



Clean Water Act Section 401 Water Quality Certification Application

Please refer to the "Clean Water Act Section 401 Water Quality Certification Application Guidance" document for assistance with completing this application.

A. Pre-Filing Meeting	
Please provide the date that a pre-filing meeting was requested from Nevada Division of Environmental Protection (NDEP) Bureau of Water Quality Planning (BWQP).	February 25, 2026
<i>Note: If a pre-filing meeting has not been requested, please schedule a pre-filing meeting with NDEP BWQP.</i>	Meeting was held March 5, 2026

B. Contact Information	
Project Proponent Information	
Company Name: Humboldt-Toiyabe National Forest	Address: HTNF Carson Ranger District 1536 S Carson St
Applicant Name: Humboldt-Toiyabe National Forest	City: Carson City
Phone: 775-882-2766	Fax: State: NV
Email: Matthew.Zumstein@usda.gov	Zip Code: 89701
Agent Information	
Company Name: Ascent, Inc.	Address: 455 Capitol Mall, Suite 300
Agent Name: Pamela Brillante	City: Sacramento
Phone: 916-661-7930	Fax: State: CA
Email: pam.brillante@ascent.inc	Zip Code: 95814

C. Project General Information			
Project Location			
Project/Site Name: Tahoe Meadows Interpretive Trail Improvements Project		Name of receiving waterbody: Ophir Creek	
Address: Humboldt-Toiyabe National Forest		Type of waterbody present at project location (<i>select all that apply</i>): ☒ Perennial River or Stream ☒ Intermittent River or Stream ☒ Ephemeral River or Stream ☐ Lake/Pond/Reservoir ☒ Wetland ☐ Other: _____	
City: Not applicable			
County: Washoe			
State: Nevada			
Zip Code: 89704			
Latitude (UTM or Dec/Deg): 39.307230		Longitude (UTM or Dec/Deg): -119.905167	
Township: 19N	Range: 19E	Section: 30	¼ Section:

Project Details		
Project purpose:	See Attachment A – Supplemental Information (page 1)	
Describe current site conditions: Attachments can include, but are not limited to, relevant site data, photographs that represent current site conditions, or other relevant documentation.	See Attachment A – Supplemental Information (pages 1-3)	
Describe the proposed activity including methodology of each project element:	See Attachment A – Supplemental Information (pages 1-6, Figure 3)	
Estimate the nature, specific location, and number of discharge(s) expected to be authorized by the proposed activity:	See Attachment A – Supplemental Information (page 7, Figure 4)	
Provide the date(s) on which the proposed activity is planned to begin and end and the approximate date(s) when any discharge(s) may commence:	See Attachment A – Supplemental Information (page 7)	
Provide a list of the federal permit(s) or license(s) required to conduct the activity which may result in a discharge into regulated waters (see mandatory attachments):	Clean Water Act Section 404 NWP #18 – Minor Discharges (non-reporting) (Regulatory Request System Tracking Number 47012), Clean Water Action Section 401 Water Quality Certification	
Provide a list of all other federal, state, interstate, tribal, territorial, or local agency authorizations required for the proposed activity and the current status of each authorization:	US Fish and Wildlife Service Biological Opinion (File No. 2025-0029432); Nevada State Historic Preservation Office Concurrence of No Historic Properties Affected in accordance with Section 106 (R2024041703193).	
Total area of impact to regulated waterbodies (acres):	0.0004 acre	
Total distance of impact to regulated waterbodies (linear feet):	19.8 linear feet	
Amount excavation and/or fill discharged within regulated waters (acres, linear feet, and cubic yards):	Temporary:	Permanent:
	0.0 acre	0.0004 acre 19.8 linear feet 1.5 CY of excavation and fill within 2 ephemeral drainages
Amount of dredge material discharged within regulated waters (acres, linear feet, and cubic yards):	Temporary:	Permanent:
	0.0 acre	0.0 acre
Describe the reason(s) why avoidance of temporary fill in regulated waters is not practicable (if applicable):	Temporary fill in regulated waters is not proposed as part of this project.	

Describe the Best Management Practices (BMPs) to be implemented to avoid and/or minimize impacts to regulated waters: Examples include sediment and erosion control measures, habitat preservation, flow diversions, dewatering, hazardous materials management, water quality monitoring, equipment or plans to treat, control, or manage discharges, etc.	See Attachment A – Supplemental Information (page 13)
Describe how the activity has been designed to avoid and/or minimize adverse effects, both temporary and permanent, to regulated waters:	See Attachment A – Supplemental Information (page 13)
Describe any compensatory mitigation planned for this project (if applicable):	Not applicable.

D. Signature		
Name and Title (Print): Matthew D. Zumstein District Ranger	Phone Number: 775-884-8100	Date:
 Digitally signed by MATTHEW ZUMSTEIN Date: 2026.07.28 10:44:44 -07'00' Signature of Responsible Official		

Mandatory Attachments:

- **Federal Permit or License Application** - A copy of the federal permit or license application and any readily available water quality-related materials that informed the development of the federal license or permit application.
- **Site Map** - A map or diagram of the proposed project site including project boundaries in relation to regulated waters, local streets, roads, and highways.
- **Engineered Drawings** - Engineered drawings are preferred to be submitted at the 70% design level. If only conceptual designs are available at the time of application, plans for construction should be submitted prior to the start of the project. Specific locations of the proposed activities and details of specific work elements planned for the project should be identified (e.g., staging areas, concrete washouts, perimeter controls, water diversions, or other BMPs).

Submit the completed application materials to NDEP (ndep401@ndep.nv.gov) with the appropriate U.S. Army Corps of Engineers Regulatory Office copied on the communication (<http://www.spk.usace.army.mil/Missions/Regulatory/Contacts/Contact-Your-Local-Office/>).

Attachment A

Tahoe Meadows Interpretive Trail
Improvements Project
Water Quality Certification
Supplemental Information

TAHOE MEADOWS INTERPRETIVE TRAIL IMPROVEMENTS PROJECT WATER QUALITY CERTIFICATION SUPPLEMENTAL INFORMATION

Continued from Clean Water Act Section 401 Water Quality Certification form:

1 SECTION C: PROJECT GENERAL INFORMATION

1.1 INTRODUCTION AND PURPOSE

This permit application was prepared by Ascent on behalf of the project applicant, Humboldt-Toiyabe National Forest (HTNF), in collaboration with Tahoe Rim Trail Association (TRTA), for the proposed Tahoe Meadows Interpretive Trail Improvements Project. The proposed project is located in Washoe County, Nevada, approximately 10 miles north of Incline Village (Figures 1 and 2). Tahoe Meadows, including the project area, is located outside of the Tahoe Basin.

Most trails in the Tahoe region (Tahoe Basin and surrounding areas) that meet accessibility requirements are paved multi-use trails lending to the feel of a more built environment. There are vast amounts of recreation opportunities in the Tahoe region, yet none provide a backcountry experience that is accessible to users of all abilities. Improvements to the Tahoe Meadows Interpretive Loop Trail will make this trail a destination for all trail users seeking an accessible backcountry experience.

The proposed project would provide increased opportunities for recreation users with a range of abilities to participate in outdoor activities on the Tahoe Rim Trail (TRT) while minimizing or avoiding impacts on the environmental resources (e.g., biological resources, heritage resources, water quality) in this area. The interpretive trail would not be designated as an Americans with Disabilities Act- (ADA-) and Architectural Barriers Act- (ABA-) compliant trail but would be constructed to meet as many ADA and ABA guidelines as possible.

This document provides supplemental information to that included in the Nevada Division of Environmental Protection (NDEP) Clean Water Act Section 401 Water Quality Certification Application Form. Supplemental information is provided only for those sections of the application form where a full response could not be given in the space provided.

1.2 PROJECT DETAILS

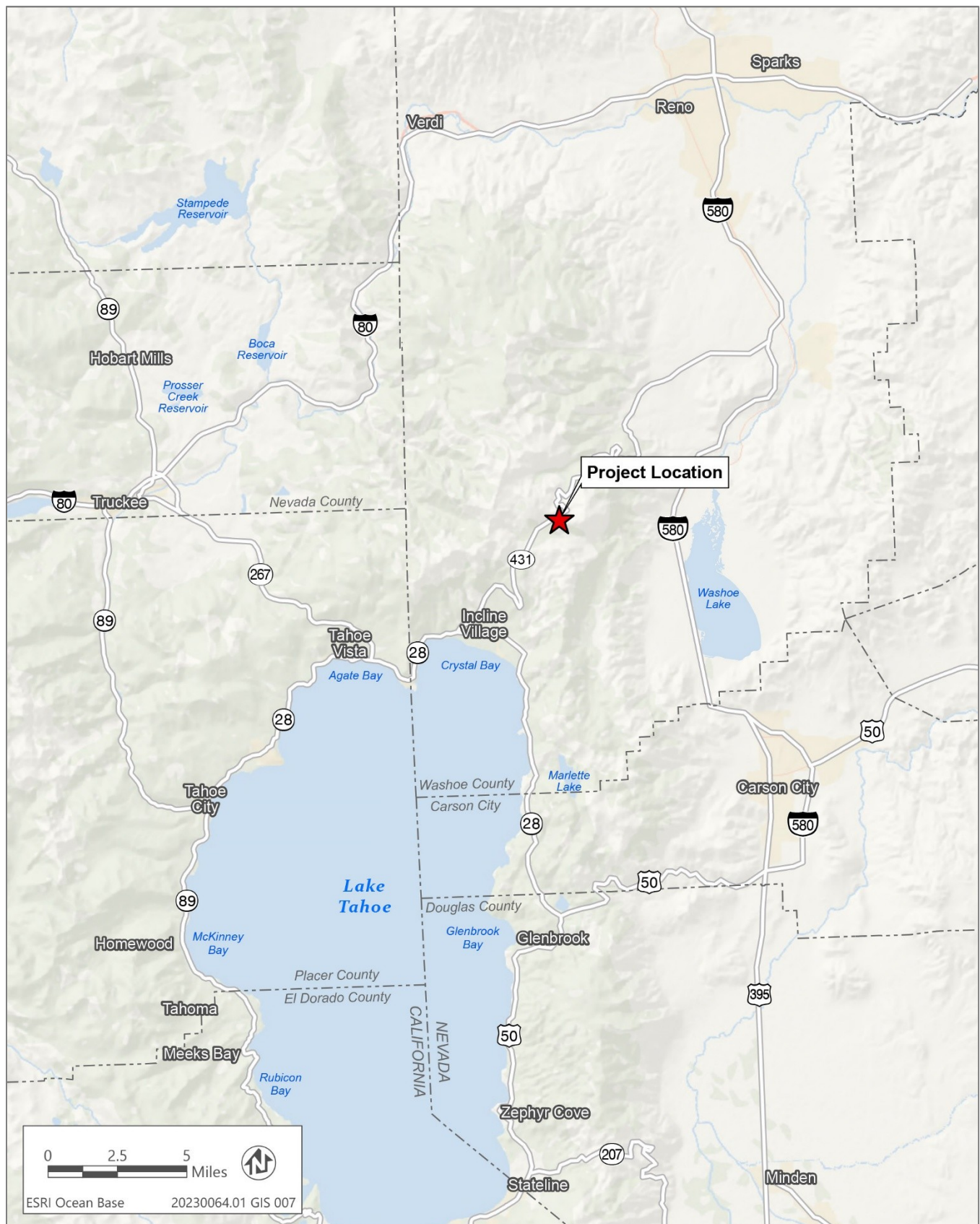
1.2.1 Current Site Conditions

The existing Tahoe Meadows Interpretive Trail is a 1.3-mile loop trail that circumvents Tahoe Meadows, a high elevation meadow containing the headwaters and upper reaches of Ophir Creek. Tahoe Meadows sits at approximately 8,700 feet elevation in the valley between Mount Rose and Relay Peak and is bordered on the north by Nevada State Route 431 (Mount Rose Highway). It is characterized by subalpine conifer and wetland meadow habitat. A dense group of whitebark pines (*Pinus albicaulis*) (listed as Threatened under the Federal Endangered Species Act) are located adjacent to the trail in the southeastern portion of the trail and are in poor health. The transition zone into mixed conifer habitat lies along the outer boundaries of the interpretive trail.

The trail is in a floodplain and at an elevation susceptible to snow for prolonged periods. The existing trail contains multiple bridges and boardwalks for crossing streams and wetlands, a recommended one-way directional flow, and accessibility signage. Trail erosion and drainage issues are common throughout the trail. Some existing culverts are impaired. The northern portion of the trail is a former road (approximately 12 to 15 feet wide) and is wider than other portions of the trail. This section of trail contains remnants of asphalt in some areas. In addition, the northeastern portion of the trail bisects an existing scrub wetland and water flows across the trail or the trail is saturated in this area during wetter periods of the year. Photos of site conditions as of fall 2024 are presented below.



Source: Design Workshop 2024.



Source: Adapted by Ascent in 2025.

Figure 1 Tahoe Meadows Interpretive Trail Improvements Project Regional Location Map

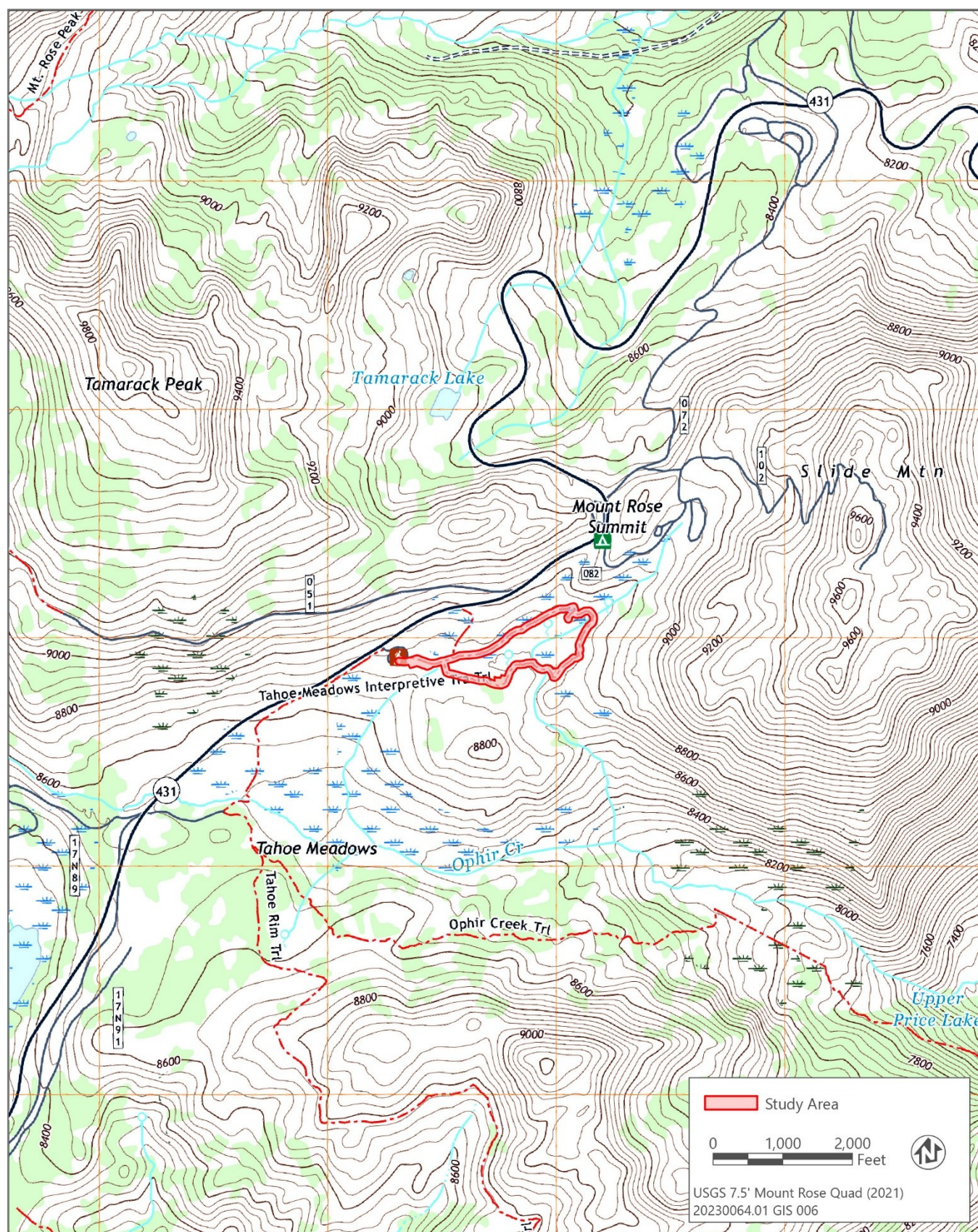


Figure 2 Tahoe Meadows Interpretive Trail Improvements Project Study Area Topo Quad Map

1.2.2 Proposed Activity

The Carson Ranger District of the HTNF is proposing improvements to the Tahoe Meadows Interpretive Trail. A conceptual plan for the proposed trail improvements was prepared in 2024 using National Wetland Inventory data. The conceptual plan was subsequently revised to replace the mapped aquatic features with the aquatic resources identified during the delineation and is presented in Figure 3. Final design for this project will be based on the aquatic resources delineation map from the preliminary jurisdictional determination (SPK-2025-00739) provided by US Army Corps of Engineers (USACE) on February 2, 2026, and will be designed to avoid impacts to waters of the United States to the greatest extent practicable. The final design is not anticipated to deviate substantially from the conceptual plan presented in Figure 3 and no additional excavation or fill in waters beyond what is detailed in Section 1.2.3 “Aquatic Resources Impacts” below, is expected. Trail planning and design activities are a collaboration between US Forest Service and TRTA.

The proposed activity includes improvements to the existing trail that include hardening the trail’s existing natural surface and recontouring the grades to meet ADA and ABA standards, where possible, widening the trail to allow people with mobility difficulties to pass one another, replacing an existing bridge and three existing boardwalks, adding a new boardwalk, improving any steps or rock encroachments to widen and ease movement, adding areas for rest, and enhancing scenic views for all users. Additional trail improvements consist of brushing and removing boulders to support widening the trail, evening out grade, compaction, and resurfacing. In addition, a dense group of whitebark pines are located adjacent to the trail and are in poor health and would be removed, as needed. The project has completed Section 7 consultation to address impacts to whitebark pine, US Fish and Wildlife Service issued a Biological Opinion (File No. 2025-0029432) for the project on May 15, 2025. Other woodland shrubs, meadow grasses, and trees would be removed where necessary to accommodate trail widening. Approximately 10 to 20 trees of varying species and height would be cut and disposed of offsite. There would be no trees greater than 15 inches in diameter at breast height removed.

The trail surface would mostly like be composed of compacted decomposed granite or other compacted native soils. The trail would require routine grading as part of normal trail maintenance activities conducted annually by TRTA. The northern portion of the trail is a former road (approximately 12 to 15 feet wide) and is wider than other portions of the trail. The proposed activity includes converting this section of trail from road back to trail and removing remnants of asphalt from this former road. This would improve trail user experience by narrowing the trail and improving drainage to protect wetland features adjacent to the trail. The target trail width for the singletrack portion of the trail loop would be 48 inches with some short sections reducing to a minimum of 36 inches wide. The former road section of the trail loop would continue to range from 10-15 feet wide. For sections of trail that would have less than 60 inches wide passing space, resting intervals would be provided approximately every 1,000 feet. An estimated 20 rest areas are proposed, each with an area of approximately 25 square feet. However, only about 12 of proposed locations would need to be widened a few feet beyond the existing footprint of the trail to meet guidelines. The remaining eight rest areas are located on the old roadbed or within the existing trail footprint that is currently wider than the desired 60 by 60 inches dimensions and would be narrowed as part of the project. Rest areas would be located outside of aquatic features. The trail cross slope would have a maximum of 2-5 percent slope. The interpretive trail would have a target grade of 2-10 percent with no more than 30 percent of the total length of the trail having a running slope steeper than approximately 8 percent. The total disturbance acreage would be about 0.8 acres. New signage would be installed to better inform trail users about trail accessibility and upgrades implemented during construction.

This project would also address trail erosion by improving drainage through culvert replacement or installation. Pending final design, three new culverts may be installed in place of existing foot bridges. Two of these culverts would be installed in ephemeral drainages. The third culvert would be installed to convey intermittent overland sheet flow and localized surface runoff through an area that lacks a defined bed and bank and is not considered a jurisdictional aquatic resource under federal or state regulations. A new boardwalk would address existing direct impacts on the scrub wetland that is currently bisected by the existing trail.

Implementing the proposed activity would involve technical trail work to improve the trail to meet accessibility standards. Proposed construction equipment consists of mini excavators, skid steer and mini skid steer, yard dumpers, roller, and hand tools such as a plate compactor, power wheelbarrow, generators, and jackhammers. During trail construction, the trail would be closed to the public. The installation would be accomplished by professional services in partnership with the US Forest Service and volunteer labor when feasible. The paved trailhead parking lot would be used as a staging area during construction.

1.2.3 Aquatic Resources Impacts

Two culvert installations may occur within waters. These installations are pending final design and may not be included in the final design. Instead, the existing footbridges may remain in place. If culvert installation is included in final design, excavation and fill would occur within two ephemeral drainages (R6-7 and R6-8) (Figure 4) (for further details on the aquatic resources in the project area, see Appendix A - Aquatic Resources Delineation Report). Following issuance of the Preliminary Jurisdictional Determination dated February 2, 2026, minor refinements to the aquatic resource mapping were identified during final engineering coordination and GIS QA/QC review. The figure showing regulated waters impacts included herein supersede the previously submitted mapping and reflect corrected feature boundaries and acreage calculations. These revisions do not substantially alter the overall aquatic resource characterization or the proposed permitting approach.

Approximately 0.0004 acres (19.8 linear feet) of ephemeral drainage (R6-7 and R6-8) would be permanently affected as a result of culvert installation. The current footbridges would be removed and a steel corrugated metal culvert 18 inches in diameter and extending at most 2 feet beyond the trail in either direction would be installed (for a maximum length of 11.26 feet). Each culvert would have up to 0.5 cubic yards excavation and the trench for the culvert would be dug by a mini excavator. Soils from the excavation would be stored outside the delineated limits of the ephemeral drainages until backfilling is completed. Up to one cubic yard of native or aggregate fill would be added as part of culvert installation. It is anticipated that work within each of the ephemeral drainages R6-7 and R6-8 would be completed in a single day.

1.2.4 Anticipated Construction Timeframe

The duration of the project would be from summer 2026 through fall 2028. Work would be phased over 3 years as follows:

- ▶ Phase 1 (2026): Work would occur on the south half of the trail, including tread improvements such as grading, surfacing, compaction, and drainage features, and boardwalk replacements. Culvert installation within the two ephemeral drainages R6-7 and R6-8 would be expected to occur in 2026.
- ▶ Phase 2 (2027): Work would occur on the north half of the trail, including road to trail conversion, grading, surfacing, compaction, drainage features, clean up and naturalization and construction of the new boardwalk on the northeast corner.
- ▶ Phase 3 (2028): Work would involve replacement of the bridge, installation of new signage, and final clean up and naturalization, if needed.

The estimated start date for construction depends on permit approvals. The estimated end date for construction activities in 2026 is dependent on snowfall. For subsequent years (2027 and 2028), work would occur from approximately June 1 – October 30, pending the start and end of the snow season.

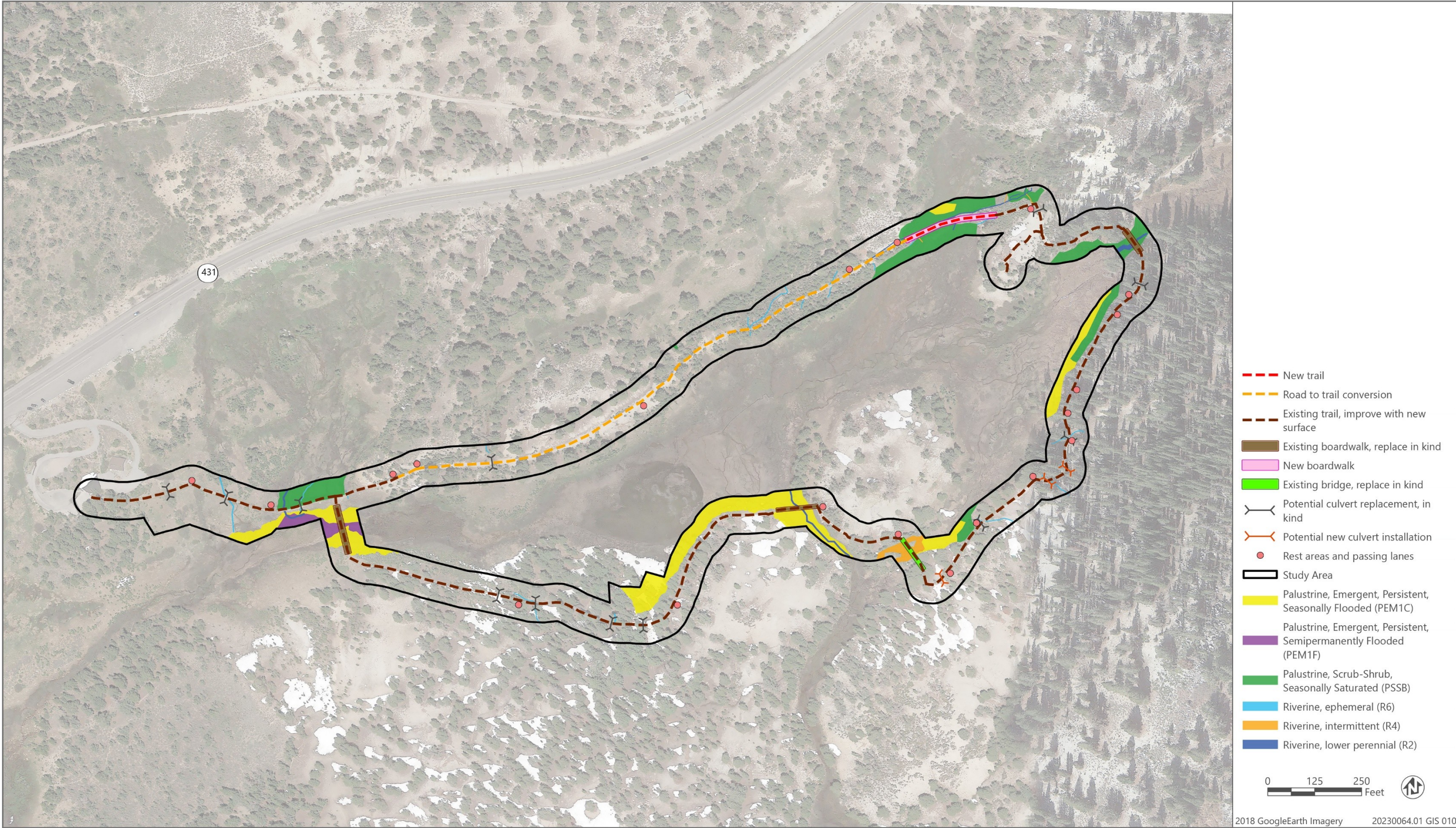


Figure 3 Conceptual Trail Improvement Plan



Source: Adapted by Ascent in 2026.

Figure 4 Tahoe Meadows Interpretive Trail Improvements Project Aquatic Resources Impacts

1.2.5 Best Management Practices

Although the construction activities described above have the potential to adversely affect surface and groundwater quality, all construction activities will utilize and be required to comply with the *National Best Management Practices for Water Quality Management on National Forest System Lands* guidance.

The various BMPs proposed for the project are described below. The locations within the project site where these BMPs would be installed are still being finalized. Location details can be provided to NDEP when available.

Precipitation Forecast: The forecast will be monitored daily to anticipate any storms, and work that could contribute to erosion and sedimentation will be minimized, especially before predicted storms.

Perimeter Fencing: All staging areas would be surrounded by perimeter fencing and control measures where required to minimize the footprint of the staging areas and prevent stormwater discharge.

Straw Wattles and Silt Fence: A combination of straw wattles and silt fence will be utilized to contain open graded soils from entering sensitive resources such as surface waters. Straw wattles will be placed on the downhill side of stockpiles and along corridors of open graded soils, and plastic may be used to cover loose soils during storms.

Staging Area: Areas would include perimeter protection, spill kits, stockpile protection, inlet/egress protection, and street sweeping if needed. Staging areas would include sufficient BMP materials to implement those BMPs prescribed in the SWPPP.

Fueling: Fueling and maintenance will take place on paved parking lots.

Pollutants: Spill kits will be on site any time heavy equipment is being used. In the event of oil, fuel, and hydraulic fluid leaks, clean-up would be conducted as soon as possible. If the leak is on pavement or a compacted surface, an oil absorbing product would be applied. Once the clean-up product has absorbed the leak it would be swept up and disposed of according to federal, state, and local regulations. If the leak occurs on soil, the contaminated soil would be removed and disposed of according to federal, state, and local regulations. In the event of a major leak the following actions would be taken:

- ▶ Contain the spread or migration of the spill, using on-hand supply of erosion control structures and/or by creating dirt berms, as feasible and necessary, and;
- ▶ Within 24 hours of an identified reportable spill, a US Forest Service or TRTA designated representative would notify the following agency:
 - Nevada Division of Environmental Protection, Bureau of Water Pollution Control, (775) 687-4670 ext. 3149.

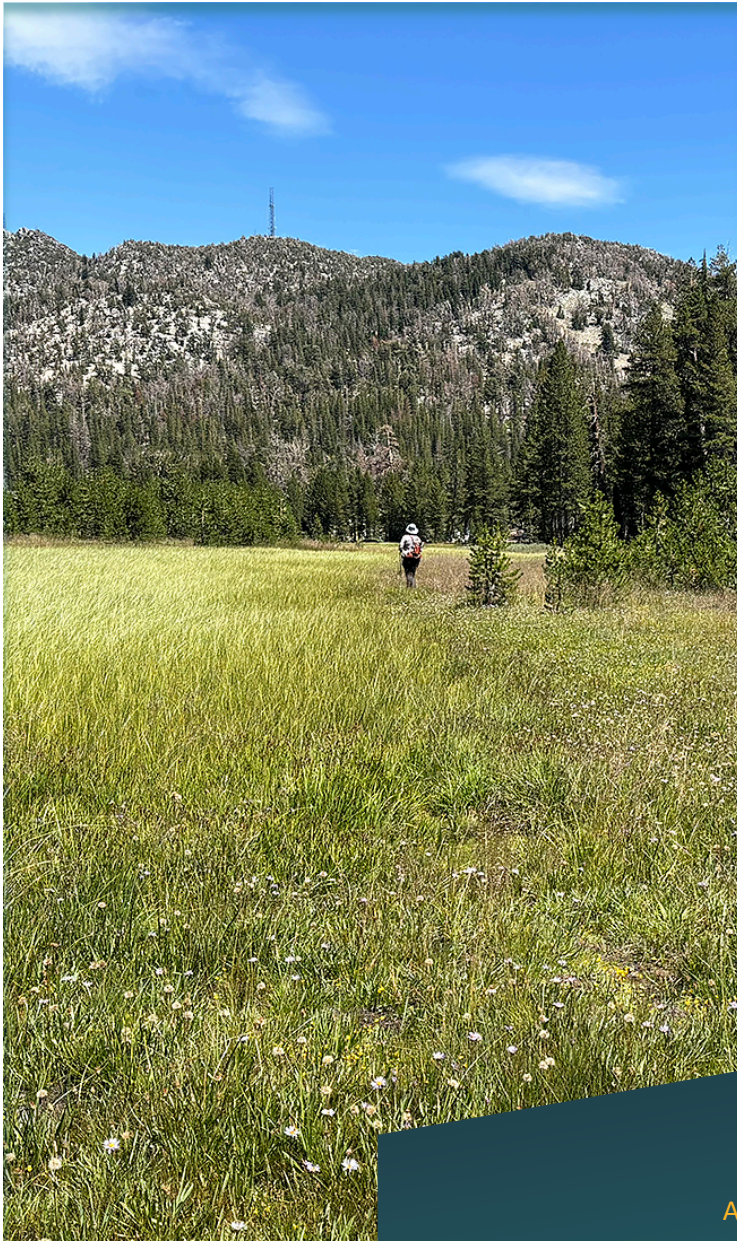
1.2.6 Avoidance and Minimization of Adverse Effects to Regulated Waters

An aquatic resources delineation was conducted in August 2024 to inform project design. Project elements, such as rerouting the trail alignment and siting of rest areas were adjusted, or in the case of the trail reroute, eliminated from project design, in order to avoid or minimize impacts to aquatic resources. By adjusting the proposed project elements, potential impacts to aquatic resources PEM1C-3, R2-2, R2-4, PSSB-6, and R6-9 were avoided, and impacts to aquatic resources R6-7 and R6-8 were minimized to the maximum extent possible (see Aquatic Resources Delineation Map in Attachment B). Erosion and sediment controls will minimize sedimentation impacts to the aquatic resources. The culverts would be installed and stabilized in a manner that would prevent erosion once complete.

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Attachment B

Aquatic Resources Delineation Report



AQUATIC RESOURCES DELINEATION REPORT

Tahoe Meadows Interpretive Trail Improvements Project

PREPARED FOR:



Tahoe Rim Trail Association

AUGUST 2025

AQUATIC RESOURCES DELINEATION REPORT

Tahoe Meadows Interpretive Trail Improvements Project Washoe County, Nevada

PREPARED FOR:



Tahoe Rim Trail Association
128 Market Street, Suite 3E
Stateline, NV 89449

CONTACT:

Morgan Steel
Executive Director

PREPARED BY:



Ascent
455 Capitol Mall, Suite 300
Sacramento, CA 95814

CONTACT:

Pamela Brillante
Ascent Environmental, Inc.
455 Capitol Mall, Suite 300
Sacramento, CA 95814
Pam.Brillante@ascent.inc

AUGUST 2025

20230064.01

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LIST OF ABBREVIATIONS

ABA	Architectural Barrier Act
ADA	Americans with Disabilities Act
AgACIS	Agricultural Applied Climate Information System
CDFW	California Department of Fish and Wildlife's
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationship
District	USACE Sacramento District
EPA	US Environmental Protection Agency
FAC	facultative
FACU	Facultative upland
FACW	facultative wetland
FGDC	Federal Geographic Data Committee
GIS	Geographic Information System
GPS	Global Positioning System
HGM	hydrogeomorphic
HUC	hydrologic unit code
NDEP	Nevada Division of Environmental Protection
NI	No indicator
NL	Not listed
NRCS	Natural Resources Conservation Service's
NWI	National Wetlands Inventory
NWPR	Navigable Waters Protection Rule
OBL	obligate
OHWM	Ordinary High Water Mark
Project	Tahoe Meadows Interpretive Trail Improvements Project
RPW	relatively permanent body of water
TNW	Traditional navigable waters
TRTA	Tahoe Rim Trail Association
UPL	Obligate upland
USACE	US Army Corps of Engineers
USGS	US Geological Survey
WMVC	Western Mountains, Valleys, and Coast

EXECUTIVE SUMMARY

Under contract to the Tahoe Rim Trail Association (TRTA), Ascent Environmental conducted a delineation of aquatic resources within the 15.35-acre study area on August 7, 14, and 20, 2024, for the Tahoe Meadows Interpretive Trail Improvements Project (Project). The Carson Ranger District of the Humboldt-Toiyabe National Forest and TRTA are proposing improvements to the Tahoe Meadows Interpretive Trail, a 1.3-mile non-motorized loop that starts and ends at the Tahoe Meadows Trailhead, to meet requirements of the Americans with Disabilities Act (ADA) and Architectural Barrier Act (ABA). Proposed improvements to the existing trail include hardening the trail's existing natural surface and recontouring the grades to meet ADA and ABA standards. Proposed improvements also include widening the trail to allow people with mobility difficulties to pass one another, upgrading bridges, improving step or rock encroachments to widen and ease movement, adding areas for rest and enjoyment, and enhancing scenic views for all users. The US Army Corps of Engineers (USACE) 1987 *Wetlands Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Environmental Laboratory 2010) were used to delineate wetlands and other waters that are potentially subject to USACE jurisdiction under the Clean Water Act (CWA). The delineation was also conducted in accordance with the 2025 *National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams (Final Version)* (David et al. 2025) and the 2014 *A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States* (Mersel and Lichvar 2014). This report was prepared to support a request for a jurisdictional determination from the USACE Sacramento District (District) and conforms to the District's *Minimum Standards for Acceptance of Aquatic Resources Delineation Reports* (USACE 2016a) and *Updated Map and Drawing Standards for the Pacific Division Regulatory Program Delineations* (USACE 2016b) as well as the USACE Regulatory Program's *Recommended Minimum Standards for Aquatic Resource Delineation Reports* (USACE 2025). This report provides necessary background information to support the preparation of permit applications under federal and state regulations related to aquatic resources.

A total of approximately 2.701 acres of aquatic resources, including wetlands, were documented within the study area. These aquatic resources consist of 0.056 acres of riverine lower perennial stream channels, 0.090 acres of riverine intermittent stream channels, 0.028 acres of riverine ephemeral stream channels, 1.067 acres of palustrine scrub shrub wetlands, and 1.460 acres of palustrine emergent persistent wetlands.

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1 INTRODUCTION

This report has been prepared to document the results and conclusions of an aquatic resources delineation and field survey conducted on August 7, 14, and 20, 2024 for the Tahoe Meadows Interpretive Trail Improvements Project. Ascent Environmental was authorized by the project applicant to conduct a delineation of aquatic resources in the project study area that may be subject to federal regulation under Sections 401 and 404 of the Clean Water Act. The purpose of this report is to identify and describe aquatic resources in the study area that may be regulated under federal and/or state laws and regulations. This report facilitates efforts to:

1. Avoid or minimize impacts to aquatic resources during the design process.
2. Document aquatic resource boundary determinations for review by regulatory authorities.
3. Provide necessary background information to support required permit applications under said regulations.

Project Proponent

Lindsey Schultz, Executive Director
Tahoe Rim Trail Association
PO Box 3267
128 Market Street, Suite 3E
Stateline, NV 89449
lindseys@tahoerimtrail.org

Delineation Contact

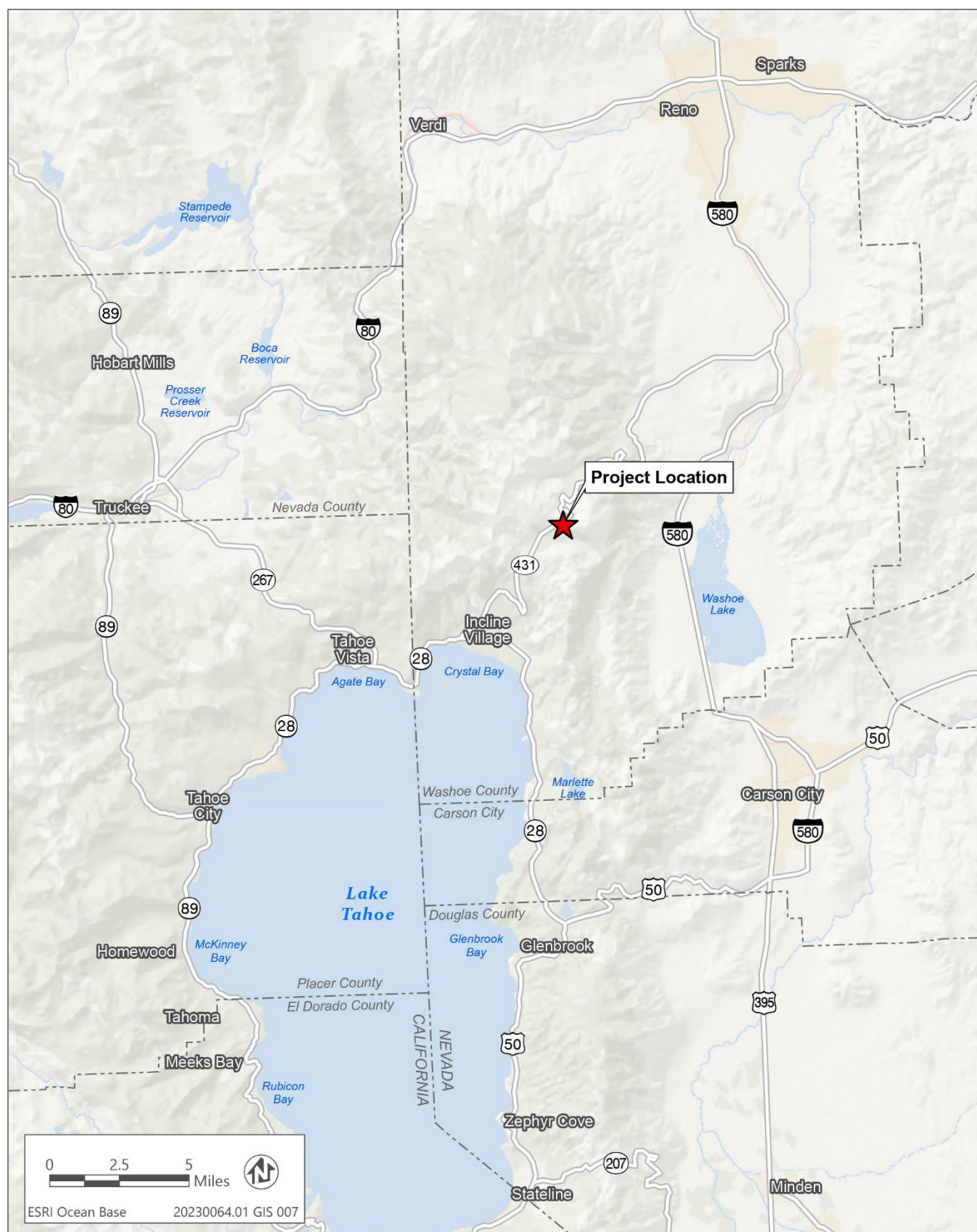
Pam Brillante
Ascent Environmental, Inc.
455 Capitol Mall, Suite 300
Sacramento, CA 95814
pam.brillante@ascent.inc

Land Owner/Manager Contact

Christopher Eddy, Recreational Management Specialist
US Forest Service, Humboldt-Toiyabe National Forest
1536 South Carson Street
Carson City, NV 89701
Christopher.Eddy@usda.gov

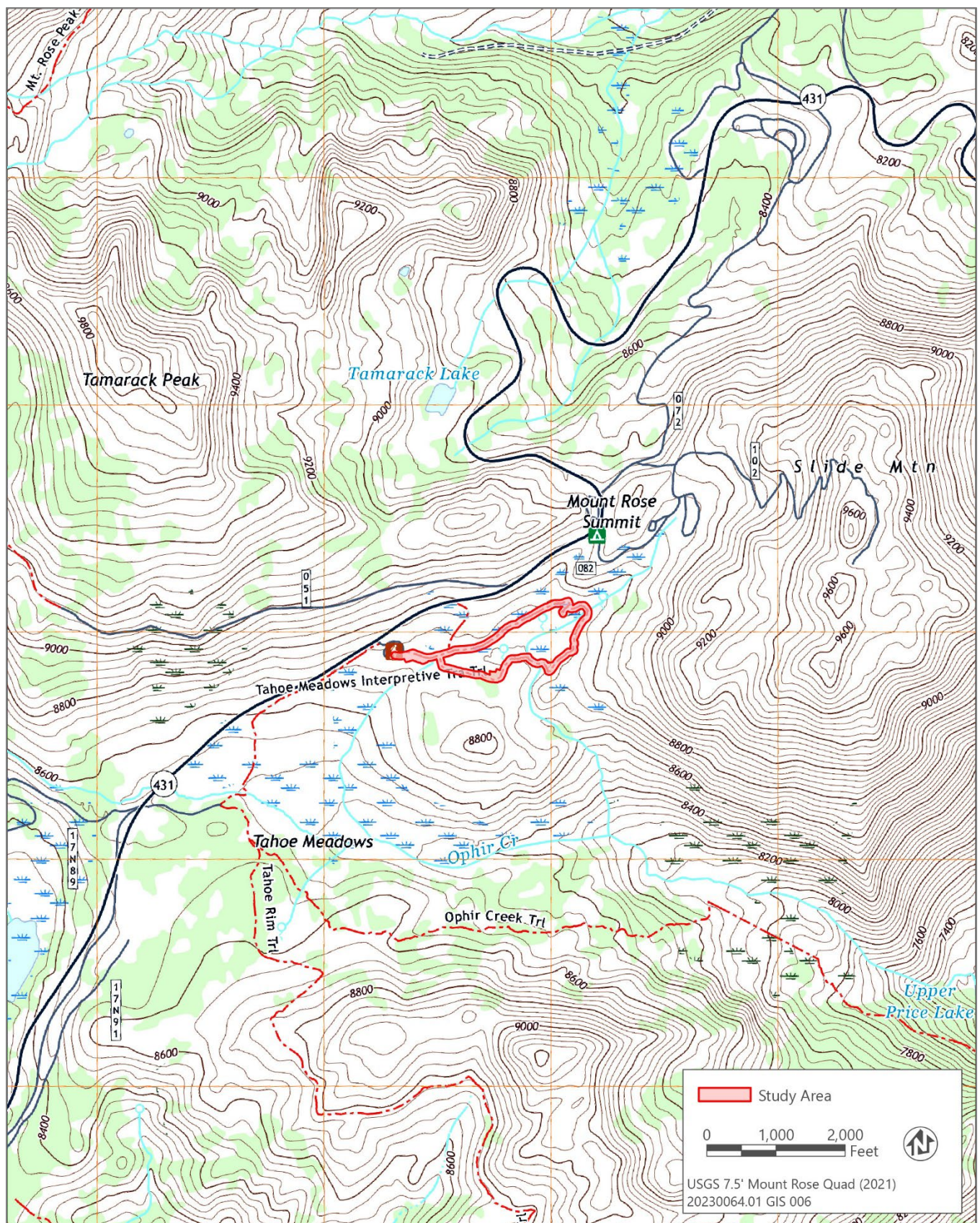
2 LOCATION

The study area consists of 15.35 acres of land situated approximately 5.0 miles north of Lake Tahoe and approximately 4.7 miles to the west of Washoe Lake in the Humboldt-Toiyabe National Forest, Washoe County, Nevada (Figure 1). The study area can be accessed via State Route 431. The study area is located within the US Geological Survey (USGS) 7.5-minute Mount Rose quadrangle within Section 30, Township 19N, Range 19E (Figure 2). The approximate centroid of the study area is 39.307230, -119.905167.



Source: Adapted by Ascent in 2025.

Figure 1 Regional Location



Source: Adapted by Ascent in 2025.

Figure 2 Study Area

Tahoe Rim Trail Association
Tahoe Meadows Interpretive Trail Improvements Project

3 REGULATORY SETTING

3.1 WATERS OF THE UNITED STATES

3.1.1 Definitions

Many of the terms used throughout this report have specific meanings with respect to the delineation of waters of the United States regulated under the CWA. These terms are defined below:

Waters of the United States: “Waters of the United States” is a threshold term in the CWA and establishes the geographic scope of federal jurisdiction under the Act. The CWA does not define “waters of the United States”; rather, it provides authority for the US Environmental Protection Agency (EPA) and the US Department of the Army to define “waters of the United States” in regulations. Since the 1970s, EPA and USACE (i.e., the US Department of the Army) have defined “waters of the United States” by regulation. Beginning in 1985, various Supreme Court Decisions [*United States v. Riverside Bayview Homes, Inc. (1985)*; *Solid Waste Agency of Northern Cook County v. US Army Corps of Engineers (2001)*; *Rapanos v. United States (2006)*; *Sackett v. Environmental Protection Agency (2023)*] have addressed the definition of “waters of the United States.”

The definition of waters of the United States subject to federal jurisdiction and concomitant CWA permitting requirements is currently in flux due to EPA and USACE (collectively “Agencies”) interpretations of that term over the last several years. In 2015, the Agencies adopted a revised waters of the United States definition (the 2015 Clean Water Rule), which was repealed by the 2019 Repeal Rule. The 2019 Repeal Rule re-codified the regulatory text that existed prior to the 2015 Rule. The agencies replaced the 2019 Repeal Rule with the Navigable Waters Protection Rule (NWPR), which went into effect on June 22, 2020. An August 30, 2021, decision by the US District Court for the District of Arizona vacated and remanded the 2020 NWPR. A “Revised Definition of ‘Waters of the United States’” rule was published in the Federal Register on January 18, 2023, and took effect on March 20, 2023. However, the 2023 “Revised Definition of ‘Waters of the United States’” is not currently operative in certain states (27 in total) due to litigation. In light of preliminary court injunctions, the agencies are interpreting “waters of the United States” consistent with the pre-2015 regulatory regime in those 27 states. In the remaining 23 states, including Nevada, the agencies are using the definition of “waters of the United States” under the final “Revised Definition of ‘Waters of the United States’” that took effect on March 20, 2023 (as amended on August 29, 2023, as described below).

On May 25, 2023, the US Supreme Court adjudicated a decision in the case of *Sackett v. Environmental Protection Agency*. In this decision, the court determined that CWA jurisdiction extends only to adjacent wetlands that have a continuous surface connection with waters of the United States—i.e., with a relatively permanent body of water (RPW) connected to traditional navigable waters, with no clear demarcation between the water and the wetland. On August 29, 2023, the EPA and USACE amended the 2023 “Revised Definition of ‘Waters of the United States’” to conform with the US Supreme Court’s decision in *Sackett*. Accordingly, the potential jurisdictional status under the CWA of aquatic features delineated within the study area for this project are evaluated under this 2023 Revised Definition as amended by the *Sackett* decision.

Under the 2023 Revised Definition (as amended on August 29, 2023), the Code of Federal Regulations (40 CFR Section 120.2[a] and 33 CFR Section 328) currently defines waters of the United States as:

(a) Waters of the United States means:

1. Waters which are:
 - (i) Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
 - (ii) The territorial seas; or
 - (iii) Interstate waters;

2. Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section;
 3. Tributaries of waters identified in paragraph (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;
 4. Wetlands adjacent to the following waters:
 - (i) Waters identified in paragraph (a)(1) of this section; or
 - (ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;
 5. Intrastate lakes and ponds not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section.
- (b) The following are not “waters of the United States” even where they otherwise meet the terms of paragraphs (a)(2) through (5) of this section:
1. Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;
 2. Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA;
 3. Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;
 4. Artificially irrigated areas that would revert to dry land if the irrigation ceased;
 5. Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;
 6. Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;
 7. Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and
 8. Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

Wetlands: The EPA and USACE define wetlands as “Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for the life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” USACE wetlands must typically exhibit three parameters: (1) wetland hydrology, (2) hydrophytic vegetation, and (3) hydric soils (defined below), to meet the federal definition.

Wetland Hydrology: This term encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. These include both riverine and non-riverine hydrology indicators, such as observation of surface water or saturated soils; evidence of recent inundation; evidence of current or recent soil saturation; and evidence from other site conditions or data.

Hydrophytic Vegetation: Hydrophytic vegetation is defined as plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present. Emphasis is placed on the assemblage of plant species that exert a controlling influence on the character of the plant community, rather than on a single indicator species, i.e., there must be a prevalence of hydrophytic vegetation present to satisfy this wetland parameter.

Wetland Indicator Status: This term refers to the probability that a plant will occur in a wetland or not. Hydrophytic species include those with an indicator status of obligate (OBL), facultative wetland (FACW), or facultative (FAC), which corresponds to the species' frequency of occurrence in wetlands. Indicator status categories are as follows:

- ▶ *Obligate (OBL)*: almost always occurs in wetlands.
- ▶ *Facultative wetland (FACW)*: usually occurs in wetlands, sometimes may occur in uplands.
- ▶ *Facultative (FAC)*: equally likely to occur in wetlands or non-wetlands.
- ▶ *Facultative upland (FACU)*: usually occurs in uplands but may occasionally occur in wetlands.
- ▶ *Obligate upland (UPL)*: almost never occurs in wetlands.
- ▶ *No indicator (NI)*: no indicator assigned due to lack of information.
- ▶ *Not listed (NL)*: species not listed in National Wetland Plant List (USACE 2020). Standard protocol states that a species with an NL designation should be considered UPL when the delineator completes the "Prevalence Index Worksheet" portion of the wetland delineation data form.

Hydric Soil: A hydric soil is a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part. Hydric soils are often characterized by redoximorphic features (such as redox concentrations, formerly known as mottles), which form by the reduction, translocation, and/or oxidation of iron and manganese oxides. Hydric soils may lack hydric indicators for several reasons. In such cases the same standard used to determine wetland hydrology when indicators are lacking can be used.

Other Waters of the United States: In this document, "other waters of the United States" refers to those aquatic resources that are regulated by the CWA but are not wetlands (33 CFR Section 328.4). The term "other waters of the United States" includes water bodies, such as lakes, rivers, and streams, that exhibit evidence of an OHWM (defined below) and are navigable or are hydrologically connected to a navigable water body (33 CFR Section 328.3[a]; 40 CFR Section 230.3[s]).

Navigable Waters of the United States: The Code of Federal Regulations (33 CFR Section 329.4) defines navigable waters of the United States as:

...those waters subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events which impede or destroy navigable capacity.

Traditional Navigable Waters: Traditional navigable waters (TNW) include all the "navigable waters of the United States" as defined in 33 CFR Section 329.4 as well as by numerous decisions of the federal courts; those water bodies USACE has determined are navigable waters of the United States pursuant to 33 CFR Section 329.14; plus all other waters that are navigable-in-fact. The definition of "navigable-in-fact" comes from a long line of court cases originating with *Daniel Ball*, 77 US 557 (1870).

Ordinary High Water Mark: OHWM is defined in 33 CFR Section 328.3[e] as "...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter or debris, or other appropriate means that consider the characteristics of the surrounding area."

Adjacent: The term adjacent means having a continuous surface connection.

3.2 CLEAN WATER ACT

The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972. "Clean Water Act" became the Act's common name with amendments in 1972. The CWA serves as the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and wetlands.

3.2.1 Section 404

Section 404 of the CWA regulates the discharge of dredged and fill materials into waters of the United States. Applicants must obtain a permit from the USACE for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed activity. Waters of the United States are under the jurisdiction of USACE and EPA.

Compliance with CWA Section 404 requires compliance with several other environmental protection laws and regulations. USACE cannot issue an individual permit or verify the use of a general nationwide permit until the requirements of the federal Endangered Species Act and the National Historic Preservation Act, among other federal regulations, have been met. In addition, USACE cannot issue or verify any permit until a water quality certification, or a waiver of certification has been issued pursuant to CWA Section 401.

3.2.2 Section 401

Under Section 401 of the CWA, applicants for a federal license or permit to conduct activities which may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all projects that require a federal license or federal permit, such as a CWA Section 404 permit, must also comply with CWA Section 401.

Section 401 of the CWA gives the state authority to grant, deny, or waive certification of proposed federally licensed or permitted activities resulting in discharge to waters of the United States. The Nevada Division of Environmental Protection (NDEP) supports the Section 401 certification and wetlands program in Nevada. NDEP regulates activities pursuant to Section 401(a)(1) of the federal CWA, which specifies that certification from the state is required for any applicant requesting a federal license or permit to conduct any activity including but not limited to the construction or operation of facilities that may result in any discharge into navigable waters.

4 METHODS

4.1 PRE-FIELD REVIEW

Prior to conducting the field investigation, Ascent wetland ecologists performed the following pre-field investigations:

- ▶ Review of the Mount Rose USGS 7.5-minute topographic quadrangle map;
- ▶ Review of Google Earth aerial photographs of the study area for vegetative, topographic, and hydrographic signatures (Google Earth 2025);
- ▶ Review of the *Custom Soil Resource Report for Washoe County, Nevada, South Part* for information about soils and geomorphology (NRCS 2025; included as Appendix F);
- ▶ Review of the National Wetlands Inventory (USFWS 2025);
- ▶ Review of the National Hydrography Dataset (USGS 2022); and
- ▶ Review of the Western Mountains, Valleys, and Coast Regional Wetland Plant List (USACE 2022).

4.2 FIELD SURVEY METHODS

Before conducting the field delineation of the study area, an Ascent wetland ecologist reviewed color aerial imagery of the study area on Google Earth (Google Earth 2025), National Wetlands Inventory (NWI) data (USFWS 2025), and the Natural Resources Conservation Service's (NRCS) *Custom Soil Resource Report for Washoe County, Nevada, South Part* (NRCS 2025) to determine areas of potential USACE jurisdiction. Areas showing evidence of wetland and/or drainage signatures were investigated within the delineation study area. The field delineation was conducted in the study area on August 7, 14, and 20, 2024 by Ascent wetland ecologists Pam Brillante, Kelley Kelso, and Taelor Whittington. Potentially jurisdictional features were mapped and jurisdictional determination data forms were completed during this delineation field survey.

4.2.1 Data Collection

The USACE 1987 *Wetlands Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast (WMVC) Region* (Environmental Laboratory 2010) were used to delineate wetlands that are potentially subject to USACE jurisdiction under Section 404 of the CWA. The 1987 *Manual* and 2010 *WMVC Supplement* provide technical guidelines and methods for the three-parameter approach to determining the location and boundaries of jurisdictional wetlands. This approach requires that an area support positive indicators of hydrophytic vegetation, hydric soils, and wetland hydrology to be considered a jurisdictional wetland. Routine jurisdictional determination data forms were completed for 16 sample points during the survey and are provided in Appendix A.

4.2.2 Determination of Hydrophytic Vegetation

To determine whether the area at a sample point was dominated by hydrophytic vegetation, plant species at each sample site were recorded and the wetland indicator status was recorded for the dominant species using USACE's National Wetlands Plant List for the Western Mountains, Valleys, and Coast Region (USACE 2022). A species is considered dominant when that species—individually or collectively—accounts for 50 percent of the total absolute cover in a vegetation stratum. Additional codominant species are identified if those species account for at least 20 percent of the absolute cover in a designated vegetation stratum (Environmental Laboratory 2010).

Hydrophytic species include those listed as obligate (OBL), facultative wetland (FACW), or facultative (FAC) species, which correspond to a given species frequency of occurrence in wetlands. Per delineation protocol, a sample site was considered to have hydrophytic vegetation if greater than 50 percent of the dominant species had an indicator status of FAC or wetter. Plants were identified to species using *Jepson eFlora* (Jepson 2025), *A Sierra Nevada Flora* (Weeden 1996), and *Field Guide to the Sedges of the Pacific Northwest* (Wilson et al. 2014). The *National Wetland Plant List* (USACE 2022) was used to determine the wetland indicator status of all plants.

Table 1 Indicator Status Rating Definitions

Wetland Indicator Status Rating	Abbreviation	Definition*
Obligate	OBL	Almost always occur in wetlands.
Facultative Wetland	FACW	Usually occur in wetlands but may occur in non-wetlands.
Facultative	FAC	Occur in wetlands and non-wetlands
Facultative Upland	FACU	Usually occur in non-wetlands but may occur in wetlands.
Upland	UPL	Almost always occur in non-wetlands.
No Indicator	NI	Insufficient information was available to determine an indicator status.
Not Listed	NL	Species not listed in the National Wetland Plant List. Standard protocol states that a species with an NL designation should be considered UPL when the delineator completes the wetland delineation data form.

* These category definitions were updated in 2020. They are qualitative descriptions that reflect the qualitative supporting information, rather than numeric frequency ranges. The percentage frequency categories used in the older definitions are now mostly used for testing problematic or contested species being recommended for indicator status changes.

4.2.3 Determination of Hydric Soils

The *Custom Soil Resource Report for Washoe County, Nevada, South Part* (NRCS 2025) was consulted to identify soil units mapped in the study area by NRCS and also to determine if any of the mapped soil units are listed as hydric. Soils were examined by digging soil test pits to determine whether hydric soils exist in a sampling location. Soils were described in terms of depth, matrix color, moisture status, and other diagnostic features indicative of hydric soils, such as the presence of concentrations, depletions, and other redoximorphic features. Hydric soil indicators were based on those provided in the 1987 USACE manual, 2010 regional supplement, and *Field Indicators of Hydric Soils in the United States: A Guide for Identifying and Delineating Hydric Soils* (NRCS 2024).

4.2.4 Determination of Wetland Hydrology

Wetland hydrology was assessed by recording observations such as surface water, high water table, saturation, and surface soil cracks. In addition, the potentially jurisdictional areas were all evaluated in terms of their status as a navigable waterway or their adjacency or hydrological connection to a navigable waterway.

4.2.5 Determination of Ordinary High Water Mark

Other waters of the United States were delineated based on the OHWM, using USACE's guide to OHWM delineation in the WMVC region (Mersel and Lichvar 2014). A riverine feature's OHWM, in the WMVC region, is consistently associated with some combination of three primary indicators – a topographic break in slope, change in vegetation characteristics, and change in sediment characteristics – that express the signature of the active channel (Mersel and Lichvar 2014). OHWM data forms were completed and are provided in Appendix B.

4.3 MAPPING AND ACREAGE CALCULATIONS

All features, including wetland sample points, wetland boundaries, OHWM intervals, and stream channel courses were recorded using a Global Positioning System (GPS) with sub-meter accuracy. All sample point locations were also recorded using an Eos Arrow 100 GPS unit. In the office, GPS data were downloaded and aquatic features mapped using Geographic Information System (GIS) software (ArcGIS Pro) on an overlay of both topography and geo-referenced aerial photography. Acreages of aquatic resources polygons and the length of linear features were determined using ArcGIS.

5 EXISTING CONDITIONS

5.1 LANDSCAPE SETTING

Regionally, the study area is located within the high-elevation Sierra Nevada ecoregion of Nevada (Bryce et al. 2003) in the Humboldt-Toiyabe National Forest. The study area supports alpine plant communities typical for the region, described in more detail below, and is characterized by flat topography with surface flows generally flowing west. Elevations within the study area range from a high of approximately 8,746 feet above mean sea level to a low of approximately 8,682 feet above mean sea level.

5.1.1 Habitat Types

Habitat types mapped in the study area were mapped and classified using US Forest Service Region 5 EVeg land cover data (USFS 2014) and further verified and refined during the aquatic resources field delineation in August 2024. General habitat types described in this document are classified using the California Department of Fish and Wildlife's (CDFW) *A Guide to Wildlife Habitats of California*, a habitat classification scheme that was developed to support

CDFW's California Wildlife Habitat Relationship (CWHR) system (Mayer and Laudenslayer 1988). Aquatic habitat descriptions contained herein are based on the Cowardin classification system (Cowardin et al. 1979) as adapted in *Classification of Wetlands and Deepwater Habitats of the United States* (FGDC 2013).

Habitats in the study area consist of perennial grassland, alpine dwarf-shrub, lodgepole pine, subalpine conifer, wet meadow, perennial grassland, montane riparian, and urban/barren (Figure 3). Habitat types in the study area are discussed in detail below. Upland habitats are discussed first; habitats associated with aquatic settings are discussed second. Plant taxonomy follows *Jepson eFlora* nomenclature (Jepson 2025). Common names of plant species are derived from the US Department of Agriculture Plants Database (2025). A complete list of plant species observed in the study area during the surveys, and their wetland indicator status is provided in Appendix C.

UPLAND HABITATS

Perennial Grassland

Perennial grassland habitat in the study area is dominated by perennial bunchgrasses such as western needlegrass (*Achnatherum occidentale*) (NL), blue wild rye (*Elymus glaucus*) (FACU), squirreltail grass (*Elymus elymoides*) (FACU), slender wheatgrass (*Elymus trachycaulus*) (FAC), and spike trisetum (*Trisetum spicatum*) (UPL). Dry tolerant sedges (i.e., Douglas' sedge [*Carex douglasii*] (FAC)) and rushes as well as a variety of forbs such as sticky cinquefoil (*Potentilla glandulosa*) (NL), yarrow (*Achillea millefolium*) (FACU), and Rydberg's penstemon (*Penstemon rydbergii*) (FACU) are common associates of these grasses. This habitat occurs throughout the study area and is found adjacent to wet meadows and in the understory of forest habitats.

Alpine Dwarf-Shrub

Alpine dwarf-shrub is typically found in alpine and subalpine zones where environmental conditions—such as cold temperatures, short growing seasons, strong winds, and poor soils—limit the growth of tall vegetation. Characteristic species in the alpine dwarf-shrub vegetation community in the study area consists of Parry's rush (*Juncus parryi*) (FAC), Douglas' sedge, and alpine pussytoes (*Antennaria media*) (FAC). The alpine dwarf-shrub habitat within the study area is very sparsely vegetated and is mostly barren decomposed granite.

Lodgepole Pine

Lodgepole pine is the predominant upland habitat type mapped in the study area. Lodgepole pine (*Pinus contorta*) (FAC) is the dominant species found in varying densities in the upper canopy layer of this habitat type. The understory is generally sparse and consists of a variety of grasses and forbs, including alpine pussytoes, black foot gayophytum (*Gayophytum racemosum*) (FAC), Parry's rush, and various grasses and upland sedges (*Carex* spp.).

Urban/Barren

Barren areas in the study area are devoid of vegetation and occur at the parking lot and along the walking path.

Subalpine Conifer

Subalpine conifer habitat occurs along the eastern part of the study area and is composed of whitebark pine (*Pinus albicaulis*) (NL) and mountain hemlock (*Tsuga mertensiana*) (FACU) trees interspersed with lodgepole pine. The understory is sparse and supports the same species as the lodgepole pine and alpine dwarf-shrub habitats.

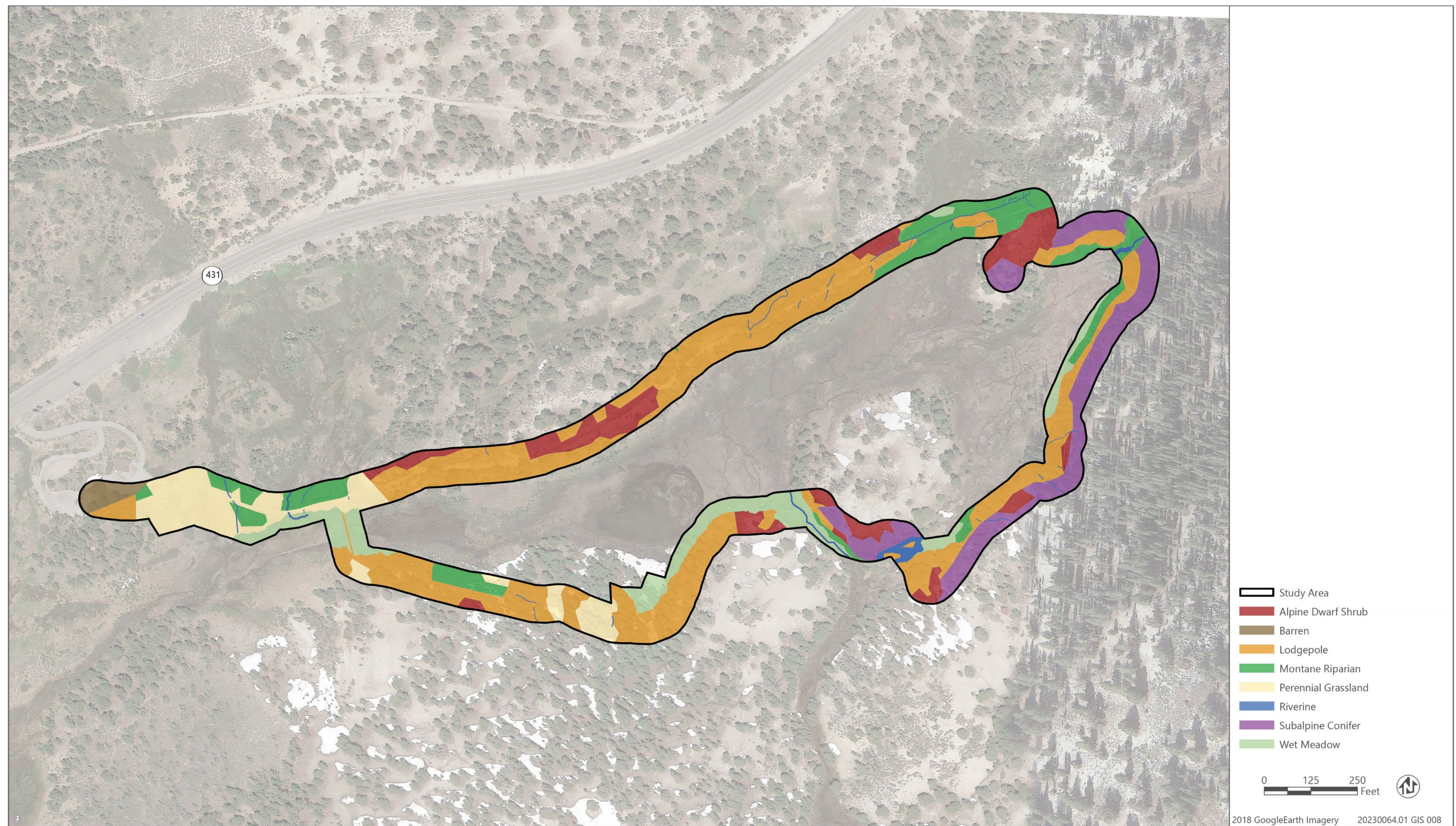


Figure 3 Land Cover

AQUATIC HABITATS

Montane Riparian

Montane riparian in the study area occurs as dense areas of willow (*Salix* spp.) (FACW) dominated vegetation creating a narrow strip between the ponds that occur outside of the study area and the wet meadows, as dense patches between forest habitats, and intermixed within patches of wet meadow and small channels. This community supports several willow species, but no single willow species is dominant. In the study area, the montane riparian community includes Lemmon's willow (*Salix lemmonii*) (FACW) and mountain willow (*Salix eastwoodiae*) (FACW).

Wet Meadow

Wet meadows at all elevations generally have a simple structure consisting of a layer of herbaceous plants. Shrub or tree layers are usually absent or very sparse; however, they can be an important feature of the meadow edge. Wet meadow occurs throughout the study area along the edges of the ponds that the trail circumnavigates and also intermixes with montane riparian. Lodgepole pine is also encroaching into wet meadow habitat. Wet meadow habitat type within the study area is characterized by tufted hair grass (*Deschampsia caespitosa*) (FACW), hairgrass (*Deschampsia elongata*) (FACW), timothy grass (*Phleum alpinum*) (FAC), northwest cinquefoil (*Potentilla gracilis*) (FAC), wandering fleabane (*Erigeron glacialis*) (FACW), tundra aster (*Oreostemma alpinum*) (FAC), meadow barley (*Hordeum brachyantherum*) (FACW), and American bistort (*Bistorta bistortoides*) (FACW). Spikerush (*Eleocharis macrostachya*) (OBL) and several species of sedges (*Carex* spp.) and rushes (*Juncus* spp.) also occur within this habitat type.

Riverine

Riverine systems include nearly all wetlands and deepwater habitats contained within a channel that periodically or continuously contains moving water or that forms a link between two standing water bodies. Riverine habitats are bounded by a bank, upland, or by wetlands dominated by trees, shrubs, or emergent marsh vegetation. Riverine habitat in the study area consists of perennial, intermittent, and ephemeral stream channels. Ophir Creek, a perennial stream, occurs within the study area.

5.1.2 Soils

Table 1 provides a list of the soil map units in the study area, a brief description, and the hydric status of the soil map unit, according to the *Custom Soil Resource Report for Washoe County, Nevada, South Part* (NRCS 2025; included as Appendix F). The locations of these soil units within the study area, as mapped by NRCS, are depicted on the soils map in Figure 4.

Table 2 Soil Map Units that Occur in the Study Area According to the Custom Soil Resource Report for Washoe County, Nevada, South Part

Map Unit Name	Map Unit Symbol	Map Unit Composition	Components Descriptions	Hydric?
Tallac very bouldery sandy loam, 4 to 30 percent slopes	hxg0	Tallac: 85%	Deep and very deep moderately well and well drained soils, formed in material weathered from glacial deposits on glacial moraines and outwash plains. Low runoff. Depth to water table generally greater than 80 inches; flooding/ponding none.	No
		Minor components: 10 percent	Minor components include Macareeno (5%), Carioca (4%), Aquolls (3%), and Burnborough.	Some ¹
Graylock-Temo-Rock outcrop complex, 30 to 70 percent slopes	hxcj	Graylock: 50%	Deep, well or somewhat excessively drained soils on mountainsides; formed in alluvium/colluvium from intermediate intrusive rocks. Low runoff. Depth to water table more than 80 inches; flooding/ponding none.	No

Map Unit Name	Map Unit Symbol	Map Unit Composition	Components Descriptions	Hydric?
		Temo: 25%	Very shallow and shallow, excessively drained soils that formed on mountains in residuum and colluvium derived from granitic rock. Medium or high surface runoff. Depth to water table more than 80 inches; flooding/ponding none.	No
		Minor components: 25%	Minor components include Rock Outcrop (10%), Toiyabe (5%), Corbett (5%), and Witefels (5%).	No

¹ Minor component Aquolls is hydric.

Source: NRCS 2025.



Figure 4 Soils

5.1.3 Hydrology

The study area is located within the Truckee River watershed (USGS hydrologic unit code [HUC]-12) and the HUC 160501020301 Steamboat Creek/Washoe Lake subwatershed (USGS 2025). Tahoe Meadows contains the headwaters and upper reaches of Ophir Creek, which enters the study area from the west, where it originates at the base of Mount Rose. Ophir Creek, a perennial stream, anastomoses into the Tahoe Meadows basin, with water flowing generally toward the east through a mosaic of alpine meadow and scrub shrub wetlands through the study area before recollecting into Ophir Creek and flowing east out of the study area. Several unnamed perennial, intermittent, and ephemeral stream channels traverse the study area, draining the surrounding uplands into the Tahoe Meadows basin. Ophir Creek then reassembles outside the study area and ultimately flows in a southeasterly direction, draining into Washoe Lake, approximately 4.65 miles to the east (USGS 2022). Washoe Lake connects to the Truckee River, a TNW, via Steamboat Creek.

5.1.4 Climate

The climate in the Lake Tahoe region is typically temperate to very cold, and is characterized by warm, dry summers and cold, wet winters, with the bulk of precipitation occurring as snow in the winter months. Data from the National Oceanic and Atmospheric Administration’s Agricultural Applied Climate Information System (AgACIS) for the Mount Rose Ski Area station, which is the nearest weather station with data, indicates that average annual precipitation from 2020 to 2024 was 49.42 inches, with the majority of that falling between December and March. The aquatic resources delineation was conducted within the study area on August 7, 14, and 20, 2024. Approximately 0.10 inches of rain fell in the study area in July, a month prior to the survey dates (NOAA 2025).

Based on the AgACIS data for the area, precipitation for the months preceding the field delineation in August 2024 was above average or average with 0.66 inches falling in June, 0.10 inches in July, and 0.46 inches in August (NOAA 2025).

5.2 AQUATIC RESOURCES

Aquatic resources in the study area are depicted on the aquatic resources delineation maps in Appendix D. Delineation sample points and OHWM sample points are also depicted on the aquatic resources delineation map and are cross-referenced to the wetland determination data forms provided in Appendix A and the OHWM data forms provided in Appendix B. An aquatic resource Excel file listing all potentially jurisdictional features, their Federal Geographic Data Committee (FGDC) (Cowardin) classification code, hydrogeomorphic (HGM) code, linear feet within the study area, water type, and latitude and longitude is provided in Appendix G.

A total of approximately 2.701 acres of aquatic resources, including wetlands, were documented within the study area. These aquatic resources consist of 0.056 acres of riverine lower perennial stream channels, 0.090 acres of riverine intermittent stream channels 0.028 acres of riverine ephemeral stream channels, 1.067 acres of palustrine scrub shrub wetlands, and 1.460 acres of palustrine emergent persistent wetlands.

Table 3 Aquatic Resources in the Study Area

Aquatic Resource Name	Aquatic Resources Classification		Aquatic Resource Size (acre) Required for All Resources	Aquatic Resource Size (linear feet) Required only for Stream Channels
	FGDC (Cowardin) Code ¹	Location (lat/long)		
Other Waters				
Riverine Perennial (RP)				
R2-1a	R2UB	39.30725818, -119.89780169	0.0046	56.732
R2-1b	R2UB	39.30708800, -119.89766464	0.0052	62.794

Aquatic Resource Name	Aquatic Resources Classification		Aquatic Resource Size (acre) Required for All Resources	Aquatic Resource Size (linear feet) Required only for Stream Channels
	FGDC (Cowardin) Code ¹	Location (lat/long)		
R2-2	R2UB	39.30709978, -119.89875623	0.0176	255.341
R2-3a	R2UB	39.30925288, -119.89875623	0.0113	49.750
R2-3b	R2UB	39.30932919, -119.89766464	0.0046	48.338
R2-4	R2UB	39.30943448, -119.89944479	0.0110	477.533
R2-5	R2UB	39.30966009, -119.89875623	0.0002	21.603
R2-6	R2UB	39.30960922, -119.898852	0.0004	31.828
R2-7	R2UB	39.30938754, -119.89942685	0.0009	17.306
<i>Riverine Perennial Totals</i>			<i>0.0558</i>	<i>1,021.225</i>
Riverine Intermittent (RI)				
R4-1	R4	39.30699756, -119.89978099	0.0889	298.665
R4-2	R4	39.30958321, -119.89870447	0.0004	38.245
R4-3	R4	39.30959808, -119.89893335	0.0003	26.744
R4-4	R4	39.30926980, 119.8997338	0.0003	13.590
<i>Riverine Intermittent Totals</i>			<i>0.0900</i>	<i>377.244</i>
Riverine Ephemeral (RE)				
R6-1a	R6	39.30729814, -119.90621789	0.0028	60.309
R6-1b	R6	39.30708902, 119.90611441	0.0042	89.714
R6-2a	R6	39.30726606, -119.90547685	0.0015	65.316
R6-2b	R6	39.30714121, 119.90547749	0.0003	10.956
R6-3a	R6	39.30729067, 119.90506992	0.0001	3.071
R6-3b	R6	39.30724929, 119.90505697	0.0002	6.481
R6-4a	R6	39.30654221, -119.90334484	0.0014	59.965
R6-4b	R6	39.30644908, 119.90326153	0.0010	44.171

Aquatic Resource Name	Aquatic Resources Classification		Aquatic Resource Size (acre) Required for All Resources	Aquatic Resource Size (linear feet) Required only for Stream Channels
	FGDC (Cowardin) Code ¹	Location (lat/long)		
R6-5	R6	39.30640428, 119.90251881	0.0012	25.535
R6-6a	R6	39.30723680, 119.89908794	0.0004	14.721
R6-6b	R6	39.30724268, -119.89890032	0.0017	74.671
R6-7a	R6	39.30756963, -119.89850769	0.0006	17.270
R6-7b	R6	39.30749874, -119.89836604	0.0015	66.313
R6-8	R6	39.30764590, -119.8983283	0.0004	10.828
R6-9a	R6	39.30784258, 119.89839013	0.0006	48.224
R6-9b	R6	39.30791065, -119.89823184	0.0010	40.894
R6-10	R6	39.30942146, -119.89911889	0.0012	52.430
R6-11a	R6	39.30929299, -119.89977963	0.0001	9.887
R6-11b	R6	39.30923888, -119.8998152	0.0003	21.480
R6-12	R6	39.30904657, -119.90017054	0.0005	20.575
R6-13a	R6	39.30896562, -119.90055717- 119.90059119	0.0009	40.482
R6-13b	R6	39.30885852, -119.90059119	0.0007	28.956
R6-14	R6	39.30878043, -119.90085287	0.0005	22.125
R6-15	R6	39.30871873, -119.90113196	0.0038	164.850
R6-16a	R6	39.30859452, -119.90132003	0.0007	31.408
R6-16b	R6	39.30853762, -119.90130003	0.0002	9.986
R6-17	R6	39.30761836, -119.90376884	0.0006	25.608
<i>Riverine Ephemeral Total</i>			<i>0.0284</i>	<i>1,066.226</i>
Total Waters			0.1742	2,464.695

Aquatic Resource Name	Aquatic Resources Classification		Aquatic Resource Size (acre) Required for All Resources	Aquatic Resource Size (linear feet) Required only for Stream Channels
	FGDC (Cowardin) Code ¹	Location (lat/long)		
Wetlands				
Palustrine Scrub Shrub – Seasonally Saturated				
PSSB-1a	PSSB	39.30721232, -119.90565922	0.0162	—
PSSB-1b	PSSB	39.30727750, -119.90534549	0.1929	—
PSSB-2	PSSB	39.30719082, -119.89920979	0.0543	—
PSSB-3	PSSB	39.30869331, -119.89805347	0.1079	—
PSSB-4	PSSB	39.30926582, -119.897995	0.1758	—
PSSB-5a	PSSB	39.30961635, -119.8986627	0.0200	—
PSSB-5b	PSSB	39.30964413, -119.89874578	0.0022	—
PSSB-5c	PSSB	39.30958826, -119.89879787	0.0086	—
PSSB-5d	PSSB	39.30961276, -119.89884998	0.0160	—
PSSB-6a	PSSB	39.30945213, -119.89884998	0.1957	—
PSSB-6b	PSSB	39.30924232, -119.89965235	0.2754	—
PSSB-7	PSSB	39.30842481, -119.90200063	0.0021	—
Palustrine Scrub Shrub Total			1.0671	
Palustrine Emergent Persistent – Seasonally Saturated				
PEM1C-1a	PEM1C	39.30697034, -119.90587557	0.0864	—
PEM1C-1b	PEM1C	39.30711809, -119.90525432	0.0610	—
PEM1C-1c	PEM1C	39.30711639, -119.90500536	0.0376	—
PEM1C-2a	PEM1C	39.30690357, -119.9048859	0.0888	—
PEM1C-2b	PEM1C	39.30692804, -119.90511842	0.0406	—
PEM1C-3a	PEM1C	39.30729303, -119.90139884	0.6545	—
PEM1C-3b	PEM1C	39.30721556, -119.90065444	0.0861	—

Aquatic Resource Name	Aquatic Resources Classification		Aquatic Resource Size (acre) Required for All Resources	Aquatic Resource Size (linear feet) Required only for Stream Channels
	FGDC (Cowardin) Code ¹	Location (lat/long)		
PEM1C-4	PEM1C	39.30708141, -119.89943377	0.0817	—
PEM1C-5	PEM1C	39.30840852, -119.89828041	0.1621	—
PEM1C-6	PEM1C	39.30949537, -119.89952374	0.0319	—
<i>Palustrine Emergent Persistent – Seasonally Saturated Total</i>			<i>1.3307</i>	
Palustrine Emergent Persistent – Semi Permanently Flooded				
PEM1F-1a	PEM1F	39.30708638, -119.90539053	0.0976	—
PEM1F-1b	PEM1F	39.30710462, -119.90554011	0.0049	—
PEM1F-1c	PEM1F	39.30702888, -119.90496276	0.0266	—
<i>Palustrine Emergent Persistent – Semi Permanently Flooded Total</i>			<i>0.1291</i>	
Total Wetlands			2.5269	—
Total Aquatic Resources			2.7011	2,464.695

¹ The codes identify the types of aquatic resources and are explained in Appendix G.

Source: Adapted by Ascent 2025 with FGDC 2013.

5.2.1 Other Waters

Other waters are non-wetland aquatic resources with an OHWM, including lakes, rivers, and streams. Other waters in the study area consist of riverine lower perennial waters in Ophir Creek (R2-3), six unnamed perennial channels (R2-1, R2-2, and R2-4 through R2-7), four intermittent channels (R4-1 through R4-4), and 17 unnamed ephemeral channels (R6-1 through R6-17). These features were delineated based on their OHWM.

RIVERINE LOWER PERENNIAL

Seven stream channel segments (one segment of Ophir Creek and six segments of unnamed tributary channels) totaling approximately 0.056 acres (1,021.23 linear feet) are present in the study area. These stream channels are classified as riverine, lower perennial according to the *Classification of Wetlands and Deepwater Habitats of the United States* classification system (FGDC 2013). Riverine systems are wetlands and deepwater habitats contained within a channel (FGDC 2013). A perennial channel is a stream, or stream portion, that has continuous flowing water all year except during extreme drought years. Lower perennial riverine systems are characterized by a low gradient. Groundwater is the primary water source supporting stream flow and the water table is above the streambed for most of the year. Runoff from precipitation (mainly snowmelt) is a supplemental source of water for stream flow. Freshwater emergent vegetation, including willows (*Salix* spp.), California false hellebore (*Veratrum californicum*) (FAC), and beaked sedge (*Carex utriculata*) (OBL), occur within the OHWM of Ophir Creek within the study area. Perennial streams in the study area abut wetlands. The bed substrate of the lower perennial streams in the study area is generally unvegetated and comprised primarily of silt, sand, gravel, and cobble. OHWM data forms were completed for four sample points (ODP1, ODP2, ODP4, and ODP5) and are provided in Appendix B.

RIVERINE INTERMITTENT - INTERMITTENT CHANNEL

Four intermittent stream channel segments (R4-1 through R4-4), totaling approximately 0.090 acres (377.24 linear feet), were identified within the study area. An intermittent channel is a stream, or stream portion, that has flowing water only part of the year, when groundwater provides water for stream flow, and when water is not flowing, it may remain in isolated pools or surface water may be absent. Runoff from precipitation is a supplemental source of water for stream flow (FGDC 2013). Intermittent drainages are classified under the *Classification of Wetlands and Deepwater Habitats of the United States* classification system as riverine intermittent (FGDC 2013). In general, intermittent channels in the study area are unvegetated and medium- to low-gradient. Montane riparian scrub vegetation occurs along their banks, in particular where the gradient is low and the flow decelerates. The bed substrates for these intermittent channels were generally sandy. Generally, the OHWM of the intermittent channels was identified by changes in sediment texture, breaks in slope, and changes in vegetation cover. The intermittent stream channels in the study area are associated with different wetlands that are interconnected and eventually drain to Ophir Creek. OHWM data forms were completed for one sample point (ODP3) and is provided in Appendix B.

RIVERINE EPHEMERAL - EPHEMERAL CHANNEL

Seventeen ephemeral stream channel segments encompassing approximately 0.028 acres (1,066.23 linear feet) are present within the study area. An ephemeral drainage has flowing water only during or for a short duration after precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round, and groundwater is not a source of water for the stream. Ephemeral drainages are classified under the *Classification of Wetlands and Deepwater Habitats of the United States* classification system as riverine ephemeral (FGDC 2013). The ephemeral channels in the study area are typically low-gradient. The bed substrate includes silt, sand, and gravel. The OHWM of the ephemeral drainage channels was identified by changes in sediment texture, breaks in slope, and changes in vegetation cover. The ephemeral stream channels in the study area are either associated with or drain into adjacent wetlands or are disconnected from other waters and convey snow melt.

5.2.2 Palustrine Wetlands

Palustrine wetlands are nontidal wetlands dominated by trees, shrubs, persistent emergent plants, or emergent mosses or lichens (FGDC 2013). Palustrine wetlands also include unvegetated wetlands that meet the following criteria: (1) smaller than 20 acres, (2) do not have wave-formed or bedrock shorelines, (3) less than 8.2 feet deep at their deepest point, and (4) salinity less than 0.5 parts ppt. Palustrine wetlands include marshes, swamps, bogs, and fens, as well as small, shallow, permanent or intermittent ponds or other depressions. Palustrine wetlands can occur on shores of lakes or rivers, on floodplains, in isolated catchments, on slopes, or as islands in rivers or lakes (FGDC 2013). A mosaic of palustrine wetlands are present within the study area and consist of two types: palustrine emergent wetlands and palustrine scrub-shrub wetlands.

PALUSTRINE EMERGENT WETLAND

Palustrine emergent wetlands have emergent vascular plants (i.e., erect, rooted, herbaceous hydrophytes, often monocots and usually perennial) as the dominant vegetation layer (FGDC 2013). Seven palustrine emergent wetlands were delineated in the study area totaling 1.460 acres. The Cowardin Code for six of these wetlands is PEM1C (Palustrine Emergent Persistent, Seasonally Saturated). The study area crosses over a wetter portion of Tahoe Meadows at PEM1F-1. Here the Cowardin Code is PEM1F (Palustrine Emergent, Persistent, Semi-permanently Flooded) reflecting the change in water regime. This wetland is a monoculture of beaked sedge. Emergent vegetation in these wetlands is typically persistent and dominated by several species of sedges and rushes, spikerush, meadow grasses, and forbs, such as wandering fleabane, tundra aster, and primrose monkeyflower (*Erythranthe* [= *Mimulus*] *primuloides*) (OBL). Primary wetland hydrology indicators observed in the palustrine emergent wetlands include saturation (Indicator A3), surface soil cracks (Indicator B6), and algal matting (Indicator B4). Redox dark surface (Indicator F6) and Depleted Below Dark Surface (Indicator A11) were the primary hydric soil indicators observed in

these wetlands. Wetland determination sample points 3, 5, 7, 10, 11, and 14 in Appendix A provide information on palustrine emergent wetlands in the study area and representative photos of these features are provided Appendix E.

PALUSTRINE SCRUB-SHRUB

Palustrine scrub-shrub wetlands have woody plants less than 20 feet tall (i.e., shrubs) as the dominant vegetation layer. Seven palustrine scrub-shrub wetlands were delineated in the study area totaling 1.067 acres. The palustrine scrub shrub wetland type is primarily found around the perimeter of Tahoe Meadows and intermixes with palustrine emergent wetlands. The Cowardin Code that best describes these wetlands is PSSB (Palustrine, Scrub Shrub, Seasonally Saturated). Vegetation is characterized by Lemmon's willow, mountain willow, and several species of rushes, including wire rush (*Juncus balticus*) (FACW), Merten's rush (*Juncus mertensianus*) (OBL), and straight leaved rush (*Juncus orthophyllus*) (FACW). The primary hydrology indicator noted in these wetlands is saturation (Indicator A3). Hydric soils were indicated by Depleted Below Dark Surface (Indicator A11). Wetland determination sample points 13 and 16 in Appendix A provide information on palustrine emergent wetlands in the study area and representative photos of these features are provided Appendix E.

6 REFERENCES

- Bryce, S.A., A.J. Woods, J.D. Morefield, J.M. Omernik, T.R. McKay, G.K. Brackley, R.K. Hall, D.K. Higgins, D.C. McMorran, K.E. Vargas, E.B. Petersen, D.C. Zamudio, and J.A. Comstock. 2003. Ecoregions of Nevada. USGS Ecoregion State Maps.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. Washington, DC: US Fish and Wildlife Service.
- David, Gabrielle C. L., Ken M. Fritz, Tracie-Lynn Nadeau, Brain J. Topping, Aaron O. Allen, Patrick H. Trier, Steven L. Kichefski, L. Allan James, Ellen Wohl, and Daniel Hamill. 2025. *National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams (Final Version)*. US Army Corps of Engineers Wetlands Regulatory Assistance Program (WRAP), Cold Regions Research and Engineering Laboratory. Hanover, NH.
- Environmental Laboratory. 1987. *US Army Corps of Engineers Wetlands Delineation Manual*. (Technical Report Y-87-1.) US Army Corps of Engineers Waterways Experiment Station. Vicksburg, MS.
- . 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0). (Technical Report ERDC/EL TR-10-3.) US Army Corps of Engineers, Engineers Research and Development Center. Vicksburg, MS.
- Federal Geographic Data Committee. 2013. *Classification of Wetlands and Deepwater Habitats of the United States*. Adapted from Cowardin, Carter, Golet, and LaRoe (1979). FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and US Fish and Wildlife Service, Washington, DC.
- FGDC. See Federal Geographic Data Committee.
- Google Earth. 2025. earth.google.com/web/.
- Jepson. See Jepson Flora Project.
- Jepson Flora Project (eds.). 2025. *Jepson eFlora*. Available: <https://ucjeps.berkeley.edu/eflora/>. Accessed July 2025.
- Mayer, K.E. and W.F. Laudenslayer. 1988. *A Guide to Wildlife Habitats of California*. State of California, Resources Agency, Department of Fish and Game, Sacramento, California.
- Mersel, M.K. and R.W. Lichvar. 2014. *A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States*. (Technical Report ERDC/CRREL TR-14-13.) US Army Corps of Engineers Research and Development Center, Cold Regions Research and Engineering Laboratory. Hanover, NH.

- National Oceanic and Atmospheric Administration. 2025. Washoe County, Mt Rose Ski Area, Monthly Climatological Data, NOAA Regional Climate Centers. Available: <http://agacis.rcc-acis.org/>. Accessed July 2025.
- Natural Resources Conservation Service. 2024. *Field Indicators of Hydric Soils in the United States, A Guide for Delineating Hydric Soils*, Version 9.0. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils. Available: https://www.nrcs.usda.gov/sites/default/files/2025-04/Field-Indicators-of-Hydric-Soils-in-the-United-States-Version-9_0.pdf. Accessed August 2024.
- . 2025. *Custom Soil Resource Report for Washoe County, Nevada, South Part*. Available: <https://websoilsurvey.nrcs.usda.gov/>. Accessed August 2025.
- NOAA. See National Oceanic and Atmospheric Administration.
- NRCS. See Natural Resources Conservation Service.
- USACE. See US Army Corps of Engineers.
- US Army Corps of Engineers. 2016a. *Minimum Standards for Acceptance of Aquatic Resources Delineation Reports, with Template*. January 2016. Available: http://www.spk.usace.army.mil/Portals/12/documents/regulatory/jd/minimum-standards/Minimum_Standards_for_Delineation_with_Template-final.pdf. Accessed July 2024.
- . 2016b. Updated Map and Drawing Standards for the South Pacific Division Regulatory Program. February 10. Available: <http://www.spd.usace.army.mil/Portals/13/docs/regulatory/standards/MapStand020816.pdf>. Accessed July 2024.
- . 2022. National Wetland Plant List, version 3.6. US Army Corps of Engineers, Engineer Research and Development Center. Cold Regions Research and Engineering Laboratory. Hanover, NH. Available: <http://wetland-plants.usace.army.mil/>. Accessed July 2024.
- . 2025. *Recommended Minimum Standards for Aquatic Resource Delineation Reports*. July 2025. Available: <https://www.usace.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/techbio/>. Accessed July 2025.
- US Department of Agriculture. 2025. *PLANTS Database*. Available: plants.usda.gov/home. Accessed July 2025.
- USDA. See US Department of Agriculture.
- US Fish and Wildlife Service. 2025. National Wetlands Inventory. US Department of Interior, Fish and Wildlife Service, Washington, D.C. Available at: <https://www.fws.gov/wetlands/index.html>. Accessed August 2025.
- USFWS. See US Fish and Wildlife Service.
- USGS. See US Geological Survey.
- US Geological Survey. 2022. National Hydrography Dataset. Available at: <https://www.usgs.gov/national-hydrography/nhdplus-high-resolution>. Retrieved July 2024.
- . 2025b. USGS WBD - Watershed Boundary Dataset. Data refreshed June, 2025.
- Weeden. 1996. *A Sierra Nevada Flora* (4th Edition). Wilderness Press. Berkeley, CA.
- Wilson, B. L. and R. Brainerd, D. Lytjen, B. Newhouse, N. Otting. 2014. *Field Guide to the Sedges of the Pacific Northwest* (2nd Edition.) Oregon State University Press. Corvallis, OR.

Appendix A

Wetland Delineation Data Sheets

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Tahoe Meadows Interpretive Trail Improvements Project City/County: Washoe County Sampling Date: 08/07/2024
 Applicant/Owner: Tahoe Rim Trail Association State: Nevada Sampling Point: SP1
 Investigator(s): P. Brillante, K. Kelso Section, Township, Range: 25, 17N, 18E
 Landform (hillslope, terrace, etc): Hillslope Local relief (concave, convex, none): none Slope (%): 7
 Subregion (LRR): LRR D Lat: 39.30704038 Long: -119.90686302 Datum: NAD83/2011
 Soil Map Unit Name: Tallac very bouldery sandy loam, 4 to 30 percent slopes; NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: No wetlands present	

VEGETATION - Use scientific names of plants.

<table style="width: 100%;"> <tr> <th style="text-align: left;">Tree Stratum (Plot size: <u>30-ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1. <i>Pinus contorta</i> / Lodgepole pine</td><td style="text-align: center;">2</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FAC</td></tr> <tr><td>2. _____</td><td></td><td></td><td></td></tr> <tr><td>3. _____</td><td></td><td></td><td></td></tr> <tr><td>4. _____</td><td></td><td></td><td></td></tr> <tr><td colspan="2" style="text-align: right;">2 = Total Cover</td><td></td><td></td></tr> </table> <table style="width: 100%;"> <tr> <th style="text-align: left;">Sapling/Shrub Stratum (Plot size: <u>15-ft</u>)</th> <th></th> <th></th> <th></th> </tr> <tr><td>1. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>2. _____</td><td></td><td></td><td></td></tr> <tr><td>3. _____</td><td></td><td></td><td></td></tr> <tr><td>4. _____</td><td></td><td></td><td></td></tr> <tr><td>5. _____</td><td></td><td></td><td></td></tr> <tr><td colspan="2" style="text-align: right;">0 = Total Cover</td><td></td><td></td></tr> </table> <table style="width: 100%;"> <tr> <th style="text-align: left;">Herb Stratum (Plot size: <u>5-ft</u>)</th> <th></th> <th></th> <th></th> </tr> <tr><td>1. <i>Potentilla gracilis</i> / Northwest cinquefoil, Slender cinquefoil</td><td style="text-align: center;">60</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FAC</td></tr> <tr><td>2. <i>Achillea millefolium</i> / Yarrow</td><td style="text-align: center;">10</td><td style="text-align: center;">No</td><td style="text-align: center;">FACU</td></tr> <tr><td>3. <i>Hordeum brachyantherum</i> / Meadow barley</td><td style="text-align: center;">5</td><td style="text-align: center;">No</td><td style="text-align: center;">FACW</td></tr> <tr><td>4. <i>Achnatherum occidentale</i> / Western needlegrass</td><td style="text-align: center;">5</td><td style="text-align: center;">No</td><td style="text-align: center;">NI</td></tr> <tr><td>5. <i>Erigeron glacialis</i> / Wandering fleabane, Subalpine fleabane</td><td style="text-align: center;">3</td><td style="text-align: center;">No</td><td style="text-align: center;">FACW</td></tr> <tr><td>6. <i>Poa sp.</i> / Bluegrass</td><td style="text-align: center;">3</td><td style="text-align: center;">No</td><td style="text-align: center;">NI</td></tr> <tr><td>7. <i>Carex athrostachya</i> / Slender leaved sedge, Long-bracted sedge</td><td style="text-align: center;">3</td><td style="text-align: center;">No</td><td style="text-align: center;">FACW</td></tr> <tr><td>8. <i>Elymus trachycaulus</i> / Slender wheatgrass</td><td style="text-align: center;">3</td><td style="text-align: center;">No</td><td style="text-align: center;">FAC</td></tr> <tr><td>9. <i>Juncus orthophyllus</i> / Straight leaved rush, Straightleaved rush</td><td style="text-align: center;">2</td><td style="text-align: center;">No</td><td style="text-align: center;">FACW</td></tr> <tr><td>10. <i>Phleum alpinum</i> / Timothy grass, Alpine timothy, Mountain timothy</td><td style="text-align: center;">1</td><td style="text-align: center;">No</td><td style="text-align: center;">FAC</td></tr> <tr><td>11. <i>Epilobium ciliatum</i> / Slender willow herb</td><td style="text-align: center;">1</td><td style="text-align: center;">No</td><td style="text-align: center;">FACW</td></tr> <tr><td colspan="2" style="text-align: right;">96 = Total Cover</td><td></td><td></td></tr> </table> <table style="width: 100%;"> <tr> <th style="text-align: left;">Woody Vine Stratum (Plot size: <u>30-ft</u>)</th> <th></th> <th></th> <th></th> </tr> <tr><td>1. _____</td><td style="text-align: center;">0</td><td></td><td></td></tr> <tr><td>2. _____</td><td></td><td></td><td></td></tr> <tr><td colspan="2" style="text-align: right;">0 = Total Cover</td><td></td><td></td></tr> </table> % Bare Ground in Herb Stratum <u>5</u>	Tree Stratum (Plot size: <u>30-ft</u>)	Absolute % Cover	Dominant Species?	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Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Total % Cover of:	Multiply by:	OBL species	0 x 1 = 0	FACW species	14 x 2 = 28	FAC species	66 x 3 = 198	FACU species	10 x 4 = 40	UPL species	8 x 5 = 40	Column Totals:	98 (A) 306 (B)
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SOIL

Sampling Point: SP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	7.5YR 3/4	100					Loam	Cobble present
2-12	7.5YR 4/4	100					Loam	Cobbles

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histic Sol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**
 Type: _____ Rock _____
 Depth (inches): _____ 12 _____
Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ High Water Table (A2)	☐ Salt Crust (B11)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LRR A)
☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)
☐ Inundation Visible on Aerial Imagery (B7)	
☐ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes _____ No <u>X</u>	Depth (inches): _____
Water Table Present?	Yes _____ No <u>X</u>	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____ No <u>X</u>	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Same veg as adjacent nwi mapped wetland but no soils and no hydro

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Tahoe Meadows Interpretive Trail Improvements Project City/County: Washoe County Sampling Date: 08/07/2024
 Applicant/Owner: Tahoe Rim Trail Association State: Nevada Sampling Point: SP2
 Investigator(s): P. Brillante, K. Kelso Section, Township, Range: 25, 18N, 18E
 Landform (hillslope, terrace, etc): Hillslope Local relief (concave, convex, none): none Slope (%): 10
 Subregion (LRR): LRR D Lat: 39.30742796 Long: -119.90652163 Datum: NAD83/2011
 Soil Map Unit Name: Tallac very bouldery sandy loam, 4 to 30 percent slopes; NWI classification: PEM1B
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u>	No <u>X</u>	
Remarks:			

VEGETATION - Use scientific names of plants.

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Remarks:

SOIL

Sampling Point: SP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	7.5YR 4/6	100					Clay Loam	
2-14	7.5YR 3/4	100					Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**
 Type: _____ Rock _____
 Depth (inches): _____ 14 _____
Hydric Soil Present? Yes _____ No X

Remarks: Cobbles present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ High Water Table (A2)	☐ Salt Crust (B11)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LRR A)
☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)
☐ Inundation Visible on Aerial Imagery (B7)	
☐ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes _____ No <u> X </u>	Depth (inches): _____
Water Table Present?	Yes _____ No <u> X </u>	Depth (inches): _____
Saturation Present?	Yes _____ No <u> X </u>	Depth (inches): _____
(includes capillary fringe)		

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SOIL

Sampling Point: SP3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	7.5YR 4/4	95	7.5R 4/8	5	C	PL	Clay Loam	Organic rich
5-17	10YR 3/2	94	7.5YR 5/8	6	C	PL	Sandy Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
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Field Observations:

Surface Water Present?	Yes ☐ No ☒	Depth (inches): _____
Water Table Present?	Yes ☐ No ☒	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ☐ No ☒	Depth (inches): _____

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Tahoe Meadows Interpretive Trail Improvements Project City/County: Washoe County Sampling Date: 08/07/2024
 Applicant/Owner: Tahoe Rim Trail Association State: Nevada Sampling Point: SP4
 Investigator(s): P. Brillante, K. Kelso Section, Township, Range: 25, 18N, 18E
 Landform (hillslope, terrace, etc): Hillslope Local relief (concave, convex, none): none Slope (%): 5
 Subregion (LRR): LRR D Lat: 39.30695627 Long: -119.90614335 Datum: NAD83/2011
 Soil Map Unit Name: Tallac very bouldery sandy loam, 4 to 30, NWI classification: PEM1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland point	

VEGETATION - Use scientific names of plants.

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SOIL

Sampling Point: SP4**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	7.5YR 3/4	100					Sndy Clay Lm	
2-9	7.5YR 2.5/3	100					Sandy Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**Type: _____
Depth (inches): _____**Hydric Soil Present?** Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ High Water Table (A2)	☐ Salt Crust (B11)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LRR A)
☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)
☐ Inundation Visible on Aerial Imagery (B7)	
☐ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes _____ No <u>X</u>	Depth (inches): _____
Water Table Present?	Yes _____ No <u>X</u>	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____ No <u>X</u>	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Tahoe Meadows Interpretive Trails Improvement Project City/County: Washoe County Sampling Date: 08/07/2024
 Applicant/Owner: Tahoe Rim Trail Association State: Nevada Sampling Point: SP5
 Investigator(s): P. Brillante, K. Kelso Section, Township, Range: 25, 18N, 18E
 Landform (hillslope, terrace, etc): Depression Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): LRR D Lat: 39.30689016 Long: -119.90519402 Datum: NAD83/2011
 Soil Map Unit Name: Tallac very bouldery sandy loam, 4 to 30 percent slopes; Graylock-Temo-Rock outcrop compl NWI classification: PEM1C
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u>	No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>			
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>			
Remarks: wetland PEM1C-2					

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30-ft</u>) 1. <u> </u> Absolute % Cover <u> </u> Dominant Species? <u> </u> Indicator Status <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> <u>0</u> = Total Cover Sapling/Shrub Stratum (Plot size: <u>15-ft</u>) 1. <u>Pinus contorta</u> / Lodgepole pine <u>10</u> Yes <u> </u> FAC 2. <u>Salix lemmonii</u> / Lemmon's willow <u>5</u> Yes <u> </u> FACW 3. <u> </u> 4. <u> </u> 5. <u> </u> <u>15</u> = Total Cover Herb Stratum (Plot size: <u>5-ft</u>) 1. <u>Oreostemma alpigenum</u> / Tundra aster <u>25</u> Yes <u> </u> FAC 2. <u>Carex nebrascensis</u> / Nebraska sedge, Nebraska sedge <u>25</u> Yes <u> </u> OBL 3. <u>Erythranthe primuloides</u> / Primrose monkeyflower <u>20</u> Yes <u> </u> NI 4. <u>Torreyochloa pallida</u> / Pale false mannagrass <u>20</u> Yes <u> </u> OBL 5. <u>Eleocharis macrostachya</u> / Spike rush <u>10</u> No <u> </u> OBL 6. <u> </u> 7. <u> </u> 8. <u> </u> 9. <u> </u> 10. <u> </u> 11. <u> </u> <u>100</u> = Total Cover Woody Vine Stratum (Plot size: <u>30-ft</u>) 1. <u> </u> 2. <u> </u> <u>0</u> = Total Cover % Bare Ground in Herb Stratum <u>0</u>				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83.3</u> (A/B) Prevalence Index worksheet: <table border="1"> <thead> <tr> <th colspan="2">Total % Cover of:</th> <th colspan="2">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td><u>55</u></td> <td>x 1 =</td> <td><u>55</u></td> </tr> <tr> <td>FACW species</td> <td><u>5</u></td> <td>x 2 =</td> <td><u>10</u></td> </tr> <tr> <td>FAC species</td> <td><u>35</u></td> <td>x 3 =</td> <td><u>105</u></td> </tr> <tr> <td>FACU species</td> <td><u>0</u></td> <td>x 4 =</td> <td><u>0</u></td> </tr> <tr> <td>UPL species</td> <td><u>20</u></td> <td>x 5 =</td> <td><u>100</u></td> </tr> <tr> <td>Column Totals:</td> <td><u>115</u> (A)</td> <td></td> <td><u>270</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>2.35</u> Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index ≤3.0¹ <u> </u> 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants¹ <u> </u> Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>		Total % Cover of:		Multiply by:		OBL species	<u>55</u>	x 1 =	<u>55</u>	FACW species	<u>5</u>	x 2 =	<u>10</u>	FAC species	<u>35</u>	x 3 =	<u>105</u>	FACU species	<u>0</u>	x 4 =	<u>0</u>	UPL species	<u>20</u>	x 5 =	<u>100</u>	Column Totals:	<u>115</u> (A)		<u>270</u> (B)
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SOIL

Sampling Point: SP5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	7.5YR 2.5/3	100		0			Loam	Organic matter rich
2-19	7.5YR 2.5/2	100		0			Sandy Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Depleted Below Dark Surface (A11)	☒ Depleted Matrix (F3)
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ High Water Table (A2)	☐ Salt Crust (B11)
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☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LRR A)
☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)
☐ Inundation Visible on Aerial Imagery (B7)	
☐ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ☐ No ☒	Depth (inches): _____
Water Table Present?	Yes ☐ No ☒	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ☐ No ☒	Depth (inches): _____

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SOIL

Sampling Point: SP6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	7.5YR 3/4	100					Sandy Loam	
2-14	10YR 3/3	100					Sandy Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒ X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ High Water Table (A2)	☐ Salt Crust (B11)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LRR A)
☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)
☐ Inundation Visible on Aerial Imagery (B7)	
☐ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
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☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes _____ No ☒ X	Depth (inches): _____
Water Table Present?	Yes _____ No ☒ X	Depth (inches): _____
Saturation Present?	Yes _____ No ☒ X	Depth (inches): _____
(includes capillary fringe)		

Wetland Hydrology Present? Yes _____ No ☒ X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Tahoe Meadows Interpretive Trail Improvements Project City/County: Washoe County Sampling Date: 08/07/2024
 Applicant/Owner: Tahoe Rim Trail Association State: Nevada Sampling Point: SP7
 Investigator(s): P. Brillante, K. Kelso Section, Township, Range: 25, 18N, 28E
 Landform (hillslope, terrace, etc): Slight hillslope Local relief (concave, convex, none): none Slope (%): 4
 Subregion (LRR): LRR D Lat: 39.30659223 Long: -119.90225599 Datum: NAD83/2011
 Soil Map Unit Name: Graylock-Temo-Rock outcrop complex, 30 to 70 percent slopes NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: wetland PEM1C-3	

VEGETATION - Use scientific names of plants.

<table style="width: 100%;"> <tr> <th style="text-align: left;">Tree Stratum (Plot size: <u>30-ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>2. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>3. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>4. <u> </u></td><td></td><td></td><td></td></tr> <tr> <td></td> <td style="text-align: center;"><u>0</u></td> <td colspan="2" style="text-align: right;">= Total Cover</td> </tr> </table> <table style="width: 100%;"> <tr> <th style="text-align: left;">Sapling/Shrub Stratum (Plot size: <u>15-ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1. <u><i>Tsuga mertensiana</i> / Patton spruce, Mountain hemlock</u></td><td style="text-align: center;">5</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACU</td></tr> <tr><td>2. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>3. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>4. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>5. <u> </u></td><td></td><td></td><td></td></tr> <tr> <td></td> <td style="text-align: center;"><u>5</u></td> <td colspan="2" style="text-align: right;">= Total Cover</td> </tr> </table> <table style="width: 100%;"> <tr> <th style="text-align: left;">Herb Stratum (Plot size: <u>5-ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1. <u><i>Erigeron glacialis</i> / Wandering fleabane, Subalpine fleabane</u></td><td style="text-align: center;">85</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACW</td></tr> <tr><td>2. <u><i>Juncus parryi</i> / Parry's rush, Parry's rush</u></td><td style="text-align: center;">5</td><td style="text-align: center;">No</td><td style="text-align: center;">FAC</td></tr> <tr><td>3. <u><i>Juncus orthophyllus</i> / Straight leaved rush, Straightleaved ru</u></td><td style="text-align: center;">5</td><td style="text-align: center;">No</td><td style="text-align: center;">FACW</td></tr> <tr><td>4. <u><i>Bistorta bistortoides</i> / American bistort, Western bistort</u></td><td style="text-align: center;">5</td><td style="text-align: center;">No</td><td style="text-align: center;">FACW</td></tr> <tr><td>5. <u><i>Muhlenbergia filiformis</i> / Slender muhly, Pull-up muhly</u></td><td style="text-align: center;">2</td><td style="text-align: center;">No</td><td style="text-align: center;">FACW</td></tr> <tr><td>6. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>7. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>8. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>9. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>10. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>11. <u> </u></td><td></td><td></td><td></td></tr> <tr> <td></td> <td style="text-align: center;"><u>102</u></td> <td colspan="2" style="text-align: right;">= Total Cover</td> </tr> </table> <table style="width: 100%;"> <tr> <th style="text-align: left;">Woody Vine Stratum (Plot size: <u>30-ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>2. <u> </u></td><td></td><td></td><td></td></tr> <tr> <td></td> <td style="text-align: center;"><u>0</u></td> <td colspan="2" style="text-align: right;">= Total Cover</td> </tr> </table> % Bare Ground in Herb Stratum <u>0</u>	Tree Stratum (Plot size: <u>30-ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	1. <u> </u>				2. <u> </u>				3. <u> </u>				4. <u> </u>					<u>0</u>	= Total Cover		Sapling/Shrub Stratum (Plot size: <u>15-ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	1. <u><i>Tsuga mertensiana</i> / Patton spruce, Mountain hemlock</u>	5	Yes	FACU	2. <u> </u>				3. <u> </u>				4. <u> </u>				5. <u> </u>					<u>5</u>	= Total Cover		Herb Stratum (Plot size: <u>5-ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	1. <u><i>Erigeron glacialis</i> / Wandering fleabane, Subalpine fleabane</u>	85	Yes	FACW	2. <u><i>Juncus parryi</i> / Parry's rush, Parry's rush</u>	5	No	FAC	3. <u><i>Juncus orthophyllus</i> / Straight leaved rush, Straightleaved ru</u>	5	No	FACW	4. <u><i>Bistorta bistortoides</i> / American bistort, Western bistort</u>	5	No	FACW	5. <u><i>Muhlenbergia filiformis</i> / Slender muhly, Pull-up muhly</u>	2	No	FACW	6. <u> </u>				7. <u> </u>				8. <u> </u>				9. <u> </u>				10. <u> </u>				11. <u> </u>					<u>102</u>	= Total Cover		Woody Vine Stratum (Plot size: <u>30-ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	1. <u> </u>				2. <u> </u>					<u>0</u>	= Total Cover		Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: center;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>97</u></td> <td>x 2 = <u>194</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>107</u> (A)</td> <td><u>229</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.14</u> Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index ≤ 3.0¹ <u> </u> 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants¹ <u> </u> Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>97</u>	x 2 = <u>194</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>107</u> (A)	<u>229</u> (B)
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SOIL

Sampling Point: SP7**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1	7.5YR 2.5/3	100					Sandy Loam	Lots of gravel and on present
1-5	7.5YR 2.5/3	100					Sandy Loam	
5-15	7.5YR 2.5/2	50	7.5YR 4/4	50	C	M	Sandy Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)
☐ Thick Dark Surface (A12)	☒ Redox Dark Surface (F6)
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ High Water Table (A2)	☐ Salt Crust (B11)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)
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☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)
☐ Inundation Visible on Aerial Imagery (B7)	
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Secondary Indicators (minimum of two required)

☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
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☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ☐ No ☒	Depth (inches): _____
Water Table Present?	Yes ☐ No ☒	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ☐ No ☒	Depth (inches): _____

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Tahoe Meadows Interpretive Trail Improvements Project City/County: Washoe County Sampling Date: 08/07/2024
 Applicant/Owner: Tahoe Rim Trail Association State: Nevada Sampling Point: SP8
 Investigator(s): P. Brillante, K. Kelso Section, Township, Range: 25, 18N, 18E
 Landform (hillslope, terrace, etc): Hillslope Local relief (concave, convex, none): none Slope (%): 6
 Subregion (LRR): LRR D Lat: 39.30648243 Long: -119.90216085 Datum: NAD83/2011
 Soil Map Unit Name: Tallac very bouldery sandy loam, 4 to 30 percent slopes; Graylock-Temo-Rock outcrop compl NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Upland point	

VEGETATION - Use scientific names of plants.

<table style="width: 100%;"> <tr> <th style="text-align: left;">Tree Stratum (Plot size: <u>30-ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr> <td>1. <u><i>Pinus contorta</i> / Lodgepole pine</u></td> <td style="text-align: center;">25</td> <td style="text-align: center;">Yes</td> <td style="text-align: center;">FAC</td> </tr> <tr> <td>2. <u><i>Tsuga mertensiana</i> / Patton spruce, Mountain hemlock</u></td> <td style="text-align: center;">2</td> <td style="text-align: center;">No</td> <td style="text-align: center;">FACU</td> </tr> <tr> <td>3. <u> </u></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4. <u> </u></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">27</td> <td colspan="2" style="text-align: center;">= Total Cover</td> </tr> </table> <table style="width: 100%;"> <tr> <th style="text-align: left;">Sapling/Shrub Stratum (Plot size: <u>15-ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>2. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>3. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>4. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>5. <u> </u></td><td></td><td></td><td></td></tr> <tr> <td></td> <td style="text-align: center;">0</td> <td colspan="2" style="text-align: center;">= Total Cover</td> </tr> </table> <table style="width: 100%;"> <tr> <th style="text-align: left;">Herb Stratum (Plot size: <u>5-ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr> <td>1. <u><i>Antennaria media</i> / Alpine pussytoes</u></td> <td style="text-align: center;">35</td> <td style="text-align: center;">Yes</td> <td style="text-align: center;">FAC</td> </tr> <tr> <td>2. <u><i>Juncus parryi</i> / Parry's rush, Parry's rush</u></td> <td style="text-align: center;">30</td> <td style="text-align: center;">Yes</td> <td style="text-align: center;">FAC</td> </tr> <tr> <td>3. <u><i>Juncus orthophyllus</i> / Straight leaved rush, Straightleaved ru</u></td> <td style="text-align: center;">15</td> <td style="text-align: center;">No</td> <td style="text-align: center;">FACW</td> </tr> <tr> <td>4. <u><i>Erigeron glacialis</i> / Wandering fleabane, Subalpine fleabane</u></td> <td style="text-align: center;">7</td> <td style="text-align: center;">No</td> <td style="text-align: center;">FACW</td> </tr> <tr> <td>5. <u><i>Muhlenbergia filiformis</i> / Slender muhly, Pull-up muhly</u></td> <td style="text-align: center;">3</td> <td style="text-align: center;">No</td> <td style="text-align: center;">FACW</td> </tr> <tr><td>6. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>7. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>8. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>9. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>10. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>11. <u> </u></td><td></td><td></td><td></td></tr> <tr> <td></td> <td style="text-align: center;">90</td> <td colspan="2" style="text-align: center;">= Total Cover</td> </tr> </table> <table style="width: 100%;"> <tr> <th style="text-align: left;">Woody Vine Stratum (Plot size: <u>30-ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>2. <u> </u></td><td></td><td></td><td></td></tr> <tr> <td></td> <td style="text-align: center;">0</td> <td colspan="2" style="text-align: center;">= Total Cover</td> </tr> </table> % Bare Ground in Herb Stratum <u>10</u>	Tree Stratum (Plot size: <u>30-ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	1. <u><i>Pinus contorta</i> / Lodgepole pine</u>	25	Yes	FAC	2. <u><i>Tsuga mertensiana</i> / Patton spruce, Mountain hemlock</u>	2	No	FACU	3. <u> </u>				4. <u> </u>					27	= Total Cover		Sapling/Shrub Stratum (Plot size: <u>15-ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	1. <u> </u>				2. <u> </u>				3. <u> </u>				4. <u> </u>				5. <u> </u>					0	= Total Cover		Herb Stratum (Plot size: <u>5-ft</u>)	Absolute % Cover	Dominant Species?	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Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index ≤3.0' <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)																																																																																																																									
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Remarks:

SOIL

Sampling Point: SP8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1	7.5YR 3/3	100					Sandy Loam	organic matter
1-12	7.5YR 2.5/3	100					Sandy Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ High Water Table (A2)	☐ Salt Crust (B11)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LRR A)
☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)
☐ Inundation Visible on Aerial Imagery (B7)	
☐ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:Surface Water Present? Yes _____ No X Depth (inches): _____Water Table Present? Yes _____ No X Depth (inches): _____Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)**Wetland Hydrology Present?** Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SOIL

Sampling Point: SP9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	7.5R 2.5/2	100					Loamy Sand	Small gravel
5-15	10YR 3/4	95	2.5YR 4/8	5	C	M	Loamy Sand	Gravelly fine.

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒ X

Remarks: Some gravel particles have iron color, orange parent material

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ High Water Table (A2)	☐ Salt Crust (B11)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LRR A)
☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)
☐ Inundation Visible on Aerial Imagery (B7)	
☐ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes _____	No ☒ X	Depth (inches): _____
Water Table Present?	Yes _____	No ☒ X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ☒ X	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ☒ X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SOIL

Sampling Point: SP10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 2/2	100					Sandy Loam	Lots of organic matter; roots
2-4	10YR 3/2	95	2.5YR 3/4	5	C	M	Sandy Loam	Lots of iron colored gravel
4-11	5YR 3/1	98	5YR 3/4	2	C	M	Sandy Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histic Sol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
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☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ High Water Table (A2)	☐ Salt Crust (B11)
☒ Saturation (A3)	☐ Aquatic Invertebrates (B13)
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Secondary Indicators (minimum of two required)

☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
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☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ☐ No ☒	Depth (inches): _____
Water Table Present?	Yes ☒ No ☐	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes ☒ No ☐	Depth (inches): 4

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Large roots

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Tahoe Meadows Interpretive Trail Improvements Project City/County: Washoe County Sampling Date: 08/14/2024
 Applicant/Owner: Tahoe Rim Trail Association State: Nevada Sampling Point: SP11
 Investigator(s): P. Brillante, T. Whittington Section, Township, Range: 30, 19N, 19E
 Landform (hillslope, terrace, etc): Slope towards bottom of hill Local relief (concave, convex, none): none Slope (%): 2
 Subregion (LRR): LRR D Lat: 39.30704033 Long: -119.89942401 Datum: WGS84
 Soil Map Unit Name: Graylock-Temo-Rock outcrop complex, 30 to 70 percent slopes NWI classification: PEM1C
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u>	No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>			
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>			
Remarks: PEM1C-4					

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30-ft</u>) <table border="1"> <thead> <tr> <th></th> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. <i>Pinus contorta</i> / Lodgepole pine</td> <td>10</td> <td>Yes</td> <td>FAC</td> </tr> <tr> <td>2. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>3. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>4. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td></td> <td>10</td> <td colspan="2">= Total Cover</td> </tr> </tbody> </table> Sapling/Shrub Stratum (Plot size: <u>15-ft</u>) <table border="1"> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td></td><td>0</td><td colspan="2">= Total Cover</td></tr> </tbody> </table> Herb Stratum (Plot size: <u>5-ft</u>) <table border="1"> <tbody> <tr><td>1. <i>Carex subfusca</i> / Brown sedge, Rusty or pale broomsedge</td><td>25</td><td>Yes</td><td>FAC</td></tr> <tr><td>2. <i>Carex athrostachya</i> / Slender leaved sedge, Long-bracted sedge</td><td>25</td><td>Yes</td><td>FACW</td></tr> <tr><td>3. <i>Veratrum californicum</i> / California false hellebore</td><td>20</td><td>Yes</td><td>FAC</td></tr> <tr><td>4. <i>Bistorta bistortoides</i> / American bistort, Western bistort</td><td>15</td><td>No</td><td>FACW</td></tr> <tr><td>5. <i>Hordeum brachyantherum</i> / Meadow barley</td><td>5</td><td>No</td><td>FACW</td></tr> <tr><td>6. <i>Juncus mertensianus</i> / Merten's rush, Mertens' rush</td><td>5</td><td>No</td><td>OBL</td></tr> <tr><td>7. <i>Oreostemma alpigenum</i> / Tundra aster</td><td>5</td><td>No</td><td>FAC</td></tr> <tr><td>8. <i>Polygonum douglasii</i> / Douglas' knotweed</td><td>1</td><td>No</td><td>FACU</td></tr> <tr><td>9. <i>Deschampsia elongata</i> / Hairgrass, Slender hair grass</td><td>1</td><td>No</td><td>FACW</td></tr> <tr><td>10. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>11. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td></td><td>102</td><td colspan="2">= Total Cover</td></tr> </tbody> </table> Woody Vine Stratum (Plot size: <u>30-ft</u>) <table border="1"> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td></td><td>0</td><td colspan="2">= Total Cover</td></tr> </tbody> </table> % Bare Ground in Herb Stratum <u> </u>					Absolute % Cover	Dominant Species?	Indicator Status	1. <i>Pinus contorta</i> / Lodgepole pine	10	Yes	FAC	2. _____	_____	_____	_____	3. _____	_____	_____	_____	4. _____	_____	_____	_____		10	= Total Cover		1. _____	_____	_____	_____	2. _____	_____	_____	_____	3. _____	_____	_____	_____	4. _____	_____	_____	_____	5. _____	_____	_____	_____		0	= Total Cover		1. <i>Carex subfusca</i> / Brown sedge, Rusty or pale broomsedge	25	Yes	FAC	2. <i>Carex athrostachya</i> / Slender leaved sedge, Long-bracted sedge	25	Yes	FACW	3. <i>Veratrum californicum</i> / California false hellebore	20	Yes	FAC	4. <i>Bistorta bistortoides</i> / American bistort, Western bistort	15	No	FACW	5. <i>Hordeum brachyantherum</i> / Meadow barley	5	No	FACW	6. <i>Juncus mertensianus</i> / Merten's rush, Mertens' rush	5	No	OBL	7. <i>Oreostemma alpigenum</i> / Tundra aster	5	No	FAC	8. <i>Polygonum douglasii</i> / Douglas' knotweed	1	No	FACU	9. <i>Deschampsia elongata</i> / Hairgrass, Slender hair grass	1	No	FACW	10. _____	_____	_____	_____	11. _____	_____	_____	_____		102	= Total Cover		1. _____	_____	_____	_____	2. _____	_____	_____	_____		0	= Total Cover		Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0</u> (A/B) Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> <th></th> </tr> </thead> <tbody> <tr><td>OBL species</td><td>5</td><td>x 1 = 5</td></tr> <tr><td>FACW species</td><td>46</td><td>x 2 = 92</td></tr> <tr><td>FAC species</td><td>60</td><td>x 3 = 180</td></tr> <tr><td>FACU species</td><td>1</td><td>x 4 = 4</td></tr> <tr><td>UPL species</td><td>0</td><td>x 5 = 0</td></tr> <tr><td>Column Totals:</td><td>112</td><td>(A) 281 (B)</td></tr> </tbody> </table> Prevalence Index = B/A = <u>2.51</u> Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index ≤3.0¹ <u> </u> 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants¹ <u> </u> Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>		Total % Cover of:	Multiply by:		OBL species	5	x 1 = 5	FACW species	46	x 2 = 92	FAC species	60	x 3 = 180	FACU species	1	x 4 = 4	UPL species	0	x 5 = 0	Column Totals:	112	(A) 281 (B)
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SOIL

Sampling Point: SP11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 2/2	100						Some peat starting to form at 3 inches, mal
5-6	10YR 2/1	100						Contains maybe 25-30% peat
6-10	7.5YR 2.5/2	37	2.5YR 4/8	3	C	M	Clay	60% peat; woody organic material that flak

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)
☐ Thick Dark Surface (A12)	☒ Redox Dark Surface (F6)
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ High Water Table (A2)	☐ Salt Crust (B11)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LRR A)
☒ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)
☐ Inundation Visible on Aerial Imagery (B7)	
☐ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ☐ No ☒	Depth (inches): _____
Water Table Present?	Yes ☐ No ☒	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ☐ No ☒	Depth (inches): _____

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site:	Tahoe Meadows Interpretive Trail Improvements Project		City/County:	Washoe County		Sampling Date:	08/14/2024	
Applicant/Owner:	Tahoe Rim Trail Association			State:	Nevada	Sampling Point:	SP12	
Investigator(s):	P. Brillante, T. Whittington			Section, Township, Range:	30, 19N, 19E			
Landform (hillslope, terrace, etc):	slope towards bottom of hill			Local relief (concave, convex, none):	none		Slope (%):	2
Subregion (LRR):	LRR D		Lat:	39.30698872		Long:	-119.89937324	
						Datum:	WGS84	
Soil Map Unit Name:	Graylock-Temo-Rock outcrop complex, 30 to 70 percent slopes					NWI classification:	PEM1C	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)								
Are Vegetation	No ☐	Soil	No ☐	or Hydrology	No ☐	Are "Normal Circumstances" present?		Yes ☒ No ☐
Are Vegetation	No ☐	Soil	No ☐	or Hydrology	No ☐	(If needed, explain any answers in Remarks.)		

Hydrophytic Vegetation Present?	Yes <u> X </u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u> </u>	No <u> X </u>
Hydric Soil Present?	Yes <u> </u>	No <u> X </u>			
Wetland Hydrology Present?	Yes <u> </u>	No <u> X </u>			
Remarks: Upland point					

Tree Stratum (Plot size: 30-ft)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Pinus contorta</i> / Lodgepole pine	15	Yes	FAC	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	15	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15-ft)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	0	= Total Cover		

Herb Stratum (Plot size: 5-ft)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Veratrum californicum</i> / California false hellebore	20	Yes	FAC	
2. <i>Deschampsia elongata</i> / Hairgrass, Slender hair grass	15	Yes	FACW	
3. <i>Carex subfusca</i> / Brown sedge, Rusty or pale broomsedge	10	Yes	FAC	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	45	= Total Cover		

Woody Vine Stratum (Plot size: 30-ft)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	0	= Total Cover		

% Bare Ground in Herb Stratum 55

Dominance Index worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 15	x 2 =	30
FAC species 45	x 3 =	135
FACU species 0	x 4 =	0
UPL species 0	x 5 =	0
Column Totals: 60	(A)	165 (B)

Prevalence Index = B/A = 2.75

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation _____

X 2 - Dominance Test is >50% _____

X 3 - Prevalence Index ≤3.0¹ _____

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) _____

5 - Wetland Non-Vascular Plants¹ _____

Problematic Hydrophytic Vegetation¹ (Explain) _____

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

SOIL

Sampling Point: SP12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	7.5YR 2.5/3	100					Sandy Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒ X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ High Water Table (A2)	☐ Salt Crust (B11)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LRR A)
☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)
☐ Inundation Visible on Aerial Imagery (B7)	
☐ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes _____	No ☒ X	Depth (inches): _____
Water Table Present?	Yes _____	No ☒ X	Depth (inches): _____
Saturation Present?	Yes _____	No ☒ X	Depth (inches): _____
(includes capillary fringe)			

Wetland Hydrology Present? Yes _____ No ☒ X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Tahoe Meadows Interpretive Trail Improvements Project City/County: Washoe County Sampling Date: 08/14/2024
 Applicant/Owner: Tahoe Rim Trail Association State: Nevada Sampling Point: SP13
 Investigator(s): P. Brillante, T. Whittington Section, Township, Range: 30, 19N, 19E
 Landform (hillslope, terrace, etc): Slope Local relief (concave, convex, none): concave Slope (%): 4
 Subregion (LRR): LRR D Lat: 39.30716251 Long: -119.89924210 Datum: NAD83/2011
 Soil Map Unit Name: Tallac very bouldery sandy loam, 4 to 30 percent slopes; Graylock-Temo-Rock outcrop compl NWI classification: PEM1C
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks: PSSB - palustrine scrub-shrub wetland	

VEGETATION - Use scientific names of plants.

<table style="width: 100%;"> <tr> <th style="text-align: left;">Tree Stratum (Plot size: <u>30-ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>2. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>3. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>4. <u> </u></td><td></td><td></td><td></td></tr> <tr> <td></td> <td style="text-align: center;">0</td> <td colspan="2" style="text-align: center;">= Total Cover</td> </tr> </table> <table style="width: 100%;"> <tr> <th style="text-align: left;">Sapling/Shrub Stratum (Plot size: <u>15-ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1. <u>Salix eastwoodiae / Mountain willow, Sierra willow</u></td><td style="text-align: center;">55</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACW</td></tr> <tr><td>2. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>3. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>4. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>5. <u> </u></td><td></td><td></td><td></td></tr> <tr> <td></td> <td style="text-align: center;">55</td> <td colspan="2" style="text-align: center;">= Total Cover</td> </tr> </table> <table style="width: 100%;"> <tr> <th style="text-align: left;">Herb Stratum (Plot size: <u>5-ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1. <u>Hordeum brachyantherum / Meadow barley</u></td><td style="text-align: center;">15</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACW</td></tr> <tr><td>2. <u>Veratrum californicum / California false hellebore</u></td><td style="text-align: center;">10</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FAC</td></tr> <tr><td>3. <u>Poa cusickii / Cusick's bluegrass</u></td><td style="text-align: center;">5</td><td style="text-align: center;">No</td><td style="text-align: center;">NI</td></tr> <tr><td>4. <u>Erythranthe guttata / Yellow monkey flower</u></td><td style="text-align: center;">5</td><td style="text-align: center;">No</td><td style="text-align: center;">OBL</td></tr> <tr><td>5. <u>Arnica mollis / Cordilleran arnica, Hairy arnica</u></td><td style="text-align: center;">3</td><td style="text-align: center;">No</td><td style="text-align: center;">FAC</td></tr> <tr><td>6. <u>Angelica capitellata / Grayswamp whiteheads, Swamp white</u></td><td style="text-align: center;">3</td><td style="text-align: center;">No</td><td style="text-align: center;">FACW</td></tr> <tr><td>7. <u>Deschampsia caespitosa / Tufted hair grass</u></td><td style="text-align: center;">2</td><td style="text-align: center;">No</td><td style="text-align: center;">FACW</td></tr> <tr><td>8. <u>Carex nebrascensis / Nebraska sedge, Nebraska sedge</u></td><td style="text-align: center;">2</td><td style="text-align: center;">No</td><td style="text-align: center;">OBL</td></tr> <tr><td>9. <u>Caltha leptosepala / White marsh marigold</u></td><td style="text-align: center;">2</td><td style="text-align: center;">No</td><td style="text-align: center;">OBL</td></tr> <tr><td>10. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>11. <u> </u></td><td></td><td></td><td></td></tr> <tr> <td></td> <td style="text-align: center;">47</td> <td colspan="2" style="text-align: center;">= Total Cover</td> </tr> </table> <table style="width: 100%;"> <tr> <th style="text-align: left;">Woody Vine Stratum (Plot size: <u>30-ft</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1. <u> </u></td><td></td><td></td><td></td></tr> <tr><td>2. <u> </u></td><td></td><td></td><td></td></tr> <tr> <td></td> <td style="text-align: center;">0</td> <td colspan="2" style="text-align: center;">= Total Cover</td> </tr> </table> % Bare Ground in Herb Stratum <u> </u>	Tree Stratum (Plot size: <u>30-ft</u>)	Absolute % Cover	Dominant Species?	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Remarks:

SOIL

Sampling Point: SP13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 2/2	100					Silty Clay Loam	Peat starts at around 4 inches and is about
6-10	10YR 2/1	100					Silty Clay	About 60% peat

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☒ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ High Water Table (A2)	☐ Salt Crust (B11)
☒ Saturation (A3)	☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LRR A)
☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)
☐ Inundation Visible on Aerial Imagery (B7)	
☐ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ☐ No ☒	Depth (inches): _____
Water Table Present?	Yes ☒ No ☐	Depth (inches): 9
Saturation Present? (includes capillary fringe)	Yes ☒ No ☐	Depth (inches): 6

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Tahoe Meadows Interpretive Trail Improvements Project City/County: Washoe County Sampling Date: 08/20/2024
 Applicant/Owner: Tahoe Rim Trail Association State: Nevada Sampling Point: SP14
 Investigator(s): P. Brillante Section, Township, Range: 25, 18N, 18E
 Landform (hillslope, terrace, etc): Floodplain Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): LRR D Lat: 39.30714585 Long: -119.90499153 Datum: NAD83/2011
 Soil Map Unit Name: Tallac very bouldery sandy loam, 4 to 30 percent slopes NWI classification: PEM1C
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u>	No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>			
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>			
Remarks: <u>Between trail and wet PEM; PEM1C-1</u>					

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30-ft</u>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0</u> (A/B)			
1.		Absolute % Cover	Dominant Species?	Indicator Status			
2.							
3.							
4.							
		<u>0</u>	= Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15-ft</u>)				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>10</u> x 1 = <u>10</u> FACW species <u>12</u> x 2 = <u>24</u> FAC species <u>78</u> x 3 = <u>234</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>268</u> (B)			
1.	<u>Pinus contorta / Lodgepole pine</u>	<u>3</u>	<u>Yes</u>	<u>FAC</u>			
2.							
3.							
4.							
5.							
		<u>3</u>	= Total Cover				
Herb Stratum (Plot size: <u>5-ft</u>)				Prevalence Index = B/A = <u>2.68</u>			
1.	<u>Oreostemma alpigenum / Tundra aster</u>	<u>75</u>	<u>Yes</u>	<u>FAC</u>			
2.	<u>Juncus orthophyllus / Straight leaved rush, Straightleaved ru</u>	<u>10</u>	<u>No</u>	<u>FACW</u>			
3.	<u>Mimulus primuloides / Primrose monkeyflower</u>	<u>10</u>	<u>No</u>	<u>OBL</u>			
4.	<u>Deschampsia caespitosa / Tufted hair grass</u>	<u>2</u>	<u>No</u>	<u>FACW</u>			
5.							
6.							
7.							
8.							
9.							
10.							
11.							
		<u>97</u>	= Total Cover				
Woody Vine Stratum (Plot size: <u>30-ft</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index ≤3.0' <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> 5 - Wetland Non-Vascular Plants ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)			
1.							
2.							
		<u>0</u>	= Total Cover				
% Bare Ground in Herb Stratum <u>5</u>				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>			

Remarks:

SOIL

Sampling Point: SP14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	7.5YR 2.5/2	95	2.5YR 3/6	5	C	M	Sandy Loam	Top 3 inches with lots of organic matter
8-16	10YR 4/3	97	5YR 5/8	3	CS	M	Loamy Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)
☐ Thick Dark Surface (A12)	☒ Redox Dark Surface (F6)
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
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☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ☐ No ☒	Depth (inches): _____
Water Table Present?	Yes ☐ No ☒	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ☐ No ☒	Depth (inches): _____

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Tahoe Meadows Interpretive Trail Improvements Project City/County: Washoe County Sampling Date: 08/20/2024
 Applicant/Owner: Tahoe Rim Trail Association State: Nevada Sampling Point: SP15
 Investigator(s): P. Brillante Section, Township, Range: 25, 18N, 18E
 Landform (hillslope, terrace, etc): Hillslope Local relief (concave, convex, none): convex Slope (%): 3
 Subregion (LRR): LRR D Lat: 39.30721765 Long: -119.90500929 Datum:
 Soil Map Unit Name: Tallac very bouldery sandy loam, 4 to 30 percent slopes NWI classification: PEM1C
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u></u>	Is the Sampled Area within a Wetland?	Yes <u></u>	No <u>X</u>
Hydric Soil Present?	Yes <u></u>	No <u>X</u>			
Wetland Hydrology Present?	Yes <u></u>	No <u>X</u>			
Remarks: Slopes up towards trail; slight difference in veg; upland point					

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30-ft</u>) 1. <u></u> 2. <u></u> 3. <u></u> 4. <u></u> <u>0</u> = Total Cover Sapling/Shrub Stratum (Plot size: <u>15-ft R</u>) 1. <u><i>Pinus contorta</i> / Lodgepole pine</u> 2. <u></u> 3. <u></u> 4. <u></u> 5. <u></u> <u>7</u> = Total Cover Herb Stratum (Plot size: <u>5-ft</u>) 1. <u><i>Oreostemma alpinum</i> / Tundra aster</u> 2. <u><i>Deschampsia caespitosa</i> / Tufted hair grass</u> 3. <u><i>Penstemon rydbergii</i> / Rydberg's penstemon</u> 4. <u><i>Trifolium longipes</i> / Long stalked clover, Long-stalked clover</u> 5. <u><i>Carex athrostachya</i> / Slender leaved sedge, Long-bracted sedge</u> 6. <u><i>Mimulus primuloides</i> / Primrose monkeyflower</u> 7. <u><i>Poa sp.</i> / Bluegrass</u> 8. <u><i>Muhlenbergia filiformis</i> / Slender muhly, Pull-up muhly</u> 9. <u><i>Juncus balticus</i> / Wire rush</u> 10. <u></u> 11. <u></u> <u>98</u> = Total Cover Woody Vine Stratum (Plot size: <u>30-ft</u>) 1. <u></u> 2. <u></u> <u>0</u> = Total Cover % Bare Ground in Herb Stratum <u>2</u>				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0</u> (A/B) Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>7</u></td> <td>x 1 = <u>7</u></td> </tr> <tr> <td>FACW species <u>25</u></td> <td>x 2 = <u>50</u></td> </tr> <tr> <td>FAC species <u>60</u></td> <td>x 3 = <u>180</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>3</u></td> <td>x 5 = <u>15</u></td> </tr> <tr> <td>Column Totals: <u>105</u> (A)</td> <td><u>292</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>2.78</u> Hydrophytic Vegetation Indicators: <u></u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index ≤3.0¹ <u></u> 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) <u></u> 5 - Wetland Non-Vascular Plants¹ <u></u> Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes <u>X</u> No <u></u>		Total % Cover of:	Multiply by:	OBL species <u>7</u>	x 1 = <u>7</u>	FACW species <u>25</u>	x 2 = <u>50</u>	FAC species <u>60</u>	x 3 = <u>180</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>3</u>	x 5 = <u>15</u>	Column Totals: <u>105</u> (A)	<u>292</u> (B)
Total % Cover of:	Multiply by:																		
OBL species <u>7</u>	x 1 = <u>7</u>																		
FACW species <u>25</u>	x 2 = <u>50</u>																		
FAC species <u>60</u>	x 3 = <u>180</u>																		
FACU species <u>10</u>	x 4 = <u>40</u>																		
UPL species <u>3</u>	x 5 = <u>15</u>																		
Column Totals: <u>105</u> (A)	<u>292</u> (B)																		

Remarks:
 Transition zone to some less hydrophytic species

SOIL

Sampling Point: SP15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	7.5YR 2.5/2	99	5YR 4/6	1	C	M	Loamy Sand	
5-15	7.5YR 4/4	90	2.5YR 3/6	10	C	M	Loamy Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒ X

Remarks: Some redox deeper in soil likely due to area being a large wetland prior to be altered by adjacent highway and trail construction and overall drying climate

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ High Water Table (A2)	☐ Salt Crust (B11)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LRR A)
☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)
☐ Inundation Visible on Aerial Imagery (B7)	
☐ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes _____	No ☒ X	Depth (inches): _____
Water Table Present?	Yes _____	No ☒ X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ☒ X	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ☒ X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SOIL

Sampling Point: SP 16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)	☐ Sandy Redox (S5)
☐ Histic Epipedon (A2)	☐ Stripped Matrix (S6)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (except MLRA 1)
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: Presumed hydric due to saturated surface soil. Sample point is in middle of trail. Did not dig soil pit to not compromise integrity of trail further.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)	☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
☐ High Water Table (A2)	☐ Salt Crust (B11)
☒ Saturation (A3)	☐ Aquatic Invertebrates (B13)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Iron Deposits (B5)	☐ Stunted or Stressed Plants (D1) (LRR A)
☐ Surface Soil Cracks (B6)	☐ Other (Explain in Remarks)
☐ Inundation Visible on Aerial Imagery (B7)	
☐ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ☐ No ☒	Depth (inches): _____
Water Table Present?	Yes ☐ No ☒	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ☒ No ☐	Depth (inches): 0

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Patch of surface water present on trail just west of sample pt.

Appendix B

OHWM Data Sheets

U.S. Army Corps of Engineers (USACE)
RAPID ORDINARY HIGH WATER MARK
(OHWM) FIELD IDENTIFICATION DATA SHEET
 The proponent agency is Headquarters USACE CECW-COR.

Form Approved -
OMB No. 0710-0024
Expires: 2027-09-30

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Project ID #: ODP1

Site Name: Tahoe Meadows Interpretive Trail

Date and Time: 8/20/24 3:36 PM

Location (lat/long): 39.30957601, -119.89889443

Investigator(s):

Step 1 Site overview from remote and online resources.

Check boxes for online resources used to evaluate site:

- | | | |
|---|---|--|
| ☐ gage data | ☐ LiDAR | ☐ geologic maps |
| ☐ climatic data | ☒ satellite imagery | ☐ land use maps |
| ☒ aerial photos | ☒ topographic maps | ☐ Other: _____ |

Describe land use and flow conditions from online resources.

Were there any recent extreme events (floods or drought)?
Channel visible within vegetated wetland. Drains into larger wetland to the west. No recent extreme events.

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or human-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls, etc.

Perennial drainage adjacent to trail and wetland. In some areas within wetland. Wetland has been disconnected by berm that created road/trail.

Step 3 Mark the boxes next to the indicators used to help identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators used to identify the location of the OHWM may be just below or above the OHWM.

Make a slash in boxes next to indicators that are helpful in identifying the OHWM. After the initial assessment, those indicators identified at the OHWM elevation should be changed from slashes to x's. Note, it is not necessary to mark indicators that are present but do not help inform identification of the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and attach a photo log.

Geomorphic indicators

Sediment indicators

- | | |
|---|---|
| ☒ Break in slope | ☐ Channel bar |
| ☒ on the bank | ☐ shelving (berms) on bar |
| ☒ undercut bank | ☐ unvegetated |
| ☐ valley bottom | ☐ vegetation transition (go to veg. indicators) |
| ☐ Other: _____ | ☐ sediment transition (go to sed. indicators) |
| ☐ Shelving | ☐ upper limit of deposition on bar |
| ☐ shelf at top of bank | ☐ Instream bedforms and other bedload transport evidence |
| ☐ natural levee | ☐ deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.) |
| ☐ human-made berms or levees | ☐ bedforms (e.g., pools, riffles, steps, etc.) |
| ☐ other berms: _____ | ☐ Weathered clasts or bedrock |
| ☒ Secondary channels | ☐ erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.) |

- | |
|---|
| ☒ Soil development |
| ☒ Changes in character of soil |
| ☒ Mudcracks |
| ☒ Changes in particle-sized distribution |
| ☐ transition from loamy sand to sand or silt |
| ☐ upper limit of sand-sized particles |
| ☒ silt deposits |

Vegetation indicators (Consider the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain)

Other physical indicators

- | | |
|--|--|
| ☒ Change in vegetation type from 0 to graminoids | ☐ Vegetation matted down and/or bent |
| ☐ Change in density of vegetation | |
| ☐ Exposed roots below intact soil layer | |
| ☐ Other vegetation observations | |

- | |
|--|
| ☐ Sediment deposited on vegetation or structures |
| ☐ Wracking/presence of organic litter |
| ☐ Presence of large wood |
| ☐ Leaf litter disturbed or washed away |
| ☐ Water staining |

Other observed indicators? Describe:

Surface water present in certain reaches; saturation visible throughout. Dense moss on banks. No vegetation or few forbs or graminoids to many forbs and graminoids.

U.S. Army Corps of Engineers (USACE)
RAPID ORDINARY HIGH WATER MARK
(OHWM) FIELD IDENTIFICATION DATA SHEET
 The proponent agency is Headquarters USACE CECW-COR.

Form Approved -
OMB No. 0710-0024
Expires: 2027-09-30

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Project ID #: ODP2

Site Name: Tahoe Meadows Interpretive Trail

Date and Time: 8/20/24 4:35PM

Location (lat/long): 39.30926035, -119.8977575

Investigator(s): P. Brillante

Step 1 Site overview from remote and online resources.

Check boxes for online resources used to evaluate site:

- | | | |
|---|---|--|
| ☐ gage data | ☐ LiDAR | ☐ geologic maps |
| ☐ climatic data | ☒ satellite imagery | ☐ land use maps |
| ☒ aerial photos | ☒ topographic maps | ☐ Other: _____ |

Describe land use and flow conditions from online resources.

Were there any recent extreme events (floods or drought)?
 Perennial stream segment (Ophir Creek) flows under bridge along trail. Largely vegetated. Channel discernible further downstream. No recent extreme events.

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or human-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls, etc.

Narrow channel upstream of trail bridge. Widens at bridge and spreads out downstream into a wetland with a channel. Unvegetated portion on creek is 3-6 feet but surface water through wetland is roughly 10 ft wide downstream of bridge

Step 3 Mark the boxes next to the indicators used to help identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators used to identify the location of the OHWM may be just below or above the OHWM.

Make a slash in boxes next to indicators that are helpful in identifying the OHWM. After the initial assessment, those indicators identified at the OHWM elevation should be changed from slashes to x's. Note, it is not necessary to mark indicators that are present but do not help inform identification of the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and attach a photo log.

Geomorphic indicators

- | | |
|--|---|
| ☒ Break in slope | ☒ Channel bar |
| ☐ on the bank | ☐ shelving (berms) on bar |
| ☒ undercut bank | ☒ unvegetated |
| ☐ valley bottom | ☒ vegetation transition (go to veg. indicators) |
| ☐ Other: _____ | ☒ sediment transition (go to sed. indicators) |
| ☐ Shelving | ☐ upper limit of deposition on bar |
| ☐ shelf at top of bank | ☐ Instream bedforms and other bedload transport evidence |
| ☐ natural levee | ☐ deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.) |
| ☐ human-made berms or levees | ☐ bedforms (e.g., pools, riffles, steps, etc.) |
| ☐ other berms: _____ | ☐ Weathered clasts or bedrock |
| ☒ Secondary channels | ☐ erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.) |

Sediment indicators

- | |
|---|
| ☐ Soil development |
| ☒ Changes in character of soil |
| ☐ Mudcracks |
| ☐ Changes in particle-sized distribution |
| ☒ transition from sandy loam to gravel cobble |
| ☐ upper limit of sand-sized particles |
| ☒ silt deposits |

Vegetation indicators (Consider the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain)

- | | |
|--|---|
| ☒ Change in vegetation type from _____ to graminoids | |
| ☐ Change in density of vegetation | |
| ☒ Exposed roots below intact soil layer | ☐ Vegetation matted down and/or bent |
| ☐ Other vegetation observations | |

Other physical indicators

- | |
|---|
| ☐ Sediment deposited on vegetation or structures |
| ☒ Wracking/presence of organic litter |
| ☐ Presence of large wood |
| ☐ Leaf litter disturbed or washed away |
| ☐ Water staining |

Other observed indicators? Describe:

U.S. Army Corps of Engineers (USACE)
RAPID ORDINARY HIGH WATER MARK
(OHWM) FIELD IDENTIFICATION DATA SHEET
 The proponent agency is Headquarters USACE CECW-COR.

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Expires: 2027-09-30

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Project ID #: ODP3

Site Name: Tahoe Meadows Interpretive Trail

Date and Time: 8/14/21 11:41AM

Location (lat/long): 39.30699581, -119.89966061

Investigator(s): P. Brillante, T. Whittington

Step 1 Site overview from remote and online resources.

Check boxes for online resources used to evaluate site:

- | | | |
|---|---|--|
| ☐ gage data | ☐ LiDAR | ☐ geologic maps |
| ☐ climatic data | ☒ satellite imagery | ☐ land use maps |
| ☒ aerial photos | ☒ topographic maps | ☐ Other: _____ |

Describe land use and flow conditions from online resources.

Were there any recent extreme events (floods or drought)?
 Channel not visible on aerial. Bridge visible. Densely vegetated. Flow comes from larger wetland upstream (northeast) and flows southwest. No recent extreme events.

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or human-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls, etc.

Wetland complex with braided channels (intermittent). Trail boardwalk over wetland at constriction point with at least 2 clearly defined intermittent channels downstream and 1 clearly defined channel upstream. Sandy bed with patches of vegetation. Islands of upland plants, including lodgepole. Encroachment by adjacent forest.

Step 3 Mark the boxes next to the indicators used to help identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators used to identify the location of the OHWM may be just below or above the OHWM.

Make a slash in boxes next to indicators that are helpful in identifying the OHWM. After the initial assessment, those indicators identified at the OHWM elevation should be changed from slashes to x's. Note, it is not necessary to mark indicators that are present but do not help inform identification of the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and attach a photo log.

Geomorphic indicators

Sediment indicators

- | | |
|---|--|
| ☒ Break in slope | ☒ Channel bar |
| ☒ on the bank | ☒ shelving (berms) on bar |
| ☐ undercut bank | ☒ unvegetated |
| ☐ valley bottom | ☒ vegetation transition (go to veg. indicators) |
| ☐ Other: _____ | ☒ sediment transition (go to sed. indicators) |
| ☒ Shelving | ☒ upper limit of deposition on bar |
| ☒ shelf at top of bank | ☒ Instream bedforms and other bedload transport evidence |
| ☐ natural levee | ☒ deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.) |
| ☐ human-made berms or levees | ☐ bedforms (e.g., pools, riffles, steps, etc.) |
| ☐ other berms: _____ | ☐ Weathered clasts or bedrock |
| ☒ Secondary channels | ☒ erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.) |

- | |
|---|
| ☒ Soil development |
| ☒ Changes in character of soil |
| ☐ Mudcracks |
| ☒ Changes in particle-sized distribution |
| ☒ transition from decomposed granite to sand |
| ☐ upper limit of sand-sized particles |
| ☐ silt deposits |

Vegetation indicators (Consider the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain)

Other physical indicators

- | | |
|---|---|
| ☒ Change in vegetation type from 0 to forbs | |
| ☐ Change in density of vegetation | |
| ☒ Exposed roots below intact soil layer | ☐ Vegetation matted down and/or bent |
| ☐ Other vegetation observations | |

- | |
|---|
| ☐ Sediment deposited on vegetation or structures |
| ☒ Wracking/presence of organic litter |
| ☒ Presence of large wood |
| ☐ Leaf litter disturbed or washed away |
| ☐ Water staining |

Other observed indicators? Describe:

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Expires: 2027-09-30

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Project ID #: ODP4

Site Name: Tahoe Meadows Interpretive Trail

Date and Time: 8/14/24 10:37AM

Location (lat/long): 39.30729890, -119.90083865

Investigator(s): P. Brillante, T. Whittington

Step 1 Site overview from remote and online resources.

Check boxes for online resources used to evaluate site:

- | | | |
|---|---|--|
| ☐ gage data | ☐ LIDAR | ☐ geologic maps |
| ☐ climatic data | ☒ satellite imagery | ☐ land use maps |
| ☒ aerial photos | ☒ topographic maps | ☐ Other: _____ |

Describe land use and flow conditions from online resources.

Were there any recent extreme events (floods or drought)?
Channel within larger wetland. Drains from pond. No recent extreme events.

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or human-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls, etc.

PEM wetland with channel (tributary to Ophir Creek) going through it. Dominated by Carex nebrascensis, few Salix. Trail boardwalk crosses wetland.

Step 3 Mark the boxes next to the indicators used to help identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators used to identify the location of the OHWM may be just below or above the OHWM.

Make a slash in boxes next to indicators that are helpful in identifying the OHWM. After the initial assessment, those indicators identified at the OHWM elevation should be changed from slashes to x's. Note, it is not necessary to mark indicators that are present but do not help inform identification of the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and attach a photo log.

Geomorphic indicators

Sediment indicators

- | | |
|---|---|
| ☒ Break in slope | ☐ Channel bar |
| ☒ on the bank | ☐ shelving (berms) on bar |
| ☐ undercut bank | ☐ unvegetated |
| ☐ valley bottom | ☐ vegetation transition (go to veg. indicators) |
| ☐ Other: _____ | ☐ sediment transition (go to sed. indicators) |
| ☐ Shelving | ☐ upper limit of deposition on bar |
| ☐ shelf at top of bank | ☐ Instream bedforms and other bedload transport evidence |
| ☐ natural levee | ☐ deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.) |
| ☐ human-made berms or levees | ☐ bedforms (e.g., pools, riffles, steps, etc.) |
| ☐ other berms: _____ | ☐ Weathered clasts or bedrock |
| ☐ Secondary channels | ☐ erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.) |

- | |
|---|
| ☒ Soil development |
| ☒ Changes in character of soil |
| ☐ Mudcracks |
| ☒ Changes in particle-sized distribution |
| ☒ transition from soil (sand-sized) to cobbles |
| ☐ upper limit of sand-sized particles |
| ☒ silt deposits |

Vegetation indicators (Consider the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain)

Other physical indicators

- | | |
|--|--|
| ☒ Change in vegetation type from _____ to graminoids | |
| ☐ Change in density of vegetation | |
| ☐ Exposed roots below intact soil layer | ☒ Vegetation matted down and/or bent |
| ☐ Other vegetation observations | |

- | |
|---|
| ☐ Sediment deposited on vegetation or structures |
| ☐ Wracking/presence of organic litter |
| ☐ Presence of large wood |
| ☐ Leaf litter disturbed or washed away |
| ☐ Water staining |

Other observed indicators? Describe:

U.S. Army Corps of Engineers (USACE)
RAPID ORDINARY HIGH WATER MARK
(OHWM) FIELD IDENTIFICATION DATA SHEET
 The proponent agency is Headquarters USACE CECW-COR.

Form Approved -
OMB No. 0710-0024
Expires: 2027-09-30

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Project ID #: ODP5

Site Name: Tahoe Meadows Interpretive Trail

Date and Time: 8/7/24 11:59AM

Location (lat/long): 39.30716158, -119.905652295

Investigator(s): P.Brillante, K. Kelso

Step 1 Site overview from remote and online resources.

Check boxes for online resources used to evaluate site:

- | | | |
|---|---|--|
| ☐ gage data | ☐ LIDAR | ☐ geologic maps |
| ☐ climatic data | ☒ satellite imagery | ☐ land use maps |
| ☒ aerial photos | ☒ topographic maps | ☐ Other: _____ |

Describe land use and flow conditions from online resources.

Were there any recent extreme events (floods or drought)?

Channel goes under the trail through a culvert.

Drains from north into a larger wetland.

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or human-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls, etc.

Perennial stream with 6-8 inches of water. Mud bottom. Some boulders. Aquatic invertebrates. Culvert under trail.

Step 3 Mark the boxes next to the indicators used to help identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators used to identify the location of the OHWM may be just below or above the OHWM.

Make a slash in boxes next to indicators that are helpful in identifying the OHWM. After the initial assessment, those indicators identified at the OHWM elevation should be changed from slashes to x's. Note, it is not necessary to mark indicators that are present but do not help inform identification of the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and attach a photo log.

Geomorphic indicators

- | | |
|---|---|
| ☒ Break in slope | ☐ Channel bar |
| ☒ on the bank | ☐ shelving (berms) on bar |
| ☐ undercut bank | ☐ unvegetated |
| ☐ valley bottom | ☐ vegetation transition (go to veg. indicators) |
| ☐ Other: _____ | ☐ sediment transition (go to sed. indicators) |
| ☐ Shelving | ☐ upper limit of deposition on bar |
| ☐ shelf at top of bank | ☐ Instream bedforms and other bedload transport evidence |
| ☐ natural levee | ☐ deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.) |
| ☐ human-made berms or levees | ☐ bedforms (e.g., pools, riffles, steps, etc.) |
| ☐ other berms: _____ | ☐ Weathered clasts or bedrock |
| ☐ Secondary channels | ☐ erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.) |

Sediment indicators

- | |
|---|
| ☐ Soil development |
| ☐ Changes in character of soil |
| ☐ Mudcracks |
| ☐ Changes in particle-sized distribution |
| ☐ transition from _____ to _____ |
| ☐ upper limit of sand-sized particles |
| ☐ silt deposits |

Vegetation indicators (Consider the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain)

- | | |
|---|---|
| ☐ Change in vegetation type from _____ to graminoids | ☐ Vegetation matted down and/or bent |
| ☐ Change in density of vegetation | |
| ☐ Exposed roots below intact soil layer | |
| ☐ Other vegetation observations | |

Other physical indicators

- | |
|---|
| ☐ Sediment deposited on vegetation or structures |
| ☐ Wracking/presence of organic litter |
| ☐ Presence of large wood |
| ☐ Leaf litter disturbed or washed away |
| ☐ Water staining |

Other observed indicators? Describe:

Appendix C

Plant List

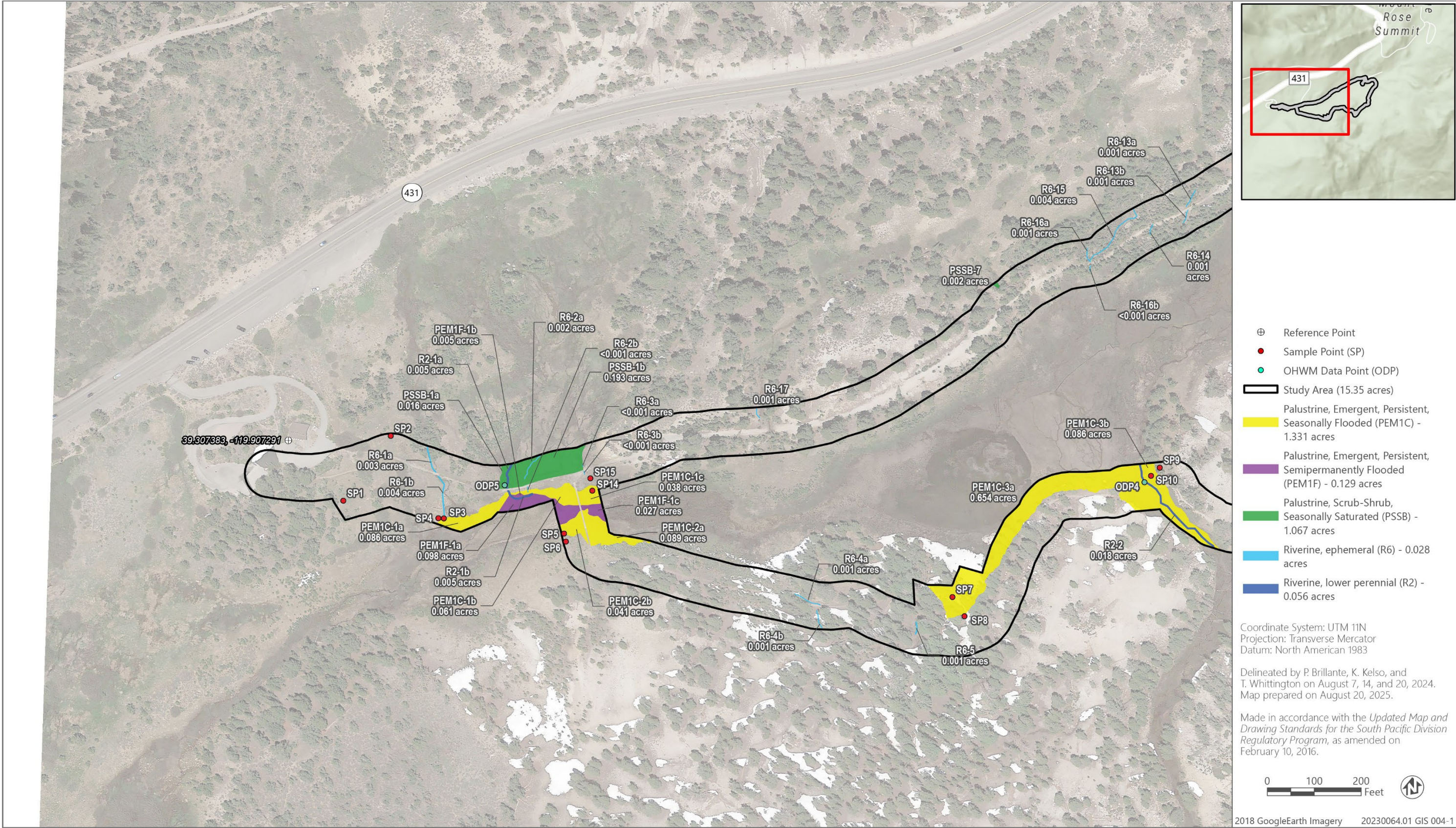
Plant Species Observed within the Study Area for the Tahoe Meadows Interpretive Trail Improvements Project

Scientific Name	Common Name	Indicator
<i>Achillea millefolium</i>	Yarrow	FACU
<i>Achnatherum occidentale</i>	Western needlegrass	NL
<i>Angelica capitellata</i>	Grayswamp whiteheads	FACW
<i>Antennaria media</i>	Alpine pussytoes	FAC
<i>Arabis platysperma</i>	Pioneer rockcress	NL
<i>Arnica mollis</i>	Cordilleran arnica	FAC
<i>Artemisia tridentata</i>	Common sagebrush	NL
<i>Bistorta bistortoides</i>	American bistort	FACW
<i>Bromus</i> sp.	Brome	—
<i>Caltha leptosepala</i>	White marsh marigold	OBL
<i>Carex angustata</i>	Wide fruit sedge	FACW
<i>Carex athrostachya</i>	Slender leaved sedge	FACW
<i>Carex douglasii</i>	Douglas' sedge	FAC
<i>Carex nebrascensis</i>	Nebraska sedge	OBL
<i>Carex pachystachya</i>	Thick headed sedge	FAC
<i>Carex praegracilis</i>	Field sedge	FACW
<i>Carex subfusca</i>	Brown sedge	FAC
<i>Carex subnigricans</i>	Blackish sedge	FAC
<i>Carex utriculata</i>	Beaked sedge	OBL
<i>Deschampsia caespitosa</i>	Tufted hair grass	FACW
<i>Deschampsia elongata</i>	Hairgrass	FACW
<i>Eleocharis macrostachya</i>	Spike rush	OBL
<i>Elymus elymoides</i>	Squirrel tail grass	FACU
<i>Elymus glaucus</i>	Blue wildrye	FACU
<i>Elymus trachycaulus</i>	Slender wheatgrass	FAC
<i>Epilobium ciliatum</i>	Slender willow herb	FACW
<i>Ericameria bloomeri</i>	Bloomer's goldenbrush	NL
<i>Erigeron glacialis</i>	Wandering fleabane	FACW
<i>Erythranthe guttata</i> (=Mimulus guttatus)	Seep monkeyflower	OBL
<i>Erythranthe</i> (=Mimulus) <i>primuloides</i>	Primrose monkeyflower	OBL
<i>Gayophytum racemosum</i>	Black foot gayophytum	FAC
<i>Gentianopsis simplex</i>	Oneflowered fringed gentian	FACW
<i>Geum macrophyllum</i>	Large leaved avens	FAC
<i>Hordeum brachyantherum</i>	Meadow barley	FACW
<i>Juncus balticus</i>	Wire rush	FACW
<i>Juncus mertensianus</i>	Merten's rush	OBL
<i>Juncus orthophyllus</i>	Straight leaved rush	FACW
<i>Juncus parryi</i>	Parry's rush	FAC

Scientific Name	Common Name	Indicator
<i>Lepidium sp.</i>	Pepperweed	—
<i>Lonicera involucrata</i>	Twinberry honeysuckle	NL
<i>Lupinus sp.</i>	Lupine	—
<i>Monardella odoratissima</i>	Mountain monardella	UPL
<i>Montia sp.</i>	Minerslettuce	—
<i>Muhlenbergia filiformis</i>	Slender muhly	FACW
<i>Oreostemma alpinum</i>	Tundra aster	FAC
<i>Pedicularis groenlandica</i>	Elephant head lousewort	OBL
<i>Penstemon rydbergii</i>	Rydberg's penstemon	FACU
<i>Phacelia hastata</i>	White leafed phacelia	NL
<i>Phleum alpinum</i>	Timothy grass	FAC
<i>Phyllodoce breweri</i>	Brewer's mountain heather	FAC
<i>Pinus albicaulis</i>	Whitebark pine	NL
<i>Pinus contorta</i>	Lodgepole pine	FAC
<i>Platanthera stricta</i>	Slender bog orchid	FACW
<i>Poa cusickii</i>	Cusick's bluegrass	NL
<i>Poa secunda</i>	Pine bluegrass,	FACU
<i>Poa sp.</i>	Bluegrass	—
<i>Polygonum douglasii</i>	Douglas' knotweed	FACU
<i>Potentilla glandulosa</i>	Sticky cinquefoil	NL
<i>Potentilla gracilis</i>	Northwest cinquefoil	FAC
<i>Ribes montigenum</i>	Mountain gooseberry	NL
<i>Rumex paucifolius</i>	Few leaved dock	FAC
<i>Salix bebbiana</i>	Gray willow	FACW
<i>Salix eastwoodiae</i>	Mountain willow	FACW
<i>Salix geyeriana</i>	Geyer's willow	FACW
<i>Salix lemmonii</i>	Lemmon's willow	FACW
<i>Sambucus racemosa</i>	Red elderberry	FACU
<i>Senecio triangularis</i>	Groundsel	FACW
<i>Spiranthes romanzoffiana</i>	Ladies' tresses	FACW
<i>Stellaria longipes</i>	Longstalk starwort	FACW
<i>Torreyochloa pallida</i>	Pale false mannagrass	OBL
<i>Trifolium longipes</i>	Long stalked clover	FAC
<i>Trisetum spicatum</i>	Spike trisetum	UPL
<i>Tsuga mertensiana</i>	Mountain hemlock	FACU
<i>Veratrum californicum</i>	California false hellebore	FAC

Appendix D

Aquatic Resource Delineation Maps



Source: Data collected by Ascent in 2024



ARDR – Map 2 of 2

Appendix E

Representative Photographs



Source: Ascent in 2024.

Representative photo of a PEM1F (palustrine emergent, persistent, semi permanently flooded) wetland. Taken August 2024.



Source: Ascent in 2024.

Representative photo of a PSSB (palustrine, scrub shrub, seasonally saturated) wetland intermixed with PEM1C (palustrine, emergent persistent, seasonally saturated) wetland. Taken August 2024.



Source: Ascent in 2024.

Representative photo of a PEM1F (palustrine emergent persistent, semi permanently flooded) wetland with a perennial channel (R2) flowing through it. Taken August 2024.



Source: Ascent in 2024.

Representative photo of R6 (riverine ephemeral). Taken August 2024.



Source: Ascent in 2024.

Representative photo of R4 (riverine intermittent). Taken August 2024.



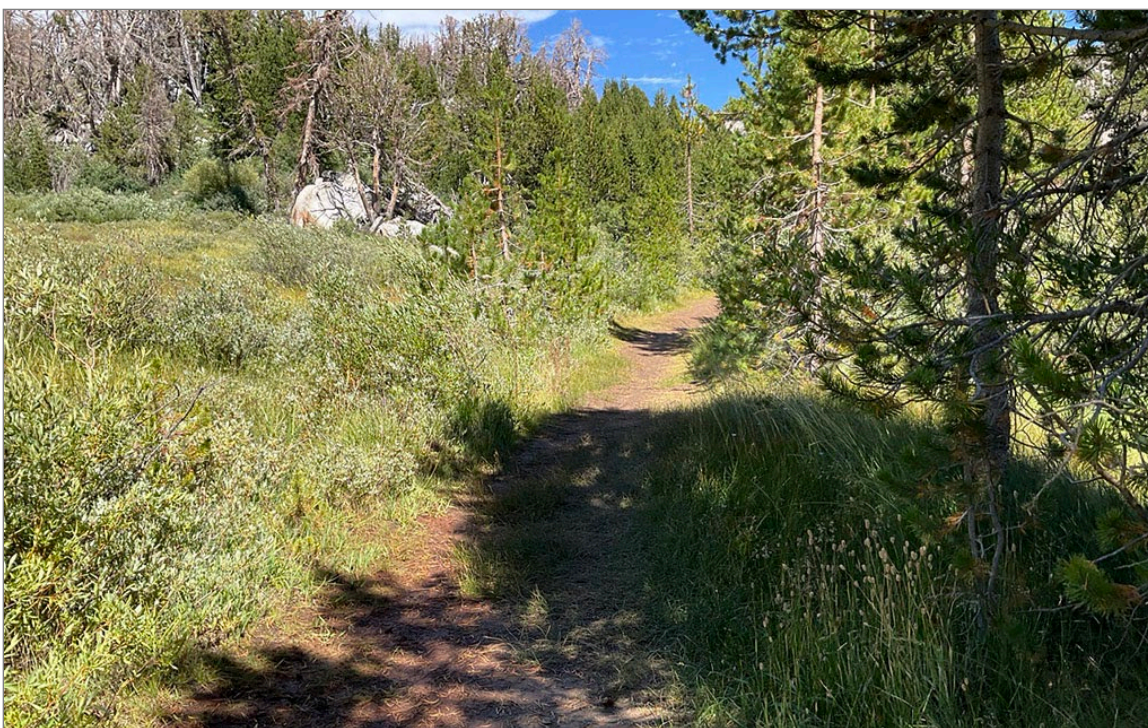
Source: Ascent in 2024.

Representative photo of R2 (riverine perennial.) Taken August 2024.



Source: Ascent in 2024.

Photo of existing bridge crossing of Ophir Creek, a perennial stream. Taken August 2024.



Source: Ascent in 2024.

Sample point 16. PEM1C (Palustrine emergent, persistent, seasonally saturated) wetland is bisected by the existing trail. Taken August 2024.



Source: Ascent in 2024.

Photo of soil pit at sample point 5. Taken August 2024.



Source: Ascent in 2024.

Representative photo of a PEM1C (palustrine, emergent persistent, seasonally saturated) wetland.
Taken August 2024.

Appendix F

Soil Report



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Washoe County, Nevada, South Part**



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

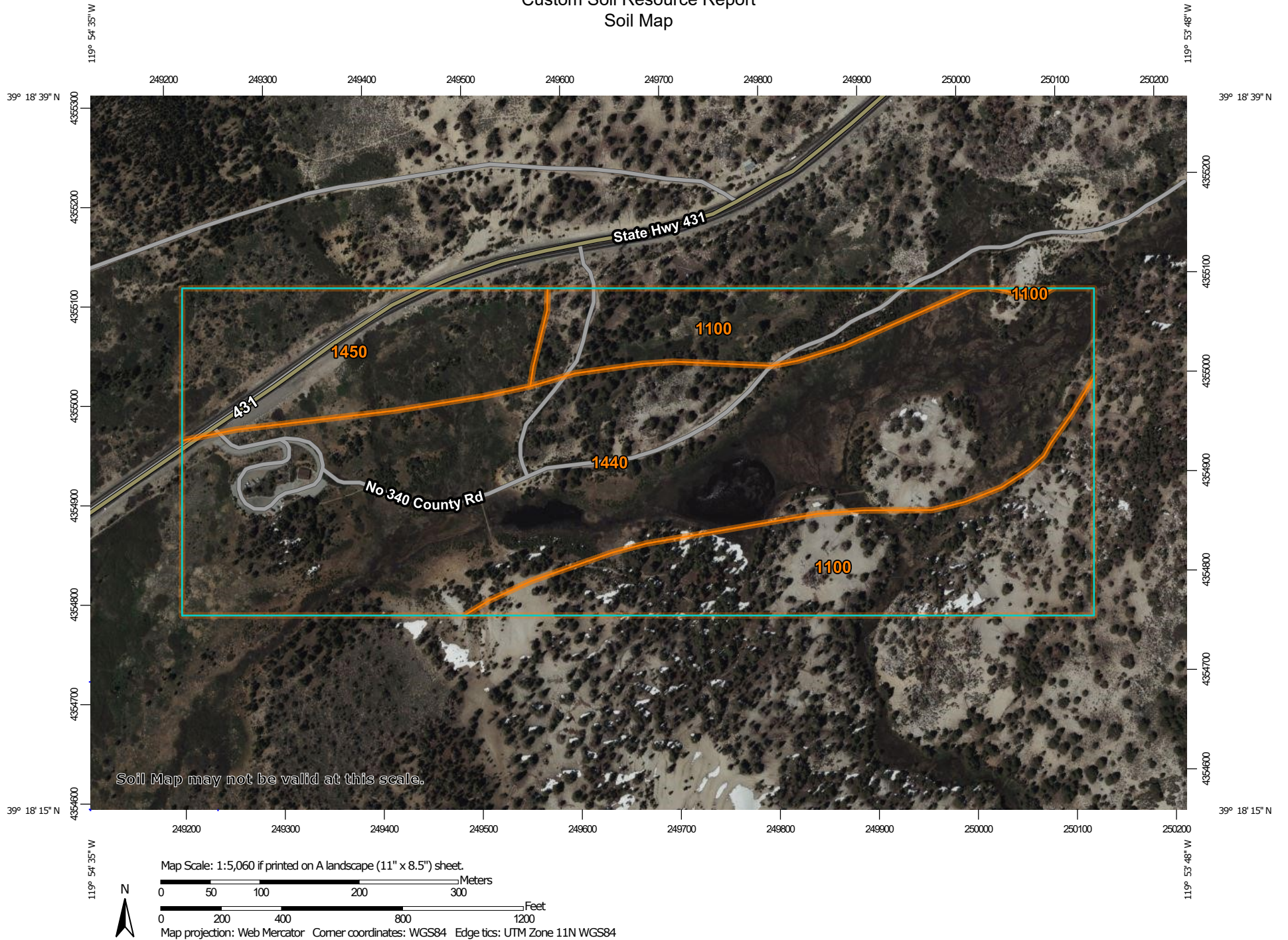
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washoe County, Nevada, South Part
Survey Area Data: Version 22, Sep 17, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 10, 2022—Jun 14, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1100	Graylock-Temo-Rock outcrop complex, 30 to 70 percent slopes	21.6	28.7%
1440	Tallac very bouldery sandy loam, 4 to 30 percent slopes	42.3	56.3%
1450	Meiss-Sibelia-Rock outcrop association	11.3	15.0%
Totals for Area of Interest		75.2	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Washoe County, Nevada, South Part

1100—Graylock-Temo-Rock outcrop complex, 30 to 70 percent slopes

Map Unit Setting

National map unit symbol: hxcj
Elevation: 6,500 to 9,000 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 39 to 41 degrees F
Frost-free period: 50 to 80 days
Farmland classification: Not prime farmland

Map Unit Composition

Graylock and similar soils: 50 percent
Temo and similar soils: 25 percent
Rock outcrop: 10 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Graylock

Setting

Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum and colluvium derived from granitic rocks

Typical profile

H1 - 0 to 6 inches: bouldery loamy sand
H2 - 6 to 42 inches: very gravelly loamy sand
H3 - 42 to 56 inches: very gravelly sand
R - 56 to 66 inches: bedrock

Properties and qualities

Slope: 30 to 70 percent
Surface area covered with cobbles, stones or boulders: 2.0 percent
Depth to restrictive feature: 39 to 59 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: F022AY105NV - PICO/ABMA/ARTRV/BRMA4
Hydric soil rating: No

Description of Temo

Setting

Landform: Mountains

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Residuum and colluvium derived from granitic rocks

Typical profile

H1 - 0 to 10 inches: bouldery coarse sand

H2 - 10 to 16 inches: gravelly loamy coarse sand

Cr - 16 to 60 inches: bedrock

Properties and qualities

Slope: 30 to 50 percent

Surface area covered with cobbles, stones or boulders: 2.0 percent

Depth to restrictive feature: 8 to 20 inches to paralithic bedrock

Drainage class: Excessively drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very low (about 1.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: D

Ecological site: F022AY121NV - Pinus contorta-Abies magnifica/Artemisia tridentata ssp. tridentata/Achnatherum occidentale ssp. occidentale-Carex rossii

Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Peaks

Down-slope shape: Convex

Across-slope shape: Convex

Minor Components

Toiyabe

Percent of map unit: 5 percent

Landform: Mountains

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F022AY116NV - PIJE/ARTRV/ACOCO

Hydric soil rating: No

Corbett

Percent of map unit: 5 percent

Landform: Mountains

Down-slope shape: Linear

Across-slope shape: Convex

Custom Soil Resource Report

Ecological site: F022AY130NV - Pinus Jeffreyi/ Artemisia Tridentata Ssp.
Vaseyana-Purshia
Hydric soil rating: No

Witefels

Percent of map unit: 5 percent
Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F022AY118NV - ABMA-PICO/ARTRV/BRMA4
Hydric soil rating: No

1440—Tallac very bouldery sandy loam, 4 to 30 percent slopes

Map Unit Setting

National map unit symbol: hxg0
Elevation: 7,500 to 8,600 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 40 to 44 degrees F
Frost-free period: 30 to 50 days
Farmland classification: Not prime farmland

Map Unit Composition

Tallac and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tallac

Setting

Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Glaciomarine deposits

Typical profile

H1 - 0 to 21 inches: very bouldery sandy loam
H2 - 21 to 31 inches: very stony coarse sandy loam
H3 - 31 to 42 inches: very cobbly coarse sandy loam
H4 - 42 to 65 inches: cemented material

Properties and qualities

Slope: 4 to 30 percent
Surface area covered with cobbles, stones or boulders: 17.0 percent
Depth to restrictive feature: 39 to 59 inches to duripan
Drainage class: Well drained
Runoff class: Low

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very low (about 2.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: A

Ecological site: F022AY118NV - ABMA-PICO/ARTRV/BRMA4

Hydric soil rating: No

Minor Components

Macareeno

Percent of map unit: 5 percent

Landform: Mountains

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F022AY104NV - POTR5/SALIX/ELTRT

Hydric soil rating: No

Carioca

Percent of map unit: 4 percent

Landform: Mountains

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F022AY105NV - PICO/ABMA/ARTRV/BRMA4

Hydric soil rating: No

Aquolls

Percent of map unit: 3 percent

Landform: Swales

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R022AY016NV - WET MEADOW

Hydric soil rating: Yes

Burnborough

Percent of map unit: 3 percent

Landform: Mountains

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: R026XY005NV - LOAMY 12-14 P.Z.

Hydric soil rating: No

1450—Meiss-Sibelia-Rock outcrop association

Map Unit Setting

National map unit symbol: hxg2
Elevation: 8,000 to 10,770 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 39 to 41 degrees F
Frost-free period: 30 to 50 days
Farmland classification: Not prime farmland

Map Unit Composition

Meiss and similar soils: 40 percent
Sibelia and similar soils: 30 percent
Rock outcrop: 15 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Meiss

Setting

Landform: Mountains
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum derived from volcanic rock

Typical profile

H1 - 0 to 6 inches: very cobbly sandy loam
H2 - 6 to 13 inches: gravelly loam
R - 13 to 23 inches: bedrock

Properties and qualities

Slope: 15 to 50 percent
Surface area covered with cobbles, stones or boulders: 2.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R022AY010NV - MOUNTAIN SHOULDERS 30+ P.Z.
Hydric soil rating: No

Description of Sibelia

Setting

Landform: Mountains

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Residuum and colluvium derived from volcanic rock

Typical profile

H1 - 0 to 6 inches: very stony sandy loam

H2 - 6 to 20 inches: very gravelly sandy loam

H3 - 20 to 47 inches: extremely cobbly sandy loam

Cr - 47 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 50 percent

Surface area covered with cobbles, stones or boulders: 6.0 percent

Depth to restrictive feature: 39 to 59 inches to paralithic bedrock

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Ecological site: F022AY126NV - Pinus albicaulis-Pinus flexilis/Poa-Carex

Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Peaks

Down-slope shape: Convex

Across-slope shape: Convex

Minor Components

Macareeno

Percent of map unit: 5 percent

Landform: Mountains

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F022AY104NV - POTR5/SALIX/ELTRT

Hydric soil rating: No

Fugawee

Percent of map unit: 5 percent

Landform: Mountains

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F022AY118NV - ABMA-PICO/ARTRV/BRMA4

Custom Soil Resource Report

Hydric soil rating: No

Tallac

Percent of map unit: 5 percent

Landform: Mountains

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F022AY118NV - ABMA-PICO/ARTRV/BRMA4

Hydric soil rating: No

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelpdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix G

Aquatic Resource Excel Spreadsheet

Aquatic Resources Spreadsheet

Waters_Name	State	Cowardin_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude
PEM1C-1a	CALIFORNIA	PEM	Area	0.0863574	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30697034	-119.90587557
PEM1C-1b	CALIFORNIA	PEM	Area	0.06096891	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30711809	-119.90525432
PEM1C-1c	CALIFORNIA	PEM	Area	0.03762279	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30711639	-119.90500536
PEM1C-2a	CALIFORNIA	PEM	Area	0.08875158	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30690357	-119.90488590
PEM1C-2b	CALIFORNIA	PEM	Area	0.04057224	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30692804	-119.90511842
PEM1C-3a	CALIFORNIA	PEM	Area	0.65445065	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30729303	-119.90139884
PEM1C-3b	CALIFORNIA	PEM	Area	0.0860734	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30721556	-119.90065444
PEM1C-4	CALIFORNIA	PEM	Area	0.08173982	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30708141	-119.89943377
PEM1C-5	CALIFORNIA	PEM	Area	0.16206828	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30840852	-119.89828041
PEM1C-6	CALIFORNIA	PEM	Area	0.03194543	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30949537	-119.89952374
PEM1F-1a	CALIFORNIA	PEM	Area	0.09755955	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30708638	-119.90539053
PEM1F-1b	CALIFORNIA	PEM	Area	0.0049011	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30710462	-119.90554011
PEM1F-1c	CALIFORNIA	PEM	Area	0.0265793	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30702888	-119.90496276
PSSB-1a	CALIFORNIA	PEM	Area	0.01620019	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30721232	-119.90565922
PSSB-1b	CALIFORNIA	PEM	Area	0.19287627	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30727750	-119.90534549
PSSB-2	CALIFORNIA	PEM	Area	0.05426552	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30719082	-119.89920979
PSSB-3	CALIFORNIA	PEM	Area	0.10790737	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30869331	-119.89805347
PSSB-4	CALIFORNIA	PEM	Area	0.1758323	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30926582	-119.89799500
PSSB-5a	CALIFORNIA	PEM	Area	0.02001028	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30961635	-119.89866270
PSSB-5b	CALIFORNIA	PEM	Area	0.00218149	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30964413	-119.89874578
PSSB-5c	CALIFORNIA	PEM	Area	0.00857254	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30958826	-119.89879787
PSSB-5d	CALIFORNIA	PEM	Area	0.01598169	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30961276	-119.89884998
PSSB-6a	CALIFORNIA	PEM	Area	0.19569546	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30945213	-119.89950347
PSSB-6b	CALIFORNIA	PEM	Area	0.27544148	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30924232	-119.89965235
PSSB-7	CALIFORNIA	PEM	Area	0.00207977	ACRE	A4-1.ADJ.WET.A1-TNW-404	39.30842481	-119.90200063
R6-1a	CALIFORNIA	R6	Linear	60.3094171	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30729814	-119.90621789

Waters_Name	State	Cowardin_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude
R6-1b	CALIFORNIA	R6	Linear	89.7141067	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30708902	-119.90611441
R6-2a	CALIFORNIA	R6	Linear	65.3160975	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30726606	-119.90547685
R6-2b	CALIFORNIA	R6	Linear	10.9555798	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30714121	-119.90547749
R6-3a	CALIFORNIA	R6	Linear	3.07122062	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30729067	-119.90506992
R6-3b	CALIFORNIA	R6	Linear	6.48062441	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30724929	-119.90505697
R6-4a	CALIFORNIA	R6	Linear	59.9653506	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30654221	-119.90334484
R6-4b	CALIFORNIA	R6	Linear	44.1705311	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30644908	-119.90326153
R6-5	CALIFORNIA	R6	Linear	25.5352126	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30640428	-119.90251881
R6-6a	CALIFORNIA	R6	Linear	14.7211409	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30723680	-119.89908794
R6-6b	CALIFORNIA	R6	Linear	74.6713861	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30724268	-119.89890032
R6-7a	CALIFORNIA	R6	Linear	17.2697537	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30756963	-119.89850769
R6-7b	CALIFORNIA	R6	Linear	66.312604	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30749874	-119.89836604
R6-8	CALIFORNIA	R6	Linear	10.827853	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30764590	-119.89832830
R6-9a	CALIFORNIA	R6	Linear	48.2244519	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30784258	-119.89839013
R6-9b	CALIFORNIA	R6	Linear	40.8944124	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30791065	-119.89823184
R6-10	CALIFORNIA	R6	Linear	52.4298497	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30942146	-119.89911889
R6-11a	CALIFORNIA	R6	Linear	9.88701064	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30929299	-119.89977963
R6-11b	CALIFORNIA	R6	Linear	21.4804789	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30923888	-119.89981520
R6-12	CALIFORNIA	R6	Linear	20.5745771	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30904657	-119.90017054
R6-13a	CALIFORNIA	R6	Linear	40.482435	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30896562	-119.90055717
R6-13b	CALIFORNIA	R6	Linear	28.9557873	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30885852	-119.90059119
R6-14	CALIFORNIA	R6	Linear	22.1248371	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30878043	-119.90085287
R6-15	CALIFORNIA	R6	Linear	164.850098	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30871873	-119.90113196
R6-16a	CALIFORNIA	R6	Linear	31.4079477	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30859452	-119.90132003
R6-16b	CALIFORNIA	R6	Linear	9.98633168	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30853762	-119.90130003
R6-17	CALIFORNIA	R6	Linear	25.6076215	FOOT	NON-WOTUS-TRIB.NEGATIVE.A3	39.30761836	-119.90376884
R2-1a	CALIFORNIA	R2	Linear	56.731689	FOOT	A3.TRIB-404	39.30725818	-119.90562109

Waters_Name	State	Cowardin_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude
R2-1b	CALIFORNIA	R2	Linear	62.7936469	FOOT	A3.TRIB-404	39.30708800	-119.90553242
R2-2	CALIFORNIA	R2	Linear	255.341217	FOOT	A3.TRIB-404	39.30709978	-119.90058450
R2-3a	CALIFORNIA	R2	Linear	49.7499609	FOOT	A3.TRIB-404	39.30925288	-119.89780169
R2-3b	CALIFORNIA	R2	Linear	48.3378823	FOOT	A3.TRIB-404	39.30932919	-119.89766464
R2-4	CALIFORNIA	R2	Linear	477.533332	FOOT	A3.TRIB-404	39.30943448	-119.89944479
R2-5	CALIFORNIA	R2	Linear	21.6033311	FOOT	A3.TRIB-404	39.30966009	-119.89875623
R2-6	CALIFORNIA	R2	Linear	31.8283492	FOOT	A3.TRIB-404	39.30960922	-119.89885200
R2-7	CALIFORNIA	R2	Linear	17.3058832	FOOT	A3.TRIB-404	39.30938754	-119.89942685
R4-1	CALIFORNIA	R4	Linear	298.665158	FOOT	A3.TRIB-404	39.30699756	-119.89978099
R4-2	CALIFORNIA	R4	Linear	38.2447673	FOOT	A3.TRIB-404	39.30958321	-119.89870447
R4-3	CALIFORNIA	R4	Linear	26.7437534	FOOT	A3.TRIB-404	39.30959808	-119.89893335
R4-4	CALIFORNIA	R4	Linear	13.590162	FOOT	A3.TRIB-404	39.30926980	-119.89973380

Appendix H

Signed Statement from Property
Owner(s) Allowing Access



Forest
Service

Humboldt-Toiyabe
National Forest

Carson Ranger District
1536 S. Carson St.
Carson City, NV 89701

File Code: 2700

Date: 19 NOV 2025

Subject: Authorization to access USFS Lands

To: US Army Corps of Engineers, Sacramento District

The Humboldt-Toiyabe National Forest's Carson Ranger District is the land manager for National Forest System Lands associated with the Tahoe Meadows Interpretive Loop Trail project. This letter serves as the district's formal authorization for US Army Corps of Engineers personnel, contractors, or representatives to access National Forest System Lands for the purpose of completing wetland delineation, sample collection, and other field-based work necessary to support the regulatory review and permitting requirements for this project.

A handwritten signature in dark ink, appearing to read "M. D. Zumstein", written over a horizontal line.

MATTHEW D. ZUMSTEIN
Carson District Ranger



Attachment C

Section 404 Nationwide Permit 18
Minor Discharges - No
Preconstruction Notification
Required Letter



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
441 G STREET NW
WASHINGTON DC 20314

June 3, 2026

Regulatory Sacramento District

Humboldt-Toiyabe National Forest
C/O Humboldt-Toiyabe National Forest Humboldt-Toiyabe National Forest
HTNF Carson Ranger District 1536 S Carson St
Carson City, NV 89701

Via Email: Matthew.Zumstein@usda.gov

Dear Humboldt-Toiyabe National Forest:

This is an automated response from the U.S. Army Corps of Engineers' Regulatory Request System to your request for confirmation that your proposed activity does not require notification to the US Army Corps of Engineers (USACE). The project/review area is located at County Road 340, Incline Village, NV 89451. The project has been assigned a Regulatory Request System Tracking Number 47012. This number should be referenced in all communication concerning this project.

Based on the information you have provided, it appears your project Tahoe Meadows Interpretive Trail improvements Project may qualify for a Nationwide Permit 18 Minor Discharges and does not require pre-construction notification to the USACE provided you ensure that the activity meets the nationwide permit terms and conditions listed in the January 8, 2026 Corps Reissuance and Modification of Nationwide Permits (91 FR 768). Copies can be found here: <https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/Nationwide-Permits/>. You must also comply with the District Regional Nationwide Permit Conditions. Contact your District at 916-557-5250 for a copy of these conditions. It is your responsibility to read the nationwide permit(s) along with the General and Regional Conditions before you begin work. If you determine your project does not meet the terms of the nationwide permit and the conditions, you must contact the Corps before you begin any work in jurisdictional waters.

If an individual 401 water quality certification or Coastal Zone Management Act consistency determination is required, you are responsible for obtaining that certification or consistency determination and complying with any conditions from the certification or consistency determination. No activity is authorized by a nationwide permit until the required certification or consistency determinations has been obtained.

The nationwide permit authorization is valid until March 15, 2031, unless the district engineer modifies, suspends, or revokes the nationwide permit authorization in accordance with 33 CFR 330.5(d). If prior to this date, the nationwide permit authorization is reissued without modification or the activity complies with any subsequent modification of the nationwide permit authorization, the verification continues to remain valid until March 15, 2031. If you commence, or are under contract to commence this activity before the nationwide permit expires, or the nationwide permit is modified, suspended, or revoked by the Chief of Engineers or division engineer in accordance with 33 CFR 330.5(b) or (c), respectively, in such a way that the activity would no longer comply with the terms and conditions of the nationwide permit, you will have 12 months after the date the nationwide permit expires or is modified, suspended, or revoked, to complete the activity under the present terms and conditions of the nationwide permit.

This letter is based solely on the information you provided as of June 3, 2026 and has not been verified by the Corps of Engineers. It is your responsibility to ensure no unauthorized work in “navigable waters of the United States” or unauthorized discharges of dredged or fill material into “waters of the United States” occurs as part of the proposed project. Note that performing such an action without the requisite permit could be a violation of the Clean Water Act and/or the Rivers and Harbors Act of 1899, and may result in enforcement action. Your electronic request and associated responses will be retained by the Corps and may be used for enforcement purposes.

Please note that other Federal, state and/or local permits may be required. Nationwide permits do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.

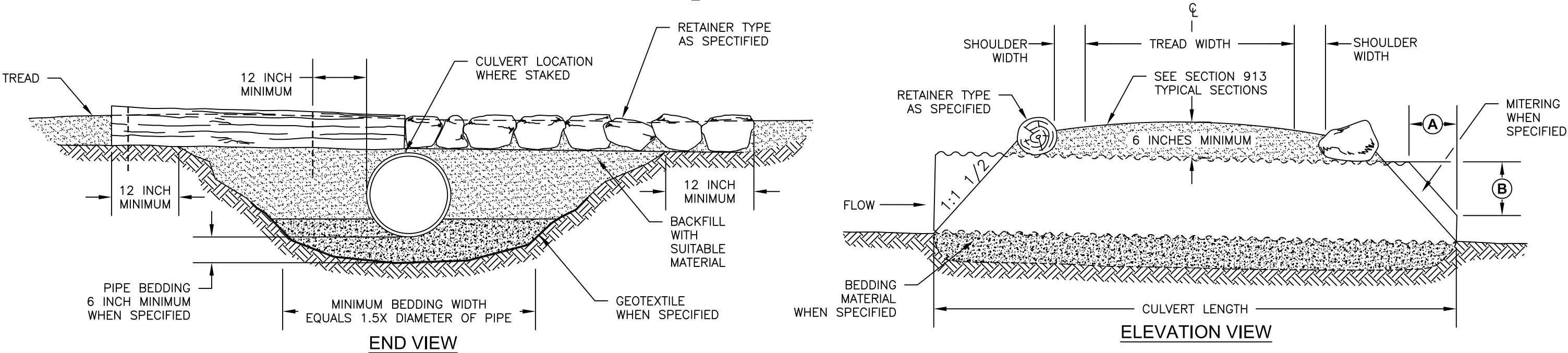
If you have any questions concerning this correspondence, please contact the Sacramento District at 916-557-5250 or you may visit the District’s website <http://www.spk.usace.army.mil/Missions/Regulatory.aspx> for additional information concerning the regulatory program. Please reference this Tracking Number 47012 in all comments and/or inquiries relating to this project.

cc: Pamela Brillante, Ascent Environmental via pam.brillante@ascent.inc

STANDARD CULVERT

TYPICAL ID	GEOTEXTILE TYPE	BEDDING TYPE	CULVERT		RETAINER*	COMMENTS
			TYPE	MITERING		
				(A) (B)		
	X	B X	C X		R x X	X

N/A WHEN NOT APPLICABLE
*FOR TYPICAL RETAINERS SEE SHEET STD_911-03



CULVERT TYPE

TYPE	MATERIAL	COMMENTS
C1	CMP – GALV	X
C2	HDPE	
C3	PLASTIC	
C4	ALUMINUM	
C5	CONCRETE	
C6	X	

- NOTE:
- 1. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
 - 2. NO ROCKS LARGER THAN 1 1/2 INCHES WITHIN 12 INCHES OF PIPE.

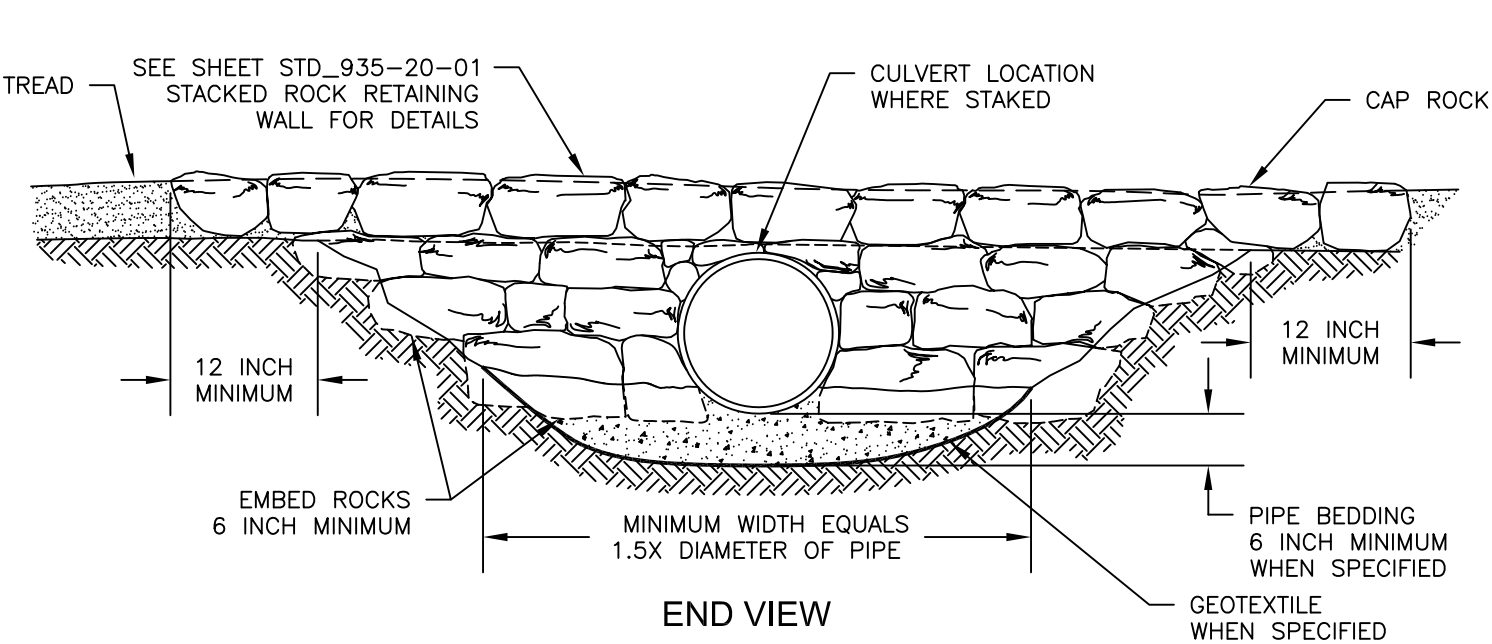
BEDDING MATERIAL TYPE

TYPE	MATERIAL	GRADATION	COMMENTS
B1	PITRUN	X	X
B2	AGGREGATE	X	
B3	X	X	

STANDARD CULVERT WITH HEADWALLS

TYPICAL ID	GEOTEXTILE TYPE	BEDDING	CULVERT	HEADWALL		COMMENTS
		TYPE	TYPE	MINIMUM ROCK SIZE	MAXIMUM ROCK SIZE	
CVH-1	X	B X	C X	X	X	X

N/A WHEN NOT APPLICABLE

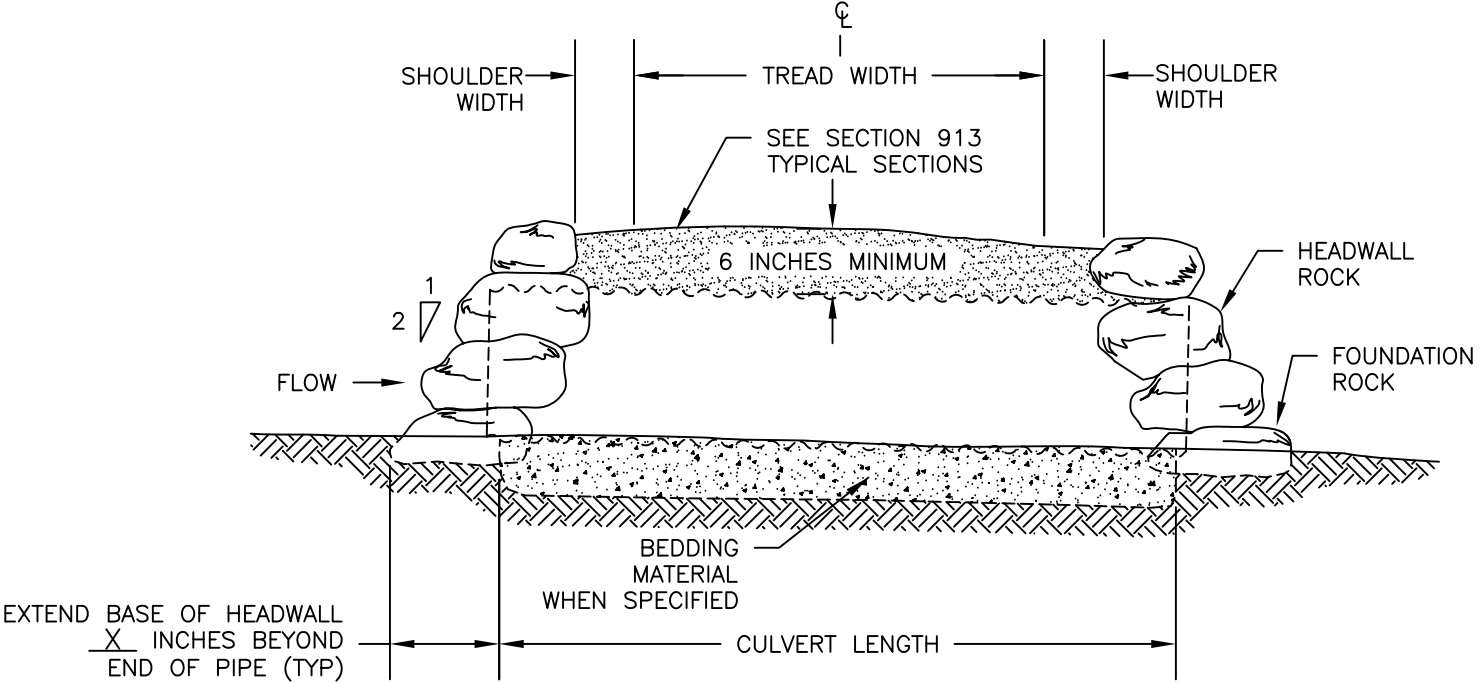


END VIEW

CULVERT TYPE

TYPE	MATERIAL	COMMENTS
C1	CMP – GALV	X
C2	HDPE	
C3	PLASTIC	
C4	ALUMINUM	
C5	CONCRETE	
C6	X	

- NOTE:
- 1. COMPACT BACKFILL IN 6 INCH LIFTS UNTIL NO VISUAL DISPLACEMENT.
 - 2. NO ROCKS LARGER THAN 1 1/2 INCHES WITHIN 12 INCHES OF PIPE.



ELEVATION VIEW

BEDDING MATERIAL TYPE

TYPE	MATERIAL	GRADATION	COMMENTS
B1	PITRUN	X	X
B2	AGGREGATE	X	
B3	X	X	



U S Army Corps of
Engineers
Sacramento District

2026 Nationwide Permit Summary

33 CFR Part 330; Issuance of Nationwide
Permits – March 15, 2026

18. Minor Discharges. Minor discharges of dredged or fill material into all waters of the United States, provided the activity meets all of the following criteria:

- (a) The quantity of discharged dredged or fill material and the volume of area excavated do not exceed 25 cubic yards below the plane of the ordinary high water mark or the high tide line;
- (b) The discharge of dredged or fill material will not cause the loss of more than 1/10-acre of waters of the United States; and
- (c) The discharge of dredged or fill material is not placed for the purpose of a stream diversion.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the discharge of dredged or fill material or the volume of area excavated exceeds 10 cubic yards below the plane of the ordinary high water mark or the high tide line, or (2) the discharge of dredged or fill material is in a special aquatic site, including wetlands. (See general condition 32.) (Authorities: Sections 10 and 404)

A. Regional Conditions

- 1. [Regional Conditions for California](#)
- 2. [Regional Conditions for Nevada and Utah](#)

B. Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note

especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

☐ 1. Navigation.

- ☐ (a) No activity may cause more than a minimal adverse effect on navigation.
- ☐ (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.
- ☐ (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his or her authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

☐ 2. **Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

☐ 3. **Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

☐ 4. **Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

☐ 5. **Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

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U.S. ARMY CORPS OF ENGINEERS – SACRAMENTO DISTRICT

1325 J ST. – SACRAMENTO, CA 95814

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www.twitter.com/USACESacramento

www.flickr.com/photos/sacramentodistrict

☐ 6. **Suitable Material.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

☐ 7. **Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

☐ 8. **Adverse Effects From Impoundments.** If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

☐ 9. **Management of Water Flows.** To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows, including tidal flows. The activity must not restrict or impede the passage of normal or high flows, including tidal flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

☐ 10. **Fills Within 100-Year Floodplains.** The activity must comply with applicable FEMA approved state or local floodplain management requirements.

☐ 11. **Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance. If mats are used to minimize soil disturbance, the affected areas must be returned to pre-construction elevations, and revegetated as appropriate. In circumstances where the use of mats has caused significant soil compaction, efforts using techniques (e.g., soil reaeration techniques) to break up the compaction should be employed to return the soil to a pre-construction state prior to returning to pre-construction elevations.

☐ 12. **Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

☐ 13. **Removal of Temporary Fills.** Temporary structures must be removed, to the maximum extent practicable, after their use has been discontinued. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

☐ 14. **Proper Maintenance.** Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general

conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

☐ 15. **Single and Complete Project.** The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

☐ 16. **Wild and Scenic Rivers.**

☐ (a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

☐ (b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. Permittees shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

☐ (c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: <http://www.rivers.gov/>.

☐ 17. **Tribal Rights.** No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

☐ 18. **Endangered Species.**

☐ (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify designated critical habitat or critical habitat proposed for such designation. No activity is authorized under any NWP which “may affect” a listed species or critical habitat, unless ESA section 7 consultation addressing the consequences of the proposed activity on listed species or critical habitat has been completed. See 50 CFR 402.02 for the definition of “effects of the action” for the purposes of ESA section 7 consultation.

☐ (b) Federal agencies should follow their own procedures for complying with the requirements of the ESA (see 33 CFR 330.4(f)(1)). If pre-construction

notification is required for the proposed activity, the federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

☐ (c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat or critical habitat proposed for such designation, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect federally-listed endangered or threatened species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation), the pre-construction notification must include the name(s) of the endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or that utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. For activities where the non-federal applicant has identified listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have "no effect" on listed species (or species proposed for listing or designated critical habitat (or critical habitat proposed for such designation), or until ESA section 7 consultation or conference has been completed. If the non-federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

☐ (d) As a result of formal or informal consultation or conference with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWP.

☐ (e) Authorization of an activity by an NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means

to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

☐ (f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal permittee should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

☐ (g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their web pages at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.nmfs.noaa.gov/pr/species/esa/> respectively.

☐ 19. **Migratory Birds and Bald and Golden Eagles.** The permittee is responsible for ensuring that an action authorized by an NWP complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting the appropriate local office of the U.S. Fish and Wildlife Service to determine what measures, if any, are necessary or appropriate to reduce adverse effects to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

☐ 20. **Historic Properties.**

☐ (a) No activity is authorized under any NWP which may have the potential to cause effects on properties listed, or eligible for listing, in the National Register of Historic Places until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

☐ (b) Federal permittees should follow their own procedures for complying with the requirements of

section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)(1)). If pre-construction notification is required for the proposed NWP activity, the federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

☐ (c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects on any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts commensurate with potential impacts, which may include background research, consultation, oral history interviews, sample field investigation, and/or field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect.

☐ (d) Where the non-federal applicant has identified historic properties on which the proposed NWP activity might have the potential to cause effects and has so notified the Corps, the non-federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects on historic properties or that NHPA section 106 consultation

has been completed. For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

☐ (e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

☐ 21. **Discovery of Previously Unknown Remains and Artifacts.** Permittees that discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activities authorized by NWPs, must immediately notify the district engineer of what they have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the federal, tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

☐ 22. **Designated Critical Resource Waters.** Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

☐ (a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, 52, 57 and 58 for any activity within, or directly affecting,

critical resource waters, including wetlands adjacent to such waters.

☐ (b) For NWP 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed by permittees in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after she or he determines that the impacts to the critical resource waters will be no more than minimal.

☐ 23. **Mitigation.** The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

☐ (a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

☐ (b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

☐ (c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

☐ (d) Compensatory mitigation at a minimum one-for-one ratio will be required for all losses of stream bed that exceed 3/100-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. This compensatory mitigation requirement may be satisfied through the restoration or enhancement of riparian areas next to streams in accordance with paragraph (e) of this general condition. For losses of stream bed of 3/100-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, because streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

☐ (e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. If restoring riparian areas involves planting vegetation, only native species should be planted. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

☐ (f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

☐ (1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation.

☐ (2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f).)

☐ (3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

☐ (4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). If permittee-responsible mitigation is the proposed option, and the proposed compensatory mitigation site is located on land in which another federal agency holds an easement, the district engineer will coordinate with that federal agency to determine if proposed compensatory mitigation project is compatible with the terms of the easement.

☐ (5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan needs to address only the baseline conditions at the impact site and the number of credits to be provided (see 33 CFR 332.4(c)(1)(ii)).

☐ (6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

☐ (g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

☐ (h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for

the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

☐ (i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

☐ 24. **Safety of Impoundment Structures.** To ensure that all impoundment structures are safely designed, the district engineer may require non-federal applicants to demonstrate that the structures comply with established state or federal, dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

☐ 25. **Water Quality.**

☐ (a) Where the certifying authority (state, authorized tribe, or EPA, as appropriate) has not previously certified compliance of an NWP with CWA section 401, a CWA section 401 water quality certification for the proposed activity which may result in any discharge from a point source into waters of the United States must be obtained or waived (see 33 CFR 330.4(c)). If the permittee cannot comply with all of the conditions of a water quality certification previously issued by the certifying authority for the issuance of the NWP, then the permittee must obtain a water quality certification or waiver for the proposed activity which may result in any discharge from a point source into waters of the United States in order for the activity to be authorized by an NWP.

☐ (b) If the NWP activity requires pre-construction notification and the certifying authority has not previously certified compliance of an NWP with CWA section 401, the proposed activity which may result in any discharge from a point source into waters of the United States is not authorized by an NWP until water quality certification is obtained or waived. If the certifying authority issues a water quality certification for the proposed discharge into waters of the United States, the permittee must submit a copy of the certification to the district engineer. The discharge into waters of the United States is not authorized by an NWP until the district engineer has notified the permittee that the water quality certification requirement has been satisfied (i.e., by the issuance of a water quality certification or a waiver and completion of the Section 401(a)(2) process).

☐ (c) The district engineer or certifying authority may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

[California 401 Water Quality Certification Status](#)

[Nevada 401 Water Quality Certification Status](#)

[Utah 401 Water Quality Certification Status](#)

☐ 26. **Coastal Zone Management.** In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). If the permittee cannot comply with all of the conditions of a coastal zone management consistency concurrence previously issued by the state, then the permittee must obtain an individual coastal zone management consistency concurrence or presumption of concurrence in order for the activity to be authorized by an NWP. The district engineer or a state may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

☐ 27. **Regional and Case-By-Case Conditions.** The activity must comply with any regional conditions that may have been added by the division engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its CWA section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

☐ 28. **Use of Multiple Nationwide Permits.** The use of more than one NWP for a single and complete project is authorized, subject to the following restrictions:

☐ (a) The total acreage loss of waters of the United States for a single and complete project cannot exceed the acreage limit of the NWP with the highest specified acreage limit when multiple NWPs are used to authorize an activity.

☐ (b) If only one of the NWPs used to authorize the single and complete project has a specified acreage limit, the acreage loss of waters of the United States for that single and complete project cannot exceed that specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14 (which has an acreage limit of 1/3 acre in tidal waters), with associated bank stabilization authorized by NWP 13 (which does not have a specified acreage limit), the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

☐ (c) If two or more of the NWPs used to authorize the single and complete project have specified acreage limits, the acreage loss of waters of the United States authorized by each of those NWPs cannot exceed the specified acreage limits of each of those NWPs. For example, if a commercial development is constructed under NWP 39 (which has a 1/2-acre limit), and the single and complete project includes the filling of a ditch authorized by NWP 46 (which has a 1-acre limit), the maximum acreage loss of waters of the United States for the construction of the commercial development under NWP 39 cannot exceed 1/2-acre, and the total acreage loss of waters of United States caused by the combination of the NWP 39 and NWP 46 activities cannot exceed 1 acre.

☐ 29. **Transfer of Nationwide Permit Verifications.** If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

“When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”

(Transferee)

(Date)

☐ 30. **Compliance Certification.** Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The successful completion of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

☐ (a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

☐ (b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

☐ (c) The signature of the permittee certifying the completion of the activity and mitigation. The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

☐ 31. **Activities Affecting Structures or Works Built by the United States.** If an NWP activity also requires review by, or permission from, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a “USACE project”), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission and/or review is not authorized by an NWP until the appropriate Corps office issues the section 408 permission or completes its review to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

☐ 32. **Pre-Construction Notification.**

☐ (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification

(PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

- ☐ (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or
- ☐ (2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

☐ (b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

- ☐ (1) Name, address and telephone numbers of the prospective permittee;

- ☐ (2) Location of the proposed activity;
- ☐ (3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;

☐ (4)

☐ (i) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures.

☐ (ii) For linear projects where one or more single and complete crossings require preconstruction notification, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters (including those single and complete crossings authorized by an NWP but do not require PCNs). This information will be used by the district engineer to evaluate the cumulative adverse environmental effects of the proposed linear project, and does not change those non-PCN NWP activities into NWP PCNs.

☐ (iii) Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

☐ (5) The PCN must include a delineation of waters, wetlands, and other special aquatic sites on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other

special aquatic sites, and other waters. Furthermore, the 45-day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate. For NWP 27 activities that require PCNs because of other general conditions or regional conditions imposed by division engineers, see Note 2 of that NWP;

☐ (6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed and a PCN is required, the prospective permittee must submit a statement describing how the compensatory mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

☐ (7) For non-federal permittees, if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat (or critical habitat proposed for such designation), the PCN must include the name(s) of those endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. For NWP activities that require pre-construction notification, federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

☐ (8) For non-federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require preconstruction notification, federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

☐ (9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the "study river" (see general condition 16); and

☐ (10) For an NWP activity that requires permission from, or review by, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or

permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from, or review by, the Corps office having jurisdiction over that USACE project.

☐ (c) Form of Pre-Construction Notification: The nationwide permit pre-construction notification form (Form ENG 6082) should be used for NWP PCNs. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

☐ (d) Agency Coordination:

☐ (1) The district engineer will consider any comments from federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal.

☐ (2) Agency coordination is required for: (i) all NWP activities that require preconstruction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iii) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

☐ (3) When agency coordination is required, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or e-mail that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the preconstruction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure that the net adverse environmental effects of the proposed activity are no

more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

☐ (4) In cases where the prospective permittee is not a federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

☐ (5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

C. District Engineer's Decision

☐ 1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the single and complete crossings of waters of the United States that require PCNs to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings of waters of the United States authorized by an NWP. If an applicant requests a waiver of an applicable limit, as provided for in NWPs 13, 36, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects.

☐ 2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by an NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the

functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add activity-specific conditions to the NWP authorization to address site-specific environmental concerns.

☐ 3. If the proposed NWP activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters. However, compensatory mitigation shall not be required for activities authorized by NWP 27 because those activities must result in net increases in aquatic resource functions and services (see the text of NWP 27). The district engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included in the proposal when determining whether the net adverse environmental effects of the proposed NWP activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the proposed activity complies with the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure that the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

☐ 4. If the district engineer determines that the adverse environmental effects of the proposed NWP activity are more

than minimal, then the district engineer will notify the applicant either: (a) that the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN review period (unless additional time is required to comply with general conditions 16, 18, 20, and/or 31), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

D. Further Information

1. District engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

E. Nationwide Permit Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term "discharge" means any discharge of dredged or fill material into waters of the United States.

Ecological reference: A model used to plan and design an aquatic ecosystem restoration, enhancement, or establishment activity under NWP 27. An ecological reference may be based on: (1) the structure, functions, and dynamics of an aquatic ecosystem type or a riparian area type that currently exists in the region; (2) the structure, functions, and dynamics of an aquatic ecosystem type or riparian area type that existed in the region in the past; and/or (3) indigenous and local ecological knowledge that apply to the aquatic ecosystem type or riparian area type (i.e., a cultural ecosystem). Cultural ecosystems are ecosystems that have developed under the joint influence of natural processes and human management activities (e.g., fire stewardship). An ecological reference takes into account the range of variation of the aquatic habitat type or riparian area type in the region.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps Regulatory Program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. The loss of stream bed includes the acres of stream bed that are permanently adversely affected by filling or excavation because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters or wetlands for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities that do not require Department of the Army authorization, such as activities eligible for exemptions under section 404(f) of the Clean Water Act, are not considered when calculating the loss of waters of the United States.

Nature-based solutions: Actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits.

Navigable waters: Waters subject to section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR part 329.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of flowing or standing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of “open waters” include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Perennial stream: A perennial stream has surface water flowing continuously year-round during a typical year.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands next to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable

substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term “single and complete project” is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of “independent utility”). Single and complete non-linear projects may not be “piecemealed” to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. The substrate may also be comprised, in part, of organic matter, such as large or small wood fragments, leaves, algae, and other organic materials. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream’s course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized jurisdictional stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission

line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a jurisdictional wetland that is inundated by tidal waters. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line.

Tribal lands: Any lands title to which is either: 1) held in trust by the United States for the benefit of any Indian tribe or individual; or 2) held by any Indian tribe or individual subject to restrictions by the United States against alienation.

Tribal rights: Those rights legally accruing to a tribe or tribes by virtue of inherent sovereign authority, unextinguished aboriginal title, treaty, statute, judicial decisions, executive order or agreement, and that give rise to legally enforceable remedies.

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a “water of the United States.” If a wetland is adjacent to a waterbody determined to be a water of the United States, that waterbody and any adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)).