Valley include the Truckee River to the north and west, the Lake Tahoe Basin to the south, and the California/Nevada State Line to the east.

Regional Setting

The Martis Valley is located within the Truckee River Basin, which encompasses approximately 3,060 square miles in the states of California and Nevada. Its headwaters lie in the Sierra Nevada Mountains above Lake Tahoe. The Truckee River then flows from Lake Tahoe to the Town of Truckee. In Truckee, the river merges with the Donner Lake drainage area west of town, the Martis Creek drainage to the south and east of town, and the Prosser Creek, Trout Creek, and Little Truckee River drainages to the north and east, before continuing east to Pyramid Lake, a terminal lake in the Nevada desert.

The Middle Truckee River Basin, which is the overall watershed that drains to the Truckee River downstream of Lake Tahoe, covers 1,190 square miles that include portions of Nevada, Placer, and Sierra Counties in California and portions of Washoe, Storey, and Lyon Counties and Carson City in Nevada. In California, the watershed includes the drainage areas surrounding the Truckee River between Lake Tahoe and the Town of Truckee, the Donner Lake drainage area west of Truckee, the Martis Creek drainage south and east of Truckee, the Prosser Creek and Little Truckee River drainage areas north and east of Truckee, and the upper Truckee Canyon below Hirschdale to the Nevada state line at Verdi.

Elevations in the Martis Valley area range from approximately 5,800 feet above mean sea level along the valley floor to approximately 8,600 feet above mean sea level along the southern mountain ridges. Natural features located within the Martis Valley area include the Truckee River, Martis Creek, Dry Lake, Gooseneck Lake, and steep terrain along with forested areas.

Areas within the MVT project site drain to Martis Creek and its tributaries. The Martis Creek drainage area covers 26,204 acres (Truckee River Watershed Council 2011). Martis Creek drains to Martis Creek Lake, located east of the Truckee-Tahoe Airport. The Martis Creek Dam was constructed by the Corps with the congressionally authorized purpose of providing flood protection to downstream areas. The lake may also serve as a water supply source in the future. Below Martis Creek Dam, Martis Creek flows to a confluence with the Truckee River south of Interstate 80. The Truckee River empties into Pyramid Lake in the Great Basin in Nevada.

Other hydrologic features in the area include ephemeral and intermittent streams, springs, wetland swales, and wetland meadows.

The project area is located within the Martis Valley Groundwater Basin Watershed. Near-surface groundwater in this 58-square-mile area is a result of precipitation and snow melt. During and immediately following seasonal snow melt, near-surface soils are saturated and shallow groundwater seepage occurs in the area.

Regional Water Quality

Regional water quality is governed by the *Water Quality Control Plan for the Lahontan Region*. The Lahontan Region is expansive—stretching from Modoc County in the north to Mono County in the south. It is 570 miles long and covers 33,131 square miles. The project area is within the Truckee River Hydrologic Area in the North Lahontan Basin. While there is little quantitative information available on most of the water bodies in the Lahontan Region, the Basin Plan states that water quality is generally good in high elevation areas. The primary source of surface water within the Truckee River Basin is mountain snowmelt. While this source is of good water quality, exposure to pollutants and sedimentation generated from human activity and development has impaired reaches of the river within the vicinity of Truckee. The Basin Plan notes that “water quality problems in the Lahontan Region are largely related to nonpoint sources (including erosion from construction, timber harvesting, and livestock grazing), stormwater, acid drainage from inactive mines, and individual wastewater disposal systems” (RWQCB 2015). Water Quality Control Plan, the Truckee River is on the Clean Water Act Section 303(d) list of impaired water bodies for elevated levels of sedimentation, iron, and phosphorus and the RWQCB’s “Watch List” for chloride and total dissolved solids. “Impaired” refers to water bodies that do not or are not expected to meet water quality standards despite compliance with the National Pollutant Discharge Elimination System (NPDES) permit requirements. In addition, Martis Creek is on the Lahontan RWQCB “Watch List” for nutrients.

The currently identified beneficial uses of water for Martis Creek include:

- Agricultural supply
- Cold freshwater habitat
- Commercial and sportfishing
- Groundwater recharge
- Migration of aquatic organisms
- Municipal and domestic supply
- Water contact recreation
- Non-contact water recreation
- Spawning, reproduction, and development
- Water quality enhancement

Precipitation

The climate of the project area is characterized by cold, wet winters and short, mild summers. Approximately 75% of the annual precipitation in the area is received during the winter months. Much of the precipitation falls as snow or a mixture of rain and snow during storms occurring between November and April. Precipitation during summer is primarily associated with thunderstorms. Due to variations in elevation, precipitation ranges from approximately 40 inches a year in the western portion of the Martis Valley region to approximately 23 inches a year in the eastern portion of the region. Temperatures recorded at the Truckee Ranger Station range from an average minimum of 14.7 degrees Fahrenheit in January to an average of 81.8 degrees Fahrenheit in August (Placer County 2003).

Local Setting

The project is located within the upper reaches of the Martis Creek watershed. Under each of the Paved Trail Alternatives, the MVT would cross Martis Creek in the location of an existing crossing. Upstream of that crossing, Martis Creek is joined by three tributaries. Downstream of the trail crossing, Martis Creek flows through a culvert under State Route (SR-) 267 and then flows north to Martis Creek Lake.

The project site is located in low-lying areas along Martis Creek that are subject to 100-year floods. The Federal Emergency Management Agency has classified approximately 1,300 acres of land along Martis Creek upstream of Martis Creek Lake, including portions of the Segments 1B-2 and 3A project site, into a Zone A floodplain category, "Special Flood Hazard area (100-year flood)." This is reflected in the soil conditions within the project site. While much of the local area consists of well-drained soils with high infiltration rates, soils within the MVT ROW study corridor are poorly drained and subject to flooding and erosion (Holdrege & Kull 2012).

Water quality and vegetation in the meadow area adjacent to SR-267, near the eastern end of the proposed ROW, is adversely affected by the high sediment load of runoff from the highway. Additionally, throughout the study area, localized erosion has occurred as surface water flow is concentrated by drainage control structures, such as culverts for dirt roads in the area.

6.3 Project Effects

Basis of Significance Determinations

The analysis of potential project effects is based on the basic project characteristics described in Chapters 1 and 2. The proposed action would have a significant adverse effect on hydrology and water quality resources if it would:

- Result in the loss of a surface water or groundwater source;
- Interfere with existing beneficial uses of water or water rights; or
- Substantially alter drainage, runoff, or flooding patterns or create flood hazards.

Project Effect 6A: Adversely Affect Surface and Groundwater Sources and Their Beneficial Uses

No Action Alternative

There would be no changes to surface and groundwater sources or beneficial uses of water in the project area. Ongoing use of the existing dirt trail would continue to contribute to erosion and sedimentation in Martis Creek.

Paved Trail within the MCLDP Alternative

The proposed action would not result in an increase in use of groundwater or surface water, nor would it result in the loss of a surface or groundwater source or affect any water rights.

Direct Effects

During any grading, excavation, or other ground-disturbing activities, a release of sediment to surface waters could occur, particularly during construction activities located near the Segment 3A crossing of Martis Creek. Other impacts to water quality could result from releases of fuels or other fluids from vehicles and equipment during the construction process and/or during trail maintenance activities. Measures to provide for water quality treatment and minimize erosion during construction will include temporary best management practices (BMPs) "designed to slow runoff velocity and intercept suspended sediment to prevent sediment discharge from the construction area while allowing runoff to continue down gradient" (Holdrege & Kull 2012). These may include fiber wattles, silt fences, water bars (which slow water as it travels down a disturbed slope and divert water to vegetated areas), sediment

basins, mulching of disturbed soil areas, channel linings, and drainage inlet protection. Mitigation Measure 6A.1 requires that Northstar Community Services District prepare a Stormwater Pollution Prevention Plan (SWPPP) for the project, and Mitigation Measure 6A.2 requires that the SWPPP include specific and detailed provisions for design, implementation, management, and monitoring of construction BMPs. A construction staging area is proposed to be located within the California Department of Transportation (Caltrans) right-of-way in the existing disturbed area at the Wildlife Viewing Area parking lot. No improvements, such as grading or paving, would be needed to accommodate use of this area for staging. Fencing would be placed on top of the ground surface and would not require any grading or paving. No fuel or other fluids would be stored at the staging area. Instead, fuel service trucks would visit, generally once per day, to fill up equipment. The staging area would be used to stage equipment and road building materials, such as aggregate base, storm drain pipe, and BMP materials. This staging area would also be specifically addressed in the SWPPP for Segments 1B-2 and 3A, which are proposed for construction in 2018. Separate SWPPPs may be prepared for each segment to ensure construction has a less-than-significant impact on water quality.

Indirect Effects

The proposed action would introduce new impervious surface to the project site, which could result in an increase in surface runoff to the adjacent Martis Creek and its tributaries. As required under Mitigation Measure 6A.3, construction of trail amenities, such as trailheads and the potential cultural resources interpretive exhibit, would be accomplished using pervious surfaces and/or would be bordered with infiltration basins (rain gardens) such that they would not contribute to the overall impervious surface increases of the project. As shown in Figure 2 of the *Preliminary Soil Evaluation and Stormwater BMP Design Report* (Holdrege & Kull 2012, Appendix B), the soils in the Segment 1B-2 and 3A project sites are of the Aquolls and Borolls soil type, which are poorly drained, subject to flooding, and have high erosion potential. Further these soils have low infiltration and “may be saturated for much of the year. Due to the already low infiltration, construction of a paved trail in these areas will not significantly increase surface runoff” (Holdrege & Kull 2012). Introduction of a paved surface to the project could increase the temperature of water runoff from the trail surface because the paved trail surface would have a higher temperature than native earth. However, due to the minimal increase in the rate and volume of runoff, the use of permanent BMPs as identified in the SWPPP, and use of underdrains where necessary as shown on Figure 2-7, runoff from the project site would not be expected to cause soil erosion that could lead to sedimentation of adjacent waterways and impairment of the beneficial uses of water.

To minimize the potential for the project to affect water quality, water temperature, and associated beneficial uses of water in the project area, the project incorporates a stormwater management strategy based on low-impact development techniques. Proposed measures for water quality treatment and control of stormwater runoff are identified in the *Stormwater Management & Water Quality Plan* (Auerbach Engineering Corporation 2012) and the *Preliminary Soil Evaluation and Stormwater BMP Design Report* (Holdrege & Kull 2012). These documents are provided in Appendix B. As stated in the *Stormwater Management & Water Quality Plan* and consistent with Mitigation Measure 6A.2, the BMPs selected for the project correspond to the California Stormwater Quality Association Stormwater BMP Handbooks and the Erosion and Sediment Control for Development Areas of the Sierra Foothills and Mountains (High Sierra Resource Conservation and Development Council 1991 as cited in Holdrege & Kull 2012). Further, Mitigation Measure 6A.4 requires that BMPs for the project must be sufficient to meet the NPDES Phase II program requirements applicable to Placer County.

Measures to provide for long-term water quality treatment and minimize erosion following construction will include permanent BMPs such as rock slope protection, vegetated swales, rain gardens, detention

basins, rock energy dissipaters, and revegetation of areas that are disturbed during construction but not part of the 10-foot wide trailbed or 2-foot wide shoulders on each side of the trail. The existing parking lot would also be restored and revegetated upon completion of the new parking lot. In addition, the proposed trail design would maintain the existing sheet flow and infiltration characteristics of the areas such that stormwater runoff from the trail would be naturally filtered and treated before it enters local waterways. This would provide for removal of water pollutants and reductions in water runoff temperatures, volumes, and rates. As required by Mitigation Measure 6A.4, the permanent (post-construction) BMPs to intercept and treat stormwater runoff from the trail surface must be detailed on the project improvements plans, which are subject to approval from Placer County. With the implementation of these mitigation measures, the proposed action's long-term impact to water quality would be less than significant. Further, it is noted that the BMPs installed as part of the proposed action could provide an additional benefit of intercepting and treating runoff from SR-267 in the trail vicinity before the runoff reaches Martis Creek.

Paved Trail within Caltrans Easement Alternative

Direct Effects

The direct effects of this alternative would be similar to the impacts of the Paved Trail within the MCLDP. The primary potential direct effect would be a reduction in water quality resulting from a release of sediment to surface waters during construction, particularly for construction activities located near the Segment 3A crossing of Martis Creek. Other impacts to water quality could result from releases of fuels or other fluids from vehicles and equipment during the construction process and/or during trail maintenance activities. Under this alternative, most construction activities would be located further from Martis Creek than under the Paved Trail within the MCLDP Alternative, with the exception of the Segment 3A crossing of Martis Creek. This increased distance between trail construction activities and Martis Creek could reduce the potential adverse effects to Martis Creek associated with release of sediment, fuels, or other fluids. However, the potential for adverse effects would remain, and implementation of Mitigation Measures 6A.1 through 6A.4 would be required, as discussed previously.

Indirect Effects

Both segments of this alternative would be constructed in an area characterized by prior disturbance and soils with low infiltration rates. Thus, construction of the trail is not expected to result in increases in surface water runoff from the project site. Further, it is noted that the BMPs installed as part of the proposed action could provide an additional benefit of intercepting and treating runoff from SR-267 in the trail vicinity before the runoff reaches Martis Creek.

Combined Paved Trail Alternative

Direct Effects

The direct effects of this alternative would be similar to the impacts of the other two paved trail alternatives. Under this alternative, Segment 1B-2 would be constructed along the alignment for the Paved Trail within the MCLDP Alternative for the first approximately 2,300 linear feet but would diverge from Paved Trail within the MCLDP Alternative alignment near the Wildlife Viewing Area allowing the trail to transition into the Caltrans easement while maintaining a maximum 5% grade while Segment 3A would be located in the same alignment as Segment 3A under the Paved Trail within the Caltrans Easement Alternative.

The primary potential direct effect would be a reduction in water quality resulting from a release of sediment to surface waters during construction, particularly for construction activities located near the Segment 3A crossing of Martis Creek. Other impacts to water quality could result from releases of fuels or other fluids from vehicles and equipment during the construction process and/or during trail

maintenance activities. Under this alternative, construction activities for Segment 3A would be located slightly further from Martis Creek than under the Paved Trail within the MCLDP Alternative, with the exception of the Segment 3A crossing of Martis Creek. This increased distance between trail construction activities and Martis Creek could reduce the potential adverse effects to Martis Creek associated with release of sediment, fuels, or other fluids. However, the potential for adverse effects would remain, and implementation of Mitigation Measures 6A.1 through 6A.4 would be required, as discussed previously.

Indirect Effects

Under this alternative, both trail segments would be constructed in an area characterized by soils with low infiltration rates while the area affected by construction of Segment 3A is also characterized by prior disturbance. Thus, construction of the trail is not expected to result in increases in surface water runoff from the project site. Further, it is noted that the BMPs installed as part of the proposed action could provide an additional benefit of intercepting and treating runoff from SR-267 in the trail vicinity before the runoff reaches Martis Creek.

Unpaved Trail Alternative

Under the Unpaved Trail Alternative, no construction activities would occur near Martis Creek or other surface water bodies. Thus the potential for construction-period effects on water quality are lessened. However, with an unpaved trail surface, use of the trail would contribute to soil erosion that could lead to sedimentation of waterways and impairment of the beneficial use of water. As water runoff occurs across the trail surface, it may cause ruts to form. The ruts may detain water during rainy periods, and in avoiding those ruts, trail users may walk along the trail edges, leading to a gradual widening of the trail surface and further increases in erosion. The requirements of Mitigation Measures 6A.1 through 6A.4 would apply to the Unpaved Trail Alternative to ensure that the potential for adverse effects on water quality and beneficial uses of water resulting from construction and operation of the native earth trail in Segment 1B-2 would be minimized to the extent feasible. No construction would occur on Segment 3A and thus no drainage infrastructure would be installed and there would be no beneficial effect on erosion and water quality. The ongoing maintenance requirements for the trail surface and BMPs associated with an unpaved trail may be higher than those for the paved trail alternative. Mitigation Measure 6A.4 requires Northstar Community Services District to monitor and maintain the erosion control BMPs and to conduct remedial actions where needed to ensure their effectiveness. With implementation of the identified mitigation measures, no significant adverse effects would occur.

Mitigation Measures

The mitigation measures presented in Section 6.4 would be required under each of the paved trail alternatives or the Unpaved Trail Alternative to ensure less-than-significant impacts to water quality.

Project Effect 6B: Substantially Alter Drainage, Runoff, or Flooding Patterns or Create Flood Hazards

No Action Alternative

There would be no changes to drainage, runoff, and flooding in the project area.

Paved Trail within the MCLDP Alternative, Paved Trail within the Caltrans Easement Alternative and Combined Paved Trail Alternative

As a linear feature designed to maintain existing stormwater flow patterns, under each of the paved trail alternatives, the proposed action would not alter the size or location of the overall Martis Creek watershed or subwatersheds within the project area. As stated in the *Stormwater Management & Water Quality Study* (Auerbach Engineering Corporation 2012), the trail design for most of the trail would maximize on-site infiltration and perpetuate existing sheet flow conditions by using “up slope

swales that collect sheet flow and allow infiltration for low flow (2 and 10-year storm) events and route stormwater runoff to under-trail drains that disperse runoff as sheet flow on the downslope side of the trail.... Runoff from larger storm events will utilize the under-trail drains as well as cross the trail similar to existing sheet flow conditions.” These design requirements would be applied to any of the paved trail alternatives. The locations of underdrains for each of the paved trail alternatives are shown in Figure 2-7.

Each of the paved trail alternatives would be located on Aquolls and Borolls soils, as shown in Figure 2 of the *Preliminary Soil Evaluation and Stormwater BMP Design Report* (Holdrege & Kull 2012, Appendix B). Because all three paved trail alternatives would be located on the same soil types, the potential for the paved surface to result in increases in stormwater runoff is the same for each alternative. As shown on Figure 2-4C, the Paved Trail within the Caltrans Easement Alternative would result slightly less total impervious area within the MCLDP because this alternative would have 2,134 fewer linear feet of trail length (corresponding to 21,340 fewer square feet of impervious surface than the Paved Trail within the MCLDP Alternative. However, when considering the portions of the trail outside of the MCLDP, the Paved Trail within the Caltrans Easement Alternative would have only 314 fewer linear feet of trail length (corresponding to 3,140 fewer total square feet of impervious surface) than the Paved Trail within the MCLDP Alternative. The Combined Paved Trail Alternative would result in 5,978 linear feet of trail within the MCLDP, which would be 17,700 fewer square feet of impervious surface than the Paved Trail within the MCLDP and 3,640 more square feet of impervious surface than the Paved Trail within the Caltrans Easement. The following analysis relies on the stormwater runoff modeling prepared for the Paved Trail within the MCLDP Alternative.

Direct Effects

Increase Floodplains or Change Water Surface Elevations

The *Martis Valley Regional Trail Project Hydrology Study* (Civil Engineering Solutions 2012) included a hydraulic analysis to determine if the project would affect water surface elevations, based on the frozen event conditions. This analysis demonstrated that the project would slightly increase water surface elevations and floodplains for the 10-year and 100-year events, but that these increases would be localized and would not affect any private property. Because the project would not change watershed size or locations, would maintain existing stormwater infiltration and sheet flow conditions, and would not substantially change water surface elevations and floodplains, it would have a less than significant impact related to alteration of drainage patterns.

Increase Rate or Amount of Surface Runoff

As noted above, soils in the Segments 1B-2 and 3A study corridor are characterized by low infiltration rates and “construction of a paved trail in these areas will not significantly increase surface runoff” (Holdrege & Kull 2012). In addition, the *Martis Valley Regional Trail Project Hydrology Study* found that the full MVT project would not substantially alter surface runoff rates or volumes. The *Martis Valley Regional Trail Project Hydrology Study* evaluated the specific increase in peak flow rates during 2-year, 10-year, 100-year and 500-year storm events for each watershed within the entire MVT project site (including segments outside of the MCLDP). This analysis determined that the overall project would increase peak flows from the 2-year storm event by amounts ranging from 0 to 2.3 cubic feet per second (cfs), increase peak flows from the 10-year storm event by amounts ranging from 0 to 1.9 cfs, and increase peak flows from the 100-year storm event by amounts ranging from 0 to 0.9 cfs. In the 2-year storm event analysis, the pre-project runoff rates in the locations where the largest increases in runoff rates would occur are 1,982.6 and 2,142.9 cfs. The increases of 2.3 and 2.2 cfs in these locations represent an approximately 0.1% increase in runoff rates flowing to Martis Creek and into Martis Creek Lake. These increases during the 2-year storm event are considered a less-than-significant effect

because they would not result in flooding of downstream properties or exceed the capacity of Martis Creek and Martis Creek Lake. The background runoff rates during the 10-year and 100-year storm events are higher than the 2-year event rates, and the increase in runoff during those events would result in less-than-significant changes in drainage patterns. Operation of the proposed action would not adversely affect drainage rates and patterns in the project area.

The *Martis Valley Regional Trail Project Hydrology Study* computed runoff in a 25.6 square mile watershed around Martis Creek and reported a peak 100-year frozen condition runoff of 8,446 cfs, and a warm event 100-year peak flow value of 7,043 cfs, assuming a snowmelt rate of 0.06 inches per hour. This translates to roughly 328 cfs per square mile for the frozen event (worst-case scenario) and 274 cfs per square mile for the warm event.

Impervious surface areas were computed for each watershed and applied in the model. Table 6-1 summarizes the changes from the pre-project warm event peak flow results with the computed post-project peak flow rates for the 2-year, 10-year, 100-year, and 500-year events for the entire MVT project area.

**Table 6-1
Pre- and Post-Project Runoff in Warm Storm Event**

Storm Event	Pre-Project Runoff (cfs)	Post-Project Runoff (cfs)	Difference (cfs)	Percent Increase
500-year	8,462.6	8,463	0.4	0.0047
100-year	7,076.3	7,077	0.7	0.0099
10-year	4,440.6	4,442.1	1.5	0.0338
2-year	2,140.7	2,142.9	2.2	0.1028

Source: Appendix B

Note: cfs = cubic feet per second

As demonstrated in Table 6-1, minor increases to the peak flow runoff rates would be expected with construction of the overall MVT, including the segments already constructed to the west of the MCLDP and those anticipated for construction between 2018 and 2020 to the southeast of the MCLDP. The effects of Segments 1B-2 and 3A, under any of the three paved trail alternatives addressed in this document, would be substantially less than those of the overall project. As noted in the *Stormwater Management & Water Quality Plan*, the analysis in the *Martis Valley Regional Trail Project Hydrology Study* does not include the effects of any of the proposed stormwater management BMPs. Use of BMPs, as discussed in *Project Effect 6A* above, would reduce the post-project peak flow rates. The peak flow rate increases reported in Table 6-1 are minimal and would be reduced further with use of BMPs. Further, the reported increases are based on the entire MVT project and increases from Segments 1B-2 and 3A would be less than those shown in Table 6-1. Construction and operation of Segments 1B-2 and 3A of the MVT would not adversely affect drainage patterns and runoff rates and volumes in the project area.

Alter Flooding Patterns or Create Flood Hazards

The *Martis Valley Regional Trail Project Hydrology Study* included a hydraulic analysis to determine if the overall project would contribute runoff water that would exceed the capacity of existing and proposed bridges and culverts, based on the frozen event conditions. This analysis found that all existing and proposed bridges and culverts would be sufficiently sized to accommodate pre- and post-project runoff volumes, when considering runoff from the entire MVT – including the existing and planned segments outside of the MCLDP. The project would have no impact related to the capacity of stormwater drainage

systems and structures and therefore would not result in adverse effects related to creating localized flooding conditions or associated hazards related to stormwater runoff.

Under each of the three paved trail alternatives, the proposed crossing of Martis Creek on Segment 3A would require replacing the existing Frank's Fish Bridge with a new structure. The existing bridge is within the 10-year flood hazard zone (and therefore also within the 100-year flood hazard zone), and the proposed structure would also be in this zone. This structure would be designed to withstand the impacts of inundation of the 10-year and 100-year flood events. The bridge is not expected to create significant changes in backwater conditions or water surface elevations.

Additionally, the 100-year flood event would completely inundate portions of the proposed trail system. Specifically, small portions of Segment 1B-2 would be located within the 100-year flood hazard zone while most of Segment 3A would be located within this zone. The portion of Segment 1B-2 located within the 100-year flood hazard zone includes the covered cultural resources interpretive exhibit shown on Figure 2-4A. The *Martis Valley Regional Trail Project Hydrology Study* demonstrates that the trail and structures (bridges and exhibit) will not impede the flow of these larger events. Additionally, the trail would be constructed to withstand the effects of flooding. In the event portions of the trail system are inundated during a 100-year flood, the trail would be temporarily closed. Placer County would inspect the trail following a flood event and carry out appropriate maintenance as appropriate.

It is also noted that a portion of the trail system would be located within the Martis Creek Lake gross pool elevation. That elevation is 5,838 feet above mean sea level. Portions of Segment 3A under each of the three paved trail alternatives would be located below this elevation and within the Martis Creek Lake gross pool. Thus, in order to construct Segment 3A, the Corps' Flood Protection and Navigation Section must first review the project's potential impacts to the MCLDP mission and purpose. Existing deficiencies with Martis Creek Dam prevent the Corps from maintaining the lake at gross pool conditions. Martis Creek Lake is typically maintained at a minimum pool condition with a water surface elevation of 5,780 feet above mean sea level. At this elevation, no portion of either potential trail alignment would be submerged.

Because the trail and associated structures would not impede the flow of flood waters, would not substantially alter flood surface elevations, and would be designed to withstand flood flows, the placement of the trail and associated structures within the flood hazard area would not result in significant adverse effects related to flood hazards or changes in flooding conditions.

Indirect Effects

Other than as discussed previously, the proposed action would not change conditions that influence or effect drainage, runoff, and flooding for properties upstream or downstream of the project site.

Parking Lot Relocation

Direct Effects

The existing Wildlife Viewing Area parking lot would be closed to the public and much of the area would be revegetated. A new parking lot would be constructed on the south side of SR-267 either directly across from Martis Dam Road or approximately 400 feet northwest of Martis Dam Road. Construction of the parking lot in either location would result in creation of approximately 0.61 acre of new impervious surface within the MCLDP. A portion of this new impervious surface would be offset by the revegetation of some of the existing parking lot. The new parking lot would contain stormwater runoff improvements, such as a vegetated swale and rain garden/detention basin to ensure that the parking lot does not increase the volume or rate of stormwater runoff from the area. Additionally, construction of the parking lot would be subject to the requirements of the SWPPP required under Mitigation Measure

6A.1. In accordance with the SWPPP, BMPs would be used to avoid water quality degradation during construction.

Indirect Effects

The proposed parking lot would result in a net increase in impervious surfaces in the area. However, the original parking area (Wildlife Viewing Area) was not constructed to current water quality and stormwater standards. Therefore, although there will be a net increase in impervious surfaces, the resulting runoff would be managed with bioswales and post-construction BMPs identified in the SWPPP prepared for the project, as required under Mitigation Measure 6A.3. The parking lot would also drain away from SR-267 in order to avoid flooding the highway.

Unpaved Trail Alternative

Direct Effects

Under the Unpaved Trail Alternative, trail construction would require some vegetation removal and soil compaction, which could contribute to increased erosion and runoff during storm events. As noted previously, construction and operation of the MVT through the MCLDP would not adversely affect drainage patterns and runoff rates and volumes in the project area. No new structures would be placed within the 10-year and 100-year flood hazard zones. The effects of this alternative on drainage, runoff, and flooding in the project area would not be significant.

Indirect Effects

The Unpaved Trail Alternative would not change conditions that influence or effect drainage, runoff, and flooding for properties upstream or downstream of the project site.

Mitigation Measures

No mitigation measures are necessary.

6.4 Mitigation Measures

The following mitigation measures would be required under either of the paved trail alternatives or the Unpaved Trail Alternative to ensure less-than-significant impacts to water quality.

Mitigation Measure 6A.1: Northstar Community Services District shall prepare a Stormwater Pollution Prevention Plan (SWPPP) and obtain coverage under the State Water Resources Control Board's National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activities. The project applicant shall provide to Placer County Engineering and Surveying Division evidence of a state-issued Waste Discharge Identification number or filing of a Notice of Intent and fees prior to issuance of a grading permit/approval of a grading or improvement plan. The SWPPP and project Grading or Improvement Plans shall identify specific construction best management practices (BMPs) for all components of the construction project, including equipment and material staging areas. For each BMP, the SWPPP shall identify provisions for design, implementation, management, and monitoring. BMPs are expected to include the following or equally effective measures:

- Fiber wattles, silt fences, and or water bars;
- Sediment basins;
- Mulching of disturbed soil areas;
- Channel linings and drainage inlet protection;
- Staging areas perimeter barriers;

- Temporary stabilized construction entrances;
- Covering exposed materials stockpiles; and
- Leak or spill response plans.

Mitigation Measure 6A.2: Water quality treatment facilities shall be designed according to the guidance of the California Stormwater Quality Association Stormwater Best Management Practice Handbook for New Development/Redevelopment and the Erosion and Sediment Control for Development Areas of the Sierra Foothills and Mountains. In addition, BMPs shall be designed to mitigate (minimize, infiltrate, filter, or treat) stormwater runoff in accordance with Attachment 4 of Placer County's NPDES Municipal Stormwater Permit (State Water Resources Control Board NPDES General Permit No. CAS000004), pursuant to the NPDES Phase II program.

Mitigation Measure 6A.3: Trail amenities shall be constructed using pervious surfaces. These features shall either be designed to provide full infiltration of runoff from the 10-year storm event within 12 hours or include an underdrain system that collects filtered stormwater and releases the runoff downslope as sheet flow at a rate that is a maximum of 90% of pre-project conditions.

The covered Native American Interpretive Area trail amenity shall be constructed using pervious surfaces in areas that will receive direct rainfall. Runoff from the roof of this amenity shall be routed to an adjacent rain garden sized to detain and infiltrate rainfall from a 10-year event and that includes an overflow system to route runoff from larger events as sheet flow to the downslope areas at a maximum rate of 90% of pre-project rates.

Mitigation Measure 6A.4: Permanent BMPs shall be identified in the SWPPP and included on project Grading or Improvement Plans, which are subject to approval by Placer County. BMPs shall be designed to mitigate (minimize, infiltrate, filter, or treat) stormwater runoff. Flow or volume based post-construction BMPs shall be designed at a minimum in accordance with the Placer County Guidance Document for Volume and Flow-Based Sizing of Permanent Post-Construction Best Management Practices for Stormwater Quality Protection. Post-construction BMPs for the project may include, but are not limited to, rock slope protection, vegetated swales, rain gardens, detention basins, rock energy dissipaters, and vegetation of disturbed soil areas. Northstar Community Services District shall provide monitoring, irrigation where necessary, and remedial actions to ensure that vegetation in vegetated swales, rain gardens, and revegetated disturbed areas (those areas that are disturbed during construction but not part of the 10-foot wide trailbed or 2-foot shoulders on each side and the location of the existing parking lot) becomes established within 3 years following construction. All BMPs shall be maintained as required to ensure effectiveness. Placer County shall maintain records providing proof of ongoing maintenance.

6.5 References

Auerbach Engineering Corporation. 2012. *Stormwater Management & Water Quality Plan*. Prepared for Northstar Community Services District. Tahoe City, California: Auerbach Engineering Corporation. March 2012.

Civil Engineering Solutions. 2012. *Martis Valley Regional Trail Project Hydrology Study*. March 2012.

Holdrege & Kull. 2012. *Preliminary Soil Evaluation and Stormwater BMP Design Report*. Prepared for Auerbach Engineering Corporation. Truckee, California: Holdrege & Kull. January 30, 2012.

Placer County 2003. *Martis Valley Community Plan*. May 2003

RWQCB (Regional Water Quality Control Board). 2015. *Water Quality Control Plan for the Lahontan Region*. Plan effective March 31, 1995; amendments effective August 1995 through September 10, 2015.

Truckee River Watershed Council 2011 "Martis Valley." Accessed June 2011. www.truckeeriverwc.org.

7 LAND USE AND RECREATION

7.1 Introduction

This chapter describes the existing land uses and recreational resources and activities within the project area and the effects that the proposed right-of-way (ROW) for the Martis Valley Trail (MVT) through the Martis Creek Lake and Dam Project (MCLDP) may have on them. The analysis includes consideration of the potential for conflict among trail user groups.

The proposed trail would pass through the MCLDP area, which includes $\pm 1,800$ acres owned and managed by the U.S. Army Corps of Engineers (Corps). This area is managed by the Corps in accordance with the *Martis Creek Lake Master Plan*, which was first adopted in 1977 and updated in 2016. The Master Plan classifies the land immediately north and immediately south of State Route (SR-) 267 as Management Unit 8, Transportation Corridor, and the land further south as Management Unit 9, the Wel Mel Ti Wildlife Area. Both Management Units 8 and 9 are crossed by portions of the Tompkins Memorial Trail, which is maintained by the NCSD. The proposed trail Segments 1B-2 and 3A would be located within Management Unit 8 and the Martis Creek Lake Master Plan authorizes the potential creation of a paved trail in this unit.

7.2 Affected Environment

Regional Setting

The proposed MVT would be located on the eastern side of the Sierra Nevada Mountains, north of Lake Tahoe and southeast of the Town of Truckee. Truckee is the major urban area in the Sierra Nevada Mountains north of Lake Tahoe, and serves as a regional center for business, commerce, and transportation. SR-267, a heavily traveled two-lane highway connecting Interstate 80 to SR-28 in the Lake Tahoe Basin, bisects the valley floor on a slightly elevated west–east alignment.

Martis Creek Lake, located at the northern end of the MCLDP, is a flood-control reservoir. Other land uses within the MCLDP include existing trails, campsites, and other recreational activities. Land uses in the project region include the Town of Truckee, Truckee-Tahoe Airport, office/commercial land uses in the vicinity of Truckee-Tahoe Airport Road and Soaring Way, Lahontan Golf Club and residential development, and the Northstar California community (including Northstar California golf course, residential development, and public facilities).

Regional Recreational Facilities

The entire Lake Tahoe Basin is a major destination for outdoor sports during both summer and winter, with numerous recreational opportunities including skiing, hiking, fishing, and cycling. The North Tahoe Public Utility District and the Tahoe City Public Utility District each operate several parks, beaches, and trails around North Lake Tahoe. Camping and hiking opportunities are provided at national forests operated by the U.S. Forest Service and state campgrounds operated by California Department of Parks and Recreation. Other public recreational facilities in the region are operated by the Corps, Placer County Parks Division, and the Truckee-Donner Recreation and Park District.

Regional Trails and Bikeways

The northern Tahoe Basin includes segments of some of California's major trail systems, including the Pacific Crest Trail, Commemorative Emigrant Trail, and Tahoe Rim Trail. Figure 1-3 shows existing trails in the Tahoe-Truckee region. A network of lesser-known formal trails exists, including trails within the Northstar California Ski Area and Tahoe National Forest, although many of these trails lack the necessary continuity to provide for effective regional use. Future regional recreational trails, such as the Sawtooth

Rim Trail planned by the U.S. Forest Service, will contribute to the Tahoe Basin's regional trail system. The region also has an extensive network of informal hiking and biking trails.

On-street bikeways in Truckee that provide regional connections include SR-89 northbound and southbound, and SR-267, both of which are currently signed as Class III bike routes. A Class III bike route is one that is designated by signs or permanent markings and shares the ROW with pedestrians or motorists. Donner Pass Road (Old Highway 40) provides a westward route over the summit. Interstate 80 between Cisco Grove and SR-20 provides cyclists with a regional connection to the Sierra foothills.

Local agencies and advocacy groups have supported a regional multiple-use trail system to connect the communities of Truckee, Northstar, Kings Beach, and Tahoe City. Segments of trail are currently being planned along the Truckee River between Tahoe City and Truckee, and between Tahoe City and Kings Beach. In addition, the Town of Truckee is in the process of implementing their Trails Master Plan, one element of which will connect their downtown core to the Placer County line near the Truckee-Tahoe Airport. The proposed MVT would provide another key connection in this regional system, linking the Town of Truckee to Northstar and Northstar to trails that access Kings Beach and Tahoe City. When completed, the overall trail system would not only connect the communities mentioned, but would also provide access to many existing recreational trail networks throughout the eastern portions of Placer and Nevada counties. The *Martis Valley Community Plan* (Placer County 2003) also includes plans for trail connections between Northstar and the Town of Truckee. Figure 3, Recreation Plan, in the *Martis Valley Community Plan* shows a proposed trail parallel to the south side of SR-267 between Schaffer Mill Road and the existing trails in the MCLDP Wildlife Management Area. The Community Plan states that proposed trails are located to connect parks, resorts, Forest Service trails, adjoining wilderness areas, and residential areas.

Local Setting

Recreation opportunities in the local area are provided at Northstar California, the MCLDP, and a variety of public parks and trails in the Town of Truckee.

Northstar California

Northstar California is a resort community served by the Northstar Community Services District (NCSD). NCSD currently serves 831 single-family homes, 897 condominiums, and 71 commercial establishments (Staudenmayer, pers. comm. 2011). Recreation opportunities offered by Northstar California include an 18-hole golf course, cross-country and downhill skiing, and a multipurpose trail system.

Martis Creek Lake and Dam Project

The Corps' MCLDP covers 1,891 acres and provides nonmotorized boating, hiking, picnicking, wildlife viewing, and camping opportunities. This area is generally open from the end of April to November 15. The majority of the MCLDP is north of SR-267 and includes the lake, campgrounds, hiking trails, and picnic facilities. The MCLDP Master Plan classifies the land immediately north and immediately south of SR-267 as Management Unit 8, Transportation Corridor, and the land further south as Management Unit 9, the Wel Mel Ti Wildlife Area. Both Management Units 8 and 9 are crossed by portions of the Tompkins Memorial Trail, which is maintained by the NCSD. The Martis Creek Lake Master Plan authorizes the creation of a paved trail in Management Unit 8, Transportation Corridor. Other facilities in this area include the Wildlife Viewing Area parking area, a bulletin board, and a portable toilet. A gate to the Wildlife Viewing Area parking area is closed by the Corps during the off-season from mid-November through the end of April. As reported by the Corps, visitation to the MCLDP reached a high of 107,600 in 2009. Visitation dropped in 2010 to 94,600 and dropped again in 2011 to 85,400. Historically, visitation was between 20,000 and 40,000 between 1987 and 2000 and increased steadily between 2000 and 2009.

Local Trails and Bikeways

The Tompkins Memorial Trail, which is maintained by the NCSD, currently provides 14.6 miles of unpaved trails through the Northstar community and the Corps' MCLDP. The majority of these trails are open to the public for bicycle and pedestrian use; the 0.8-mile trail segment along Martis Creek is limited to pedestrian use. These existing trails through the MCLDP Wildlife Viewing Area are some of the most popular trails in the Truckee area. The heavy use of the trail along Martis Creek has led to water quality impacts as erosion of the trail and streambanks lead to sedimentation of the creek, and impacts to wildlife from the presence of humans and dogs in the area (Truckee River Watershed Council 2009). Restoration activities undertaken by the Watershed Council and the Corps include "rerouting some portions of the existing trails away from stream banks, meadows and wetlands, restructuring and rebuilding portions of trails, and stabilizing stream banks through extensive revegetation" to reduce sedimentation and enhance natural habitat (Truckee River Watershed Council 2009). In 2012, the Truckee River Watershed Council issued a final report on their assessment of the Martis Creek watershed, which was prepared to prioritize restoration efforts in the watershed. The assessment describes watershed attributes and existing conditions, evaluates natural processes and identifies where those processes have been disrupted, and identifies restoration opportunities. Based upon the assessment, the Truckee River Watershed Council has completed one restoration and drainage enhancement project on Middle Martis Creek at SR-267, located east of the MVT Segment 3A study area. The project was undertaken to restore alluvial fan processes and wet meadow functions and values to the Middle Martis Creek Alluvial Fan and associated meadow, while addressing stormwater and streamflow drainage issues on SR-267 near the Golf Course at Northstar. Currently, the Truckee River Watershed Council is focusing on a similar restoration project along the mainstem of Martis Creek.

In 2012, the Town of Truckee adopted and updated its Trails Master Plan, which provides detailed guidelines for development of over 130 miles of trails and bikeways within the Town. A major priority in that plan is the Truckee River Legacy Trail that is planned to extend from Donner Lake to Glenshire, located just north of the MCLDP. Phases 1, 2, and 3A of this trail have been completed, linking Truckee Regional Park to the Riverview Sports Park and extending from Riverview Sports Park to an overlook of an historic site just west of the Tahoe-Truckee Sanitation Agency plant. The Town completed the construction of Phase 3B, connecting the trail to the Glenshire Subdivision in 2014. Future phases 4 and 5 would extend the trail from the Truckee Regional Park to the Hilltop development, Donner State Memorial Park, and the Coldstream Specific Plan area.

In 2013, the Town completed a Class I trail along the Brockway Road corridor between the north end of the proposed MVT and the Regional Park. A Class I bikeway provides a completely separated ROW designated for the exclusive use of bicycles and pedestrians with cross flows by motorists minimized. This trail will also tie into the Truckee River Legacy Trail. The Town has also begun planning for construction of the first phase of the Tahoe Donner to Downtown Recreational Trail.

The current on-street bikeway system was implemented beginning in 1998 when the Town installed the first Class I bikeway along Donner Pass Road from the east Gateway area to Coldstream. Class II bike lanes have since been continued on Donner Pass Road to the east end of Donner Lake and then along the length of Northwoods Boulevard loop in Tahoe Donner. A bike lane or Class II bikeway is defined as a portion of the roadway that has been designated by striping, signage, and pavement markings for one-way bicycle travel on either side of a street or highway.

SR-267 is currently classified as a Class III bikeway; however, the Placer County Transportation Planning Agency's 2001 Regional Bikeway Plan proposes a Class II bike lane for SR-267 in the future. As noted above, the *Martis Valley Community Plan* anticipates construction of a trail through Martis Valley connecting the Town of Truckee and Northstar.

Other trails within Truckee are primarily informal trails, developed over many years of use and lacking any cohesiveness or planned connections. Other formal trails in the project area include a 60-mile trail system owned and maintained by the Tahoe Donner Association (the majority of which is located north of the Town of Truckee), and a portion of the U.S. Forest Service-maintained Commemorative Emigrant Trail.

The Donner Land Trust is undertaking development of the 22-mile Donner Lake Rim Trail, which is planned to encircle the peaks around Donner Lake. This trail provides several connections to local access trails, the Pacific Crest Trail, and the Town of Truckee's local trail system. The Donner Land Trust also maintains trails within the Waddle Ranch Preserve, which is accessed in Martis Valley through the MCLDP.

Existing Tahoe Basin Trail Usage

Pedestrian, bicycle, and equestrian trails are a high priority for the residents of and visitors to Martis Valley, the Town of Truckee, and the Lake Tahoe region. The technical memorandum, *Environmental, Economic and Public Health Impacts of Shared-Use Paths in Lake Tahoe* (Alta Planning + Design 2009), prepared for the Tahoe Regional Planning Agency, summarized data regarding existing bicycle and pedestrian activity levels. This data was obtained through a series of counts and surveys conducted over 12 years by the Tahoe Coalition of Recreation Providers, the Tahoe City Public Utility District, Tahoe Regional Planning Agency, and Stantec Consulting. Survey locations were distributed throughout the Tahoe region. The memorandum reached the following findings regarding current nonmotorized travel on shared-use paths:

- The region's existing shared-use paths are estimated to serve 5,690 bicyclists and 3,260 pedestrians on a typical peak summer day.
- Trail use generally peaks in mid-day (roughly 11 a.m. to 2 p.m.). This is consistent with automobile traffic patterns, and reflects the high proportion of recreational travel in the Tahoe region. In some locations, such as the Truckee River Trail, there is also a lower peak in the 5 p.m. hour, which probably indicates commute travel.
- Trail use levels vary substantially, even from one day to the next. For example, on two subsequent mid-week days (August 8 and 9, 2007) total use of the Truckee River Trail varied 25% and total use on the West Shore Trail varied by 30%. This variation indicates that any evaluation of trail use and associated impacts should be considered to be only a rough approximation.
- Where shared-use path facilities parallel roadways, the preponderance of bicyclists use the facility rather than the roadway.
- The type of facility-user varies greatly between facilities. On the Tahoe City Public Utility District trails and the trails serving El Dorado Beach and Camp Richardson, the preponderance of users was bicyclists. In more urbanized centers, such as at Stateline and along Incline's Lakeshore Drive, the preponderance was pedestrians.
- Overall, slightly more than half of trail users indicate that they are Tahoe residents, which can include seasonal residents. This proportion is higher for the more urban locations, and lower for those locations with more scenic amenities.
- Of the trail users that are Tahoe visitors, a very large proportion (on the order of 80% to 90%) are overnight visitors to the Tahoe Region, with only 10% to 20% indicating that they are day visitors.
- A substantial proportion of all trail users drive to the trail, rather than walk or bike from their residence or lodging facility. The rates at which users drive to the trail rather than walk or bike varies among facilities. Trails with greater connectivity to residential and commercial areas tend to exhibit lower proportions of users driving to the trail.

7.3 Project Effects

Basis of Significance Determinations

The analysis of potential project effects is based on the basic project characteristics described in Chapters 1 and 2. The proposed action would significantly affect land use and recreational resources if it would:

- Adversely affect use of recreational facilities; or
- Create conflicts between trail user groups.

Project Effect 7A: Effects to Use of Recreational Facilities

No Action Alternative

There would be no changes to existing recreational facilities or recreational activities in the project area. Ongoing recreational use of the existing trail as well as other facilities within the MCLDP would not result in a degradation of the recreational value and features of the area.

Paved Trail within the MCLDP Alternative, Paved Trail within the Caltrans Easement Alternative, and Combined Paved Trail Alternative

Each of the paved trail alternatives would pass through the MCLDP, which is managed by the Corps. As noted previously, the existing trail system through the MCLDP Wildlife Management Area is one of the most popular trails in the Truckee/North Tahoe area. Under any of the paved trail alternatives, the trail would allow for pedestrian and bicycle use, and would be constructed to meet the standards of the Americans with Disabilities Act (ADA). The maximum grade of the trail would be 5%. The width of the paved portion of the trail would generally be 10 feet, and 2-foot-wide unpaved shoulders would be provided on both sides of the pavement.

Direct Effects

Projected Martis Valley Trail Usage

Construction of the MVT as a paved ADA-accessible trail under any of the paved trail alternatives would attract more trail users and could potentially result in changes in the use of portions of the trail. LSC Transportation Consultants Inc. (LSC 2011) prepared a memorandum, "Martis Valley Trail Use Forecasts," evaluating the level of bicycle and pedestrian activity projected for the MVT. While the analysis was prepared specifically for the Paved Trail within the MCLDP Alternative, the trail characteristics that influence the anticipated level of trail use are consistent between the three paved trail alternatives; thus the LSC analysis is applicable to each alternative. The LSC memorandum provides daily, peak-hour, and annual trail usage estimates for the following two analysis locations:

1. A point immediately south of Schaffer Mill Road; and
2. The point where the trail crosses the boundary between the MCLDP and the Northstar area.

[Note that a third location was evaluated but is not applicable to the analysis in this EA as it is located beyond the proposed Segments 1B-2 and 3A.]

To evaluate the potential trail use activity, LSC developed a specific bicycle/pedestrian usage model for the study area, using the existing Town of Truckee TransCAD Model and based on the methodologies used to develop the Tahoe Region Bicycle and Pedestrian Corridor Use Model, as described in the "Tahoe Region Bicycle and Pedestrian Use Models" memorandum (LSC 2009) and used in the preparation of the 2010 Lake Tahoe Regional Bicycle and Pedestrian Plan. The "Tahoe Region Bicycle and Pedestrian Use Models" memorandum is available for review at:

<http://www.tahoempo.org/documents/TahoeBikePedSimplifiedModelInstructions.PDF>

The trail use estimates in the LSC study were determined based on the maximum feasible demand, as adjusted based on specific reduction factors that account for site-specific trail characteristics. The maximum feasible demand is defined as the greatest number of users that would be expected if all conditions along the facility were perfect, and the specific methodology for calculating maximum feasible demand is described in the “Tahoe Region Bicycle and Pedestrian Use Models” memorandum. The reduction factors include consideration of trail class, grade, continuity, maintenance, recreational value, and congestion.

The LSC model developed for the proposed action generated estimates for the number of trail users in the following categories:

- Residents biking directly to/from the trail from home
- Visitors biking directly to/from the trail from lodging
- Residents or visitors driving to the trail to bicycle
- Residents walking directly to/from the trail from home
- Visitors walking directly to/from the trail from lodging
- Residents or visitors driving to the trail to walk

The “walk” category also includes other nonmotorized and non-bicycle travel modes, such as in-line skaters. The LSC model also provided estimates of parking demand based on the trail usage estimates. The usage estimates generated by the LSC model are summarized in Table 7-1 under both existing (2011) and future (2025) conditions. It is noted that the LSC model assumed that the connection between the MVT and the Town of Truckee trail system at the northern terminus of the MVT was in place in both the existing and future conditions. As indicated in the Town of Truckee Trails and Bikeways Master Plan, the Town is actively working to provide a Class I separated multiuse path along the Brockway Road corridor between the north end of the MVT and the Regional Park, where it will tie to the Legacy Trail extending from Donner Lake to Glenshire.

**Table 7-1
Estimated Martis Valley Trail Use**

Scenario	User Group	South of Schaffer Mill Road	North of Northstar
2011 – Busy Summer Day	Bicyclists	262	338
	Pedestrians	23	90
	Total	285	428
2011 – Total Annual Use		29,000	43,000
2025 – Busy Summer Day	Bicyclists	1,094	891
	Pedestrians	62	110
	Total	1,185	1,001
2025 – Total Annual Use		121,000	102,000

The LSC analysis concluded that:

- Under 2011 conditions, the location that received the highest use was on the north side of the Northstar area and on the southern boundary of the MCLDP. If the trail were built today, approximately 428 person-trips would pass this point over a busy summer day, and approximately 43,000 over an entire year.

- The preponderance of trail use at the analysis locations would consist of bicyclists. Of the total users, 91% are forecast to be bicyclists at the northern location (south of Schaffer Mill Road), and 79% at the other two locations.
- Approximately two-thirds of trail users are expected to walk or bicycle to the trail and one-third will drive to/from the trail.
- Trail use will grow substantially in the future, reflecting development along the trail corridor. In particular, use of the northernmost portion of the trail will grow, associated with development along Schaffer Mill Road as well as in the portions of Truckee just to the north. By 2025, levels at the northernmost analysis point will be roughly four times current estimates, making this the busiest section of the trail.

Based on the methodology described above, LSC estimated that the trail would support approximately 66,000 person-trips per year if it were built today (existing conditions), increasing to 168,000 person-trips per year by 2025. The proposed action has been designed to be a multiple-use accessible trail that would accommodate user demand. The trail use forecasts at the analysis points indicate that trail congestion in the future condition would be low to moderate. Therefore the project would not result in an adverse effect related to congestion on the proposed trail.

Increased Congestion on Existing Trails

The proposed action is expected to increase trail usage in the project area. Introducing a paved trail that connects with the existing unpaved trail system would increase public accessibility to the existing trail system. Construction of the MVT would not cut off access to the existing unpaved trails in the area. While the majority of the increased trail usage would occur along the proposed MVT, new users of this proposed facility may also use the existing trails in the area. For example, a hiker or bicyclist may walk or ride along the MVT for a portion of their trip, and then walk or ride along the unpaved Tompkins Memorial Trail for another portion of their trip. However, because trail use forecasts for the MVT indicate low to moderate congestion levels, and the Tompkins Memorial Trail would have lower trail usage factors based on trail class and connectivity, it is expected that trail congestion on the Tompkins Memorial Trail would remain low. Because access to the existing trails would be preserved and trail congestion would remain low, the project would not have an adverse effect related to trail congestion on existing trails as a result of increased trail usage generated by use of the proposed MVT.

Physical Deterioration of Existing Trails

As discussed previously, construction of the MVT could lead to an increase in the use of area trail networks. The proposed MVT would connect to existing unpaved trails in the MCLDP. NCS D maintains the existing Tompkins Memorial Trail system and would maintain the MVT. Continued maintenance of the Tompkins Memorial Trail system would ensure that the increased use of the existing trails associated with use of the MVT would not cause or accelerate their substantial physical deterioration. The proposed action would not have an adverse effect related to deterioration of existing trails.

Maintenance activities, including sweeping, crack sealing, surface restoration, vegetation control, and removal of slough, would be performed by NCS D staff or volunteers, and maintenance of both the Tompkins Memorial Trail and the MVT would occur annually or as needed. Additional maintenance may be required as a result of weather-related events (e.g., removal of downed trees and slide removal), routine wear from trail use, and unauthorized activities such as vandalism.

Trail User Safety

Under the Paved Trail within the Caltrans Easement Alternative and on Segment 3A of the Combined Paved Trail Alternative, trail users would be between 80 and 250 feet from the shoulder of SR-267. The

posted speed limit on SR-267 is 55 miles per hour, though typical vehicle speeds can reach 60 to 70 miles per hour. Placement of the trail proximate to the SR-267 shoulder could expose trail users to noise and visual disruption that would detract from the trail user's experience. In addition, these alternatives would expose trail users to greater safety risks than the Paved Trail Within the MCLDP Alternative. Caltrans data indicates that a total of 183 traffic collisions occurred on the stretch of SR-267 in the vicinity of the proposed alignment of Segment 1B-2 under the Paved Trail within the Caltrans Easement Alternative and Segment 3A under both the Paved Trail within the Caltrans Easement Alternative and the Combined Paved Trail Alternative between 2009 and 2014, including some fatalities. Annual totals ranged from 16 in 2013 to 44 in 2010 (Martin, pers. comm. 2016). SR-267 is anticipated to be widened in the future, which would bring the traffic closer to trail users, potentially increasing safety hazards to trail users. The trail would remain a minimum of 7.9 feet from the edge of the highway paved travel lanes, thus a barrier between the highway and trail would not be required under Caltrans design standards. In addition, traffic volumes on SR-267 are expected to grow over time, which would also increase the number and frequency of traffic collisions that could impact trail users. Under the Paved Trail within the MCLDP Alternative, trail users would be further away from SR-267, which would lessen their exposure to noise and visual disruption as well as avoid the potential adverse safety effects.

Indirect Effects

Martis Creek Lake and Dam Project Operations

Expansion of the MCLDP trail system and the associated increase in recreational activity levels in the MCLDP could result in the need for additional Corps staff to maintain facilities, provide visitor assistance, and manage the Corps' environmental stewardship and recreation missions.

Access to the proposed trail would be provided from connecting trail segments outside the MCLDP, including the planned parking lot along Segment 1A, off of Schaffer Mill Road. The increase in trail usage associated with the proposed trail could cause an increased demand for visitor services from the Corps. While trail maintenance would continue to be provided by NCSO, other cost increases would be associated with additional visitor assistance requirements and environmental stewardship activities, additional staffing needs, and increased need for emergency response efforts. These additional costs could result in a decline in operations at the MCLDP. In order to construct the proposed trail, an operating agreement between the Corps and Placer County, or NCSO as an agent to Placer County, would need to be executed. To ensure that impacts to operations and visitor assistance at the MCLDP are reduced to a less-than-significant level, Mitigation Measure 7A.1 requires that the agreement describe increased operational requirements at the MCLDP and identify funding sources to meet these increased requirements.

Parking Lot Relocation

Direct Effects

Under any of the paved trail alternatives, the project includes construction of a new parking lot to provide access to the paved trail. As required under Mitigation Measure 5A.3, the existing Wildlife Viewing Area parking lot would be closed to the public following construction of the new parking lot. The new parking lot would be constructed on the south side of SR-267 either directly across from Martis Dam Road or approximately 400 feet northwest of Martis Dam Road, with a short trail spur connecting the parking lot to Segment 1B-2. In this location, a portion of the parking lot would be located outside the MCLDP boundaries. By itself, construction of the parking lot in either location would not result in an increase in use of the trail and would not result in a degradation of the recreational value and features of the area. This would ensure that access to the existing trails is maintained and thus the parking lot relocation would not adversely affect recreation opportunities and access for existing trail users.

Indirect Effects

The relocation of the parking lot would not indirectly result in a degradation of the recreational value and features of the area.

Unpaved Trail Alternative

Direct Effects

Under the Unpaved Trail Alternative, the increase in MCLDP trail usage is expected to be substantially less than that described for the paved trail alternatives. This is because the trail would not be constructed to meet ADA accessibility requirements, and no improvements would be made to the existing native earth trail in the Segment 3A alignment, thus it would not provide any new amenities or improve accessibility for new user groups. Therefore, the project would have no adverse effects on trail use and conditions.

Indirect Effects

By expanding the trail network and providing a connection to trails located west of the MCLDP, the Unpaved Trail Alternative would result in a slight increase in recreational activity in the MCLDP. To ensure that impacts to operations and visitor services at the MCLDP are reduced to a less-than-significant level, Mitigation Measure 7A.1 requires that the operating agreement between the Corps, Placer County, and/or NCS D describe increased operational requirements at the MCLDP and identify funding sources to meet these increased requirements.

Mitigation Measures

Mitigation Measure 7A.1 presented in Section 7.4 would be required under either paved trail alternative or the Unpaved Trail Alternative to reduce impacts on recreation and land use to less-than-significant levels.

Project Effect 7B: Create Conflicts between Trail User Groups

No Action Alternative

There would be no changes to existing recreational facilities or recreational activities in the project area, therefore no new sources of conflict between trail user groups would be created.

Paved Trail within the MCLDP Alternative, Paved Trail within the Caltrans Easement, and Combined Paved Trail Alternative

Because the proposed trail would be a multiple-use trail and because it would intersect with other trails, the potential exists for conflicts between pedestrians, bicyclists, and other nonmotorized transportation. Additionally, the Paved Trail within the MCLDP Alternative would replace a portion of the existing unpaved trail with a paved multiple-use trail while the Paved Trail within the Caltrans Easement and the Combined Paved Trail Alternative would revegetate a portion of the existing unpaved trail. Concerns regarding potential safety conflicts between bicyclists and pedestrians and dogs were specifically raised during the environmental review process under the California Environmental Quality Act for the full MVT. In particular, comments noted that the area within the Wildlife Management Area near the Wildlife Viewing Area parking lot is currently used as an off-leash dog walking area, and that fast-moving bicyclists (or other wheeled trail users such as in-line skaters) could collide with dogs. An increase in potential for user conflicts could impact the quality of the recreation experience.

Direct Effects

Multiple-Use Trail User Conflicts

The Federal Highway Administration and the National Recreational Trails Advisory Committee report *Conflicts on Multiple-Use Trails: Synthesis of the Literature and State of the Practice* (1994) concluded that conflict in outdoor recreation settings (such as trails) can best be defined as “goal interference attributed

to another's behavior." As such, trail conflicts can and do occur among different user groups, among users within the same user group, and as a result of factors not related to users' trail activities. Conflict has been found to be related to activity style, focus of trip, expectations, attitudes toward and perceptions of the environment, level of tolerance for others, and different norms held by different users.

Multiple-use trails are becoming increasingly common. It is also becoming increasingly common for trail users to encounter other users (or evidence of use) on trails. Some encounters are with trail users participating in the same activity (such as two pedestrians), and some are with trail users engaged in different activities (such as a pedestrian and a bicyclist). While most trail encounters tend to be pleasant or neutral, some are unpleasant. As the number of trail users and diversity of trail activities increases, the potential for conflict resulting from unpleasant encounters also increases (Federal Highway Administration and National Recreational Trails Advisory Committee 1994). The Corps is actively looking for ways to improve visitor safety and reduce user conflicts in the park with the Master Plan Update that is currently underway.

A study conducted in 2004 assessed trail-related conflicts and their resolutions at state parks throughout the United States. This study, the results of which are presented in the U.S. Forest Service's *State Park Trail Conflicts and Resolution Strategies, Proceedings of the 2004 Northeastern Recreation Research Symposium*, found that conflict between users was most common between nonmotorized uses. Conflict among trail users with and without dogs occurs in a majority of states. To reduce dog-related conflicts, leash laws and their enforcement, prohibition of dogs from trails, etiquette training, and mandatory dog feces removal are used in various states. These approaches have proven to be moderately successful (USFS 2004).

As discussed previously, LSC estimated the potential level of congestion that would occur on the MVT. The estimates were based on the "Shared Off-Street Path" level of service (LOS) methodology in the Highway Capacity Manual (Transportation Research Board 2000, cited in LSC 2011). LOS is based on the number of passing events that occur during the peak hour of trail use. A passing event is defined as either passing a bicycle/pedestrian traveling in the opposite direction or overtaking another bicycle/pedestrian traveling in the same direction. For the portion of the MVT within the MCLDP, LSC found that congestion would be low, with LOS B and C conditions, under existing trail usage patterns, and that this congestion would increase to a moderate level in future (year 2025) conditions.

The proposed MVT would incorporate several measures to reduce user conflicts. Primarily, the trail design of providing a 10-foot paved trail width with 2-foot unpaved shoulders on each side would provide sufficient space for trail users to pass one another safely. Additionally, the trail would include informational signage to remind trail users of trail courtesy along the trail route and signage regarding trail etiquette and dog leash requirements posted at trail entrances. These measures are consistent with the recommendations of the studies cited above as well as the information presented in several of the trail design publications available at the American Trails Organization resource library (<http://www.americantrails.org/resources/trans/index.html>). The proposed trail width could reduce potential user conflicts on this trail compared to the current narrower trail width; however, the number of trail users and variety of trail use activities are projected to increase with the proposed trail, which could result in increased conflicts. Additionally, the new trail users that may be attracted to the area to use the proposed MVT may also use other existing segments of the Tomkins Memorial Trail. This could increase user conflicts, such as between pedestrians and bicyclists, on those existing trails.

Conflicts Associated with Dogs

Under the *Martis Creek Lake Master Plan*, the Wildlife Viewing Area is designated for wildlife habitat and protection to offset impacts to wildlife caused by the construction of the dam. The current use of the area as an off-leash dog walking area has led to effects on water quality related to dog excrement

not being removed by dog owners, incidents of harassment of wildlife and other trail users by dogs, and trampling of vegetation and soil. By increasing trail usage in the area, the proposed action could exacerbate existing problems as follows:

- Pet waste can contain pathogens, such as *Giardia*, roundworms, *Salmonella*, *Escherichia* (particular strains of some species are human pathogens, such as fecal coliform bacteria), parvovirus, and many other microorganisms that can be harmful to human health (CRCCD 2016). Leaving pet waste anywhere on the ground may expose children, adults, and other pets to these potential pathogens and bacteria (CRCCD 2016). If dog waste from infected dogs is left on the ground, the surrounding soil can become contaminated with parasite eggs that are passed in animal feces and hatch in the soil. The collection of feces and reducing feral and unaccompanied domestic animals in parks could help reduce the risk of transmission of many diseases (North Carolina Clean Water Education Partnership 2016).
- Walkers, hikers, joggers, bicyclists, wildlife watchers, and those seeking a quiet and natural experience can all potentially be disturbed by running and barking dogs. Additionally, dogs may adversely affect the aesthetics of the park by leaving waste on trails and the overwhelming smell of urine in areas with heavy dog use may also affect visitor experience at the park. In some cases, dog groups and associations organize dog cleanups, provide bags, and try to influence their members; but despite these efforts, many dog owners still do not comply with picking up dog waste.
- Encounters with unruly or aggressive dogs can pose a major health and safety concern to people and other pets. Serious bites can result in injury/disease, medical insurance and worker's compensation claims, lost wages, and sick leave (AVMA 2001). Data collected by the Centers for Disease Control and Prevention show that approximately 4.5 million Americans are bitten by dogs each year, and one in five dog bites results in injuries that require medical attention (Centers for Disease Control and Prevention 2016). Small children are typically the most common victims of dog-related injuries because of their natural behaviors, such as running, yelling, grabbing, or hitting, which may sometimes threaten a dog. Children are also more likely than adults to receive medical attention (Centers for Disease Control and Prevention 2016).

Code of Federal Regulations Title 36, Part 327, establishes nationwide Corps park rules and regulations, which apply within the MCLDP. Section 327.11 requires that dogs be on a leash no greater than 6 feet in length, or otherwise physically restrained. This regulation applies to existing trails as well as any future trails. Chapter 6 of the Placer County Code also requires that dogs be kept on a leash (with a maximum length of 6 feet) when not within the dog's owner's property. Enforcement of both existing dog-leash requirements would provide for better protection of native wildlife and their habitat (including by reducing potential harassment or disturbance by dogs) and would minimize degradation of vegetation, soil and water resources by dog use.

As stated previously, the measures included in the proposed action including the trail width and trail courtesy and etiquette signage are measures consistent with recommendations for reducing trail conflicts. Despite these measures, user conflicts may still occur on the proposed trail, in particular conflicts between trail users and off-leash dogs. Mitigation Measure 7B.1 would require that the operating agreement between Placer County, and/or NCSO as an agent of Placer County, and the Corps for the trail through the MCLDP address the enforcement and monitoring of trail use and user conflicts and provide for specific requirements for dog owners to keep their dogs leashed and to remove pet waste. By providing for enforcement and monitoring of trail use requirements, this mitigation measure would ensure that the project would not result in adverse effects associated with user conflicts.

Indirect Effects

No indirect effects related to conflicts between different trail user groups would occur.

Parking Lot Relocation

Direct Effects

Construction of a new parking lot in either of the potential locations would not result in a change in the types of user groups expected to use the trail and thus this component of the project would not result in any new or increased conflicts between trail user groups.

Under the Paved Trail within the Caltrans Easement Alternative, the trail would be located between SR-267 and the parking lot. This would require that trail users cross the access drive to the parking lot, which would expose trail users to the risk of being hit by a car that is entering or exiting the parking lot. To avoid this risk, trail users would need to stop or slow down before crossing the access drive. This would reduce the recreational value of the trail, particularly for bicyclists. Risks of vehicle-pedestrian conflicts would also be higher for families with children and people using wheelchairs (due to their shorter height, people using wheelchairs are less visible to vehicle drivers). This effect could be avoided by rerouting Segment 1B-2 under the Paved Trail within the Caltrans Easement Alternative to loop around the southern side of the parking lot. This could require additional grading, additional trail length, and therefore additional impervious surface than has been evaluated throughout this EA. In the area of the proposed parking lot location, there is limited topography, thus the additional grading needed to reroute this portion of the trail would be minimal. Under the Paved Trail within the MCLDP Alternative and the Combined Paved Trail Alternative, the trail would be located south of the parking lot, and trail users would not be required to cross the access drive, thus, these risks would be avoided under those alternatives.

Indirect Effects

The relocation of the parking lot would not indirectly result in an increase in trail user group conflicts.

Unpaved Trail Alternative

By expanding the trail network and providing a connection to trails located west of the MCLDP, the Unpaved Trail Alternative would result in a slight increase in recreational activity in the MCLDP. Under the Unpaved Trail Alternative, the increase in MCLDP trail usage is expected to be less than under either of the Paved Trail Alternatives and this alternative is expected to result in fewer impacts related to trail-user conflicts.

Direct Effects

Multiple-Use Trail User Conflicts

The Unpaved Trail Alternative would result in increased trail usage in the area which would lead to similar effects as the paved trail alternatives of exacerbating existing conflicts between user groups. However, this alternative would not change the types of trail experiences that are available within the MCLDP and thus is not expected to introduce a substantial volume of new trail users to the area.

Conflicts Associated with Dogs

This alternative would result in increased trail usage in the area which would lead to similar effects as the paved trail alternatives of exacerbating existing problems associated with off-leash dog walking activity, particularly effects due to the presence of dog excrement in the MCLDP. However, this alternative would not change the types of trail experiences that are available within the MCLDP and thus is not expected to introduce a substantial volume of new trail users to the area. While the potential for increased conflicts is less than under the Paved Trail Alternative, user conflicts may still occur on the

proposed trail, in particular conflicts between trail users and off-leash dogs. Mitigation Measure 7B.1 would require that the operating agreement between the Northstar Community Services District and/or Placer County and the Corps for the trail through the MCLDP address the enforcement and monitoring of trail use and user conflicts. This mitigation measure would ensure that the project would not result in adverse effects associated with user conflicts.

Indirect Effects

No indirect effects related to conflicts between different trail user groups would occur.

Mitigation Measures

Mitigation Measure 7B.1 presented in Section 7.4 would be required under all three of the paved trail alternatives as well as the Unpaved Trail Alternative to ensure the project would not result in adverse effects on land use and recreation due to conflicts between trail users.

7.4 Mitigation Measures

Mitigation Measure 7A.1: The operating agreement between the U.S. Army Corps of Engineers (Corps) and the Northstar Community Services District (NCSD) and/or Placer County shall determine potential costs associated with use of the Martis Valley Trail (MVT) and identify funding sources to meet these costs. These shall include maintenance and operations at the Martis Creek Lake and Dam Project (MCLDP) Wildlife Viewing Area parking lot and/or the relocated parking lot, ongoing maintenance of the trail system on the south side of State Route (SR-) 267, enforcement and monitoring of responsible trail behavior, monitoring and maintenance of revegetated areas, monitoring and protection of cultural resources, and increased demand for emergency services.

Mitigation Measure 7B.1: The operating agreement between the Corps and the Northstar Community Services District and/or Placer County described in Mitigation Measure 7A.1 shall address enforcement and monitoring of responsible trail behavior, including enforcement of Corps regulations related to dog control. The following standards for use of the trail by dogs shall be included in the operating agreement and MCLDP Recreation Use Rules:

- All dog walkers must have a functional 6-foot leash that is attached to a collar or harness on the dog, for each dog under their care and is simultaneously held by the dog walker.
- Dog walkers must keep dogs on leash in parking lots and on paths.
- Dog walkers must keep dogs out of any area closed by fence or sign for restoration, habitat protection, or safety concerns.
- Dog walkers must pick up their dogs' feces immediately and dispose of it in a garbage container.

7.5 References

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8 VISUAL RESOURCES

8.1 Introduction

The following analysis identifies potential effects due to project-related visual change as experienced by existing and future viewers with exposure to the project site. These effects are discussed in terms of compatibility of character and visual quality in relation to visual sensitivity of these viewers.

A visual impact analysis was prepared by North Fork Associates to describe the existing visual characteristics of the project area and evaluate visual changes that would be caused by construction and use of the full Martis Valley Trail (MVT) project (NFA 2009). This included consideration of the effects on visual resources from Segment 1B-2. Consideration of the visual effects associated with Segment 3A is presented in an addendum to the visual impact analysis prepared by North Fork Associates in October 2011. The findings of the visual impact analysis as they related to Segments 1B-2 and 3A are summarized in this chapter. The report and addendum are provided as Appendix C to this Draft Environmental Assessment (EA).

The analysis evaluated physical changes that would occur, considering both natural and constructed features, and considered the project in the context of planning guidance documents applicable to the project area, including the *Martis Valley Community Plan* (Placer County 2003) and the *Martis Creek Lake and Dam Master Plan* (Corps 2016). None of the roadways in the project area are designated as National Scenic Byways or as State Scenic Highways (or eligible for state designation), however, Placer County designates State Route (SR-) 267 as a Scenic Route because of the expansive views of Martis Valley available from this roadway (Placer County 2003).

8.2 Affected Environment

Regional Landscape

Long-range views within the region include Castle Peak and the Sierra Nevada crest to the west. Martis Peak and other mountain peaks surrounding the Lake Tahoe Basin are visible generally east of the valley. Views to these regional features from State Route (SR-) 267 are possible only along the Segment 3A alignment. Important natural features seen in mid-range views include the flat expanse of Martis Valley and the forest, scrub, meadow, and riparian vegetation communities that occupy the valley and surrounding slopes. These features are seen from SR-267, Schaffer Mill Road, and existing trails in the Wildlife Management Area.

Constructed features that typify the area include SR-267 with power lines, office/commercial development in the vicinity of Truckee-Tahoe Airport Road and Soaring Way, the Truckee-Tahoe Airport, Martis Creek Dam, recreational facilities, and trails in the Martis Creek Lake and Dam Project (MCLDP), including the Wildlife Viewing Area and portions of the Tompkins Memorial Trail system, Lahontan Golf Club and residential development, and the Northstar Community (including the Northstar California golf course, residential development, and public facilities). Policy 4.C.1 of Placer County's *Martis Valley Community Plan* designates SR-267, Schaffer Mill Road, and Northstar Drive as Scenic Routes and designates the MCLDP Wildlife Viewing Area as a Scenic Overlook (Placer County 2003). Furthermore the Washoe Tribe consider the valley viewsheds as a culturally rich landscape.

Local Landscape

The following description of existing setting is supported by a series of photographs, which are shown in Figures 8-1 and 8-2. Segments 1B-2 and 3A would pass through the MCLDP, which is undeveloped except for the existing Tompkins Memorial Trail network, the Wildlife Viewing Area, and the associated

parking lot. The project area is characterized by gently rolling to generally flat topography within Martis Valley, transitioning to steeper slopes outside of the valley.

Vegetation communities in the project area include sagebrush scrub, wet meadow, and riparian. These features are visible from SR-267. Martis Creek is the primary drainage in the valley. The Martis Valley floor is characterized by wide and relatively flat meadows associated with Martis Creek and its tributaries. Riparian vegetation, primarily willows, occurs as a distinct feature along the meandering courses of Martis Creek and its tributaries and contrasts in color and relief with adjacent meadow vegetation (Photos 1 and 2 in Figure 8-1). The riparian vegetation is generally a linear feature breaking up views of the meadow. Sagebrush scrub vegetation is generally adjacent to and at a slightly higher elevation than meadow vegetation, occurring on flat to gently rolling topography in the vicinity of SR-267 (Photo 3 in Figure 8-1). When under snow cover, the valley is characterized by flat expanses of snow distinctly contrasting with the darker conifer forest on the slopes surrounding the valley floor.

SR-267, a heavily traveled two-lane highway connecting Interstate 80 to SR-28 in the Lake Tahoe Basin, bisects the valley floor on a slightly elevated west–east alignment and represents a prominent constructed landscape feature through the valley (Photos 1 and 3 in Figure 8-1, and Photo 9 in Figure 8-2). SR-267 also represents the primary viewpoint from which Martis Valley is viewed, as it provides a slightly elevated vantage point for the many motorists crossing the valley daily. SR-267 is designated by Placer County as a Scenic Route under Policy 4.C.1 of the Martis Valley Community Plan (Placer County 2003). Travelers on both directions of the highway have expansive views of the valley, with the views for northbound travelers descending the hill from Brockway Summit and Northstar Drive have clear views of the proposed MVT segments 1B-2 and 3A.

Other features visible from SR-267 include the office/commercial development on the north side of SR-267 where airplane hangars and rows of self-storage buildings are visually prominent (Photos 5 and 6 in Figure 8-1). In the vicinity of the existing parking area for the MCLDP Wildlife Viewing Area, portions of the unpaved multi-use Tompkins Memorial Trail are visible from SR-267, particularly the section leading southwest from the parking area through a bench of sagebrush scrub habitat (Photo 7 in Figure 8-2). Portions of the existing Tompkins Memorial Trail in the vicinity of the crossing of West Martis Creek and running along Middle Martis Creek are also visible from the highway. Snow cover obscures these portions of trail during much of winter and into spring.

Martis Creek Dam is a visually prominent feature of the landscape north of SR-267, appearing as a level and elevated embankment when not under snow cover (Photo 8 in Figure 8-2). At its current level, Martis Creek Lake is not a prominent feature as viewed from SR-267 (Photo 8 in Figure 8-2).

The existing Tompkins Memorial Trail through the MCLDP and the Northstar California community also provides views of Martis Valley and the surrounding mountains. The views from the existing trail system in the valley are dominated by near-distant views to meadow areas associated with Martis Creek and its tributaries, broken up by linear riparian shrub vegetation following the course of the streams. Primary views from the existing portion of the Tompkins Memorial Trail in the area of proposed Segment 3A are generally to the meadow, forested slopes, and golf course; views to the north are restricted by the elevated SR-267 alignment.

Features visible from both the existing trails and SR-267 include ski runs in the Lookout Mountain portion of the Northstar ski area, the Northstar California Golf Course, adjacent homes, and other constructed landscape features, such as power poles at the east end of the valley floor, and fencing and a sewer lift station building south of SR-267 near the Northstar California golf course (Photo 10 in Figure 8-2).

The ski runs are visually prominent as a modified natural feature as linear swaths where trees have been removed. These linear swaths generally appear as an “N” shape when viewed from the valley or SR-267

to the north (Photo 2 in Figure 8-2). They are more distinct in winter as snow cover contrasts with dark hues of the conifer forest. While existing unpaved multi-use trails exist on the slopes south of Martis Valley, they are screened by dense forest and are not visible from the valley floor or SR-267.

When not under snow cover, the north end of the Northstar California golf course is a prominent landscape feature at the east side of the valley at the base of the coniferous forest, as the bright green of the course contrasts with the color of natural vegetation in the valley (Photos 9 and 10 in Figure 8-2). Homes situated on the south and east edge of the golf course are visible from the valley and SR-267, but are somewhat screened by mature conifers and are not considered a primary visual component of the landscape.

Sensitive Receptors: Key Viewpoints

Sensitive receptors are those viewers who would be most sensitive to changes in the character of the project site. Individuals may have high sensitivity to visual changes if they have frequent or lengthy exposure to the view, are familiar with the existing condition of the site, or have a unique view to the site. Sensitive receptors are often represented by residents of adjacent parcels with views to a project site or people viewing a project site from public land.

The primary views of the study area are from portions of the existing Tompkins Memorial Trail, SR-267, and homes within the Northstar community on the north side of Basque Drive and near the end of Skidder Trail. Thus, existing trail users, travelers on SR-267, and residents within the Northstar community are considered sensitive receptors. The views in the area are generally characterized by meadow and riparian vegetation, SR-267, existing trails and trail users, golf course greens and fairways and golfers, conifer forest, and adjacent residential development. When snow cover is present, meadow and riparian vegetation and golf course features are not as visually prominent. As discussed above, views from within the study area and adjacent viewpoints include distant views of mountains along the Sierra Crest; views of constructed features including parking lots, roadways, trails, and buildings; and views of the meadow and riparian habitat within the MCLDP.

Viewer Sensitivity

Factors that influence the visual quality of the local landscape character include:

- The intact nature of the large meadow and linear riparian habitat on the valley floor visible from both SR-267 and from existing trails in the area;
- Intact long distance views west to the Sierra Crest and Castle Peak;
- Seasonal variety in views;
- Visual contrast and continuity associated with constructed and natural elements of the existing landscape;
- Previous alteration of the natural visual quality from constructed features including SR-267 (and cars traveling the highway), office/commercial development, golf courses, trails, ski area development, power lines, Martis Creek Dam, and residential development.

Considering these factors, the visual quality of the area may be characterized as moderate in terms of vividness, intactness, and unity, since both natural and constructed visual components are present. However, visual response to the area is considered to be high, as the meadow and valley floor is the primary and dominant visual component of the landscape and, although bisected by SR-267 and altered by Martis Creek Dam and other constructed features, it remains largely intact and is a well-used recreational area and scenic vista available from SR-267.

The *Martis Valley Community Plan* (Placer County 2003) states that any development within the open meadow and sagebrush flats of the Martis Valley visible from SR-267 must be considered very carefully. The Community Plan also notes that construction of roads and trails within the open valley could result in substantial visual impacts and such facilities, although permitted, should be carefully sited.

8.3 Project Effects

Basis of Significance Determinations

The analysis of potential project effects is based on the basic project characteristics described in Chapters 1 and 2. The project would significantly affect visual resources if it would result in changes in landform, vegetation, land use, or structural features that create substantially increased levels of visual contrast as compared to surrounding conditions.

Project Effect 8A: Create Increased Levels of Visual Contrast

No Action Alternative

There would be no changes to visual resources in the project area.

Paved Trail within the MCLDP Alternative

Segment 1B-2 would travel over relatively flat terrain within Martis Valley, south of and generally parallel to SR-267, through sagebrush scrub vegetation. Segment 1B-2 could include a covered interpretive exhibit regarding cultural significance of the region. Segment 3A would be located within a strip of sagebrush scrub vegetation between the toe of the fill slope for SR-267 and Martis Creek. Natural vegetation, including sagebrush and meadow and riparian vegetation are the primary natural landscape features in this area.

As discussed above, the sagebrush meadow and riparian vegetation of the Martis Valley are considered important scenic resources by both the *Martis Valley Community Plan* (Placer County 2003) and the *2016 Martis Creek Lake Master Plan* (Corps 2016). While Section I.E of the *Martis Valley Community Plan* indicates that additional recreational uses could be accommodated without degrading the special visual qualities of the valley, it recognizes a need for careful consideration of any development, including trails, to ensure that visual impacts are kept to a minimum. The MCLDP Wildlife Viewing Area is a designated Scenic Vista according to the *Martis Valley Community Plan* (Placer County 2003).

Direct Effects

Trail Surface, Trail Users, and Trail Amenities

Existing views to the northwest from the Wildlife Viewing Area (towards the Segment 1B-2 alignment) are of a sagebrush-covered rise that leads to SR-267 and a drainage swale that travels along the base of that rise, with rural homes in the background. Views to the southeast from the Wildlife Viewing Area (towards the Segment 3A alignment) are of the existing single-track native earth trail in that location. sagebrush and riparian vegetation, Martis Creek, SR-267, and the Northstar California golf course. The project would alter these views by creating a paved trail surface through both segments and constructing a cultural resources interpretive exhibit near the junction of the two segments. Construction of the trail would require vegetation removal in areas adjacent to the trail. Mitigation Measure 8A.1 requires that NCS D revegetate these areas with native plants that are found in the sagebrush scrub habitat in the vicinity. This would ensure that the project does not result in adverse effects to the visual qualities of the area by creating areas of exposed soil. Additionally, the project would increase trail usage in the area, so existing trail users would have an increased frequency of views of other trail users. While these changes would be noticeable for existing users of the trails within the MCLDP, with implementation of Mitigation Measure 8A.1, the proposed development of new

recreational amenities within an existing recreational area would not adversely affect the aesthetics of the recreational area or views from existing trails.

Views of the project site from SR-267 are constrained due to topography. The elevation of SR-267 near the Segment 1B-2 alignment is generally approximately 5,875 to 5,870 feet above mean sea level (amsl), while the elevation of SR-267 near the Segment 3A alignment is generally approximately 5,850 feet amsl. Within Segment 1B-2, the trail surface would be at an elevation approximately 6 to 16 feet lower than the SR-267 surface, while the Segment 3A trail surface would range in elevation from 6 to 26 feet lower than the SR-267 surface. Additionally, the interpretive exhibit, if constructed, would be placed at an elevation of approximately 5,838 feet amsl, well below the SR-267 surface at an elevation of 5,870 feet amsl in this area. The natural and constructed slopes between the trail surface and SR-267 would limit views of the trail surface, trail users, and interpretive exhibit from SR-267, thus protecting the existing views from this designated Scenic Route. Segment 3A would replace an existing dirt trail along the south side of SR-267. In areas where it is positioned near the toe of the highway fill slope at a lower elevation than the roadway, the existing dirt trail and trail users on this segment are only intermittently visible to motorists on SR-267. Since Segment 3A would occupy an area in the valley dominated by existing constructed landscape features, including SR-267, the golf course, and the sewer lift station, and would be only intermittently visible from the highway, Segment 3A is considered appropriately sited to avoid substantial impacts to resources that contribute to the scenic values of SR-267. With these limited changes in views, the project would not significantly increase visual contrast for viewpoints along SR-267.

The interpretive exhibit regarding cultural significance in the region, as explained in chapter 5, could introduce a new vertical constructed element in the viewshed west of the Wildlife Viewing Area. While it has not been determined whether this feature would be constructed, preliminary plans for the structure have been developed to allow analysis of its potential visual impacts. The preliminary plans indicate that materials would include a brown metal roof and interpretive panels mounted between pillars made of logs harvested from near the project site, outside of the MCLDP (likely from areas within or adjacent to trail segments that would pass through the Northstar California community). The structure would be similar in scale to the existing trailhead and information signage at the Wildlife Viewing Area and would be in compliance with Corps standards. Although the structure would be constructed in proximity to the Wildlife Viewing Area, its placement in relation to the drainage swale and site topography and its context-sensitive design and building materials would ensure that its effect on scenic vistas from the Wildlife Viewing Area would be less than significant.

From both the Wildlife Viewing Area and SR-267, an existing double-track gravel-surfaced trail is clearly visible leading southwest across a meadow area and continuing onto a bench of sagebrush scrub. The trail remains visible until gaining slightly in elevation on a sparsely forested knoll. The light color of the bare soil and gravel surface of the trail contrasts with the appearance of the natural meadow and sagebrush vegetation in the valley and is a visually prominent constructed feature in the landscape. Other single-track portions of the Tompkins Memorial Trail in the valley are visible from SR-267 and the Wildlife Viewing Area. The proposed project would not affect views of these portions of the Martis Valley and the existing trails.

Construction Phase

Construction phase trail-building activities would temporarily place vehicles and construction equipment, construction materials stockpiles, and construction fencing within the scenic viewsheds identified and discussed above. The presence of construction equipment, materials, and fencing would present a limited, temporary adverse visual impact to the existing view available from the Wildlife Viewing Area and from SR-267. Mitigation Measure 8A.2 requires that construction material staging

areas be identified on project plans and placed within existing disturbed areas located, to the extent possible, to screen views of staging areas from the Wildlife Viewing Area. Implementation of Mitigation Measure 8A.2 would ensure that temporary construction period effects to scenic viewsheds remain less than significant.

Lighting

No lighting is proposed as part of the Paved Trail within the MCLDP Alternative. The trail would be constructed using non-reflective materials and finishes for the surface of the pathway and retaining wall surfaces. Any reflective striping used for pathway markings would not result in substantial glare or adversely affect day or nighttime views in the area. Signage would be designed to avoid glare.

Indirect Effects

The Paved Trail within the MCLDP Alternative could potentially result in increased use of existing trails in the MCLDP. This would increase the frequency with which existing trail users have views of other trail users. However, as discussed above, the increased levels of recreational activity within this established recreational area would not substantially alter the visual conditions of the project vicinity. Additionally, the increased trail usage that may indirectly result from construction of the proposed trail could lead to increased trailbed widening due to individuals walking at the edges of the existing trailbed. This could result in minor degradation of the visual quality of the area. However, all of the existing trails would continue to be managed by the NCSO, and management activities include placing temporary barriers and signage where necessary to prevent trailbed widening. Thus, the Paved Trail within the MCLDP Alternative would not result in significant adverse indirect effects to visual resources.

Paved Trail within the Caltrans Easement Alternative

Direct Effects

Trail Surface, Trail Users, and Trail Amenities

The effects of this alternative would be similar to those under the Paved Trail within the MCLDP Alternative because this alternative would result in alteration of existing views by creating a paved trail surface through both segments. This alternative would not include construction of an interpretive exhibit because it would be within 250 feet of the existing centerline of SR-267 and at the same elevation as the highway surface. Including an interpretive exhibit in this alternative would result in adding a new structure to the viewshed of SR-267, which would adversely affect existing expansive views of the Martis Valley and would detract from the qualities that lead to Placer County's designation of SR-267 as a Scenic Route. Implementation of Mitigation Measure 8A.1 would be required to ensure that the project does not result in adverse effects to the visual qualities of the area by creating areas of exposed soil.

Both Segments 1B-2 and 3A under this alternative would be placed proximate to SR-267 (between 80 and 250 feet from the SR-267 centerline), making the trail surface and trail users much more visible to travelers on SR-267 than they would be under the Paved Trail within the MCLDP Alternative. The alignment for the Caltrans Easement alternative represents a visual impact for travelers on SR-267 because trail users would be in the foreground of views of the Martis Valley for roughly 1.5 miles. This is significant due to Placer County's designation of SR-267 as a Scenic Route (Placer County (2003)). This is a greater impact than those discussed in the Paved Trail within the MCLDP Alternative because the Paved Trail within the Caltrans Easement alternative does not have the benefit of additional vegetation and topography to help preserve the existing views from SR-267. However parallel trail layout of the Caltrans Easement alternative will coincide in linear agreement with the design and direction of existing SR-267. Areas of disturbance will be revegetated appropriately as mentioned in previous chapters, furthermore the implementation of Mitigation Measure 8A.3 would be required to ensure that the project does not

result in adverse effects to the travelers on SR-267 by reducing the appearance of trail users in the foreground by harmonizing with the surroundings through the use of aesthetic design treatments.

Additionally, the project would increase trail usage in the area, so existing trail users would have an increased frequency of views of other trail users. While these changes would be noticeable for existing users of the trails within the MCLDP, the proposed development of new recreational amenities within an existing recreational area would not substantially change the aesthetics of the recreational area or views from existing trails. The increase in the total number of trail users would be compatible with the visual quality of the area for existing trail users.

Construction Phase

Construction phase trail-building activities would temporarily place vehicles and construction equipment, materials stockpiles, and fencing within the scenic viewsheds identified and discussed above. The presence of construction equipment, materials, and fencing would present a limited, temporary adverse visual impact to the existing view available from the Wildlife Viewing Area and from SR-267. Under the Paved Trail within the Caltrans Easement Alternative, the construction activities for both Segments 1B-2 and 3A would be clearly visible from SR-267, which would adversely affect views of the valley from the highway. Mitigation Measure 8A.2 requires that construction material staging areas be identified on project plans and placed within existing disturbed areas located, to the extent possible, to minimize changes in views from the Wildlife Viewing Area and SR-267. Implementation of Mitigation Measure 8A.2 would ensure that temporary construction period effects to scenic viewsheds remain less than significant.

Lighting

No lighting is proposed as part of the trail project. The proposed trail would be constructed using non-reflective materials and finishes for the surface of the pathway and retaining wall surfaces. Any reflective striping used for pathway markings would not result in substantial glare or adversely affect day or nighttime views in the area. Signage would be designed to avoid glare. This is the same as it would be under the Paved Trail within the MCLDP Alternative.

Indirect Effects

The Paved Trail within the Caltrans Easement Alternative could potentially result in increased use of existing trails in the MCLDP. This would increase the frequency with which existing trail users have views of other trail users. However, as discussed above, the increased levels of recreational activity within this established recreational area would not substantially alter the visual conditions of the project vicinity. Additionally, the increased trail usage that may indirectly result from construction of the proposed trail could lead to increased trailbed widening due to individuals walking at the edges of the existing trailbed. This could result in minor degradation of the visual quality of the area. However, all of the existing trails would continue to be managed by the NCSD, and management activities include placing temporary barriers and signage where necessary to prevent trailbed widening. Thus, the Paved Trail within the Caltrans Easement Alternative would not result in significant adverse indirect effects to visual resources.

Combined Paved Trail Alternative

Direct Effects

Trail Surface, Trail Users, and Trail Amenities

Under this alternative, the effects of Segment 1B-2 would be similar to those under the Paved Trail within the MCLDP Alternative while the effects of Segment 3A would be the same as those under the Paved Trail within the Caltrans Easement Alternative. Segment 1B-2 would be constructed along the same alignment as the MCLDP Alternative for approximately 2,300 linear feet. It would diverge from Paved Trail within the MCLDP Alternative alignment near the Wildlife Viewing Area allowing the trail to transition into the

Caltrans easement while maintaining a maximum 5% grade. This alternative could also include construction of a cultural resources interpretive exhibit, as described in the analysis of the Paved Trail within the MCLDP Alternative. The natural and constructed slopes between the trail surface and SR-267 would limit views of the trail surface, trail users, and interpretive exhibit from SR-267, thus protecting the existing views from this designated Scenic Route.

The alignment of Segment 3A under this alternative would be the same as under the Paved Trail within the Caltrans Easement Alternative. It would be placed proximate to SR-267 (between 80 and 250 feet from the SR-267 centerline), making the trail surface and trail users much more visible to travelers on SR-267 than they would be under the Paved Trail within the MCLDP Alternative. Like the Paved Trail within the Caltrans Easement Alternative, the alignment for the Combined Paved Trail Alternative represents a visual impact for motorists as trail users would be in the foreground of views of the Martis Valley for 0.97 mile. This is significant due to the highway's designation by Placer County as a Scenic Route.

Implementation of Mitigation Measure 8A.1, which requires revegetation of areas that are disturbed during construction, would be required to ensure that construction of the trail does not result in adverse effects to the visual qualities of the area by creating areas of exposed soil.

Additionally, the project would increase trail usage in the area, so existing trail users and travelers on SR-267 would have an increased frequency of views of trail users. While these changes would be noticeable for existing users of the trails within the MCLDP, the proposed development of new recreational amenities within an existing recreational area would not substantially change the aesthetics of the recreational area or views from existing trails. The increase in the total number of trail users would be compatible with the visual quality of the area for existing trail users.

Construction Phase

Construction phase trail-building activities would temporarily place vehicles and construction equipment, materials stockpiles, and fencing within the scenic viewsheds identified and discussed above. The presence of construction equipment, materials, and fencing would present a limited, temporary adverse visual impact to the existing view available from the Wildlife Viewing Area and from SR-267. Under the Combined Paved Trail Alternative, the construction activities for Segment 1B-2 would be located at a similar location as the Paved Trail within the MCLDP Alternative but at a slightly higher location and thus could be slightly more visible. Construction activities for Segment 3A would be clearly visible from SR-267, which would adversely affect views of the valley from the highway. Mitigation Measure 8A.2 requires that construction material staging areas be identified on project plans and placed within existing disturbed areas located, to the extent possible, to minimize changes to views from the Wildlife Viewing Area and SR-267. Implementation of Mitigation Measure 8A.2 would ensure that temporary construction period effects to scenic viewsheds remain less than significant.

Lighting

No lighting is proposed as part of the trail project. The proposed trail would be constructed using non-reflective materials and finishes for the surface of the pathway and retaining wall surfaces. Any reflective striping used for pathway markings would not result in substantial glare or adversely affect day or nighttime views in the area. Signage would be designed to avoid glare. This is the same as it would be under the Paved Trail within the MCLDP Alternative and the Paved Trail within the Caltrans Easement Alternative.

Indirect Effects

The Combined Paved Trail Alternative could potentially result in increased use of existing trails in the MCLDP. This would increase the frequency with which existing trail users have views of other trail users. However, as discussed above, the increased levels of recreational activity within this established recreational area would not substantially alter the visual conditions of the project vicinity. Additionally, the increased trail usage that may indirectly result from construction of the proposed trail could lead to increased trailbed widening due to individuals walking at the edges of the existing trailbed. This could result in minor degradation of the visual quality of the area. However, all of the existing trails would continue to be managed by the NCSA, and management activities include placing temporary barriers and signage where necessary to prevent trailbed widening. Thus, the Combined Paved Trail Alternative would not result in significant adverse indirect effects to visual resources.

Parking Lot Relocation

Direct Effects

The new parking lot that would be constructed to replace public parking opportunities at the existing Wildlife Viewing Area parking lot would be located at least 1,900 feet north of the Wildlife Viewing Area and approximately 200 feet west of SR-267. The existing Wildlife Viewing Area parking lot would be closed to the public and revegetated after the new parking lot is constructed. Access to the parking lot for maintenance and property management would be maintained. As discussed above, Mitigation Measure 8A.1 stipulates that revegetation be completed using native plants that occur in the sagebrush scrub habitat in the area. Views from the Wildlife Viewing Area are primarily to the south, rather than to the northwest. In addition, the parking lot would be placed at a higher elevation than the viewpoints at the Wildlife Viewing Area. Views to the parking lot from the Wildlife Viewing Area would be obscured and thus construction and use of the new parking lot would not result in adverse effects on the scenic vistas available at the Wildlife Viewing Area.

The new parking lot would be visible from SR-267; however, the overflow parking at the existing Wildlife Viewing Area parking lot is also visible from SR-267. Thus construction and use of the new parking lot would relocate the visual disturbance but would not add to the extent of visual disturbance in the valley as viewed from SR-267. Therefore construction and use of the new parking lot would not result in adverse effects on the scenic vistas available from SR-267.

Indirect Effects

Construction and use of the new parking lot would contribute to the potential increased use of the trails in the MCLDP, which could lead to changes in the aesthetic landscape of the project area. However, this EA incorporates mitigation measures that would prevent recreational usage from affecting the physical environment in Martis Valley.

Unpaved Trail Alternative

Under the Unpaved Trail Alternative, no changes to visual resources within the Segment 3A alignment would occur, and the cultural resources interpretive exhibit would not be constructed. A native-earth trail would be constructed in the Segment 1B-2 alignment, but as previously discussed this trail segment would not result in direct or indirect adverse effects or substantial changes to visual contrast in the project area.

8.4 Mitigation Measures

The following mitigation measures would be required under the Paved Trail within the MCLDP Alternative, the Paved Trail within the Caltrans Easement Alternative, the Combined Paved Trail Alternative, or the Unpaved Trail Alternative.

Mitigation Measure 8A.1: All areas of the project site that are subject to vegetation removal and/or grading but are not included within the final footprint of the trail (which includes the trail bed and any shoulders) shall be revegetated following construction. If one of the paved trail alternatives is selected for construction, at the time that the existing parking lot at the Wildlife Viewing Area is relocated, the existing parking lot shall be revegetated with the exception of an area sufficient to allow for access for maintenance and property management. Plantings shall be of native species.

Mitigation Measure 8A.2: Stockpiling of materials on site shall be minimized during construction. Construction staging areas and stockpile storage locations shall be identified on project plans and located within existing disturbed areas or as close to or within the areas of construction as possible.

Mitigation measure 8A.3: Use of appropriate aesthetic design treatments as possible along the trail route to blend the multi-use trail reducing the appearance of trail users in the foreground by harmonizing with the surroundings of the area.

8.5 References

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Photo 1: Looking west across Martis Valley from Highway 267 near the golf course.



Photo 2: View to south across Martis Valley from the entrance to the Wildlife Viewing Area.



Photo 3: View from Highway 267 looking east across Martis Valley.



Photo 5: Looking north to commercial development at Schaffer Mill Road/Highway 267 intersection.



Photo 6: View from Highway 267 north to self-storage facility and airport area at west side of Martis Valley.

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MARTIS VALLEY TRAIL EA

FIGURE 8-1
Site Photos (1)

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Photo 7: View from Highway 267 looking southwest to portion of existing Tompkins Memorial Trail through sagebrush scrub habitat.



Photo 8: Looking north from Highway 267 to Martis Creek Lake and dam



Photo 9: Looking east from Highway 267 in Martis Valley near the entrance to the Wildlife Viewing Area. The Northstar at Tahoe golf course is prominent at the east side of the valley floor.



Photo 10: View from Highway 267 southwest to Northstar at Tahoe golf course. Ski runs on Lookout Mountain, homes at the edge of the golf course, and power poles are visible. Lift station is out of picture to left.

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MARTIS VALLEY TRAIL EA

FIGURE 8-2
Site Photos (2)

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9.0 CUMULATIVE EFFECTS

This chapter identifies the cumulative effects of development within the project region and evaluates the extent to which the proposed project would contribute to each cumulative effect identified. Only those environmental resource areas where the project could have a direct adverse effect are considered in this analysis. Where the analysis in Chapter 4 through 8 demonstrate that the project would not result in a significant impact directly, there is no potential for the project to contribute substantially to an associated cumulative impact and thus those effects are not evaluated in this chapter.

9.1 Cumulative Development Scenario

Cumulative effects are those that occur as a result of regional development activity and refer to the change in the environment that results from the incremental effect of the project when added to other related past, present, and reasonably foreseeable future projects. Cumulative effects can result from individually minor but collectively significant projects taking place over a period of time.

This analysis considers the regional effects associated with growth projections reflected in the Martis Valley Community Plan and the Town of Truckee General Plan as well as other current and reasonably foreseeable future projects. The growth projections from the Martis Valley Community Plan and the Town of Truckee General Plan are summarized in *Tables 9.1* and *9.2*, while the current and reasonably foreseeable projects in the vicinity are summarized in *Table 9.3*. These current and reasonably foreseeable projects were identified by review of Corps' Martis Creek Master Plan Environmental Assessment, the Placer County Active Projects list, the Nevada County Current Planning Projects, the Town of Truckee Major Development Projects list and the Town of Truckee Planning Application List, as well as projects that have already been approved but not yet fully constructed.

Table 9.1

Martis Valley Community Plan Growth Projections

Land Use Designation	Acres
General Commercial	39
Forest (1 du/40 ac)	17,065
High Density Residential (10 – 15 du/ac)	18
Medium Density Residential (5 – 10 du/ac)	457
Low Density Residential (1 – 5 du/ac)	2,648
Rural Residential (0.4 – 1 du/ac)	834
Forest Residential (2.5 – 10 ac/du)	250
Tourist/Resort Commercial (15 du/ac)*	49
Professional Office	6
Public/Quasi Public	31
Open Space	3,660
Water	509

Land Use Designation	Acres
Holding Capacity for Potential Dwelling Units (Gross)	20,467
Adjusted Holding Capacity (20% reduction applied, adjusted for actual proposed unit count for active projects at time of Community Plan adoption)	9,220

Source: Placer County 2003b

du = dwelling unit

ac = acres

* Except for ski mountain commercial areas

Table 9.2

Town of Truckee General Plan Growth Projections

Residential Units	Town Limits	Sphere of Influence
Single-Family Residential*	15,293	522
Multi-Family Residential **	3,644	0
Second Units	1,145	105
Total Buildout Capacity	20,082	627
Year-Round Units	10,844	
Seasonal/Vacation Units	9,238	
Development Type		Quantity
Commercial (including General Commercial, Retail, Restaurant, Highway Commercial)		1,994,000 square feet
Office (includes General Office, Medical Office and Government Office)		952,000 square feet
Light Industrial/Warehouse		1,259,000 square feet
Religious Institution		85,700 square feet
Lodging		1,392 rooms

Source: Town of Truckee 2006

* Includes mobile homes.

** Assumes that 20 percent of all future single-family units will include secondary dwelling units.

Table 9.3

Current and Reasonably Foreseeable Projects

Project Name	Use and Size	Location
Regional Projects		
Martis Creek Lake Master Plan	The Corps recently updated the Martis Creek Lake Master Plan. Future projects within the MCLDP may include expanded capacity of the campground and	Martis Valley
Fuel Reduction Project	The Corps and Northstar Fire Department are taking action to reduce fuel load on the southeastern park boundary to minimize risk to adjacent land owners.	MCLDP

Project Name	Use and Size	Location
California Pacific Electric Company 625 and 650 Line Upgrades	The California Pacific Electric Company (CalPeco) is undertaking upgrades to the existing 625 and 650 electrical power lines and associated substations from 60 kilovolt (kV) to 120 kV near Martis Creek. These upgrades are planned to allow the entire North Lake Tahoe Transmission System to operate at 120 kV, increase the ability to maintain the current maximum system loads during a partial outage, and decrease reliance on the Kings Beach Diesel Generation Station. Section 650-4 spans the Martis Valley south of SR 267 through Martis Creek Lake managed by the Corps and a parcel of the National Forest System managed by the Tahoe National Forest. The proposed upgrades to this portion would take place within an existing right of way.	Martis Valley and Tahoe National Forest
SR 267 Widening	Caltrans plans to widen SR-267 to four lanes through Martis Valley.	Martis Valley
Projects Within Placer County		
Northstar California Overall Mountain Master Plan	Placer County approved the Overall Mountain Master Plan for Northstar California in February 2017. The Master Plan outlines a long-term improvement program for the existing ski resort area, including new ski trails and ski lifts, expanded snowmaking and associated infrastructure, skier bridges, new half pipe and existing half pipe relocation, relocation of the cross country center, relocation of ropes course and tree canopy tours, additional mountain bike trails, new skier service sites, and a new backside campsite area.	Northstar California
Brockway Campground	A private applicant proposes to develop up to 550 campsites and associated amenities on 104 acres of a 120 acres property near Brockway summit.	Brockway summit
Projects Within Nevada County		
Truckee-Tahoe Airport Master Plan	In 2014, the Truckee Tahoe Airport updated the airport Master Plan to include modifications and additions to the airfield and terminal area and property acquisition. The primary improvements anticipated in the master plan are construction of a multi-use hangar to store aircrafts and host public events and extending and widening runway 2/20. The airport is currently expanding the vehicle maintenance shop by 2,500 square feet. Further, in July 2017, the airport Board of Directors approved building 10 new executive hangars on the west side of the airport property.	Truckee-Tahoe Airport
Projects Within Town of Truckee		
Joerger Ranch Specific Plan (PC-3)	The Town of Truckee adopted this Specific Plan in March 2015. The plan anticipates development of 24 acres of commercial uses, 13 acres of business park, 14 acres of a Business Innovation Zone, 3.5 acres of multi-family housing, and open space.	SR 267 and Brockway Road

9.2 Cumulative Effects Analysis

Effects that result from ongoing development within the project region can be greater or more severe than effects from each individual project. Such effects are identified in the following cumulative effect

analysis. This analysis also considers whether the proposed project would make a substantial contribution to any identified cumulative effects. The analysis in this Environmental Assessment concluded that with implementation of the mitigation measures identified in Chapters 4 through 8, none of the three project alternatives would result in significant adverse impacts associated with Biological Resources, Cultural Resources, Hydrology and Water Quality, and Land Use and Recreation. One alternative would avoid significant adverse impacts to visual resources while the other two would not.

The project's potential contribution to cumulative effects in the project region is evaluated below. For each topic, the geographic area applicable to the analysis is defined, the types and extent of cumulative effects are identified, and the project's contribution to each effect is assessed.

Biological Resources

The geographic area for consideration of cumulative impacts to biological resources is all of Martis Valley, which consists of approximately 70 square miles (44,800 acres) in Placer and Nevada counties. Features that support biological resources in Martis Valley include Donner Lake, Martis Reservoir, the Truckee River and associated tributaries to the Truckee River (e.g., Martis Creek, Donner Creek, Cold Creek, Juniper Creek). Vegetation communities in Martis Valley include sagebrush scrub, mixed coniferous forest, montane chaparral, ruderal (which describes areas that have been affected by development or other disturbance), montane meadow, red fir forest, and riparian scrub.

Cumulative Effect 9A: Result in Habitat Loss, Including Loss of Federally-Protected Wetlands

Development in the project region would result in direct and indirect effects to habitats and vegetation communities, as well as the wildlife that rely on those habitats. As identified in the Martis Valley Community Plan EIR, adverse effects on habitats in the region would include loss of habitat and forage lands, habitat degradation due to encroaching urbanization, habitat fragmentation, obstruction of movement corridors, and conflicts between wildlife and human activity. Development under the Martis Valley Community Plan is expected to result primarily in the loss of mixed conifer forest habitat (over 2,200 acres). It would also directly affect approximately 149 acres of montane meadow, 127 acres of great basin sagebrush scrub, 21 acres of red fir forest, 16 acres of montane chaparral, and 1 acre of riparian scrub. Development of the Joerger Ranch Specific Plan would also result in the loss of approximately 55 acres of sagebrush scrub habitat. The total loss of habitat areas in the cumulative condition represents a significant environmental change in the region.

The proposed Martis Valley Trail project would contribute to loss of the habitats through which the trail passes. The project would affect sagebrush scrub, wet meadow, open water, and dry meadow habitats. As identified in Chapter 4, Biological Resources, the MVT project would affect small amounts of each habitat type – specifically under the three paved trail alternatives, it would result in the loss of approximately 4 acres of sagebrush scrub, 0.17 acres of wet meadow, and 0.009 acres of open water. Under the Paved Trail within the MCLDP Alternative the project would also result in the loss of up to 0.01 acres of dry meadow. Based on the limited extent of habitat loss resulting from the MVT project and the location of the proposed project within an area where the affected habitats have already

experienced some disturbance, and with implementation of *Mitigation Measures 4A.1, 6.1a, 6.1b, 6.1c, and 6.1d*, the proposed project's would not contribute to adverse cumulative effects of habitat loss and loss of federally-protected wetlands.

Cultural Resources

The geographic area for consideration of cumulative effects to cultural resources is all of Martis Valley, which supports extensive archaeological resources associated with Native American activities and historic resources associated with settlement and economic development, as discussed in Chapter 5, Cultural Resources.

Cumulative Effect 9B: Loss of Cultural Resources

Ongoing development in the project region would adversely affect cultural resources by disturbing archaeological and historic resource sites. As noted in the Martis Valley Community Plan EIR, development anticipated under that plan as well as expansions of recreational land uses in the vicinity could conflict with known cultural resources and culturally sensitive areas. Ongoing development in this highly sensitive area could reduce the integrity and continuity of the regional resource base, particularly if effects occur before important data from resource sites can be inventoried, evaluated and interpreted, resulting in a significant adverse cumulative effect.

Both trail segments 1B-2 and 3A have been designed to avoid and minimize effects to cultural resources where feasible; for example, under the Paved Trail within the MCLDP Alternative Segment 3A uses the existing alignment of the Tomkins Memorial Trail while under the other two paved trail alternatives, Segment 3A would be located within the Caltrans easement. Either of these locations would reduce the amount of new disturbance to the archeological sites in that portion of the study corridor. However, potential disturbance to surface and subsurface artifacts would occur under any of the paved trail alternatives.

As discussed in Chapter 5 Cultural Resources, a Research Design and Testing Plan was prepared and implemented to further evaluate the archeological resource present within the Paved Trail within the MCLDP Alternative and to define a treatment plan to identify specific measures to minimize direct and indirect effects to each site. Measures to minimize direct impacts would likely include: preservation and archeological monitoring and/or data recovery (including metal detection, archeological excavation, focused archival research, and enhanced documentation involving detailed mapping and photography). Data recovery measures for affected resources within the Corps' MCLDP would likely be prepared and implemented as part of a Memorandum of Agreement between NCSD, Corps, and the State Historic Preservation Office (SHPO), and in consultation with the Washoe Tribe. To minimize indirect effects to cultural resources, interpretation may be included in the treatment plan. Interpretation could reflect either an individual site or feature or various elements of a site type or feature type that represent a particular prehistoric or historic theme such as Washoe culture or historic mining, logging and ranching.

Mitigation Measure 5A.1 requires that the limits of the area of disturbance shall be flagged or otherwise demarcated when in the vicinity of all known archaeological resource sites, that the alignment be kept

within previously disturbed areas as much as possible, and that subsurface disturbance be restricted to 8 inches below existing grade where the trail crosses areas of special archaeological concern. *Mitigation Measure 5A.2* identifies assessment and protection measures that must be implemented if archaeological resources are encountered during earth-disturbance. This mitigation would ensure that appropriate interpretation and data recovery is conducted to obtain the relevant scientific and cultural information from each affected site such that the project would not have an adverse effect or contribute to cumulative adverse effects to cultural resources in the project region.

Hydrology and Water Quality

The assessment of cumulative effects to hydrology and water quality considers the overall watershed that drains to the Truckee River downstream of Lake Tahoe, known as the Middle Truckee River Basin. This watershed covers 1,190 square miles that include portions of Nevada, Placer and Sierra counties in California and portions of Washoe, Storey and Lyon counties and Carson City in Nevada. In California, the watershed includes the drainage areas surrounding the Truckee River between Lake Tahoe and the Town of Truckee, the Donner Lake drainage area west of Truckee, the Martis Creek drainage south and east of Truckee, the Prosser Creek and Little Truckee River drainage areas north and east of Truckee, and the upper Truckee Canyon below Hirschdale to the Nevada state line at Verdi.

The proposed project is located within the Martis Creek drainage area, which covers 26,204 acres (Truckee River Watershed Council 2011). The primary drainage feature in the project area is Martis Creek. This creek and several drainages that are tributary to the creek flow through Martis Valley, into the dammed Martis Creek Lake, and below the dam to a confluence with the Truckee River south of Interstate 80.

Cumulative Effect 9C: Alter Drainage Conditions and/or Impair Water Quality

Ongoing development within the Middle Truckee River Basin would alter drainage conditions, rates, volumes, and water quality, which could result in potential flooding and stormwater quality effects within the watershed. Such ongoing development could result in a significant adverse change in the environment associated with water quality and drainage. However, all projects would be required to meet state and federal standards for management of stormwater runoff and protection of water quality. Compliance with these standards is expected to ensure that each individual project reduces its impacts to drainage and water quality to a less than significant level. This would result in there being no adverse cumulative impacts to drainage and water quality.

As discussed in Chapter 6, Hydrology and Water Quality, under each of the paved trail alternatives, the project would slightly increase stormwater runoff from the project site into Martis Creek and its tributaries. However, the project would not change watershed size or locations, would maintain existing stormwater infiltration and sheet flow conditions, and would not substantially change water surface elevations and floodplains. Therefore, the project would not adversely affect local or regional drainage patterns. Further, *Mitigation Measures 6A.1* through *6A.4* require implementation of Best Management Practices to avoid erosion and ensure that the project does not impair water quality during construction and during use and maintenance of the trail. Implementation of these mitigation measures would avoid

significant increases in runoff and impairment of water quality from the project, which would ensure that the project would not contribute to adverse changes in drainage conditions under the cumulative development scenario.

Land Use and Recreation

The cumulative effect assessment for effects related to land use and recreation considers use of existing and future recreational amenities in Martis Valley, the Town of Truckee, and the greater Tahoe region. When fully constructed, the proposed Martis Valley Trail would provide a connection between the Town of Truckee and the Lake Tahoe basin through Martis Valley, and some users of the Martis Valley Trail would be expected to also use recreational amenities in the Town of Truckee and/or the Lake Tahoe basin.

Cumulative Effect 9D: Use of Existing Recreational Facilities

Ongoing development in and surrounding Martis Valley is expected to lead to increases in the year-round and seasonal population in the region. This would increase demands for recreational facilities. If no new recreational facilities are provided, use of existing facilities would increase, which may lead to deterioration and overcrowding of existing facilities and increased maintenance and staffing requirements. The Martis Creek Lake and Dam Master Plan (Corps 2016) identifies several potential projects that would increase or enhance recreational opportunities to better accommodate the increased visitation to the facility.

The proposed Martis Valley Trail would have a beneficial impact on recreation by enhancing the recreational amenities in the region and ultimately providing a connection to other regional trails. It is also expected that local and regional land use agencies and public service districts would continue to implement recreation plans, such as the Town of Truckee *Trails and Bikeways Master Plan* and the 2010 *Lake Tahoe Regional Bicycle and Pedestrian Plan*. In addition, residential and commercial development is expected to include or contribute to development of new recreational opportunities consistent with local and regional land use plans and policies. Compliance with the local and regional land use plans and policies and ongoing implementation of recreation planning in the region is expected to provide sufficient recreational amenities to support the anticipated year-round and seasonal population of the region.

Although projects such as the Martis Valley Trail and CalPeco power line upgrade may create short-term restrictions on recreational access during construction, the trail and other similar past, present, and reasonably foreseeable future related projects are not expected to result in long-term negative impacts to recreational access or opportunities. The proposed Martis Valley Trail would provide additional recreational facilities while not increasing the year-round or seasonal populations of the region. Therefore the proposed project would not alter the cumulative scenario with respect to adverse effects associated with use of recreational facilities. There would be no adverse effects to land use and recreation in the cumulative scenario.

Visual Resources

The geographic area for analysis of cumulative effects to visual resources is the Martis Valley. As noted in the Martis Valley Community Plan EIR, roadways outside of the community plan area do not provide views of the Martis Valley as topography, vegetation, and other existing development intervene.

Cumulative Effect 9E: Existing Scenic Resources and Scenic Vistas

Buildout of the Martis Valley Community Plan and other development in Martis Valley (such as expansion of the Northstar California resort) is expected to substantially alter landscape characteristics in Martis Valley, particularly as viewed from the portion of State Route 267 that occurs within the Community Plan area, the Martis Creek Lake and Dam Project, and public roads and trails. The landscape changes noted in the Martis Valley Community Plan EIR include the addition of structures (residential and commercial), roads, golf courses, and recreational trails to areas that are currently forested or within the open valley.

As discussed in Chapter 8, Visual Resources, development of trail Segments 1B-2 and 3A would introduce a paved trail feature and more frequent views of trail users to views of the open valley from SR-267 and from the Wildlife Viewing Area. Although the degree of change in scenic views would vary among the three paved trail alternatives, in general the project would not contribute significantly to cumulative loss of visual resources.

Due to the topography of the project site, the Paved Trail within the MCDLP Alternative would not be visible from SR-267, other than intermittent views of Segment 3A where it is closest to the highway. However, under the Paved Trail within the Caltrans Easement Alternative, both Segments 1B-2 and 3A would be visible from SR-267, which is designated by Placer County as a Scenic Route due to the expansive vistas of Martis Valley (Placer County 2003). The project does not propose substantial vegetation removal that would be visible from SR-267 or the Wildlife Viewing Area and disturbed areas adjacent to the trail shoulders would be revegetated with native plants as required under Mitigation Measure 8.1A. Areas adjacent to the study corridor for each alignment through Martis Valley are designated to remain in open space, thus ongoing development in the area is not expected to alter the local viewsheds that include the project area. Because other development would not occur within or adjacent to the Martis Creek Lake Project area portion of the valley, the project would not contribute to adverse cumulative visual resource impacts.

9.3 References

Corps (U.S. Army Corps of Engineers). 2016. *Martis Creek Lake Master Plan*.

Placer County. 2003. *Martis Valley Community Plan*. May 2003.

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