MT. ROSE/SKI TAHOE FACILITY EXPANSION AND UPGRADE SPECIAL USE PERMIT

PREPARED FOR

BASE ELV. 8260'
Mt. Rose
SKI TAHOE

PREPARED BY

cfa

LUMOS & ASSOCIATES

DATE: SEPTEMBER 16, 2019
AMENDED: SEPTEMBER 24, 2019
JOB # 19-062.00

Project Narrative - Table of Contents

Property Location/Site Area

Mt. Rose/Ski Tahoe is a destination resort ski area that is located in the southwest corner of Washoe County approximately 25 miles south of Reno and approximately 32 miles north of Carson City (refer to the Project Vicinity Map provided on page 2 of this Project Narrative). The ski resort is accessed via the Mt. Rose Highway (NV Route 431) from either I-580 to the east or NV Route 28, which runs along the northern and eastern shore of Lake Tahoe to the west. There are two main access points to the resort, one directly off Mt. Rose Highway to the Mt. Rose main lodge and one to an access road to the Winters Creek Lodge.

This destination resort is contained on both private and public lands and the overall ski area and existing improvements are located on portions of the following parcels. Ownership of each of the parcels along with the parcel number is provided in the following table.

Assessor's Parcel Number	Owner	Private/Public Land
048-112-12 thru 15	Mt. Rose Development Company	Private
048-050-11	USFS	Public
048-111-11	USFS	Public
048-120-22	USFS	Public

Special Use Permit Requests

This application specifically requests the following special use permits and modification to some of the code standards from the Washoe County Development Code.

Timeframe Requested -- The past approval (SB11-015) was granted for a period of 15-years as it similarly provided a multi-project expansion and upgrade plan. See Project Background for a more complete overview of this approval. It is requested that approval of these additions and upgrades to the Mt. Rose Ski Tahoe Resort be granted a 10-year approval. The rationale for this length of approval is multifaceted. The construction season can be very short at higher elevations and some of these improvements will take multiple years to accomplish. Also, the ability to improve is directly tied to financial benefits gained during the prior ski season. If the season was good and highly profitable, there would have been more snow and a longer season, which shortens the construction window. Conversely, if the season was bad and low on profitability, there would have been less snow, which would tend to lengthen the construction window. An anticipated project phasing plan if provided in the Phasing Plan section of this narrative.

Special use permit for the allowance for expansion and upgrade to a Destination Resort within the TC and PR zoning districts.

Special use permit for the allowance of a utility service (5-million gallon snowmaking water tank) within a PR zone.

Special use permit for the allowance of the setback of the water tank to be less than is typically required in the PR zoning designation – justification is that the uses on both sides of the water tank are contained within the Mt. Rose Ski Tahoe ski area boundary (as defined by the USFS) and the USFS NEPA approval for location of the water tank will require that a minimal amount of ground disturbance be provided with the construction of the facility. The 7.8-foot setback, rather than the 15 or 20 foot setback that would be required (depending upon whether a side, rear or front yard is applicable) helps to minimize the overall ground disturbance on USFS land and keep the project within the boundaries stipulated by the USFS NEPA approval.

The following special use permit requests and modifications are associated with Washoe County Grading Code

110.438.35(a)(1)(i)(c) Grading of an area of more than four (4) acres on a parcel of any size (SUP)

110.438.35(a)(1)(ii)(B) Importation of one thousand (1,000) cubic yards or more whether the material is intended to be permanently located on the project site or temporarily stored on a site for relocation to another, final site

110.438.35(a)(2)(i)(C) Grading of more than two (2) acres on any size parcel

110.438.35(a)(3) Any driveway or road that traverses any slope of thirty (30) percent or greater (steeper)

This occurs with grading that is proposed with the ATOMA access ski trail, which will also be used for maintenance vehicles associated with the ski area.

G110.438.35(a)(4) Grading to construct a permanent earthen structure greater than four and one-half (4.5) feet in height within the required front yard setback, or greater than six (6) feet in height on the remainder of the property. The height of an earthen structure is measured from existing grade at the time of permit issuance

This occurs at the ski lift unloading stations and at the proposed water tank.

The following standards are requested for modification allowance as the Mt. Rose Ski Tahoe resort (as would any ski area) operates and functions differently than most other uses within the County. Much of the modification allowance request relates to providing skiable slopes, rather than abrupt drop-offs and is primarily for skier safety.

110.438.45(a) Grading shall not result in slopes in excess of, or steeper than, three horizontal to one vertical (3:1).

2:1 slopes are necessary and will be stabilized with rip-rap along areas where the ATOMA access ski trail and bridge crossing Mt. Rose Highway are proposed. if 3:1 slopes were used, the amount of ground

disturbance and scarring would be substantially greater. If stepped walls were to be used, skier safety becomes and issue.

110.438.45(b) Within the required yard setbacks fills shall not differ from the natural or existing grade by more than forty-eight (48) inches.

This requirement is exceeded with the ATOMA Skier Bridge and ATOMA access ski trail and along the property line frontage for the driveway to the proposed maintenance building.

110.438.45(c) Finish grading shall not vary from the natural slope by more than ten (10) feet in elevation.

This occurs on the ATOMA Bridge and associated skier access road, the maintenance building and the water tank. The total area that is estimated to exceed this threshold is +/- 65,000 s.f. between these three project areas.

110.438.45(e) Within the side and rear yard setback areas of any parcel with a residential use or zoned for residential use, as well as the front yard setback of any parcel zoned for commercial or industrial use, retaining walls are limited to a maximum height of six (6) feet.

Retaining walls that will exceed 6 feet in height are proposed within the NDOT right-of-way as part of the bridge structure. Since this is within the NDOT right-of-way and NDOT provides a specific permit process for review, this may not be applicable for review through the Washoe County process.

110.438.50(a) The use of riprap and gabions as a mechanical stabilization for cut slopes is prohibited, except where essential for safe access, for passage within the rights of-way of public roads, and for storm drainage control device(s).

As noted in the rationale for modification to the standard identified in 110.438.45(a), 2:1 slopes are necessary for the construction of the ATOMA access ski trail and bridge crossing Mt. Rose Highway are proposed and at the lift unloading stations. if 3:1 slopes were used, the amount of ground disturbance and scarring would be substantially greater. If stepped walls were to be used, skier safety becomes and issue. These areas of 2:1 will use rip-rap to stabilize the slope. The rip-rap will create a surface that would be skiable with enough snow coverage, which creates a safe situation for skiers.

Project Background

Mt. Rose Ski Tahoe has a long history dating back to the 1930's when Wayne Paulson built and operated the Mt. Rose Upski and Ski School Tyrol in the area that is now operated by the City of Reno as the Sky Tavern Ski School. During this time, devoted skiers would hike from the area that would become Sky Tavern up to the 9,700' peak of Slide Mountain and would ski the slopes that are now Mt. Rose Ski Tahoe. Through the years, the State of Nevada connected the Mt. Rose Highway all the way over the Mt. Rose Summit and to Lake Tahoe, which opened the vehicular access to the area that is now Mt. Rose Ski Tahoe. Two ski areas operated at the mountain between 1964 and 1987 (The Slide Mountain Ski Area and the Mt.

Rose Ski Area). The two ski areas were joined in 1987. The joined ski area continues to have a slow and steady growth.

In 2012, the most recent expansion approval was granted by the Washoe County Board of Adjustment under SB11-015. This approval granted the following improvements:

- The allowance for the removal of two lifts (Ponderosa and Galena) and the replacement of those lifts with a single new ski lift.
- The extension of the existing Lakeview Ski Lift,
- Expansion of the mountain terrain to include new ski trails and a new surface lift,
- Expansion of the existing Mt. Rose Lodge by approximately 30,000+/- s.f.,
- Relocation of a 5,000+/- s.f. maintenance building, the construction of two snowmaking ponds,
- Construction of a relocated access road off Mt. Rose Highway,
- Construction of a new 3,000+/- s.f. on mountain restaurant,
- Construction of a 15,000+/- s.f. seasonal locker building, and
- Construction of a new terrain park ski lift on the Slide side of the resort.

The special use permit approval was granted on February 2, 2012 and holds a 15-year approval timeframe due to the broad nature of the facilities for improvement or upgrade and the short construction season at the 8,260' elevation and above.

Project Overview

A Mt. Rose Concept Plan/Overall Plan is provided with this application that shows the conceptual location for all the proposed improvements. The improvements are broken down into Private Land or Public Land improvements in the following list.

Private Land Improvements

- New Maintenance Building +/-12,000 s.f. (Replaces the +/-5,000 s.f. maintenance building approved under the 2012 approval)
- Lakeside Chairlift Replacement/Upgrade
- Grading of in association with new ATOMA lift and ATOMA facilities
- New 1ST Aid/Ski Patrol
- Winters Creek Lodge Expansion
- Grading for terrain transition to Skier Bridge crossing Mt. Rose Highway (Private Land Side)
- Clearing of vegetation for grading and facilities on Private Land (8+/- Acres, per USFS EIS)
- Repurposing of Existing Buildings
  - Existing Vehicle Maintenance Building to become Locker Facility
  - Existing Employee Locker Facility to become guest or passholder locker facility
  - Existing Lift Maintenance Facility at Slide to become Employee or Guest Locker Facility

Public Land Improvements

- 5M Gallon Water Tank
- Remove Existing ATOMA Building and Recontour past graded area what was used for parking.
- Skier Bridge (+/- 30 feet wide with a minimum vehicle clearance of 16.5 feet) (NDOT Property)
- Grading of in association with new ATOMA lift and ATOMA facilities (Includes Grading for Skier Bridge terrain transition from NDOT property)
- New ATOMA Ski Lift
- ATOMA Restroom Facility
- Clearing of Vegetation for new ATOMA Ski Runs & Lift and Water Tank (32+/- acres, per USFS EIS)
- New Snowmaking coverage approximately 20 acres (Per USFS EIS)

Phasing Plan

Following is a draft phasing plan for the proposed improvements contained within this application request:

	2020	2021	2022	2023	2024	2025	2026	2027
5M Gallon Water Tank								
New Maintenance Building								
Winters Creek Lodge Expansion								
1ST Aid/Ski Patrol								
Remove Existing ATOMA Building								
ATOMA Grading and Vegetation Clearing								
Atoma Lift								
Atoma Bridge								
Snowmaking Construction								
Repurposing of Existing Buildings								
Lakeside Chairlift								
Note: Target timeframes ate shown as likely start and completion windows. Actual timing based on financial ability to construct and the length of actual construction seasons.								

Federal and State Review

The proposed project has been in review with the USFS since 2011 and is nearing completion of that review. A copy of the USFS Environmental Impact Statement has been provided with this application to the Washoe County staff for review and consideration along with this special use permit request. One of the requirements of the USFS in their issuance of a permit to Mt. Rose Ski Tahoe is that the project has appropriate and necessary state and local approvals. This process represents part of those approvals that will be required by the USFS.

In addition to the federal process, the applicant has also been in discussion with NDOT regarding the Skier Bridge crossing Mt. Rose Highway. The first communication regarding this crossing occurred around the same timeframe as the initiation of the USFS permit. The NDOT process is now commencing in earnest

with the federal process nearing completion. NDOT will provide a specific permit for work within their right-of-way. As such, grading and improvements within the NDOT right-of-way are shown with this application, but they are shaded, and calculations shown on project plans do not include the work within the NDOT right-of-way.

Master Plan and Zoning

The land associated with the Mt. Rose Ski Tahoe Resort holds a variety of master plan and zoning designations. Following is an identification of the parcels that are in part or whole associated with the application request. The master plan and zoning designations contained on each parcel is listed.

Assessor's Parcel Number	Owner	Master Plan Designation(s)	Zoning Designation(s)
048-112-12	Mt. Rose Development Company	Commercial & Rural	5% TC & 95% PR
048-122-13	Mt. Rose Development Company	Commercial & Rural	75% TC, 25% PR
048-112-14	Mt. Rose Development Company	Commercial & Rural	14% TC, 86% PR
048-112-15	Mt. Rose Development Company	Commercial & Rural	3% TC, 97% PR
048-050-11	USFS	Open Space	9% PR, 91% OS
048-111-11	USFS	Open Space	36% PR, 64% OS
048-120-22	USFS	Rural & Open Space	21% PR, 79% OS

The project proposes expansion and upgrade to an existing destination resort and a utility service (water tank) that are both allowed within the TC and PR zoning designation with the approval of a Board of Adjustment special use permit.
The project area master plan and zoning maps are provided on the following page showing the approximate ski area boundary shown on each map.

Signage and Lighting

Mt. Rose Ski Tahoe proposes modification of signage for direction of vehicles for parking within the existing parking lots. proposed sign elevations are provided on page 7 of this narrative. Although the signage elevation shows an Electronic Message Display (EMD), the applicant will not include the EMD with the signage and requests that this sign be part of the review and approval of this application. If an EMD is desired in the future, the applicant will submit the necessary Administrative Permit application for review.

Lighting will be provided only where necessary and would largely be for safety and access at buildings. No lighting is proposed on any of the ski runs associated with this application nor on or approaching the skier bridge crossing Mt. Rose Highway. Any lighting that is provided will be architecturally compatible with the lighting that is currently in use at Mt. Rose Ski Tahoe and/or compatible with the associated building architecture and will be conformant with Article 414 of the Washoe County Code.

Parking

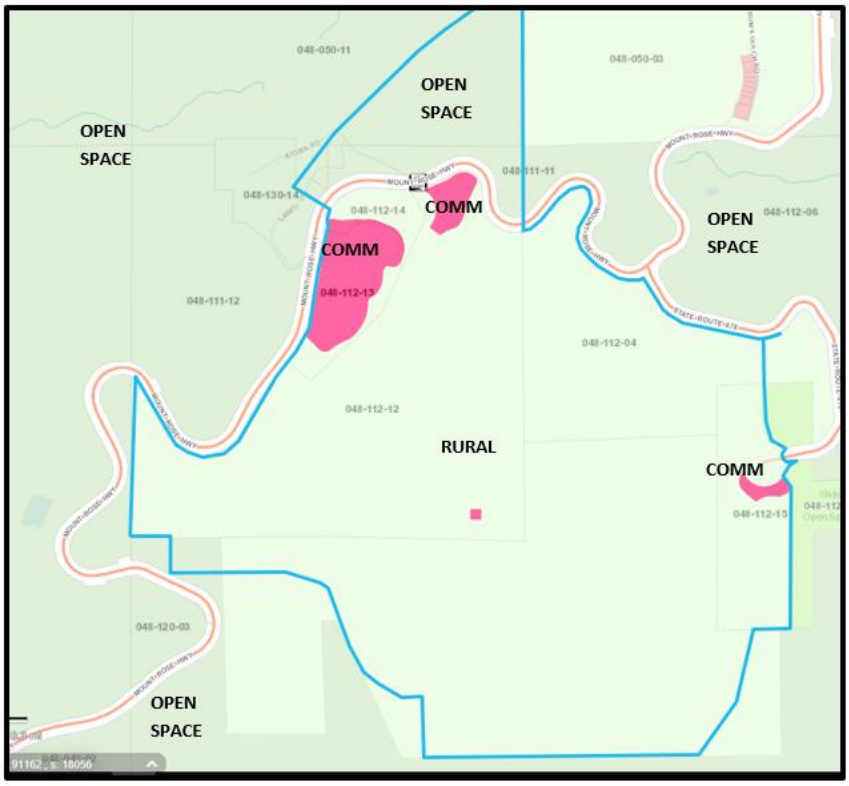
Article 410 of the Washoe County Code does not provide a specific parking requirement for a ski area nor a destination resort. The Mt Rose Ski Tahoe Resort has 2,500 parking spaces with 1,600 spaces located near the Mt Rose main lodge and 900+/- spaces located near the Winters Creek Lodge. Mt. Rose Ski Tahoe keeps records of peak parking demand period and the past 6 ski season records are provided for the period of the Christmas and New Year periods (some of the heaviest skier periods). Parking is managed by Parking Attendants to help optimize the parking area used by each vehicle and to keep people parking in the closest and easiest access areas to the main lodge. A 15-day period is tallied each year during the peak visitor periods and the tallies noted how full each lot gets during each of these days. No tally is provided for the Winters Creek Lodge lot as that is one large parking lot containing 900+/- parking spaces.

Provided in Tab E is parking data for the Mt. Rose parking lots. Parking is tallied on during the Christmas and New Year ski weeks, annually. Data for this period from 2013 and 2018 is provided in Tab E of this application. The data shows that the demand for parking very rarely ever does not exceed the existing availability during this peak season time rarely ever reaches capacity. Only two times during the past 6 years during this record keeping, peak timeframe have all the parking lot areas been identified to be "full".

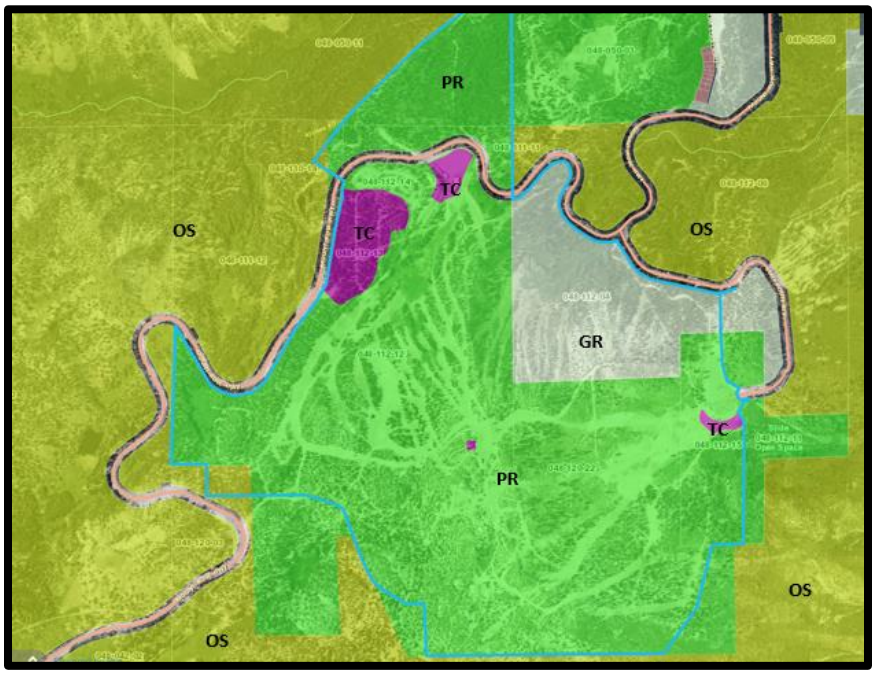
Traffic

A traffic update letter was prepared for this project by Solaegui Engineers. The proposed uses will have minimal additional impact on the traffic that is already attributable to Mt. Rose Ski Tahoe. In fact, many of the uses are entirely non-traffic generators (water tank, maintenance building, first aid station, locker room conversion). Solaegui Engineers identifies that the proposed project is expected to generate 620 ADT with 65 trips during the weekend AM Peak Hour and 55 trips during the mid-day peak hour and 75 trips during the PM Peak Hour. All of the peak hour calculations do not meet the Washoe County threshold of 80 peak hour trips that would necessitate a traffic study, but one was prepared in association with the USFS process and the update letter addressing a scope called for by NDOT for the Skier Bridge is provided with this application.

Master Plan Map with Approximate Ski Area Boundary Lines



Zoning Map with Approximate Ski Area Boundary Lines



Proposed Signage at Mt Rose Parking lot area – can indicate where parking is available through LED monitor. Sign is proposed to be located approximately 35 feet from NDOT ROW edge and approximately 120 feet from existing roadway pavement edge with Mt. Rose Highway.

Proposed Signage at parking lot entry for Winters Creek Lodge parking lot. Signage at this location can provide a better directional information for drivers entering the parking lot as this has been a long-standing area of confusion on which way to go to park.

Revegetation

Revegetation of graded areas will occur to the acceptance of Washoe County and the USFS (on forest service land). Following is a seed mixture that is proposed for use on the project.

Botanical Name	Common Name/Variety	PLS lbs./acre
Achillea millefolium	Yarrow	0.20
Achnatherum occidentalis	Western needlegrass	1.00
Artemisia tridentata ssp vaseyana	Mtn. sagebrush	0.50
Bromus carintaus	California brome	4.00
Elymus elymoides	Blue wildrye 'Stanislaus'	4.00
Elymus trachycaulus	Slender wheatgrass, 'Pryor'	6.00
Ericameria nauseosa	Rubber rabbitbrush	1.00
Poa secunda	Sandberg bluegrass 'Sherman'	2.00
Purshia tridentata	Bitterbrush	3.00
Total		21.70

Existing Site Conditions

Following are photos of the existing sites where the new facilities are proposed at the Mt. Rose Ski Tahoe Resort.

ATOMA Bridge Crossing and ATOMA Lift Site Photos

View of Mt. Rose Highway to the south at the location of where the skier bridge is proposed to be located.

View of Mt. Rose Highway to the north at the location of where the skier bridge is proposed to be located.

View of the ATOMA lift bottom of run load station location. View to the North.

View of the ATOMA lift bottom of run load station location. View to the South.

View of the existing ATOMA building (to be removed and parking area to be regraded and contoured (per USFS direction).

First Aid/Ski Patrol Building Location Site Photo

First aid building to be located on existing parking lot near edge for ease of access in and out for ski patrol and for ambulance access.

Maintenance Building Location Site Photos

View to the south of the proposed maintenance building location. Existing parking area in foreground.

View of Maintenance Building Site

Water Tank Location Site Photos

View to the south west toward proposed tank location, behind existing tank.

View to the northeast from proposed tank location.

Winters Creek Lodge Site Photos

View of existing Winters Creek Lodge and patio to the southeast.

View of existing Winters Creek Lodge to the southwest.

View of the rear (east side) of Winters Creek Lodge – Existing bar are that will be expanded to the southeast can be seen in the projection out from the main building.

View of the front (west side) of Winters Creek Lodge

Special Use Permit Findings

Article 810 of the Washoe County Development Code identifies findings that must be made in order to approve a special use permit. Following is an identification of each finding and the applicant's response as to how or why this finding is met with this request.

(1) Consistency. The proposed use is consistent with the action programs, policies, standards and maps of the Master Plan and the applicable area plan;

The proposed uses and grading proposed with this special use permit are consistent with the Parks and Recreation and Tourist Commercial zoning designations which is consistent with the Rural and Commercial Master Plan Designations on the property. More specifically, the policies, and associated findings, outlined in Goal Four: Mount Rose Resort Services Area (MRRSA) are addressed. In particular, F.4.2 (a-n) and the vision that the Mt. Rose Ski Resort is a long term planning project, with multiple component projects scattered across the resort area that will take years to complete due to the regulatory overviews of many governmental agencies, funding sources, and careful business acumen.

(2) The proposed development is consistent with the following policies of the Forest Area Plan:

The Mt. Rose Ski Tahoe is located within the Mt. Rose Resort Service Area as defined by the Forest Area Plan of the Washoe County Comprehensive Plan

Goal Four: Mount Rose Resort Services Area (MRRSA). To preserve the important role of resort destinations in the community character of the Forest planning area and to promote the economic viability of resort destination activities, the Mount Rose Resort Services Area is designated on the Character Management Plan map. In order to achieve this goal, the following policies will apply to this area:

> F.4.2 (a-n) Mt. Rose Resort Services Area Conceptual Development Standards. These standards and guidelines of the Mt. Rose Resort Services Area are intended to form the basis for the future development of the Mount Rose Resort Services Area. This language is not intended to represent the only alternative for accomplishing the concept it embodies.

This goal, and its associated policies, is a component portion of the Forest Plan. The resort is a unique opportunity that narrow guidelines would limit by not allowing changes to occur in a more timely fashion. This goal allows for flexibility of, and the oversight of, any changes going forward.

Goal Six: Resources key to the preservation and implementation of the character described in the Character Statements will be protected and where possible, enhanced.

> F.6.2 Washoe County will cooperate with other agencies, institutions, and local residents to ensure that recreational, educational and scientific activities based on the area's key resources will be

supported and encouraged, particularly where those activities contribute to the character of the local community and are beneficial to the broader region. Washoe County will work with private landowners and developers to ensure that the goals of the Regional Open Space Plan are met and adhered to. The County will explore alternative funding sources for acquisition, maintenance, and operation.

The Mt. Rose Ski Tahoe Resort is a unique resource for primarily recreational activities and the goal of preserving and enhancing the area dovetails with this finding to support activities that contribute to the character of the area.

Goal 8: Maintain and enhance the scenic value of the State Route 431 corridor.

F.8.1 The State Route (SR) 431 corridor through the planning area is designated a Scenic Corridor as depicted on the Forest Character Management Plan map. The intent of the Scenic Corridor is to:

a. Promote the preservation and enhancement of the scenic nature of the corridor.
b. Limit and manage the establishment of uses incompatible with the scenic nature of the corridor.
c. Ensure that development within the corridor does not diminish the distant vistas available along the corridor.
d. Ensure that development within the corridor enhances the near vistas available along the corridor and does not create a tunnel effect.
e. Promote the corridor as a community and regional asset.

The improvements, with the exception of the proposed skier bridge, will not be visible from the Mt. Rose Highway corridor with the existing evergreen screening in the area. A photo simulation of the proposed 5M Gallon water tank is provided in this application as an example of the existing screening that the area possesses.

F.8.3 To enhance the visitor and resident experience, Washoe County will encourage recreational facilities such as trails, trailheads, and scenic view points.

The proposed improvements will allow for a better overall experience by upgrading existing facilities, relocating existing facilities to better service the site, and provide functional upgrades to the proposed expansion in a timely manner.

Goal 10: The Forest planning area will contain an extensive system of trails that integrates other recreational facilities, the Regional Trail System including the urban core of Reno and Sparks, public lands, schools, and transit facilities; and contributes to the preservation and implementation of the community character.

F.10.2 New trails will be designed to accommodate multiple uses including equestrian, pedestrian and bicycle traffic, unless severe technical, environmental, or economic hardships warrant consideration of a more limited use.

F.10.4 Parking will be provided at all trailheads unless technical or safety issues prevent the construction of parking facilities or it is determined that the parking facility cannot be adequately screened or buffered from adjacent residential properties. Points of access other than trailheads may be depicted on the Recreational Opportunities Plan map but do not require parking facilities.

The proposed expansion of the Mt. Rose Ski Tahoe Resort provides winter trail access and recreation. Public parking will be provided in lot 7 of the Mt. Rose Ski Tahoe parking area and access for year-round trail access for bikers, hikers, cross country skiers and snowshoers will be provided with a crossing of the proposed skier bridge and an access gate to non-leased federal land, continuing the access that has been requested through the EIS process.

Goal 11 - Washoe County will cooperate with state and federal agencies in the management of public lands in the planning area.

F.11.1 Washoe County recognizes a growing pressure on public lands brought on by an increasing demand for outdoor recreational activities. Washoe County will work with the United States Forest Service to ensure that Management Plans for federal lands in the planning area consider the growing impact of recreational activities on residents of the area.

F.11.2 Washoe County will cooperate with the community and with other local agencies to explore establishing new funding sources and to enlist volunteers to help in the maintenance and operation of local recreation facilities.

This project is proposed on private and USFS land and is in the final stages of a USFS permit. Additionally, NDOT has been engaged in the beginning states of review for the proposed skier bridge and link to the ATOMA area. As such, there has been, and is anticipated to be, continued cooperation with federal, state and local jurisdictions associated with the project.

(3) Improvements. Adequate utilities, roadway improvements, sanitation, water supply, drainage, and other necessary facilities have been provided, the proposed improvements are properly related to existing and proposed roadways, and an adequate public facilities determination has been made in accordance with Division Seven;

F.4.2(g) Infrastructure. The MRRSA is currently served by a private water system, public sewerage (Washoe County) and electricity. This existing infrastructure, particularly the sewer and water improvements, is sized to meet only the level of development contemplated in the MRRSA. Therefore, it cannot promote the expansion of surrounding development outside the MRRSA.

The Mt. Rose Ski Tahoe Resort is accessed via State Route 431/Mt. Rose Highway and provides safe and appropriate access to the property. The proposed improvements will have limited additional impact on utilities. The water tank is proposed such that an appropriate volume of water exists to service more of the snow making equipment simultaneously Mt. Rose Ski Tahoe has two private water systems (one serving the Mt. Rose Side of the hill and one serving the Slide Mt./Winters Creek Lodge side) that are regulated by NDEP and the Washoe County Health Department.

(4) Site Suitability. The site is physically suitable for the type of development and for the intensity of development;

Skiing in the area of Mt Rose Ski Tahoe has been ongoing since the 1930's and the resort is an appropriate location for the proposed expansion that is presented in this application. The use is consistent with the uses in and around the area. Policy 4.2(b) of the Forest Area Plan cites that the purpose of the MRRSA is to establish and define the characteristics, uses and limitations for the long term master plan of the Mt. Rose-Ski Tahoe Resort in concert and consistent with the United States Forest Service (USFS) Plan that has been adopted by the USFS (Mt. Rose/Slide Mt. Master Development Plan, October 2003). Mt. Rose-Ski Tahoe has served for more than 44 years as the local ski resort for the residents of Washoe County. It has also benefited the tourism sector of the local economy by providing a recreational experience that is not typically found close to an urban area

(5) Issuance Not Detrimental. Issuance of the permit will not be significantly detrimental to the public health, safety or welfare; injurious to the property or improvements of adjacent properties; or detrimental to the character of the surrounding area;

It is not foreseen that there will be any detrimental impact associated with the allowance of the proposed improvements. The new 1st aid/ski patrol building will assist in providing injured skiers with medical attention (off the slope) quicker than is the case, currently. The new terrain will allow for fewer conflicts between advanced and novice skiers, which can be a safety issue. The use is proposed on area that has been defined by the USFS as the ski area boundary, and the operation is bound by the rules and regulations put forth by the USFS along with the rules of Washoe County.

(6) Effect on a Military Installation. Issuance of the permit will not have a detrimental effect on the location, purpose or mission of the military installation.

There are no military installations located in proximity to the proposed site area. As such, this finding is not applicable.

APPENDIX A

Washoe County Development Application

Your entire application is a public record. If you have a concern about releasing personal information, please contact Planning and Building staff at 775.328.6100.

Project Information	**Staff Assigned Case No.:**
Project Name: Mt. Rose Ski Tahoe Facility Expansion and Upgrade	
Project Description: Expansion and Upgrade to existing Mt. Rose Ski Tahoe Terrain and Facilities. Please see project narrative for detailed description of project.	
Project Address: 22222 Mt. Rose Highway, Reno, Nevada 89511	
Project Area (acres or square feet): Total Mt Rose Boundary	
Project Location (with point of reference to major cross streets **AND** area locator): The main access to the site is +/-11.4 driving miles from the intersection of Mt. Rose Hwy and Thomas Creek Road.	

Assessor's Parcel No.(s):	Parcel Acreage:	Assessor's Parcel No.(s):	Parcel Acreage:
Please see Parcel/Owner List			
following this page			

Indicate any previous Washoe County approvals associated with this application:
Case No.(s).

Applicant Information (attach additional sheets if necessary)

Property Owner:		**Professional Consultant:**	
Name: Please see Parcel/Owner List on following page		Name: CFA, Inc.	
Address:		Address: 1150 Corporate Blvd	
	Zip:	Reno, Nevada	Zip: 89502
Phone:	Fax:	Phone: 775-856-7073	Fax:
Email: PS		Email: dsnelgrove@cfareno.com	
Cell:	Other:	Cell: 775-737-8910	Other:
Contact Person: Paul Senft, General Manager		Contact Person: R. David Snelgrove, AICP	
Applicant/Developer:		**Other Persons to be Contacted:**	
Name: Mt. Rose Development Company		Name: Lumos & Associates	
Address: 22222 Mt. Rose Highway		Address: 9222 Prototype Drive	
Reno, Nevada	Zip: 89511	Reno, Nevada	Zip: 89521
Phone:	Fax:	Phone: 775-827-6111	Fax:
Email: ps@skirose.com		Email: ethomas@lumosinc.com	
Cell: 775-762-9478	Other:	Cell:	Other:
Contact Person: Paul Senft, General Manager		Contact Person: Ed Thomas, P.E.	

For Office Use Only

Date Received:	Initial:	Planning Area:	
County Commission District:		Master Plan Designation(s):	
CAB(s):		Regulatory Zoning(s):	

Mt. Rose Ski Tahoe Facility Expansion & Upgrade

Special Use Permit - Parcel Ownership Listing

Assessor's Parcel Number	Owner	Address	Contact Name and Phone Number
048-112-12 thru 15	Mt. Rose Development Company	22222 Mt. Rose Highway Reno, Nevada 89511	Paul Senft, General Manager Phone – 775-849-0704
048-050-11	USFS	1200 Franklin Way, Sparks NV 89431	William Dunkelberger & Marnie Bonesteel 775-331-6444
048-111-11	USFS	1200 Franklin Way, Sparks NV 89431	William Dunkelberger & Marnie Bonesteel 775-331-6444
048-120-22	USFS	1200 Franklin Way, Sparks NV 89431	William Dunkelberger & Marnie Bonesteel 775-331-6444

Property Owner Affidavit

Applicant Name: Mt. Rose Development Co.

The receipt of this application at the time of submittal does not guarantee the application complies with all requirements of the Washoe County Development Code, the Washoe County Master Plan or the applicable area plan, the applicable regulatory zoning, or that the application is deemed complete and will be processed.

STATE OF NEVADA)
)
COUNTY OF WASHOE)

I, Paul Senft,
(please print name)

being duly sworn, depose and say that I am the owner* of the property or properties involved in this application as listed below and that the foregoing statements and answers herein contained and the information herewith submitted are in all respects complete, true, and correct to the best of my knowledge and belief. I understand that no assurance or guarantee can be given by members of Planning and Building.

(A separate Affidavit must be provided by each property owner named in the title report.)

Assessor Parcel Number(s): 048-112-12 thru 15

Printed Name Paul Senft

Signed

Address 22222 Mt. Rose Hwy

Reno NV 89511

County of Washoe
State of Nevada

Subscribed and sworn to before me this 12 day of September, 2019.

Notary Public in and for said county and state

My commission expires: 2/13/2022

(Notary Stamp)

DEANE RENE SCHEIBER
Notary Public, State of Nevada
Appointment No. 06-105013-2
My Appt. Expires Feb 13, 2022

*Owner refers to the following: (Please mark appropriate box.)

- ☐ Owner
- ☑ Corporate Officer/Partner (Provide copy of record document indicating authority to sign.)
- ☐ Power of Attorney (Provide copy of Power of Attorney.)
- ☐ Owner Agent (Provide notarized letter from property owner giving legal authority to agent.)
- ☐ Property Agent (Provide copy of record document indicating authority to sign.)
- ☐ Letter from Government Agency with Stewardship

(PROFIT) INITIAL/ANNUAL LIST OF OFFICERS, DIRECTORS AND STATE BUSINESS LICENSE APPLICATION OF:

MT. ROSE DEVELOPMENT COMPANY	C1919-1964
NAME OF CORPORATION	ENTITY NUMBER

FOR THE FILING PERIOD OF 2018 TO 2019. DUE BY 11/30/2018

100103

USE BLACK INK ONLY - DO NOT HIGHLIGHT

YOU MAY FILE THIS FORM ONLINE AT www.nvsilverflume.gov

☐ Return one file stamped copy. (If filing not accompanied by order instructions, file stamped copy will be sent to registered agent.)

IMPORTANT: Read instructions before completing and returning this form

1. Print or type names and addresses, either residence or business, for all officers and directors. A President, Secretary, Treasurer, or equivalent of and all Directors must be named. There must be at least one director. An Officer or other person authorized by the corporation must sign the form. FORM WILL BE RETURNED IF UNSIGNED.
2. If there are additional officers, attach a list of them to this form.
3. Return the complete form with the filing fee. Annual list fee is based upon the current total authorized stock as explained in the Annual List Fee Schedule For Profit Corporations. A $75.00 penalty must be added for failure to file this form by the deadline. An annual list received more than 90 days before its due date shall be deemed an amended list for the previous year.
4. State Business License fee is $500.00 / $200.00 (for Professional Corporations filed pursuant to NRS Chapter 89). Effective 2/1/2010, $100.00 must be added for failure for file form by deadline.
5. Make your check payable to the Secretary of State.
6. Ordering Copies: If requested above, one file stamped copy will be returned at no additional charge. To receive a certified copy, enclose an additional $30.00 per certification. A copy fee of $2.00 per page is required for each additional copy generated when ordering 2 or more file stamped or certified copies. Appropriate instructions must accompany your order.
7. Return the completed form to: Secretary of State, 202 North Carson Street, Carson City, Nevada 89701-4201, (775) 684-5708.
8. Form must be in the possession of the Secretary of State on or before the last day of the month in which it is due. (Postmark date is not accepted as receipt date.) Forms received after due date will be returned for additional fees and penalties. Failure to include annual list and business license fees will result in rejection of filing.

ABOVE SPACE IS FOR OFFICE USE ONLY

ANNUAL LIST FILING FEE: $950.00 LATE PENALTY: $75.00

BUSINESS LICENSE FEE: $500.00 / $200.00 if NRS Chapter 89
LATE PENALTY: $100.00

CHECK ONLY IF APPLICABLE AND ENTER EXEMPTION CODE IN BOX BELOW

☐ Pursuant to NRS Chapter 76, this entity is exempt from the business license fee. [ ]

NOTE: If claiming an exemption, a notorized Declaration of Eligibility form must be attached. Failure to attach the Declaration of Eligibility form will result in rejection, which could result in late fees.

☐ This corporation is a publicly traded corporation. The Central Index Key number is: _____

☐ This publicly traded corporation is not required to have a Central Index Key number.

NRS 76.020 Exemption Codes
001 - Governmental Entity
006 - NRS 680B.020 Insurance Co.

KURT BUSER NAME:	TITLE(S) **PRESIDENT (OR EQUIVALENT OF)**		
22222 MT. ROSE HWY ADDRESS:	**RENO** CITY:	**NV** ST:	**89511** ZIP:
PAUL SENFT NAME:	TITLE(S) **SECRETARY (OR EQUIVALENT OF)**		
22222 MT. ROSE HWY ADDRESS:	**RENO** CITY:	**NV** ST:	**89511** ZIP:
KURT BUSER NAME:	TITLE(S) **TREASURER (OR EQUIVALENT OF)**		
22222 MT. ROSE HWY ADDRESS:	**RENO** CITY:	**NV** ST:	**89511** ZIP:
ROLF BUSER NAME:	TITLE(S) **DIRECTOR**		
22222 MT. ROSE HWY ADDRESS:	**RENO** CITY:	**NV** ST:	**89511** ZIP:

None of the officers or directors identified in the list of officers has been identified with the fraudulent intent of concealing the identity of any person or persons exercising the power or authority of an officer or director in furtherance of any unlawful conduct.

I declare, to the best of my knowledge under penalty of perjury, that the information contained herein is correct and acknowledge that pursuant to NRS 239.330, it is a category C felony to knowingly offer any false or forged instrument for filing in the Office of the Secretary of State.

X _____
Signature of Officer or Other Authorized Signature

Title: Secretary

Date: 7-10-18

Nevada Secretary of State List Profit
Revised: 7-1-17

Property Owner Affidavit

Applicant Name: United States Forest Service

The receipt of this application at the time of submittal does not guarantee the application complies with all requirements of the Washoe County Development Code, the Washoe County Master Plan or the applicable area plan, the applicable regulatory zoning, or that the application is deemed complete and will be processed.

STATE OF NEVADA)
)
COUNTY OF WASHOE)

I, William Dunkelberger,
(please print name)

being duly sworn, depose and say that I am the owner* of the property or properties involved in this application as listed below and that the foregoing statements and answers herein contained and the information herewith submitted are in all respects complete, true, and correct to the best of my knowledge and belief. I understand that no assurance or guarantee can be given by members of Planning and Building.

(A separate Affidavit must be provided by each property owner named in the title report.)

Assessor Parcel Number(s): 048-050-11, 048-111-11 & 048-120-22

The signature of the Forest Service represents our acknowledgment of the affidavit and does not represent our approval of the project.

Printed Name WILLIAM A. DUNKELBERGER

Signed

Address 1200 Franklin Way,

Sparks, NV 89431

Subscribed and sworn to before me this 3rd day of June, 2019.

Notary Public in and for said county and state

My commission expires: 04/13/2023

(Notary Stamp)

J. W. MCCANN
Notary Public - State of Nevada
Appointment Recorded in Washoe County
No: 15-3191-2 - Expires April 13, 2023

*Owner refers to the following: (Please mark appropriate box.)

- ☒ Owner
- ☐ Corporate Officer/Partner (Provide copy of record document indicating authority to sign.)
- ☐ Power of Attorney (Provide copy of Power of Attorney.)
- ☐ Owner Agent (Provide notarized letter from property owner giving legal authority to agent.)
- ☐ Property Agent (Provide copy of record document indicating authority to sign.)
- ☐ Letter from Government Agency with Stewardship

Special Use Permit Application
Supplemental Information

(All required information may be separately attached)

1. What is the project being requested?

   The project requested is an expansion of the overall ski terrain of Mt. Rose Ski Tahoe along with some facility expansions, additions, upgrades and re-purposing of a few existing buildings at the resort.

2. Provide a site plan with all existing and proposed structures (e.g. new structures, roadway improvements, utilities, sanitation, water supply, drainage, parking, signs, etc.)

   The required site plan and detail information is provided with this application package.

3. What is the intended phasing schedule for the construction and completion of the project?

   Requested is an approval for the proposed improvements over a 10 year period. The anticipated phasing of the included improvements and upgrades is provided within the Project Narrative provided with this application.

4. What physical characteristics of your location and/or premises are especially suited to deal with the impacts and the intensity of your proposed use?

   The ski boundary property authorized through special use permit by the USFS and the private lands are varied in terrain and slope.

5. What are the anticipated beneficial aspects or affects your project will have on adjacent properties and the community?

   Mt. Rose Ski Tahoe has been the "local's" ski area for Truckee Meadows residents for many years. The additional terrain will present an improvement to our local ski area and the new terrain will provide additional skiing opportunities with predominately beginner and intermediate rated slopes.

6. What are the anticipated negative impacts or affect your project will have on adjacent properties? How will you mitigate these impacts?

   The Mt. Rose Ski Tahoe resort has been established for many years at its current location. the predominate adjacent land owner is the USFS from which Mt. Rose Ski Tahoe is currently in the final steps of review for a use permit and NEPA process. With the granting of a permit from the adjacent land owner, it is not foreseen that there will be any significant impacts on adjacent properties/owners.

7. Provide specific information on landscaping, parking, type of signs and lighting, and all other code requirements pertinent to the type of use being purposed. Show and indicate these requirements on submitted drawings with the application.

   The entire ski area is within the national forest, as such the site is significantly naturally landscaped. No new or ornamental landscape is proposed with this project. Please see Project Narrative for information on parking, signs and lighting.

8. Are there any restrictive covenants, recorded conditions, or deed restrictions (CC&Rs) that apply to the area subject to the special use permit request? (If so, please attach a copy.)

❑ Yes	■ No

9. Utilities:

a. Sewer Service	Washoe County
b. Electrical Service	NV Energy
c. Telephone Service	AT&T
d. LPG or Natural Gas Service	Propane
e. Solid Waste Disposal Service	Waste Management
f. Cable Television Service	Satalite TV Service
g. Water Service	2 Private Water System, Monitored by NDEP and Washoe County

For most uses, Washoe County Code, Chapter 110, Article 422, Water and Sewer Resource Requirements, requires the dedication of water rights to Washoe County. Please indicate the type and quantity of water rights you have available should dedication be required.

h. Permit #	Multiple - See Tab D	acre-feet per year	386.669 Total combined)
i. Certificate #	Multiple - See Tab D	acre-feet per year	
j. Surface Claim #		acre-feet per year	
k. Other #		acre-feet per year	

Title of those rights (as filed with the State Engineer in the Division of Water Resources of the Department of Conservation and Natural Resources).

The existing forest screens the Mt. Rose facilities from public ROW. Only the bridge crossing will be seen.

10. Community Services (provided and nearest facility):

a. Fire Station	Forest Service Fire Station - 16255 Mt. Rose Highway
b. Health Care Facility	Saint Mary's Galena Urgent Medical Center, 18653 Wedge Pkwy, #300
c. Elementary School	Not Applicable - no school impact
d. Middle School	Not Applicable - no school impact
e. High School	Not Applicable - no school impact
f. Parks	Toyabe National Forest
g. Library	Not Applicable - no library impact
h. Citifare Bus Stop	No bus service is provided up Mt. Rose Highway - Some Shuttle Service on Holiday/Peak Use Times

Special Use Permit Application
for Grading
Supplemental Information

(All required information may be separately attached)

1. What is the purpose of the grading?

   Grading will be limited to areas of the site where new facilities will be placed on currently vacant land - inclusive of the 5 million gallon water tank, new maintenance building, Winters Creek Lodge Expansion, New ski lift offload locations for ATOMA and Lakeview Extension, and smaller facilities.

2. How many cubic yards of material are you proposing to excavate on site?

   13,000+/- CY. This is cut, only.

3. How many square feet of surface of the property are you disturbing?

   32+/- AC on Federal Land and 8+/- AC on private land, per USFS EIS.

4. How many cubic yards of material are you exporting or importing? If none, how are you managing to balance the work on-site?

   47,000+/- CY of import.

5. Is it possible to develop your property without surpassing the grading thresholds requiring a Special Use Permit? (Explain fully your answer.)

   No. The new skier unload stations associated with the ATOMA and Lakeview lifts will need to be elevated so as to provide the slope necessary for skier offload. Water tanks must be set entirely in cut earth for structural stability. Due to the steep nature of the terrain, depths of cut will exceed 10 feet in depth.

6. Has any portion of the grading shown on the plan been done previously? (If yes, explain the circumstances, the year the work was done, and who completed the work.)

   Yes, some grading for ski runs has previously been done where the extended/upgraded Lakeview Chairlift is proposed. The proposed first aid station is located within an existing parking lot and grading and site improvements have previous been accomplished. As the resort has been operating for many years, there are areas of the site where some grading leading to the proposed uses with this application has previously been accomplished.

7. Have you shown all areas on your site plan that are proposed to be disturbed by grading? (If no, explain your answer.)

   No, due to the large nature of the site, smaller areas of disturbance have not been identified. such smaller areas would include lift tower foundation locations. The ATOMA area lift towers will be new, but the upgraded Lakeview lift will utilize the same alignment that has existed for many years.

8. Can the disturbed area be seen from off-site? If yes, from which directions and which properties or roadways?

Grading in association with the skier bridge crossing of Mt. Rose Highway will be visible from the highway (off-site). Most of the other grading will be fully screened by trees and topography such that the additional areas of grading are not visible from off-site.

9. Could neighboring properties also be served by the proposed access/grading requested (i.e. if you are creating a driveway, would it be used for access to additional neighboring properties)?

No. The existing access points into the Mt. Rose main lodge and Winters Creek Lodge areas only serve the ski resort, which has been in operation since its very modest beginnings in 1939.

10. What is the slope (horizontal/vertical) of the cut and fill areas proposed to be? What methods will be used to prevent erosion until the revegetation is established?

Where possible 3:1 slopes will be used, however to minimize ground disturbance, some areas will require 2:1 slopes. 3:1 slope areas will be stabilized with a dryland seed mixture and 2:1 slopes will be stabilized with rip-rap. Cutoff ditches will be utilized to protect created slope areas from upstream runoff.

11. Are you planning any berms?

Yes	No X	If yes, how tall is the berm at its highest?

12. If your property slopes and you are leveling a pad for a building, are retaining walls going to be required? If so, how high will the walls be and what is their construction (i.e. rockery, concrete, timber, manufactured block)?

Only the water tank will require such grading treatment. Grading plans are provided.

13. What are you proposing for visual mitigation of the work?

The existing forest screens the Mt. Rose facilities from public ROW. Only the bridge crossing will be seen.

14. Will the grading proposed require removal of any trees? If so, what species, how many and of what size?

Approximately 250 trees will be removed with buildings and lifts proposed with this application. The EIS identifies that 37+/- acres of tree clearing will be needed for new ski runs clearing with Alternative 3.

15. What type of revegetation seed mix are you planning to use and how many pounds per acre do you intend to broadcast? Will you use mulch and, if so, what type?

A dryland seed mix will be used within the project. The proposed mix and pounds per acre is identified in the project narrative.

16. How are you providing temporary irrigation to the disturbed area?

Temporary irrigation is not planned for the project in disturbed areas. Hydroseeding is planned to occur in the late fall or early winter to maximize natural moisture for seed germination and growth.

17. Have you reviewed the revegetation plan with the Washoe Storey Conservation District? If yes, have you incorporated their suggestions?

No.

18. Are there any restrictive covenants, recorded conditions, or deed restrictions (CC&Rs) that may prohibit the requested grading?

Yes	No X	If yes, please attach a copy.

Washoe County Treasurer
Tammi Davis

Washoe County Treasurer
P.O. Box 30039, Reno, NV 89520-3039
ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Bill Detail

Back to Account Detail | Change of Address | Print this Page

Washoe County Parcel Information

Parcel ID	Status	Last Update
04811212	Active	9/12/2019 2:07:27 AM

Current Owner:
MT ROSE DEVELOPMENT CO
22222 MOUNT ROSE HWY
RENO, NV 89511

SITUS:
22222 MOUNT ROSE HWY
WCTY NV

Taxing District
4000

Geo CD:

Legal Description

Range 19 SubdivisionName _UNSPECIFIED Township 17 Section 19 Lot 1 Block

Installments

Period	Due Date	Tax Year	Tax	Penalty/Fee	Interest	Total Due
INST 1	8/19/2019	2019	$0.00	$0.00	$0.00	$0.00
INST 2	10/7/2019	2019	$26,043.80	$0.00	$0.00	$26,043.80
INST 3	1/6/2020	2019	$26,043.80	$0.00	$0.00	$26,043.80
INST 4	3/2/2020	2019	$26,043.80	$0.00	$0.00	$26,043.80
		Total Due:	**$78,131.40**	**$0.00**	**$0.00**	**$78,131.40**

Tax Detail

	Gross Tax	Credit	Net Tax
State of Nevada	$5,465.64	$0.00	$5,465.64
Truckee Meadows Fire Dist	$17,361.46	$0.00	$17,361.46
Washoe County	$44,744.35	$0.00	$44,744.35
Washoe County Sc	$36,603.75	$0.00	$36,603.75
PLEASANT VALLEY WATER BASIN	$0.86	$0.00	$0.86
Total Tax	**$104,176.06**	**$0.00**	**$104,176.06**

Payment History

Tax Year	Bill Number	Receipt Number	Amount Paid	Last Paid
2019	2019171974	B19.72038	$26,044.66	8/23/2019

Pay By Check

Please make checks payable to:
WASHOE COUNTY TREASURER

Mailing Address:
P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

Change of Address

All requests for a mailing address change must be submitted in writing, including a signature (unless using the online form).

To submit your address change online click here

Address change requests may also be faxed to: (775) 328-3642

Address change requests may also be mailed to:
Washoe County Assessor
1001 E 9th Street
Reno, NV 89512-2845

Washoe County Treasurer
P.O. Box 30039, Reno, NV 89520-3039
ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Washoe County Treasurer
Tammi Davis

Bill Detail

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Washoe County Parcel Information

Parcel ID	Status	Last Update
04811213	Active	9/12/2019 2:07:27 AM

Current Owner:
MT ROSE DEVELOPMENT CO
22222 MOUNT ROSE HWY
RENO, NV 89511

SITUS:
0 MOUNT ROSE HWY
WASHOE COUNTY NV

Taxing District
4000

Geo CD:

Legal Description

Township 17 Section 19 Lot 2 Block Range 19 SubdivisionName _UNSPECIFIED

Installments

Period	Due Date	Tax Year	Tax	Penalty/Fee	Interest	Total Due
INST 1	8/19/2019	2019	$0.00	$0.00	$0.00	$0.00
INST 2	10/7/2019	2019	$493.74	$0.00	$0.00	$493.74
INST 3	1/6/2020	2019	$493.73	$0.00	$0.00	$493.73
INST 4	3/2/2020	2019	$493.73	$0.00	$0.00	$493.73
		Total Due:	**$1,481.20**	**$0.00**	**$0.00**	**$1,481.20**

Tax Detail

	Gross Tax	Credit	Net Tax
State of Nevada	$123.22	($18.96)	$104.26
Truckee Meadows Fire Dist	$391.42	($72.51)	$318.91
Washoe County	$1,008.77	($155.24)	$853.53
Washoe County Sc	$825.24	($127.00)	$698.24
PLEASANT VALLEY WATER BASIN	$0.86	$0.00	$0.86
Total Tax	**$2,349.51**	**($373.71)**	**$1,975.80**

Payment History

Tax Year	Bill Number	Receipt Number	Amount Paid	Last Paid
2019	2019172464	B19.72042	$494.60	8/23/2019

Pay By Check

Please make checks payable to:
WASHOE COUNTY TREASURER

Mailing Address:
P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

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1001 E 9th Street
Reno, NV 89512-2845

Washoe County Treasurer
Tammi Davis

Washoe County Treasurer
P.O. Box 30039, Reno, NV 89520-3039
ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Bill Detail

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Washoe County Parcel Information

Parcel ID	Status	Last Update
04811214	Active	9/12/2019 2:07:27 AM

Current Owner:
MT ROSE DEVELOPMENT CO
22222 MOUNT ROSE HWY
RENO, NV 89511

SITUS:
0 MOUNT ROSE HWY
WASHOE COUNTY NV

Taxing District
4000

Geo CD:

Legal Description

Township 17 Section 19 Lot 3 Block Range 19 SubdivisionName _UNSPECIFIED

Installments

Period	Due Date	Tax Year	Tax	Penalty/Fee	Interest	Total Due
INST 1	8/19/2019	2019	$0.00	$0.00	$0.00	$0.00
INST 2	10/7/2019	2019	$1,230.86	$0.00	$0.00	$1,230.86
INST 3	1/6/2020	2019	$1,230.85	$0.00	$0.00	$1,230.85
INST 4	3/2/2020	2019	$1,230.85	$0.00	$0.00	$1,230.85
		Total Due:	**$3,692.56**	**$0.00**	**$0.00**	**$3,692.56**

Tax Detail

	Gross Tax	Credit	Net Tax
State of Nevada	$258.31	$0.00	$258.31
Truckee Meadows Fire Dist	$820.52	$0.00	$820.52
Washoe County	$2,114.65	$0.00	$2,114.65
Washoe County Sc	$1,729.94	$0.00	$1,729.94
PLEASANT VALLEY WATER BASIN	$0.86	$0.00	$0.86
Total Tax	**$4,924.28**	**$0.00**	**$4,924.28**

Payment History

Tax Year	Bill Number	Receipt Number	Amount Paid	Last Paid
2019	2019172482	B19.72036	$1,231.72	8/23/2019

Pay By Check

Please make checks payable to:
WASHOE COUNTY TREASURER

Mailing Address:
P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

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Washoe County Treasurer
P.O. Box 30039, Reno, NV 89520-3039
ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Washoe County Treasurer
Tammi Davis

Bill Detail

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Washoe County Parcel Information

Parcel ID	Status	Last Update
04811215	Active	9/12/2019 2:07:27 AM

Current Owner:
MT ROSE DEVELOPMENT COMPANY
22222 MOUNT ROSE HWY
RENO, NV 89511

SITUS:
21333 MOUNT ROSE HWY
WCTY NV

Taxing District
4000

Geo CD:

Legal Description

Range 19 Lot 1 SubdivisionName _UNSPECIFIED Township 17

Installments

Period	Due Date	Tax Year	Tax	Penalty/Fee	Interest	Total Due
INST 1	8/19/2019	2019	$0.00	$0.00	$0.00	$0.00
INST 2	10/7/2019	2019	$5,154.30	$0.00	$0.00	$5,154.30
INST 3	1/6/2020	2019	$5,154.30	$0.00	$0.00	$5,154.30
INST 4	3/2/2020	2019	$5,154.30	$0.00	$0.00	$5,154.30
		Total Due:	**$15,462.90**	**$0.00**	**$0.00**	**$15,462.90**

Tax Detail

	Gross Tax	Credit	Net Tax
State of Nevada	$1,081.70	$0.00	$1,081.70
Truckee Meadows Fire Dist	$3,435.99	$0.00	$3,435.99
Washoe County	$8,855.31	$0.00	$8,855.31
Washoe County Sc	$7,244.21	$0.00	$7,244.21
Total Tax	**$20,617.21**	**$0.00**	**$20,617.21**

Payment History

Tax Year	Bill Number	Receipt Number	Amount Paid	Last Paid
2019	2019172015	B19.45091	$5,154.31	8/13/2019

Pay By Check

Please make checks payable to:
WASHOE COUNTY TREASURER

Mailing Address:
P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

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ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Washoe County Treasurer
Tammi Davis

Bill Detail

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Washoe County Parcel Information

Parcel ID	Status	Last Update
04805011	Active	9/12/2019 2:07:27 AM

Current Owner:
UNITED STATES OF AMERICA
NONE
RENO, NV 00000

SITUS:
0 MOUNT ROSE HWY
WCTY NV

Taxing District
4000

Geo CD:

Legal Description

Range 19 SubdivisionName _UNSPECIFIED Section 18 Township 17

Installments

Period	Due Date	Tax Year	Tax	Penalty/Fee	Interest	Total Due
INST 1	8/19/2019	2019	$0.00	$0.00	$0.00	$0.00
		Total Due:	**$0.00**	**$0.00**	**$0.00**	**$0.00**

Tax Detail

	Gross Tax	Credit	Net Tax
State of Nevada	$562.47	($562.47)	$0.00
Truckee Meadows Fire Dist	$1,786.66	($1,786.66)	$0.00
Washoe County	$4,604.63	($4,604.63)	$0.00
Washoe County Sc	$3,766.87	($3,766.87)	$0.00
Total Tax	**$10,720.63**	**($10,720.63)**	**$0.00**

Payment History

No Payment Records Found

Pay By Check

Please make checks payable to:
WASHOE COUNTY TREASURER

Mailing Address:
P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

Change of Address

All requests for a mailing address change must be submitted in writing, including a signature (unless using the online form).

To submit your address change online click here

Address change requests may also be faxed to:
(775) 328-3642

Address change requests may also be mailed to:
Washoe County Assessor
1001 E 9th Street
Reno, NV 89512-2845

Washoe County Treasurer
Tammi Davis

Washoe County Treasurer
P.O. Box 30039, Reno, NV 89520-3039
ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Account Detail

Back to Account Detail | Change of Address | Print this Page

CollectionCart

Collection Cart	Items	Total	Checkout	View
	0	$0.00		

Pay Online

No payment due for this account.

Washoe County Parcel Information

Parcel ID	Status	Last Update
04811111	Active	9/12/2019 2:07:27 AM

Current Owner:
UNITED STATES OF AMERICA

NONE
RENO, NV 00000

SITUS:
22215 MOUNT ROSE HWY

Taxing District
4000

Geo CD:

Legal Description

Range 19 SubdivisionName _UNSPECIFIED Section 20 Township 17

Tax Bill (Click on desired tax year for due dates and further details)

Tax Year	Net Tax	Total Paid	Penalty/Fees	Interest	Balance Due
2019	$0.00	$0.00	$0.00	$0.00	$0.00
2018	$0.00	$0.00	$0.00	$0.00	$0.00
2017	$0.00	$0.00	$0.00	$0.00	$0.00
2016	$0.00	$0.00	$0.00	$0.00	$0.00
2015	$0.00	$0.00	$0.00	$0.00	$0.00
				Total	$0.00

Disclaimer

- ALERTS: If your real property taxes are delinquent, the search results displayed may not reflect the correct amount owing. Please contact our office for the current amount due.
- For your convenience, online payment is available on this site. E-check payments are accepted without a fee. However, a service fee does apply for online credit card payments. See Payment Information for details.

Pay By Check

Please make checks payable to:
WASHOE COUNTY TREASURER

Mailing Address:
P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

Payment Information

Special Assessment District

Installment Date Information

Assessment Information

Washoe County Treasurer
Tammi Davis

Washoe County Treasurer
P.O. Box 30039, Reno, NV 89520-3039
ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Account Detail

Back to Account Detail | Change of Address | Print this Page

CollectionCart

Collection Cart	Items	Total	Checkout	View
	0	$0.00		

Pay Online

No payment due for this account.

Washoe County Parcel Information

Parcel ID	Status	Last Update
04812022	Active	9/12/2019 2:07:27 AM

Current Owner:
UNITED STATES OF AMERICA

NONE
RENO, NV 00000

SITUS:
22900 MOUNT ROSE HWY
WASHOE COUNTY NV

Taxing District
4000

Geo CD:

Legal Description

SubdivisionName _UNSPECIFIED Section 20 21 Township 17 Range 19

Tax Bill (Click on desired tax year for due dates and further details)

Tax Year	Net Tax	Total Paid	Penalty/Fees	Interest	Balance Due
2019	$0.00	$0.00	$0.00	$0.00	$0.00
2018	$0.00	$0.00	$0.00	$0.00	$0.00
2017	$0.00	$0.00	$0.00	$0.00	$0.00
2016	$0.00	$0.00	$0.00	$0.00	$0.00
2015	$0.00	$0.00	$0.00	$0.00	$0.00
				Total	$0.00

Disclaimer

- ALERTS: If your real property taxes are delinquent, the search results displayed may not reflect the correct amount owing. Please contact our office for the current amount due.
- For your convenience, online payment is available on this site. E-check payments are accepted without a fee. However, a service fee does apply for online credit card payments. See Payment Information for details.

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Mailing Address:
P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

Payment Information

Special Assessment District

Installment Date Information

Assessment Information

APPENDIX B

Mt. Rose
SKI TAHOE
BASE ELV. 8260'

MT ROSE

WINTERS CREEK LODGE

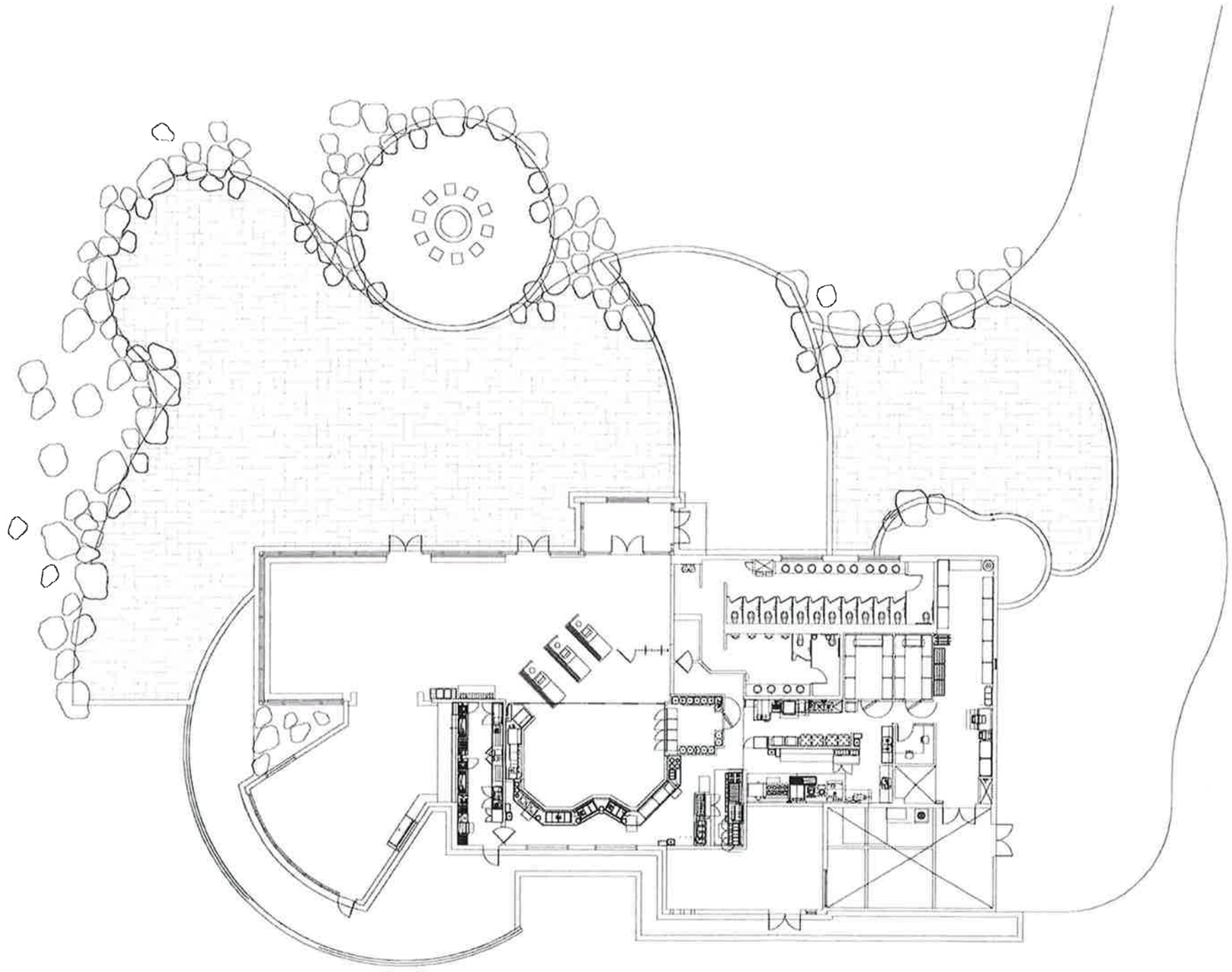
CONCEPT DESIGN

bull stockwell allen
ARCHITECTURE + PLANNING + INTERIORS

Located between Reno and Lake Tahoe, Mt Rose has the highest base elevation in the area. The existing Winters Creek Lodge is approximately 8000 sf and was constructed in 2009, on the east side of the ski area as a second access point to the ski area from the Mt Rose Highway. In this location the building is uniquely positioned to take advantage of dramatic views toward the ski mountain and east towards the Washoe Valley and beyond.

The lodge's primary function during the ski seasons is as a food and beverage outlet with restrooms that serve the day skiers. The building contains a full-service kitchen, scramble type serving area and bar. The interior spaces can expand to the extensive out door decks in good weather. In addition, the building program, scenic location and proximity to Reno make it a destination for conferences, weddings and other event throughout the non-ski seasons.

Due to the popularity of lodge venue, the resort has worked with Bull Stockwell Allen to prepare an expansion strategy to accommodate more users. The basic approach is to create larger the seating and bar areas and outdoor seating with limited modifications to the kitchen and back of house areas. The overall Scope of Work for the Projects is outlined in the attached conceptual design package. The project schedule starts construction in Spring 2020, for project opening in Winter 2020.



0' 10' 20' 40'

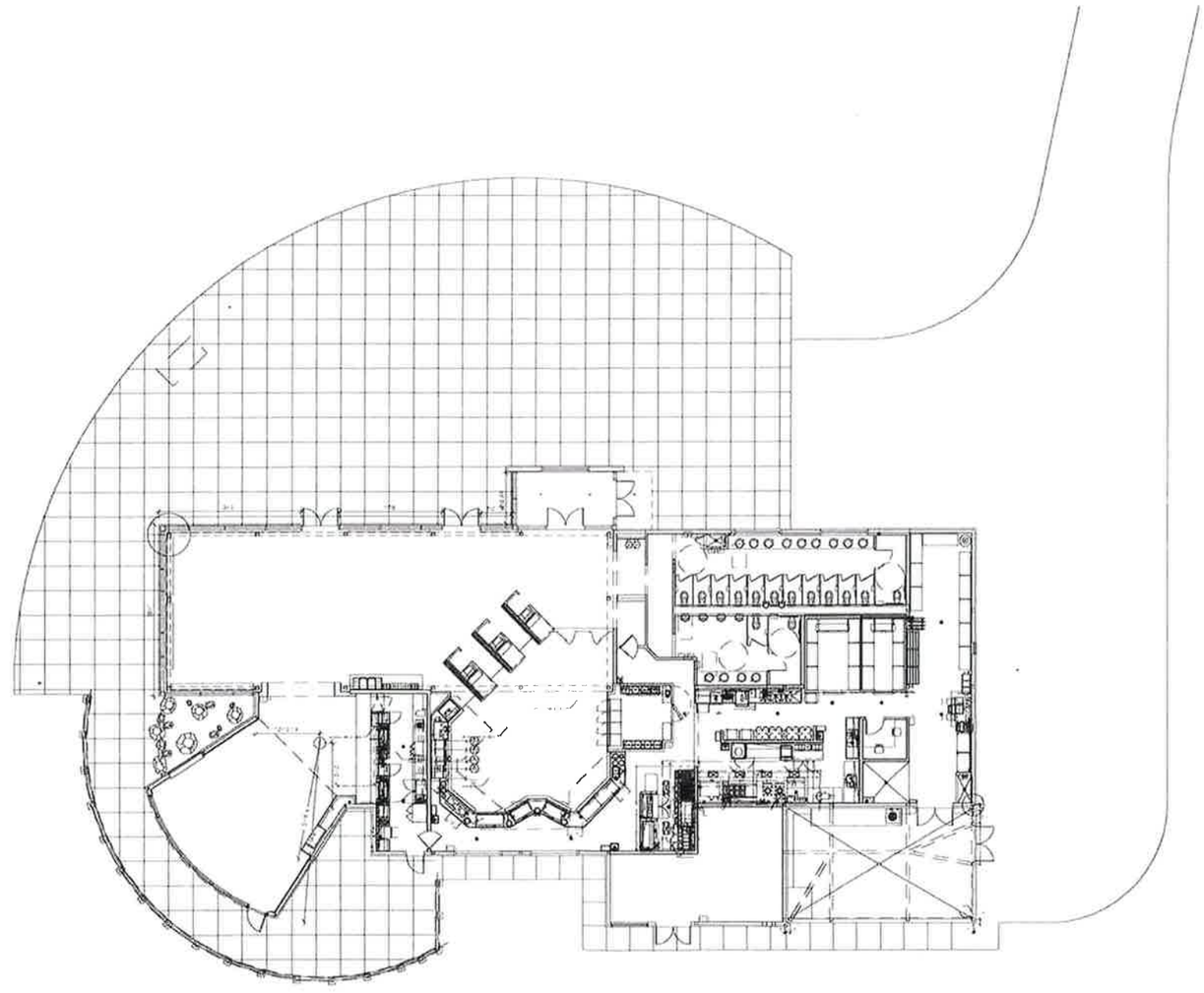
SITE OVERVIEW AND SCOPE

WINTERS CREEK LODGE

JULY 2019

Mt. Rose

bull stockwell allen
ARCHITECTURE + PLANNING + INTERIORS



0' 10' 20' 40'

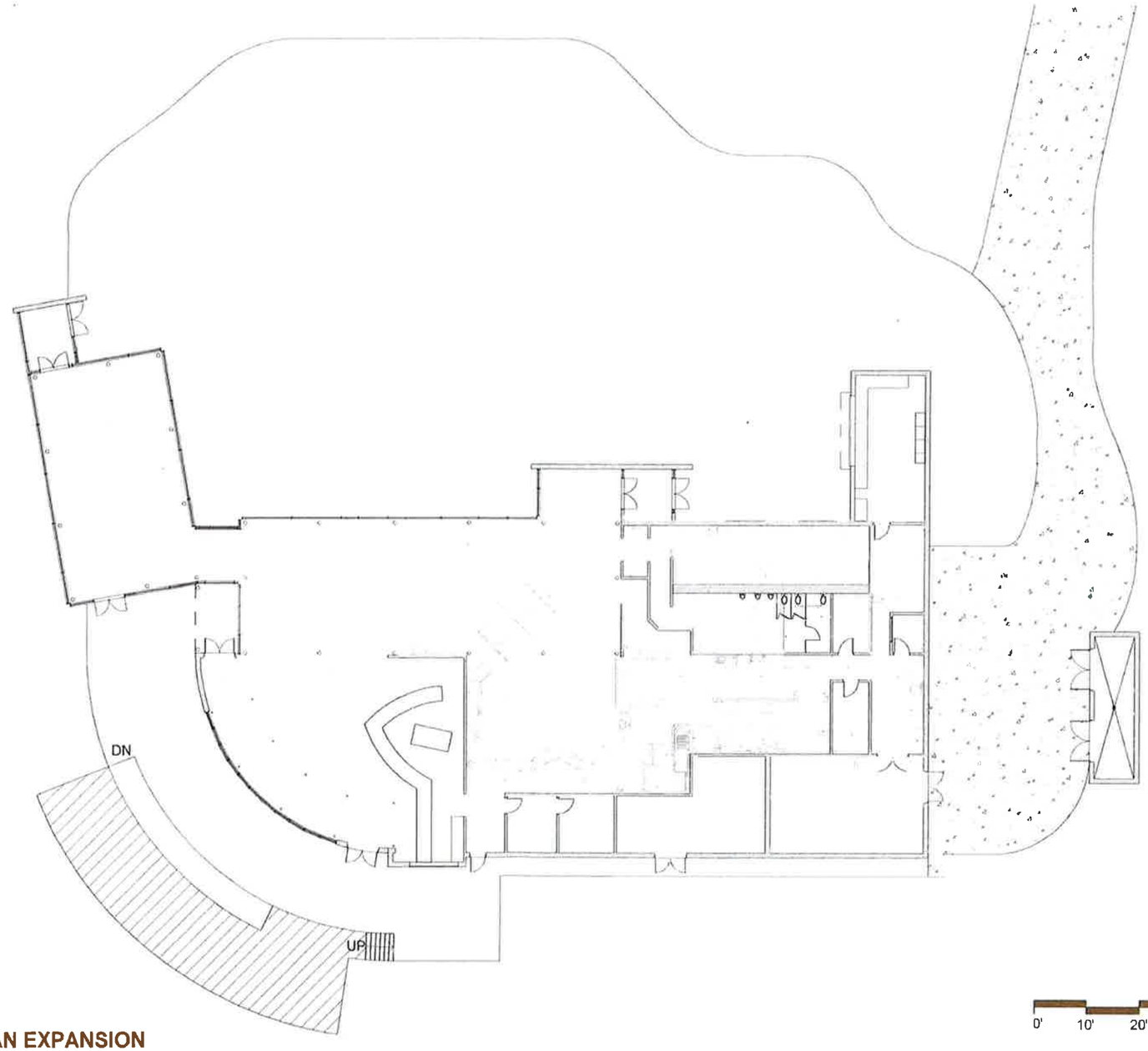
EXISTING FLOOR PLAN

WINTERS CREEK LODGE

JULY 2019

Mt. Rose

bull stockwell allen
ARCHITECTURE + PLANNING + INTERIORS



0' 10' 20' 40'

PROPOSED FLOOR PLAN EXPANSION

WINTERS CREEK LODGE

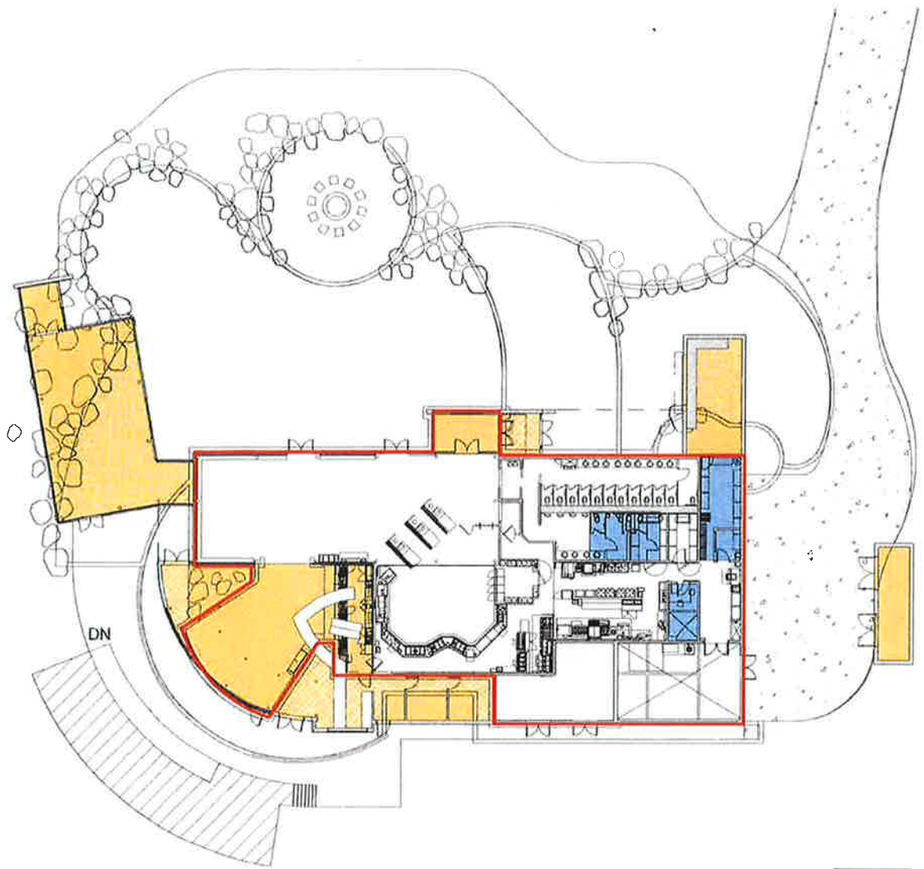
JULY 2019

Mt. Rose Ski Tahoe

bull stockwell allen
ARCHITECTURE + PLANNING + INTERIORS

EXISTING LODGE	
Dining Room	1250 sf
Entry and Cashiers	860 sf
Bar	1075 sf
Kitchen & Scramble	2690 sf
Vestibule	150 sf
Men	230 sf
Women	475 sf
Mechanical	450 sf
Circulation Walls Support	800 sf
Total	7980 sf
Dining Terrace	11200 sf
Bar Terrace	1290 sf

EXPANDED LODGE	
Dining Room	1250 sf
Entry and Cashiers	860 sf
Dining Expansion	**1250 sf**
New Bar	**1800 sf**
Kitchen & Scramble	**2580 sf**
Barbeque Expansion	**450 sf**
Expanded Vestibule	**275 sf**
New Vestibule	**115 sf**
Expanded Men	**360 sf**
Women	475 sf
Mechanical	450 sf
Circulation Walls Support	1275 sf
Total	**11120 sf**
Trash Enclosure	**330 sf**
Dining Terrace Expansion	**13950 sf**
New Bar Terrace	**2100 sf**
New Deck	**1510 sf**



EXPANDED AREA

MODIFIED AREA

EXISTING BUILDING

0' 10' 20' 40'

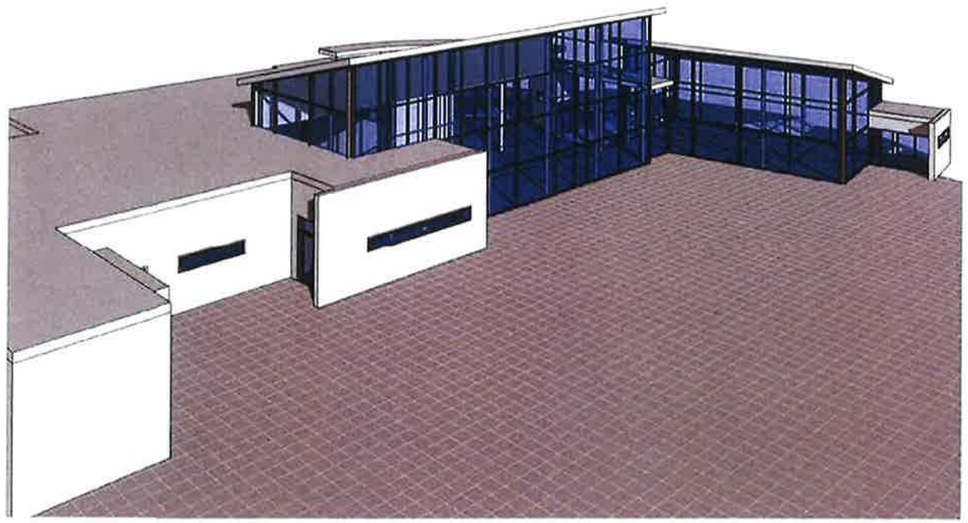
PLAN DIAGRAM AND AREA SUMMARY

WINTERS CREEK LODGE

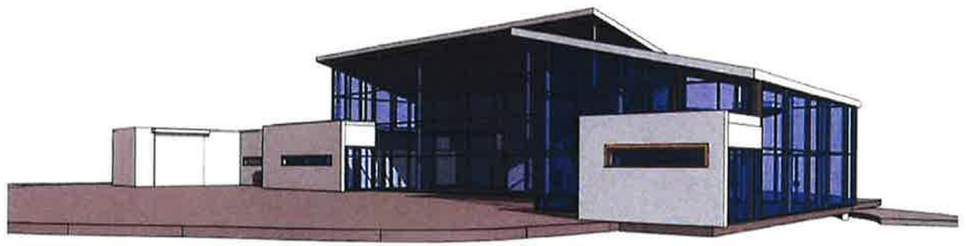
JULY 2019

Mt. Rose

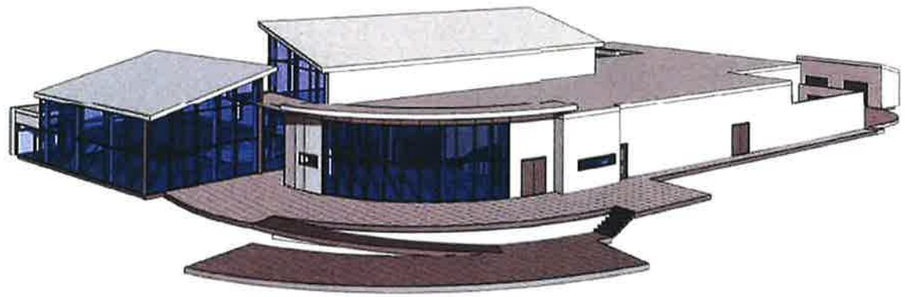
bull stockwell allen
ARCHITECTURE • PLANNING • INTERIORS



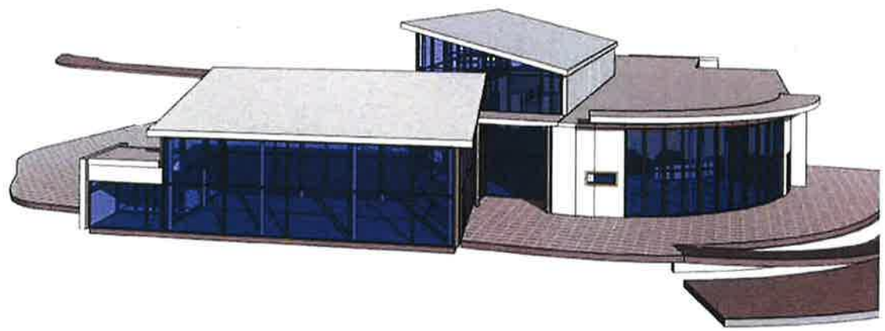
VIEW TOWARDS ENTRY AND DINING



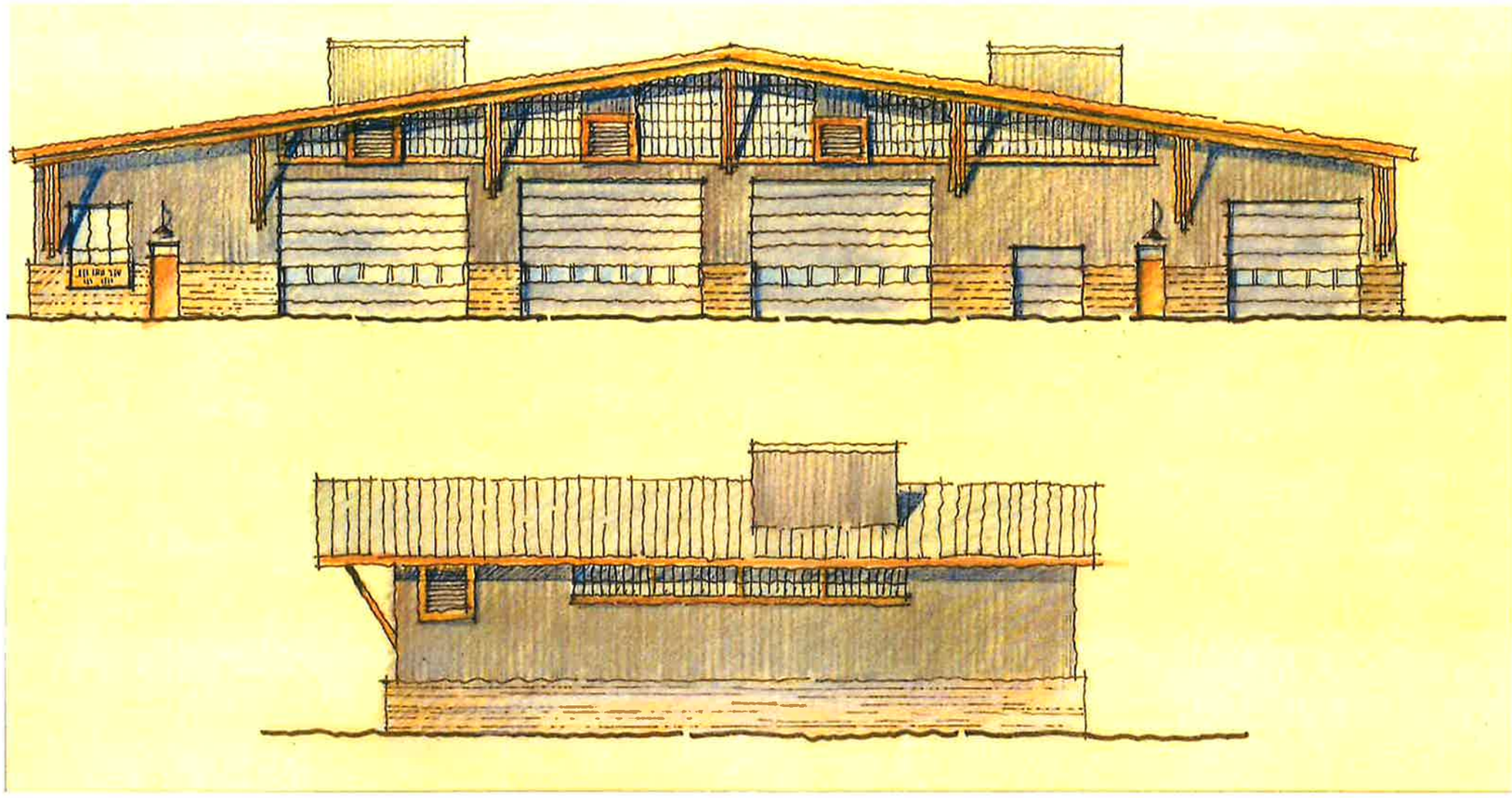
VIEW TOWARDS NEW DINING EXPANSION



VIEW TOWARDS NEW BAR AND BAR TERRACE



VIEW TOWARDS NEW DINING EXPANSION & BAR TERRACE



MAINTENANCE BUILDING

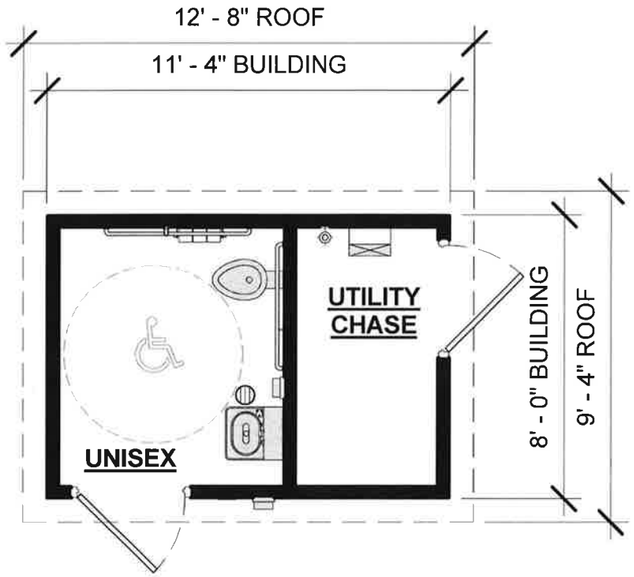
WINTERS CREEK LODGE

JULY 2019

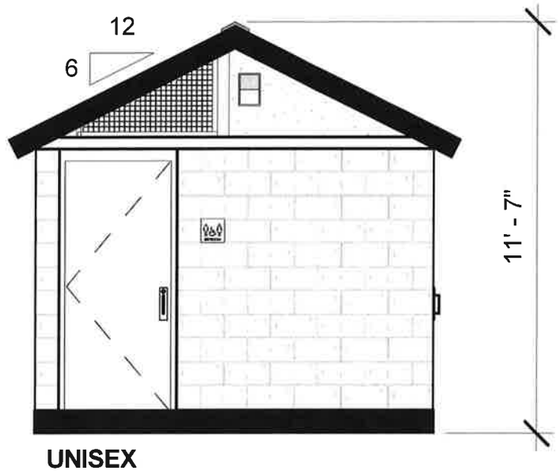
Mt. Rose

bull stockwell allen

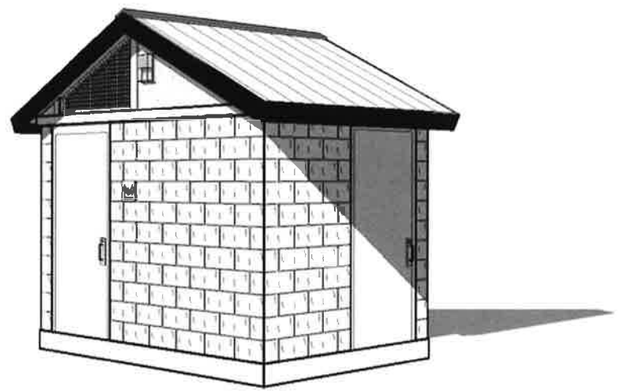
ARCHITECTURE + PLANNING + INTERIORS



1 FLOOR PLAN
3/16" = 1'-0"



2 FRONT ELEVATION
3/16" = 1'-0"



3 PERSPECTIVE

PUBLIC RESTROOM COMPANY
Building Better Places To Go.℠

PLAYGROUND SERIES

PS-011

MAXIMUM PERSON AN HOUR:

45 S

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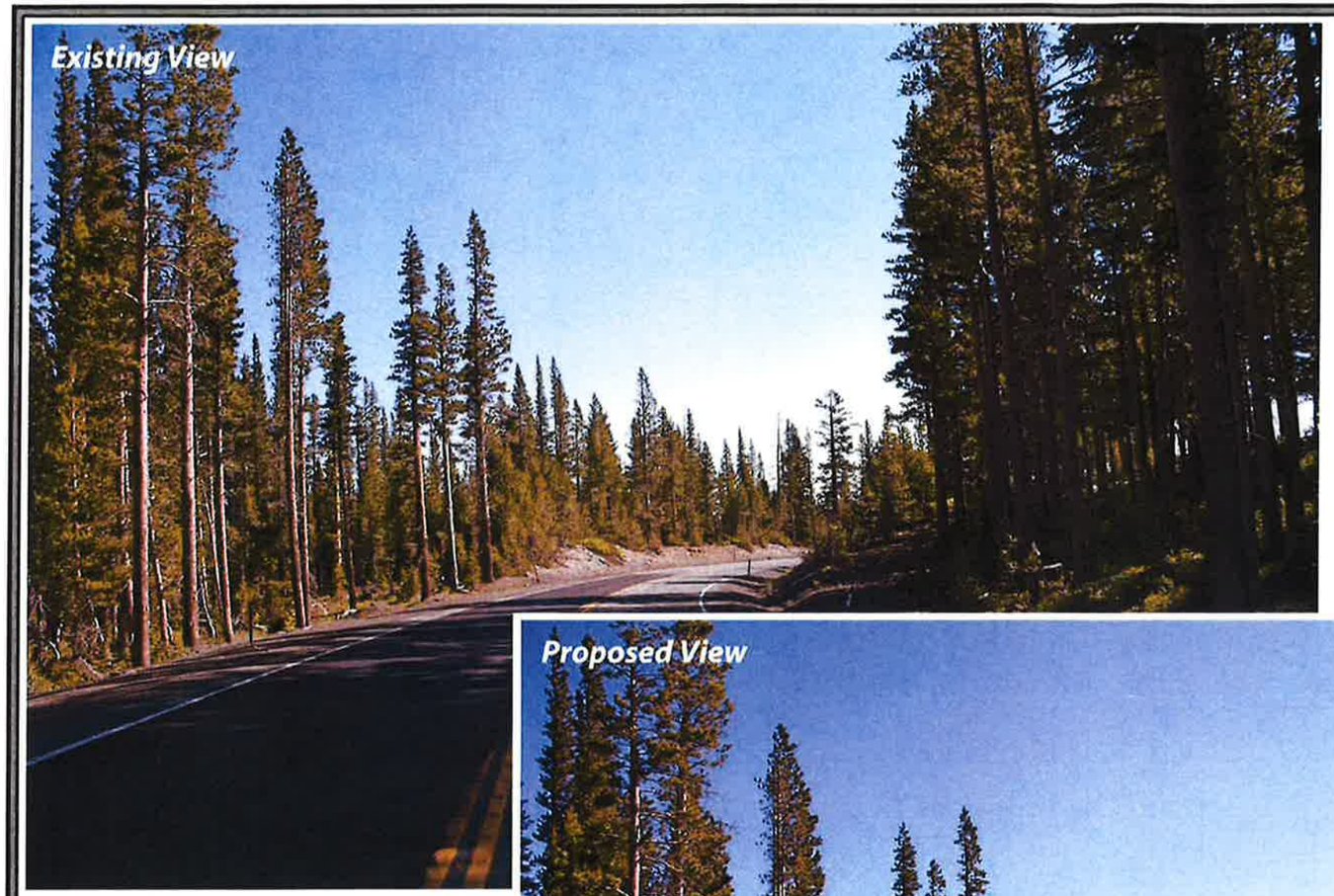
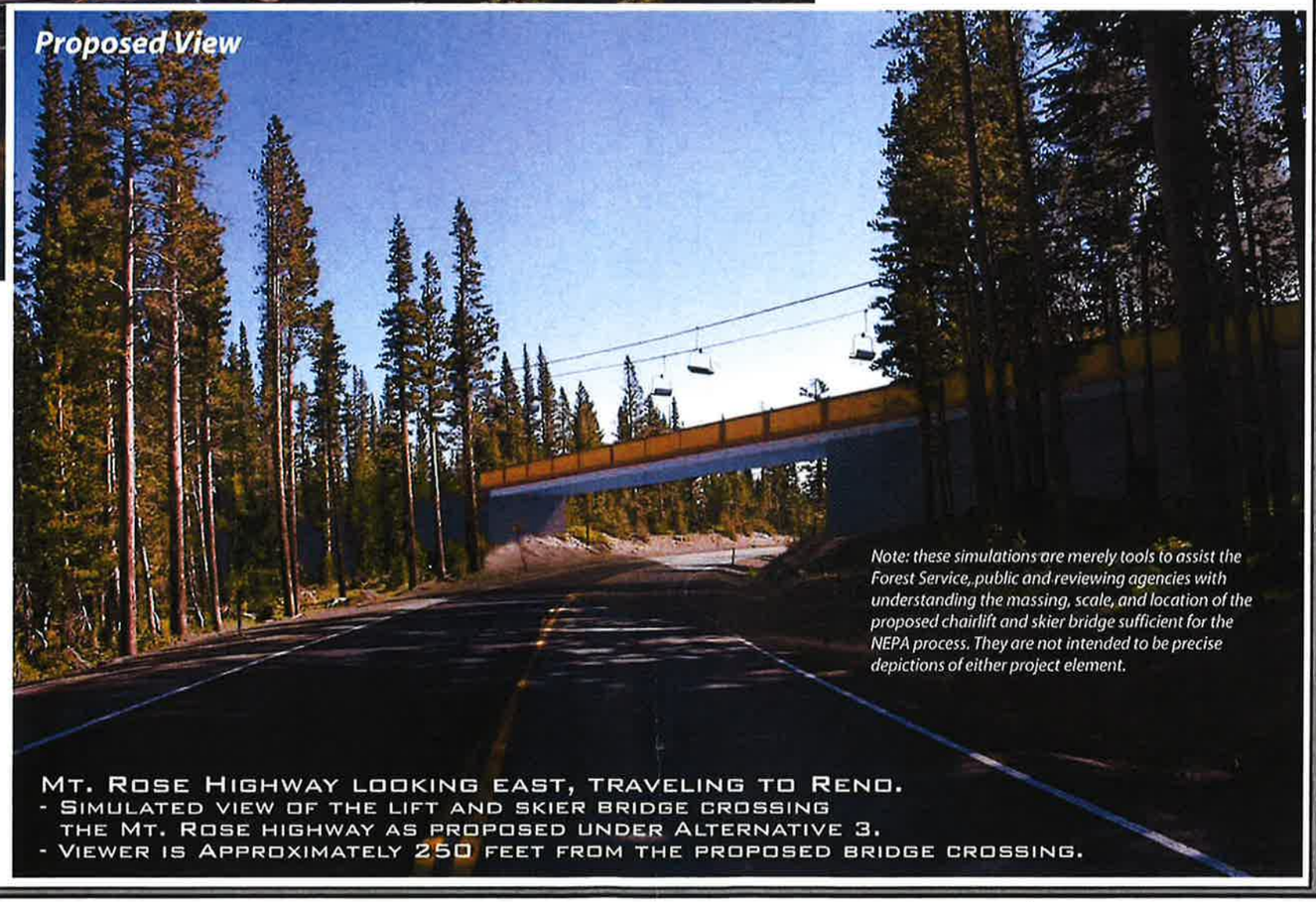
~NOT FOR CONSTRUCTION ~ PRELIMINARY DESIGN DRAWING ONLY ~ DO NOT SCALE, DIMENSIONS PRESIDE





Note: these simulations are merely tools to assist the Forest Service, public and reviewing agencies with understanding the massing, scale, and location of the proposed chairlift and skier bridge sufficient for the NEPA process. They are not intended to be precise depictions of either project element.

MT. ROSE HIGHWAY LOOKING EAST, TRAVELING TO RENO.
- SIMULATED VIEW OF THE LIFT AND SKIER BRIDGE CROSSING THE MT. ROSE HIGHWAY AS PROPOSED UNDER ALTERNATIVE 3.
- VIEWER IS APPROXIMATELY 250 FEET FROM THE PROPOSED BRIDGE CROSSING.

MT. ROSE SKI TAHOE - ATOMA AREA
ENVIRONMENTAL IMPACT STATEMENT

FIGURE 12
VISUAL SIMULATION
PROPOSED LIFT AND SKIER BRIDGE
SPANNING THE MT. ROSE HIGHWAY

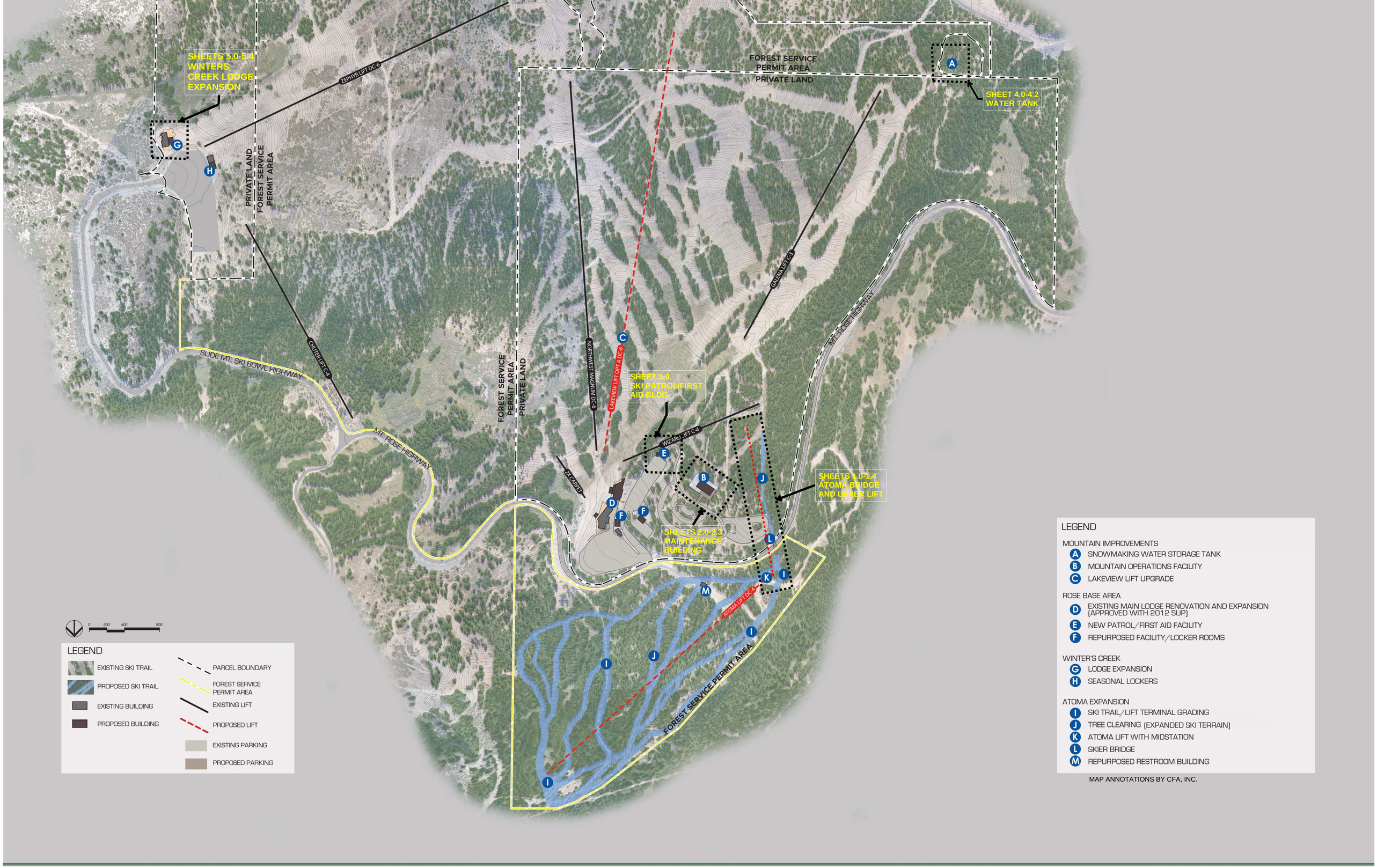
MT. ROSE SKI TAHOE - ATOMA AREA
ENVIRONMENTAL IMPACT STATEMENT

FIGURE 14
VISUAL SIMULATION
WATER TANK

Note:
Use Figure 10 to locate visual simulations

Proposed Water Tank Approximate Location

APPENDIX C



LEGEND

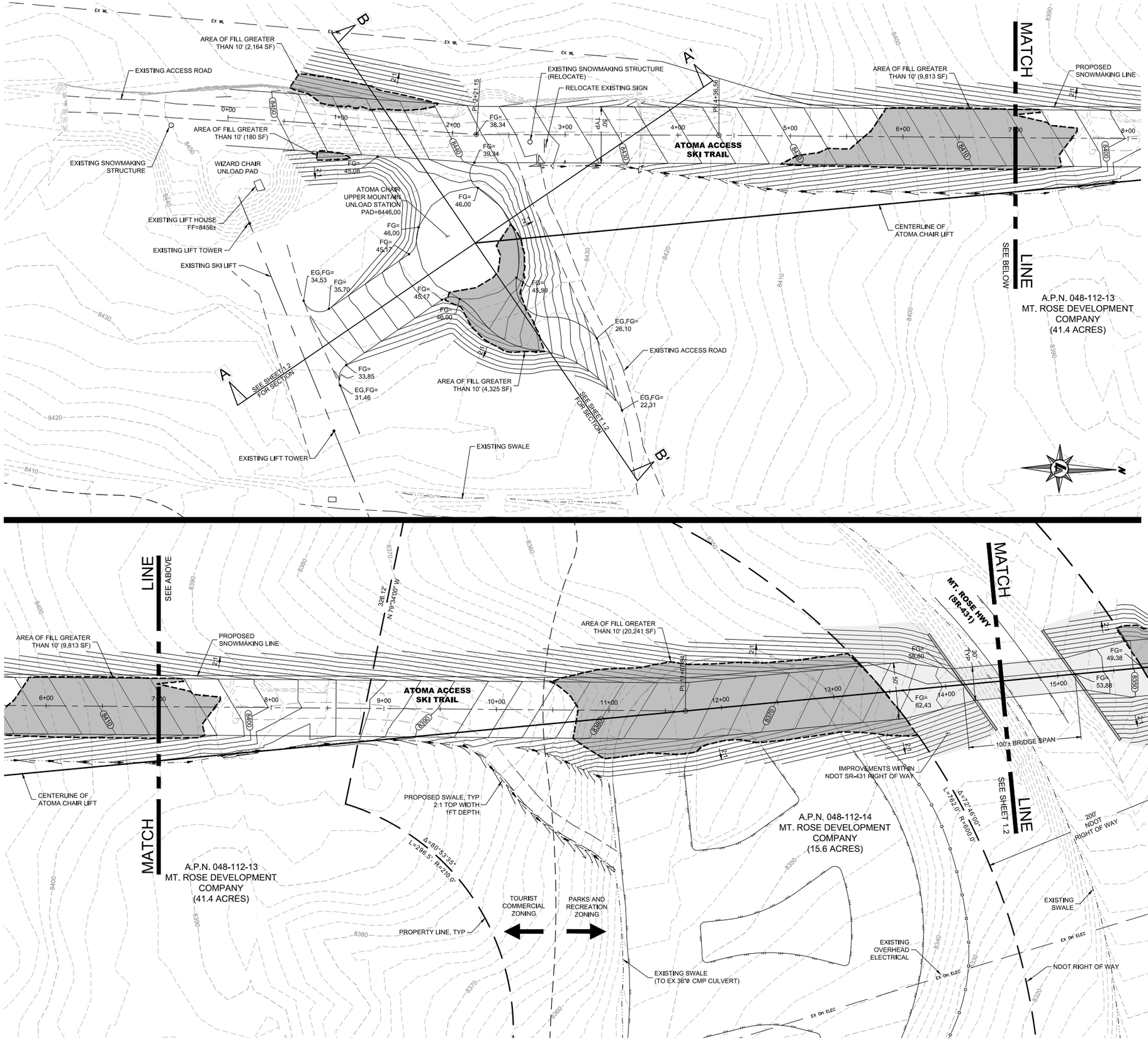
MOUNTAIN IMPROVEMENTS
- A SNOWMAKING WATER STORAGE TANK
- B MOUNTAIN OPERATIONS FACILITY
- C LAKEVIEW LIFT UPGRADE

ROSE BASE AREA
- D EXISTING MAIN LODGE RENOVATION AND EXPANSION (APPROVED WITH 2012 SUP)
- E NEW PATROL/FIRST AID FACILITY
- F REPURPOSED FACILITY/LOCKER ROOMS

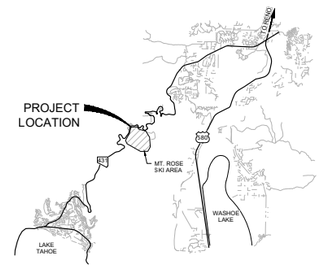
WINTER'S CREEK
- G LODGE EXPANSION
- H SEASONAL LOCKERS

ATOMA EXPANSION
- I SKI TRAIL/LIFT TERMINAL GRADING
- J TREE CLEARING (EXPANDED SKI TERRAIN)
- K ATOMA LIFT WITH MIDSTATION
- L SKIER BRIDGE
- M REPURPOSED RESTROOM BUILDING

MAP ANNOTATIONS BY CFA, INC.



VICINITY MAP



SUP LEGEND

- AREAS OF CUT/FILL GREATER THAN 10'
- IMPROVEMENTS WITHIN NDOT RIGHT OF WAY

GRADING LEGEND

- PROPERTY BOUNDARY
- EX ACCESS ROAD
- EX FLOWLINE
- PROP RETAINING WALL
- PROP FLOWLINE
- PROPOSED CULVERT
- AREA OF CUT GREATER THAN 10'

EARTHWORK TABLE - PRIVATE PROPERTY

DISTURBED AREA - PRIVATE PROP.	3.5 AC.
TOTAL EARTHWORK VOLUME	36,588 CU. YD. (NET-FILL)
TOTAL EARTHWORK (CUT)	621 CU. YD. (CUT)
TOTAL EARTHWORK (FILL)	35,967 CU. YD. (FILL)
MAXIMUM DEPTH OF FILL	20 FT
AREA OF CUT GREATER THAN 10'	36,733 SF

GENERAL NOTES

1. TO THE BEST OF MY KNOWLEDGE, BELIEF, AND ABILITY THESE PLANS ARE IN COMPLIANCE WITH WASHOE COUNTY DEVELOPMENT CODE.

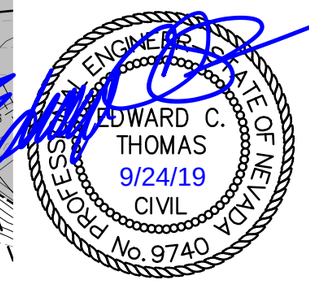
LUMOS & ASSOCIATES
9222 PROTOTYPE DRIVE
RENO, NV 89521
TEL: 775.827.6111
WWW.LUMOSINC.COM

SUP FOR MT. ROSE/SKI TAHOE FACILITIES EXPANSION AND UPGRADE ATOMA BRIDGE - UPPER AREA (PRIVATE)

MT. ROSE/SKI TAHOE — WASHOE COUNTY — NEVADA

REV | DATE | DESCRIPTION | BY

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 2019



EXP. 6/30/20

BAR IS 1 INCH ON ORIGINAL DRAWING
0 1"=40'

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

1.0

DRAWN BY:	KMK
DESIGNED BY:	KMK/ECT
CHECKED BY:	ECT
JOB NO.:	9764.100

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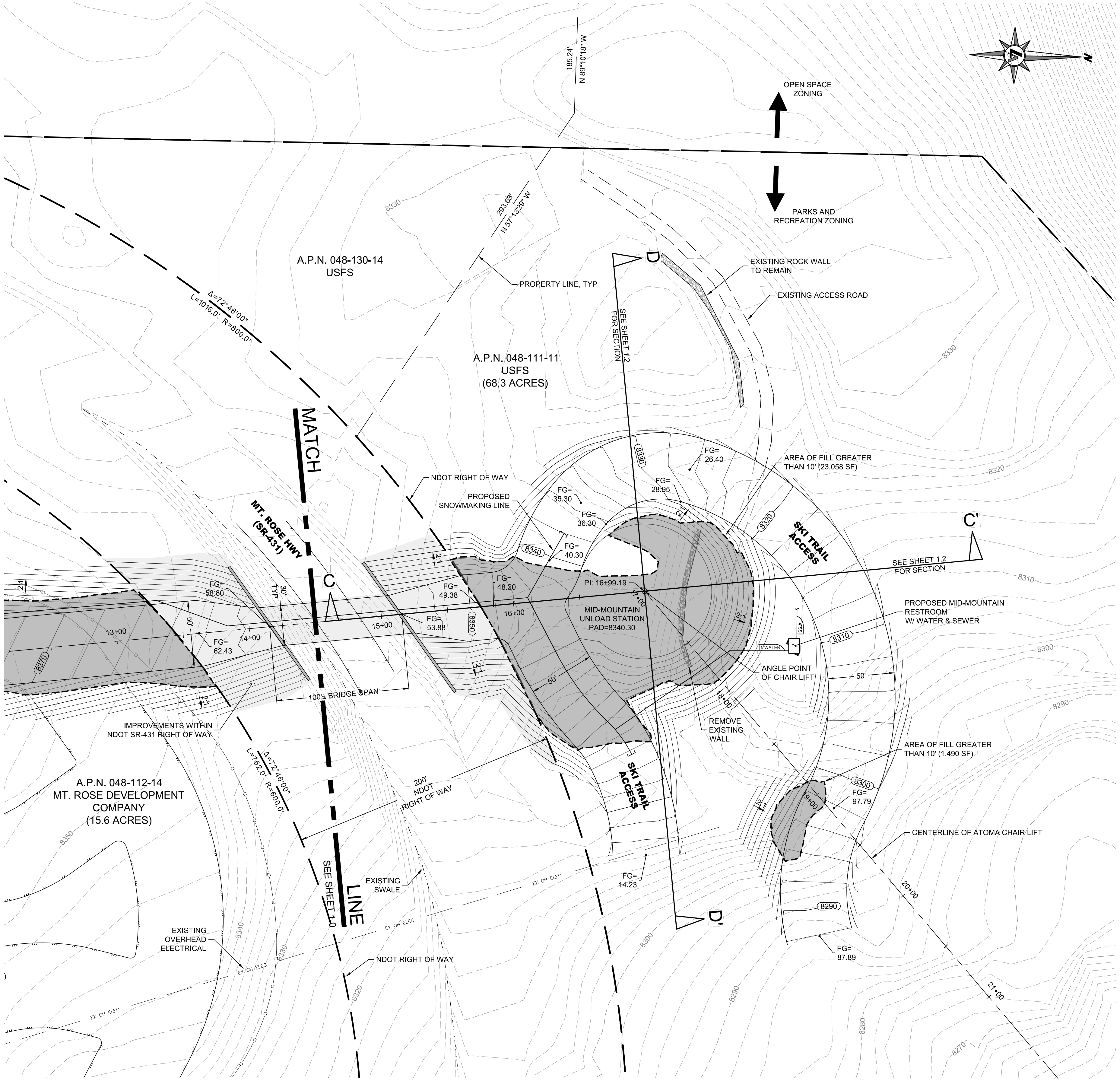

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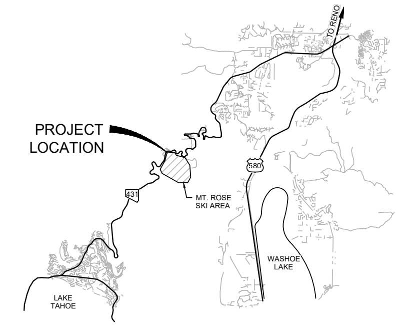
VICINITY MAP



SUP LEGEND

AREAS OF CUT/FILL GREATER THAN 10'

IMPROVEMENTS WITHIN NDOT RIGHT OF WAY

GRADING LEGEND

PROPERTY BOUNDARY

EX ACCESS ROAD

EX FLOWLINE

PROP RETAINING WALL

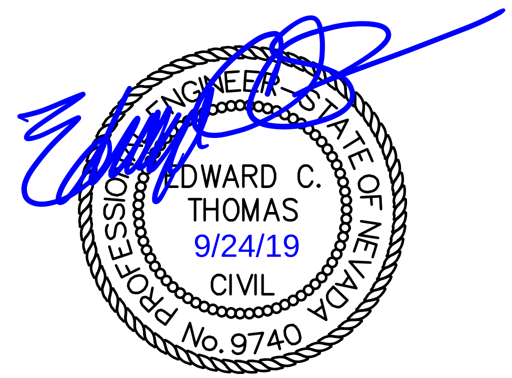
PROP FLOWLINE

PROPOSED CULVERT

AREA OF CUT GREATER THAN 10'

EARTHWORK TABLE - USFS PROPERTY

DISTURBED AREA - PUBLIC PROP.	1.7 AC.
TOTAL EARTHWORK VOLUME	16,033 CU. YD. (NET-FILL)
TOTAL EARTHWORK (CUT)	2,241 CU. YD. (CUT)
TOTAL EARTHWORK (FILL)	18,274 CU. YD. (FILL)
MAXIMUM DEPTH OF FILL	26 FT
AREA OF CUT GREATER THAN 10'	24,548 SF



LUMOS & ASSOCIATES

9222 PROTOTYPE DRIVE
RENO, NV 89521
TEL: 775.827.6111

WWW.LUMOSINC.COM

MT. ROSE/SKI TAHOE

SUP FOR MT. ROSE/SKI TAHOE FACILITIES EXPANSION AND UPGRADE ATOMA BRIDGE - LOWER AREA (USFS)

WASHOE COUNTY NEVADA

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 2019

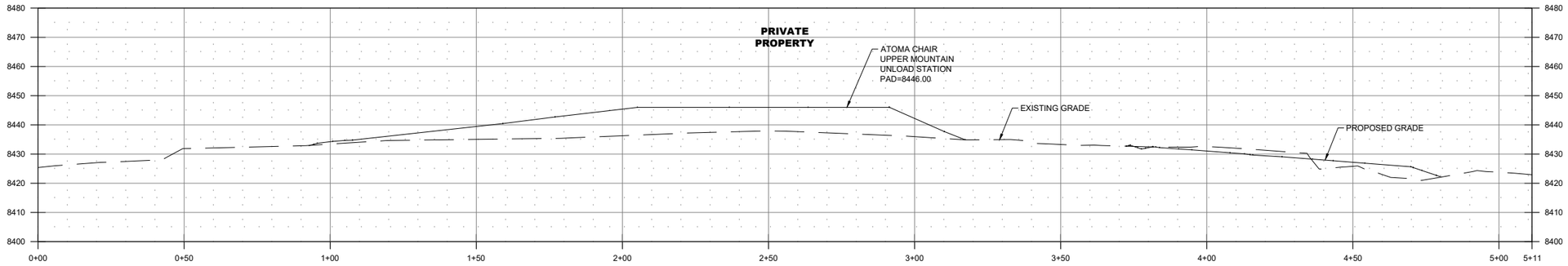
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1"=40'

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

1.1

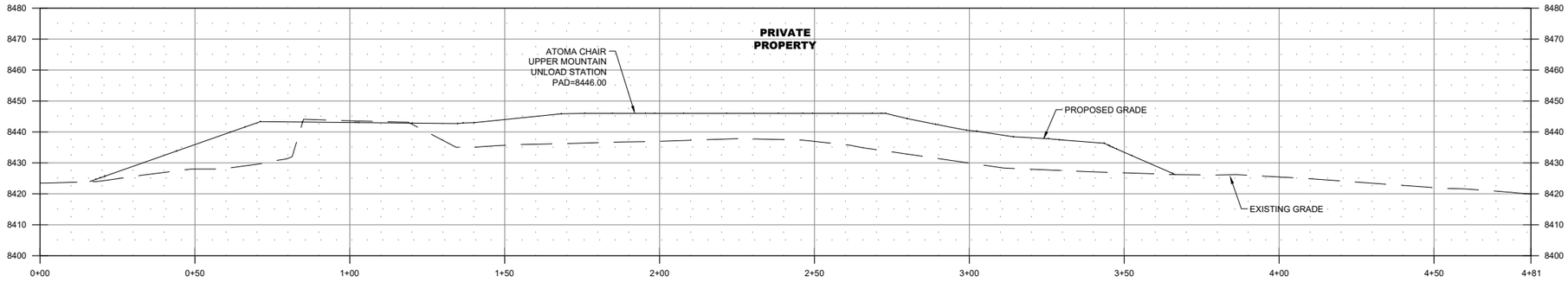
DRAWN BY:	KMK
DESIGNED BY:	KMK/ECT
CHECKED BY:	ECT
JOB NO.:	9764.100

SECTION A-A'



HORIZ SCALE: 1"=20'
VERTICAL SCALE: 1"=20'

SECTION B-B'



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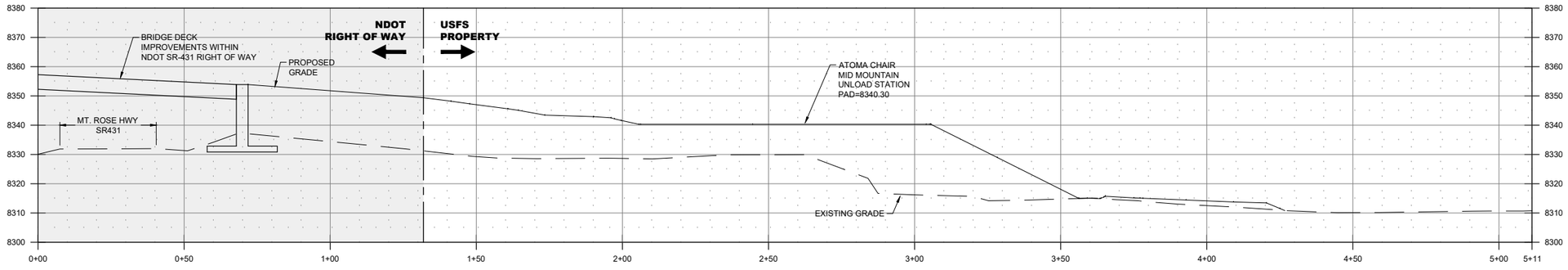
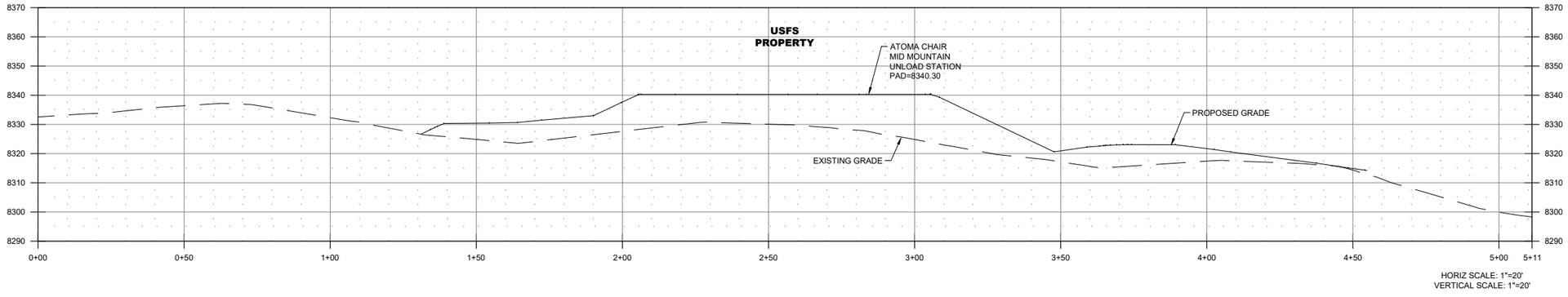
VERTICAL SCALE: 1"=20'

SECTION C-C'



HORIZ SCALE: 1"=20'
VERTICAL SCALE: 1"=20'

SECTION D-D'



HORIZ SCALE: 1"=20'
VERTICAL SCALE: 1"=20'

LUMOS & ASSOCIATES

9222 PROTOTYPE DRIVE
RENO, NV 89521
TEL: 775.827.6111

WWW.LUMOSINC.COM

PROFESSIONAL ENGINEER
EDWARD C. THOMAS
9/13/19
CIVIL
No. 9740
STATE OF NEVADA
EXP. 6/30/20

MT. ROSE/SKI TAHOE

SUP FOR MT. ROSE/SKI TAHOE FACILITIES EXPANSION AND UPGRADE
ATOMA BRIDGE - CROSS SECTIONS

WASHOE COUNTY

NEVADA

REV	DATE	DESCRIPTION	BY

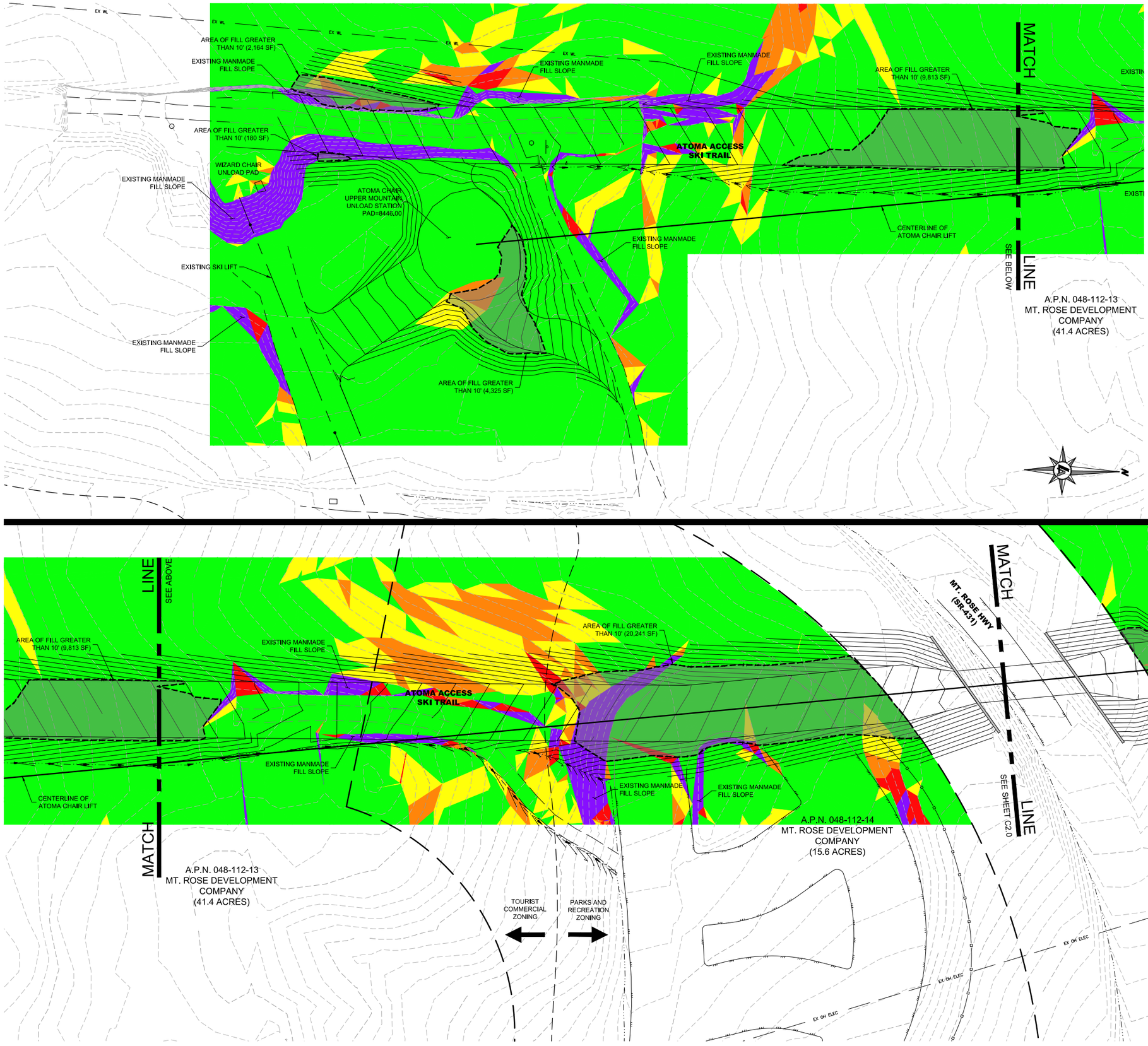
PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 2019

BAR IS 1 INCH ON ORIGINAL DRAWING
0 1"=20'

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

1.2

DRAWN BY:	KMK
DESIGNED BY:	KMK/ECT
CHECKED BY:	ECT
JOB NO.:	9764.100



SLOPE ANALYSIS MAP LEGEND			
ID	MIN SLOPE	MAX SLOPE	COLOR
1	0.00%	15.00%	
2	15.00%	20.00%	
3	20.00%	25.00%	
4	25.00%	30.00%	
5	30.00%	16116.86%	

SUP LEGEND

AREAS OF CUT/FILL GREATER THAN 10'

LUMOS & ASSOCIATES
9222 PROTOTYPE DRIVE
RENO, NV 89521
TEL: 775.827.6111
WWW.LUMOSINC.COM

PROFESSIONAL ENGINEER
EDWARD C. THOMAS
9/13/19
CIVIL
No. 9740
STATE OF NEVADA
EXP. 6/30/20

MT. ROSE/SKI TAHOE

SUP FOR MT. ROSE/SKI TAHOE FACILITIES EXPANSION AND UPGRADE
ATOMA BRIDGE - SLOPE ANALYSIS MAP (PRIVATE)

NEVADA
WASHOE COUNTY

REV	DATE	DESCRIPTION	BY

PRELIMINARY
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SEPTEMBER 2019

BAR IS 1 INCH ON ORIGINAL DRAWING
0 1"=40'

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

1.3

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JOB NO.:	9764.100

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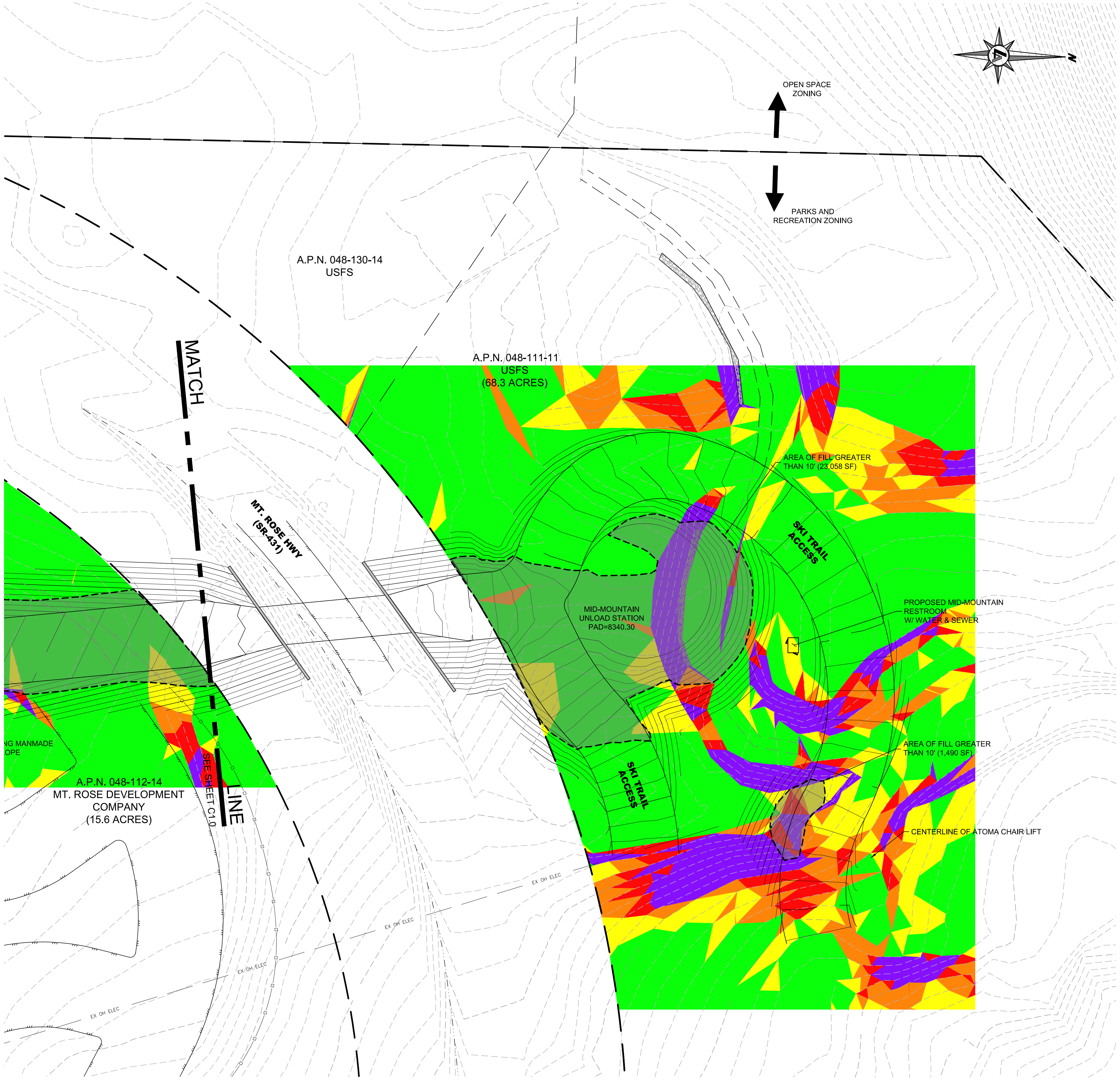

SLOPE ANALYSIS MAP LEGEND

ID	MIN SLOPE	MAX SLOPE	COLOR
1	0.00%	15.00%	green
2	15.00%	20.00%	yellow
3	20.00%	25.00%	orange
4	25.00%	30.00%	red
5	30.00%	970.85%	purple

SUP LEGEND

AREAS OF CUT/FILL GREATER THAN 10'

LUMOS & ASSOCIATES
9222 PROTOTYPE DRIVE
RENO, NV 89521
TEL: 775.827.6111
WWW.LUMOSINC.COM

PROFESSIONAL ENGINEER STATE OF NEVADA
EDWARD C. THOMAS
9/13/19
CIVIL
No. 9740
EXP. 6/30/20

MT. ROSE/SKI TAHOE

SUP FOR MT. ROSE/SKI TAHOE FACILITIES EXPANSION AND UPGRADE ATOMA BRIDGE - SLOPE ANALYSIS MAP (USFS)

NEVADA
WASHOE COUNTY

REV	DATE	DESCRIPTION	BY

PRELIMINARY
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BAR IS 1 INCH ON ORIGINAL DRAWING
0 1"=40'
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1.4

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JOB NO.: 9764.100

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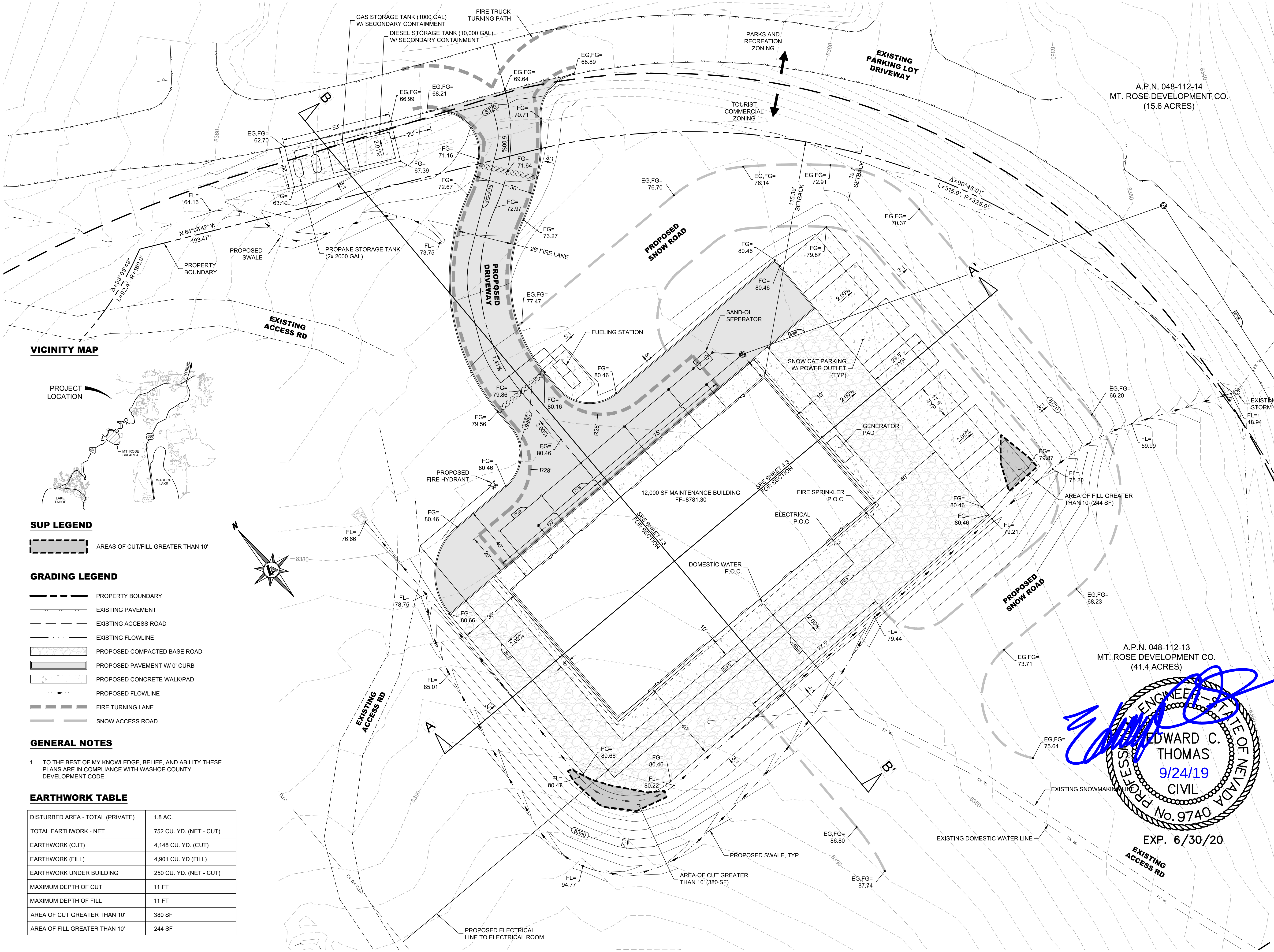

SUP LEGEND

AREAS OF CUT/FILL GREATER THAN 10'

GRADING LEGEND

- PROPERTY BOUNDARY
- EXISTING PAVEMENT
- EXISTING ACCESS ROAD
- EXISTING FLOWLINE
- PROPOSED COMPACTED BASE ROAD
- PROPOSED PAVEMENT W/ 0' CURB
- PROPOSED CONCRETE WALK/PAD
- PROPOSED FLOWLINE
- FIRE TURNING LANE
- SNOW ACCESS ROAD

GENERAL NOTES

1. TO THE BEST OF MY KNOWLEDGE, BELIEF, AND ABILITY THESE PLANS ARE IN COMPLIANCE WITH WASHOE COUNTY DEVELOPMENT CODE.

EARTHWORK TABLE

DISTURBED AREA - TOTAL (PRIVATE)	1.8 AC.
TOTAL EARTHWORK - NET	752 CU. YD. (NET - CUT)
EARTHWORK (CUT)	4,148 CU. YD. (CUT)
EARTHWORK (FILL)	4,901 CU. YD (FILL)
EARTHWORK UNDER BUILDING	250 CU. YD. (NET - CUT)
MAXIMUM DEPTH OF CUT	11 FT
MAXIMUM DEPTH OF FILL	11 FT
AREA OF CUT GREATER THAN 10'	380 SF
AREA OF FILL GREATER THAN 10'	244 SF

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PROFESSIONAL ENGINEER - STATE OF NEVADA
EDWARD C. THOMAS
9/24/19
CIVIL
No. 9740
EXP. 6/30/20

LUMOS & ASSOCIATES
9222 PROTOTYPE DRIVE
RENO, NV 89521
TEL: 775.827.6111
WWW.LUMOSINC.COM

MT. ROSE/SKI TAHOE

SUP FOR MT. ROSE/SKI TAHOE FACILITIES EXPANSION AND UPGRADE
MAINTENANCE BLDG - PRELIM GRADING PLAN

WASHOE COUNTY
NEVADA

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 2019

BAR IS 1 INCH ON ORIGINAL DRAWING
0 20'
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2.0

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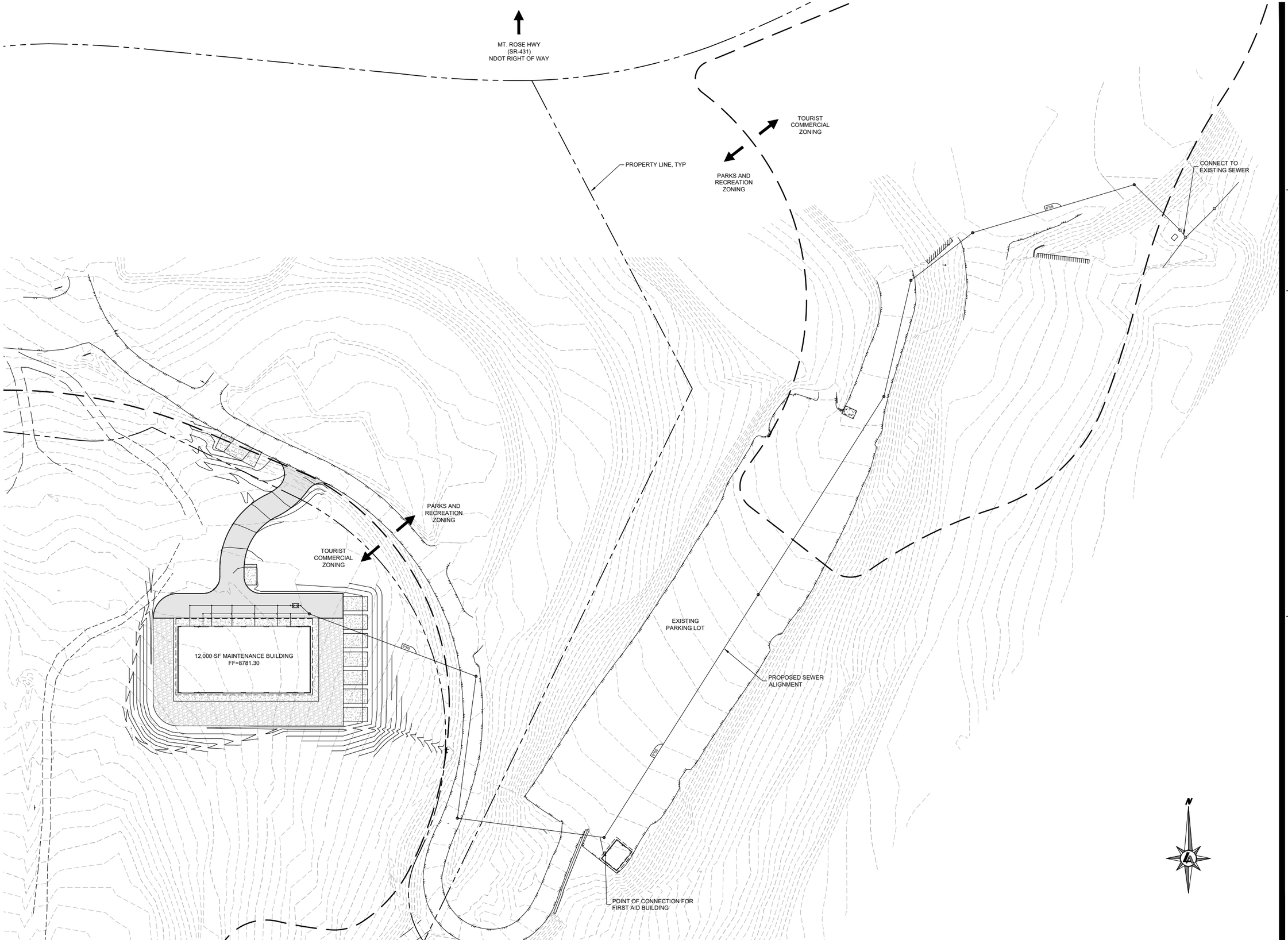
JOB NO.:	9764.100



LUMOS & ASSOCIATES

9222 PROTOTYPE DRIVE
RENO, NV 89521
TEL: 775.827.6111

WWW.LUMOSINC.COM

PROFESSIONAL ENGINEER
STATE OF NEVADA
EDWARD C. THOMAS
9/13/19
CIVIL
No. 9740

EXP. 6/30/20

MT. ROSE/SKI TAHOE

SUP FOR MT. ROSE/SKI TAHOE FACILITIES EXPANSION AND UPGRADE MAINTENANCE BLDG - SEWER ALIGNMENT

WASHOE COUNTY NEVADA

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 2019

BAR IS 1 INCH ON ORIGINAL DRAWING
0 50'

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

2.1

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CHECKED BY:	ECT
JOB NO.:	9764.100

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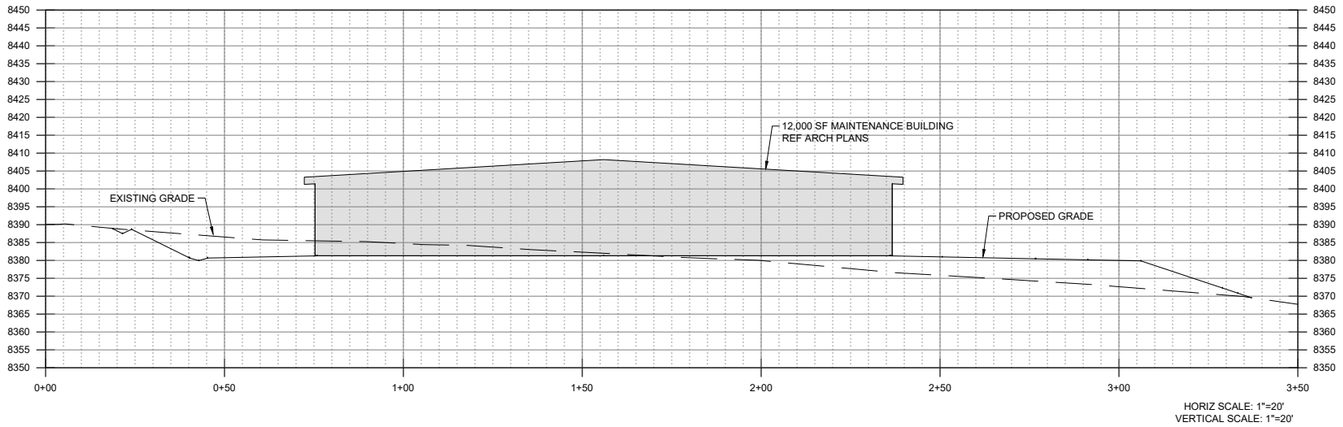
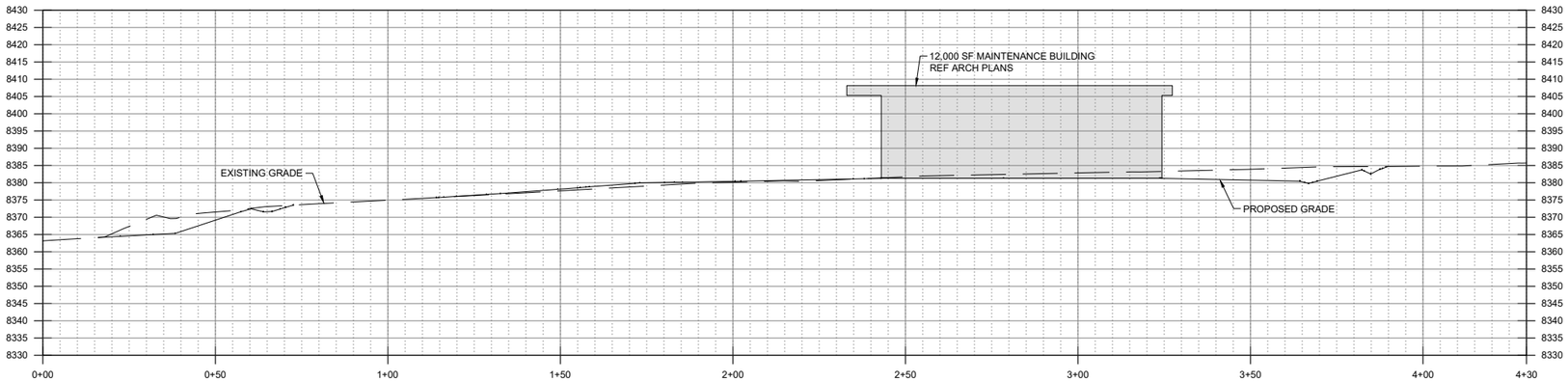
SECTION A-A'



HORIZ SCALE: 1"=20'
VERTICAL SCALE: 1"=20'

SECTION B-B'



HORIZ SCALE: 1"=20'
VERTICAL SCALE: 1"=20'

LUMOS & ASSOCIATES

9222 PROTOTYPE DRIVE
RENO, NV 89521
TEL: 775.827.6111

WWW.LUMOSINC.COM

PROFESSIONAL ENGINEER
STATE OF NEVADA
EDWARD C. THOMAS
9/13/19
CIVIL
No. 9740

EXP. 6/30/20

MT. ROSE/SKI TAHOE

SUP FOR MT. ROSE/SKI TAHOE FACILITIES EXPANSION AND UPGRADE MAINTENANCE BLDG - CROSS SECTIONS

WASHOE COUNTY NEVADA

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 2019

BAR IS 1 INCH ON ORIGINAL DRAWING
0 20'

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

2.2

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DESIGNED BY:	ECT,KMK
CHECKED BY:	ECT
JOB NO.:	9764.100

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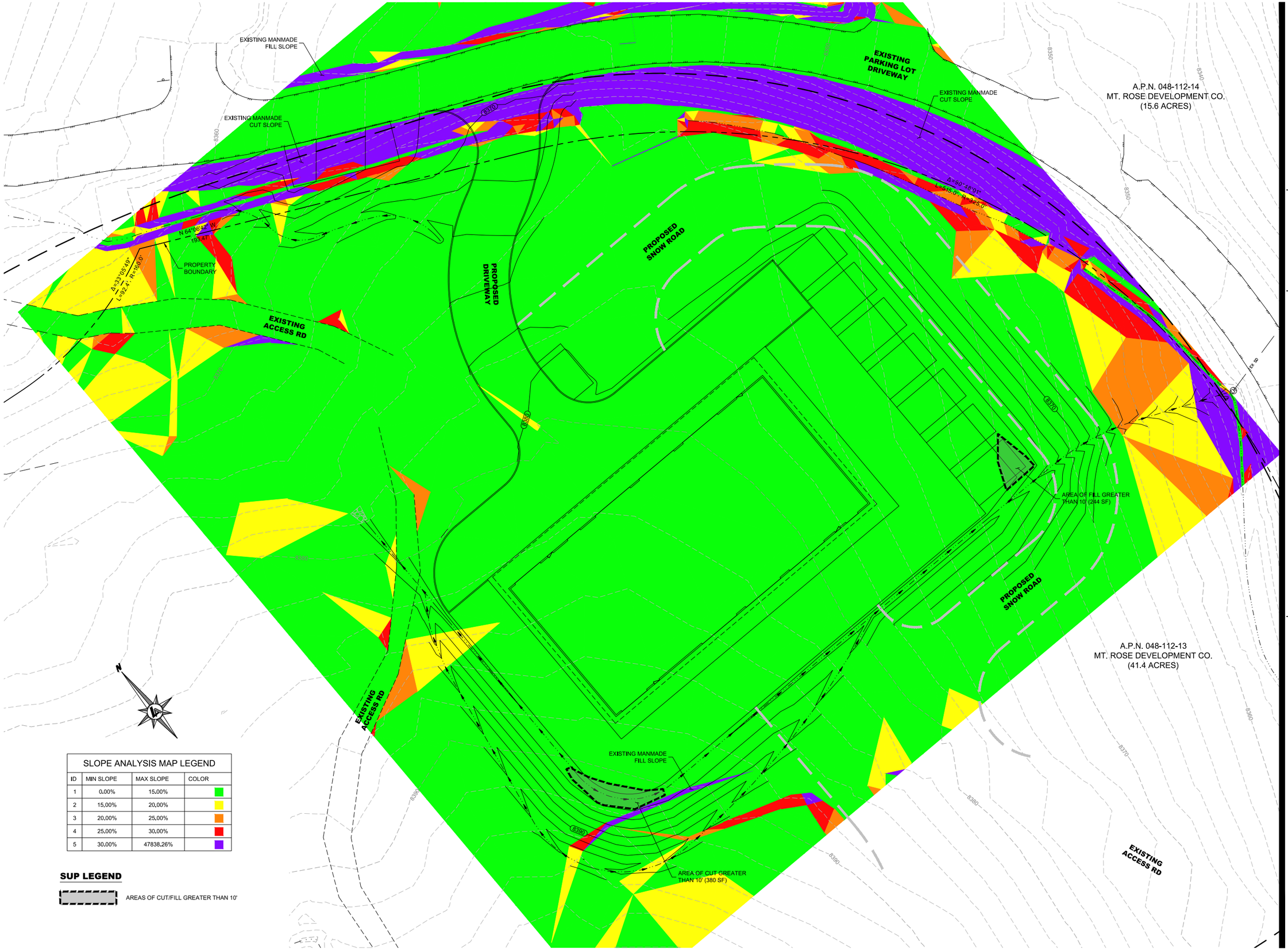

SLOPE ANALYSIS MAP LEGEND			
ID	MIN SLOPE	MAX SLOPE	COLOR
1	0.00%	15.00%	
2	15.00%	20.00%	
3	20.00%	25.00%	
4	25.00%	30.00%	
5	30.00%	47838.26%	

SUP LEGEND

AREAS OF CUT/FILL GREATER THAN 10'

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9222 PROTOTYPE DRIVE
RENO, NV 89521
TEL: 775.827.6111
WWW.LUMOSINC.COM

PROFESSIONAL ENGINEER STATE OF NEVADA
EDWARD C. THOMAS
9/13/19
CIVIL
No. 9740
EXP. 6/30/20

MT. ROSE/SKI TAHOE

SUP FOR MT. ROSE/SKI TAHOE FACILITIES EXPANSION AND UPGRADE MAINTENANCE BLDG - SLOPE ANALYSIS MAP

NEVADA
WASHOE COUNTY

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 2019

BAR IS 1 INCH ON ORIGINAL DRAWING
0 20'
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

2.3

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CHECKED BY:	ECT
JOB NO.:	9764.100

APN 048-112-14
MT. ROSE DEVELOPMENT CO.
(15.6 ACRES)

APN 048-112-12
MT. ROSE DEVELOPMENT CO.
(340.9 ACRES)

PLANNING NOTES:
1. CURRENT ZONING: PR'
2. ALL IMPROVEMENTS TO TAKE PLACE WITHIN EXISTING ASPHALT PAVED PARKING LOT
3. NO EARTHWORK OUTSIDE BUILDING FOOTPRINT

EX WL

6"SS

37'4"W

149.92'

720 SF
SKI PATROL/
FIRST AID BUILDING
FG=8312

N

GENERAL NOTES

1. TO THE BEST OF MY KNOWLEDGE, BELIEF, AND ABILITY THESE PLANS ARE IN COMPLIANCE WITH WASHOE COUNTY DEVELOPMENT CODE.

PROFESSIONAL ENGINEER
STATE OF NEVADA
EDWARD C. THOMAS
9/13/19
CIVIL
No. 9740
EXP. 6/30/20

LUMOS & ASSOCIATES
308 N. CURRY ST., STE. 200
CARSON CITY, NV 89703
TEL: 775.883.7077
WWW.LUMOSINC.COM

MT. ROSE/SKI TAHOE

SUP FOR MT. ROSE/SKI TAHOE FACILITIES EXPANSION AND UPGRADE
SKI PATROL/ FIRST AID BLDG-PRELIM SITE PLAN

WASHOE COUNTY NEVADA

REV	DATE	DESCRIPTION	BY

PRELIMINARY
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SEPTEMBER_2019

BAR IS 1 INCH ON ORIGINAL DRAWING
0 20'
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

3.0

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DESIGNED BY:	ECT
CHECKED BY:	
JOB NO.:	9764.300
SHEETS:	

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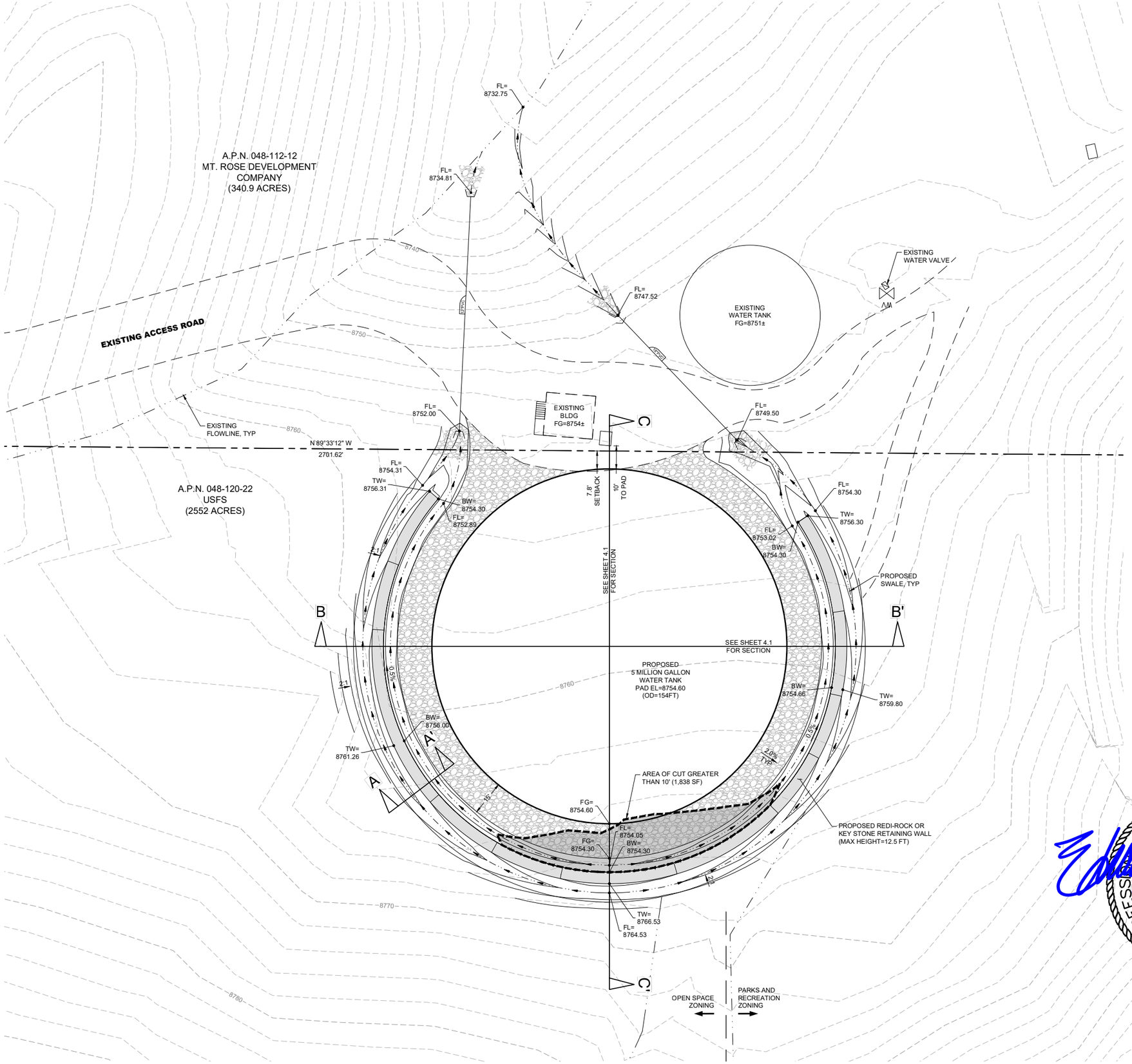
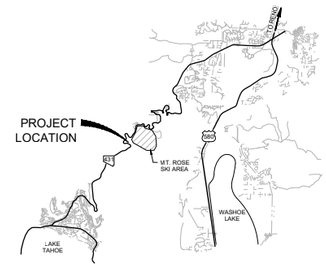


VICINITY MAP



SUP LEGEND

AREAS OF CUT/FILL GREATER THAN 10'

GRADING LEGEND

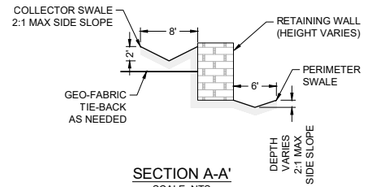
- PROPERTY BOUNDARY
- EX ACCESS ROAD
- EX FLOWLINE
- PROP RETAINING WALL
- PROP FLOWLINE
- PROPOSED CULVERT

GENERAL NOTES

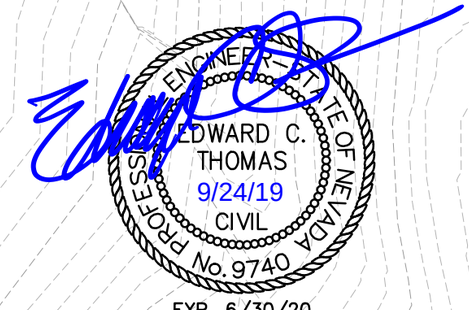
1. TO THE BEST OF MY KNOWLEDGE, BELIEF, AND ABILITY THESE PLANS ARE IN COMPLIANCE WITH WASHOE COUNTY DEVELOPMENT CODE.

EARTHWORK TABLE

DISTURBED AREA - PRIVATE	0.03 AC.
DISTRUBED AREA - USFS	0.87 AC.
TOTAL EARTHWORK VOLUME	5720 CU. YD. (CUT)
EARTHWORK UNDER TANK	3175 CU. YD. (CUT)
EARTHWORK NOT UNDER TANK	2545 CU. YD. (CUT)
MAXIMUM DEPTH OF CUT	12 FT
AREA OF CUT GREATER THAN 10'	1,838 SF



SECTION A-A'
SCALE: NTS



LUMOS & ASSOCIATES
9222 PROTOTYPE DRIVE
RENO, NV 89521
TEL: 775.827.6111
WWW.LUMOSINC.COM

MT. ROSE/SKI TAHOE

MT. ROSE/SKI TAHOE
SUP FOR 5 MILLION GALLON WATER TANK
PRELIMINARY GRADING PLAN

WASHOE NEVADA

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 2019

RENO

BAR IS 1 INCH ON ORIGINAL DRAWING
0 20"
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4.0

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DESIGNED BY:	KMK
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JOB NO.:	9764.400

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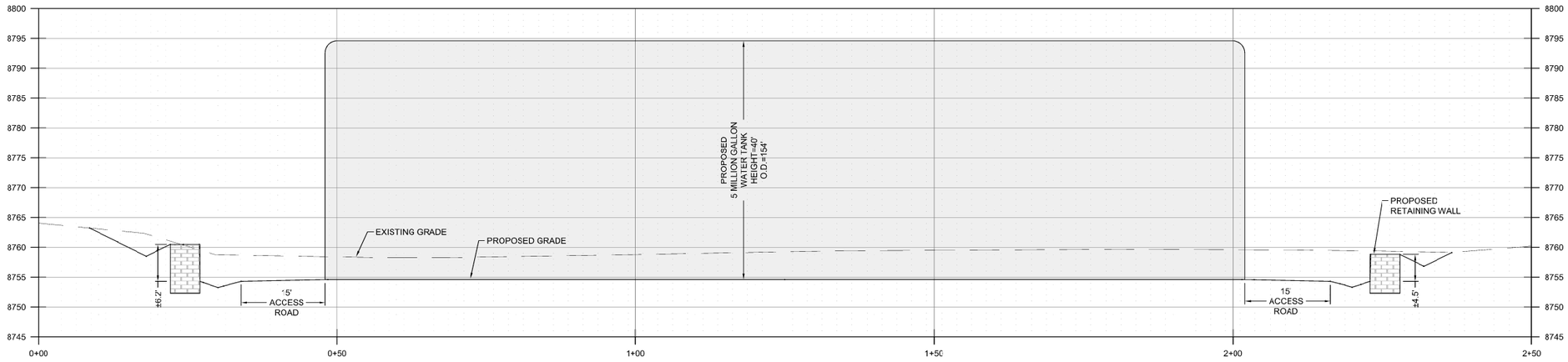
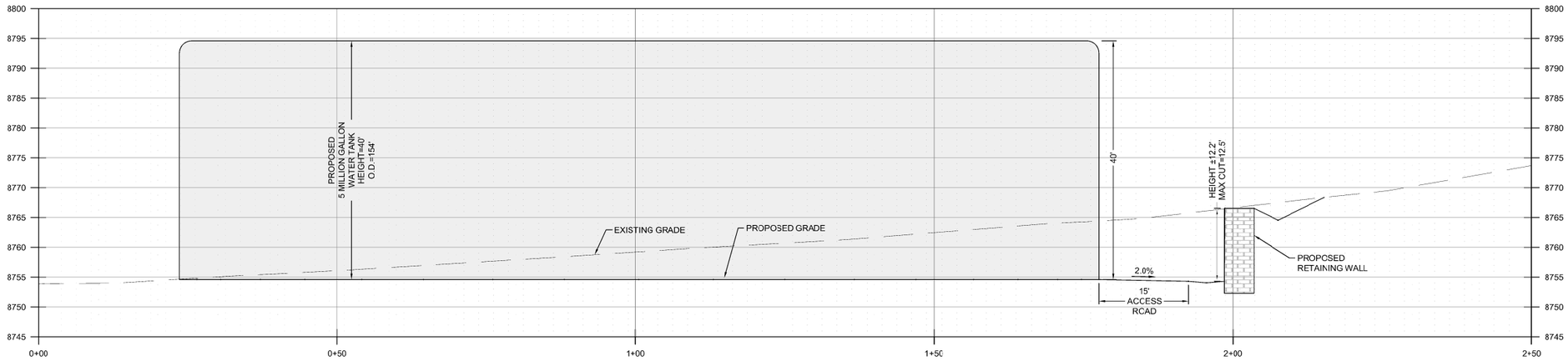
SECTION B-B' (EAST-WEST)



HORIZ SCALE: 1"=20'
VERTICAL SCALE: 1"=20'

SECTION C-C' (NORTH-SOUTH)



HORIZ SCALE: 1"=20'
VERTICAL SCALE: 1"=20'

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9222 PROTOTYPE DRIVE
RENO, NV 89521
TEL: 775.827.6111
WWW.LUMOSINC.COM

PROFESSIONAL ENGINEER
STATE OF NEVADA
EDWARD C. THOMAS
9/13/19
CIVIL
No. 9740
EXP. 6/30/20

MT. ROSE/SKI TAHOE

SUP FOR 5 MILLION GALLON WATER TANK
MT. ROSE/SKI TAHOE
CROSS SECTIONS

RENO

WASHOE

NEVADA

REV	DATE	DESCRIPTION	BY

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BAR IS 1 INCH ON ORIGINAL DRAWING
0 20'
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JOB NO.:	9764.400

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A.P.N. 048-112-12
MT. ROSE DEVELOPMENT
COMPANY
(340.9 ACRES)

EXISTING ACCESS ROAD

EXISTING
WATER VALVE

EXISTING
WATER TANK
FG=8751±

EXISTING
BLDG
FG=8754±

N 89°33'12" W
2701.62'

EXISTING MANMADE
CUT SLOPE

7.8'
SETBACK

10'
TO PAD

A.P.N. 048-120-22
USFS
(2552 ACRES)

PROPOSED
5 MILLION GALLON
WATER TANK
PAD EL=8754.60
(OD=154FT)

AREA OF CUT GREATER
THAN 10' (1,838 SF)

PROPOSED REDI-ROCK OR
KEY STONE RETAINING WALL
(MAX HEIGHT=12.5 FT)

OPEN SPACE
ZONING

PARKS AND
RECREATION
ZONING

SLOPE ANALYSIS MAP LEGEND			
ID	MIN SLOPE	MAX SLOPE	COLOR
1	0.00%	15.00%	
2	15.00%	20.00%	
3	20.00%	25.00%	
4	25.00%	30.00%	
5	30.00%	6256.05%	

SUP LEGEND

AREAS OF CUT/FILL GREATER THAN 10'

N

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9222 PROTOTYPE DRIVE
RENO, NV 89521
TEL: 775.827.6111
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PROFESSIONAL ENGINEER
STATE OF NEVADA
EDWARD C. THOMAS
9/13/19
CIVIL
No. 9740

EXP. 6/30/20

MT. ROSE/SKI TAHOE

MT. ROSE/SKI TAHOE
SUP FOR 5 MILLION GALLON WATER TANK
SLOPE ANALYSIS MAP

WASHOE NEVADA

RENO

REV	DATE	DESCRIPTION	BY

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NOT FOR CONSTRUCTION
SEPTEMBER 2019

BAR IS 1 INCH ON
ORIGINAL DRAWING
0 20'

IF NOT ONE INCH ON THIS SHEET,
ADJUST SCALES ACCORDINGLY

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CHECKED BY:	ECT
JOB NO.:	9764.400

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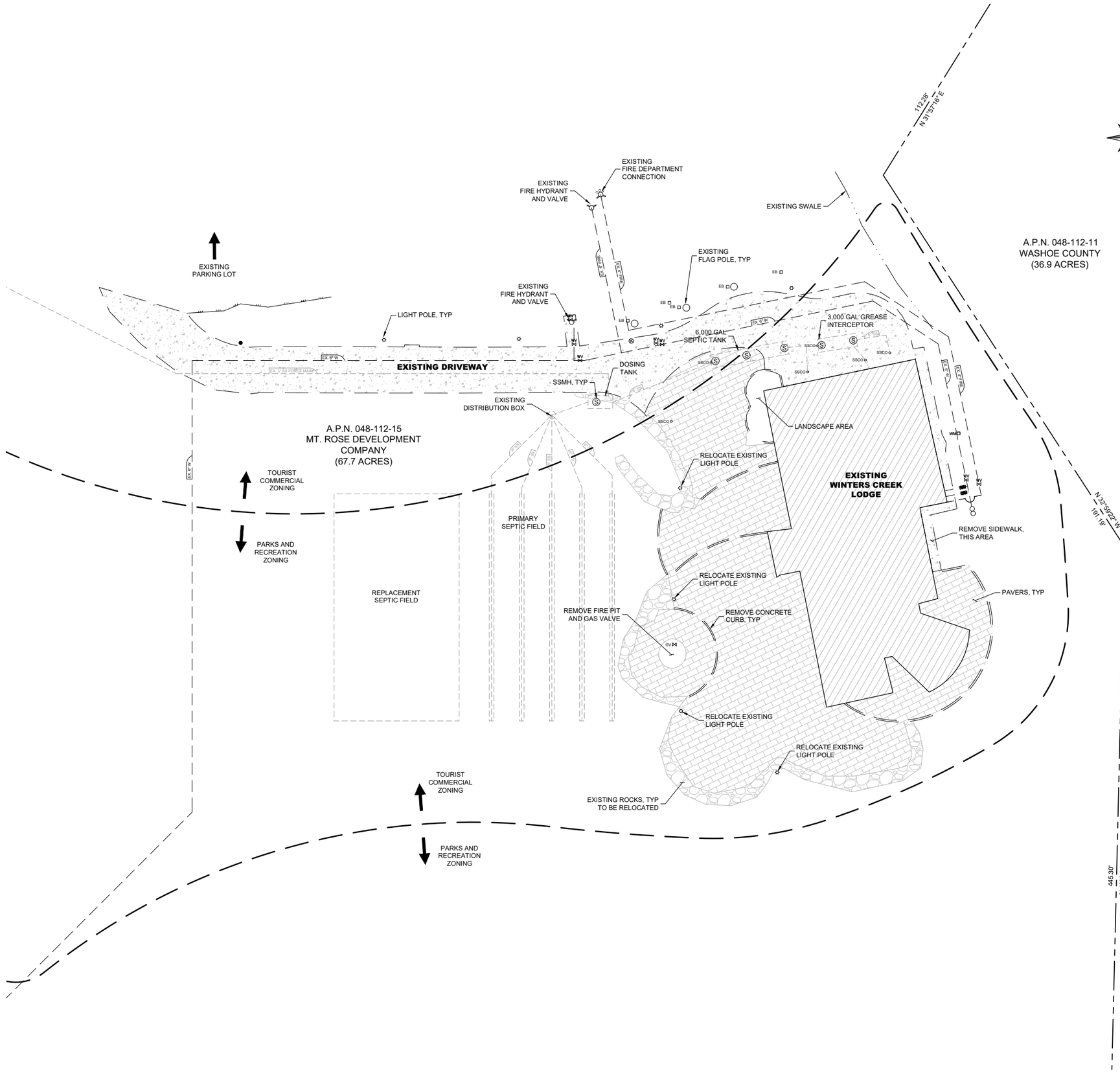
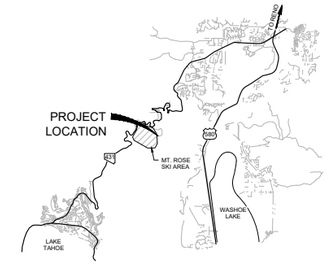


VICINITY MAP



DEMOLITION LEGEND

- PROPERTY BOUNDARY
- EX PAVEMENT
- EX CONCRETE
- EX FLOWLINE
- EX BUILDING
- EX PAVERS TO BE REMOVED
- ZONING BOUNDARY

GENERAL NOTES

1. TO THE BEST OF MY KNOWLEDGE, BELIEF, AND ABILITY THESE PLANS ARE IN COMPLIANCE WITH WASHOE COUNTY DEVELOPMENT CODE.

LUMOS & ASSOCIATES
9222 PROTOTYPE DRIVE
RENO, NV 89521
TEL: 775.827.6111
WWW.LUMOSINC.COM

PROFESSIONAL ENGINEER
STATE OF NEVADA
EDWARD C. THOMAS
9/13/2019
CIVIL
No. 9740
EXP. 6/30/20

SUP FOR MT. ROSE/SKI TAHOE FACILITIES EXPANSION AND UPGRADE WINTERS CREEK LODGE - DEMO PLAN

MT. ROSE/SKI TAHOE

WASHOE COUNTY

NEVADA

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 2019

BAR IS 1 INCH ON ORIGINAL DRAWING
0 1"=20'

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

5.0

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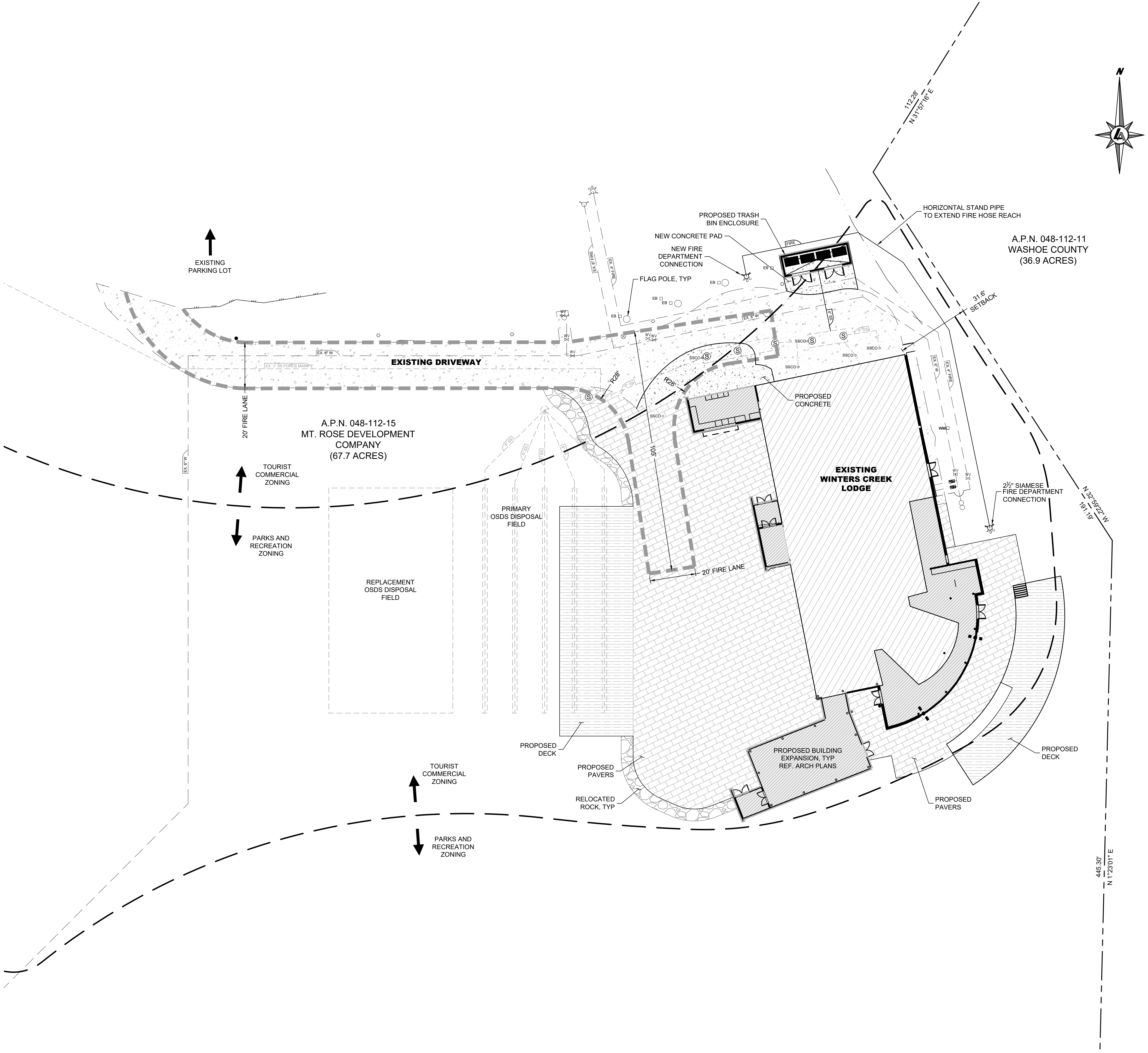
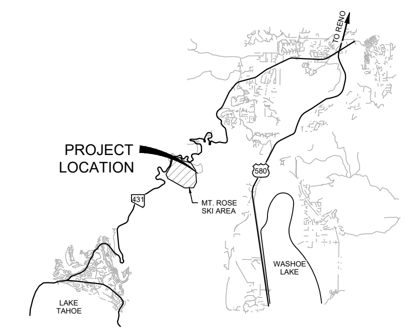
DESIGNED BY:	KMK/ECT
CHECKED BY:	ECT
JOB NO.:	9764.100



VICINITY MAP



SITE LEGEND

- PROPERTY BOUNDARY
- EX PAVEMENT
- EX CONCRETE
- EX FLOWLINE
- ZONING BOUNDARY
- PROP FLOWLINE
- EX BUILDING
- PROP PAVERS
- PROP DECK
- PROP BUILDING EXPANSION
- PROP CONCRETE

GENERAL NOTES

1. TO THE BEST OF MY KNOWLEDGE, BELIEF, AND ABILITY THESE PLANS ARE IN COMPLIANCE WITH WASHOE COUNTY DEVELOPMENT CODE.

LUMOS & ASSOCIATES
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PROFESSIONAL ENGINEER STATE OF NEVADA
EDWARD THOMAS
9 / 13 / 2019
CIVIL
No. 9740
EXP. 6/30/20

MT. ROSE/SKI TAHOE

SUP FOR MT. ROSE/SKI TAHOE FACILITIES EXPANSION AND UPGRADE WINTERS CREEK LODGE - SITE & UTILITY PLAN

WASHOE COUNTY
NEVADA

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 2019

BAR IS 1 INCH ON ORIGINAL DRAWING
0 1"=20'
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

5.1

DRAWN BY: KMK
DESIGNED BY: KMK/ECT
CHECKED BY: ECT
JOB NO.: 9764.100

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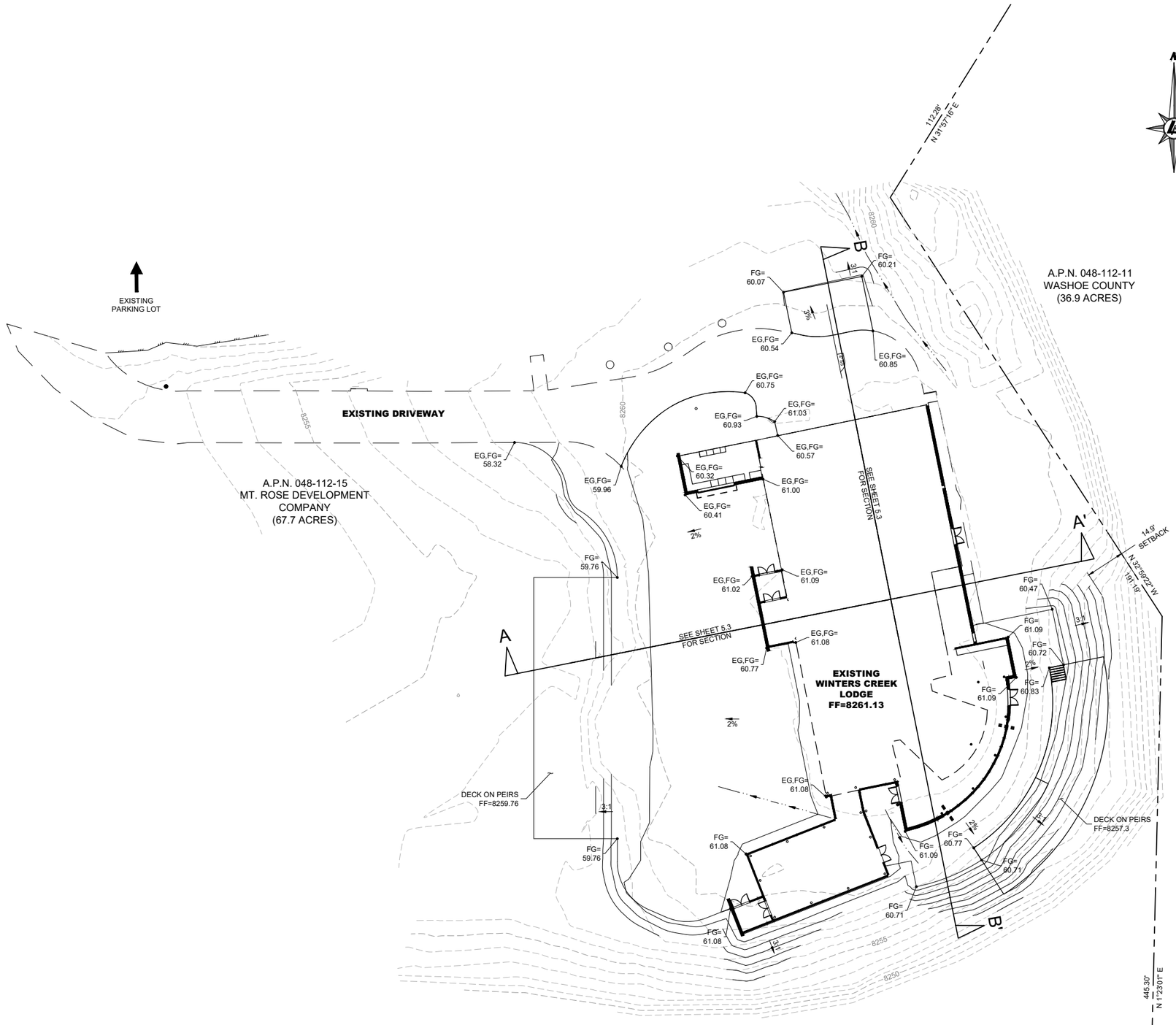

SITE LEGEND

- PROPERTY BOUNDARY
- EX PAVEMENT
- EX CONCRETE
- EX FLOWLINE
- PROP FLOWLINE

EARTHWORK TABLE - PRIVATE PROPERTY

NEW DISTURBED AREA	0.28 AC.
TOTAL EARTHWORK VOLUME	449 CU. YD. (NET-FILL)
TOTAL EARTHWORK (CUT)	29 CU. YD. (CUT)
TOTAL EARTHWORK (FILL)	478 CU. YD. (FILL)
MAXIMUM DEPTH OF FILL	4 FT
MAXIMUM DEPTH OF CUT	0.5 FT
AREA OF CUT/FILL GREATER THAN 10'	0 SF

LUMOS & ASSOCIATES
9222 PROTOTYPE DRIVE
RENO, NV 89521
TEL: 775.827.6111
WWW.LUMOSINC.COM

PROFESSIONAL ENGINEER
EDWARD C. THOMAS
9/13/2019
CIVIL
No. 9740
STATE OF NEVADA
EXP. 6/30/20

MT. ROSE/SKI TAHOE

SUP FOR MT. ROSE/SKI TAHOE WINTERS CREEK LODGE GRADING PLAN

NEVADA
WASHOE COUNTY

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 2019

BAR IS 1 INCH ON ORIGINAL DRAWING
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

5.2

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DESIGNED BY:	KMK/ECT
CHECKED BY:	ECT
JOB NO.:	9764.100

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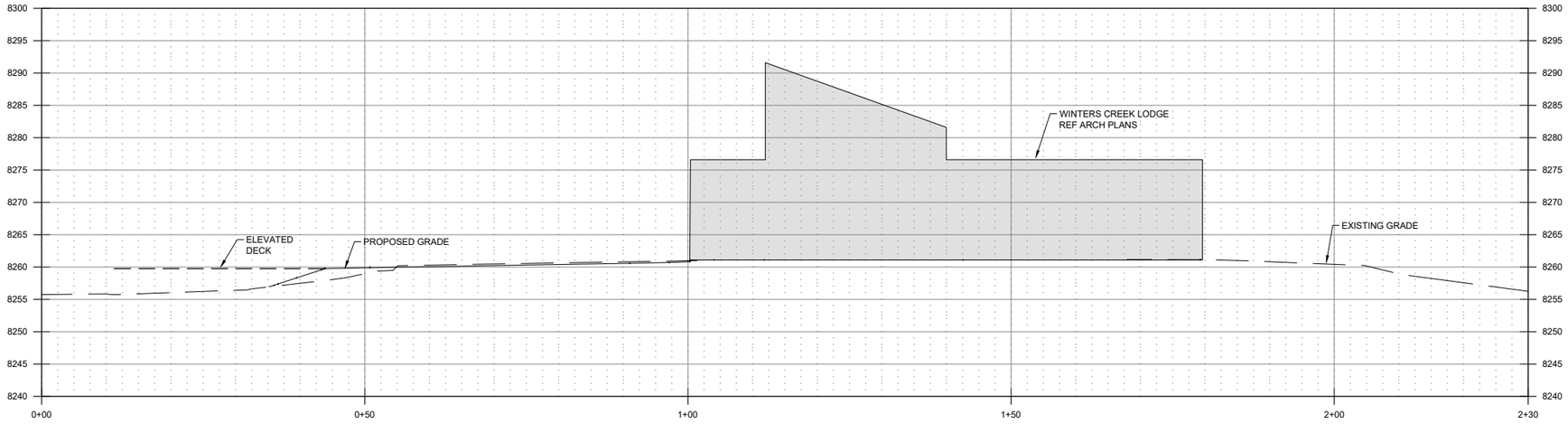
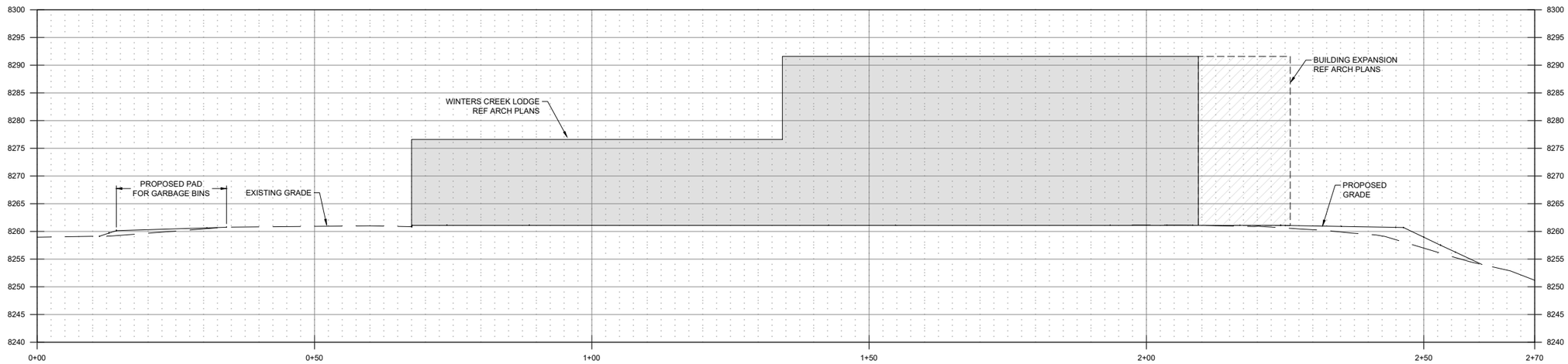
SECTION A-A'



HORIZ SCALE: 1"=20'
VERTICAL SCALE: 1"=20'

SECTION B-B'



HORIZ SCALE: 1"=20'
VERTICAL SCALE: 1"=20'

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PROFESSIONAL ENGINEER
EDWARD C. THOMAS
9/13/2019
CIVIL
No. 9740
STATE OF NEVADA
EXP. 6/30/20

SUP FOR MT. ROSE/SKI TAHOE
WINTERS CREEK LODGE
CROSS SECTIONS

MT. ROSE/SKI TAHOE

WASHOE COUNTY

NEVADA

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 2019

BAR IS 1 INCH ON ORIGINAL DRAWING
0 1"=20'

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

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DRAWN BY:	KMK
DESIGNED BY:	KMK/ECT
CHECKED BY:	ECT
JOB NO.:	9764.100

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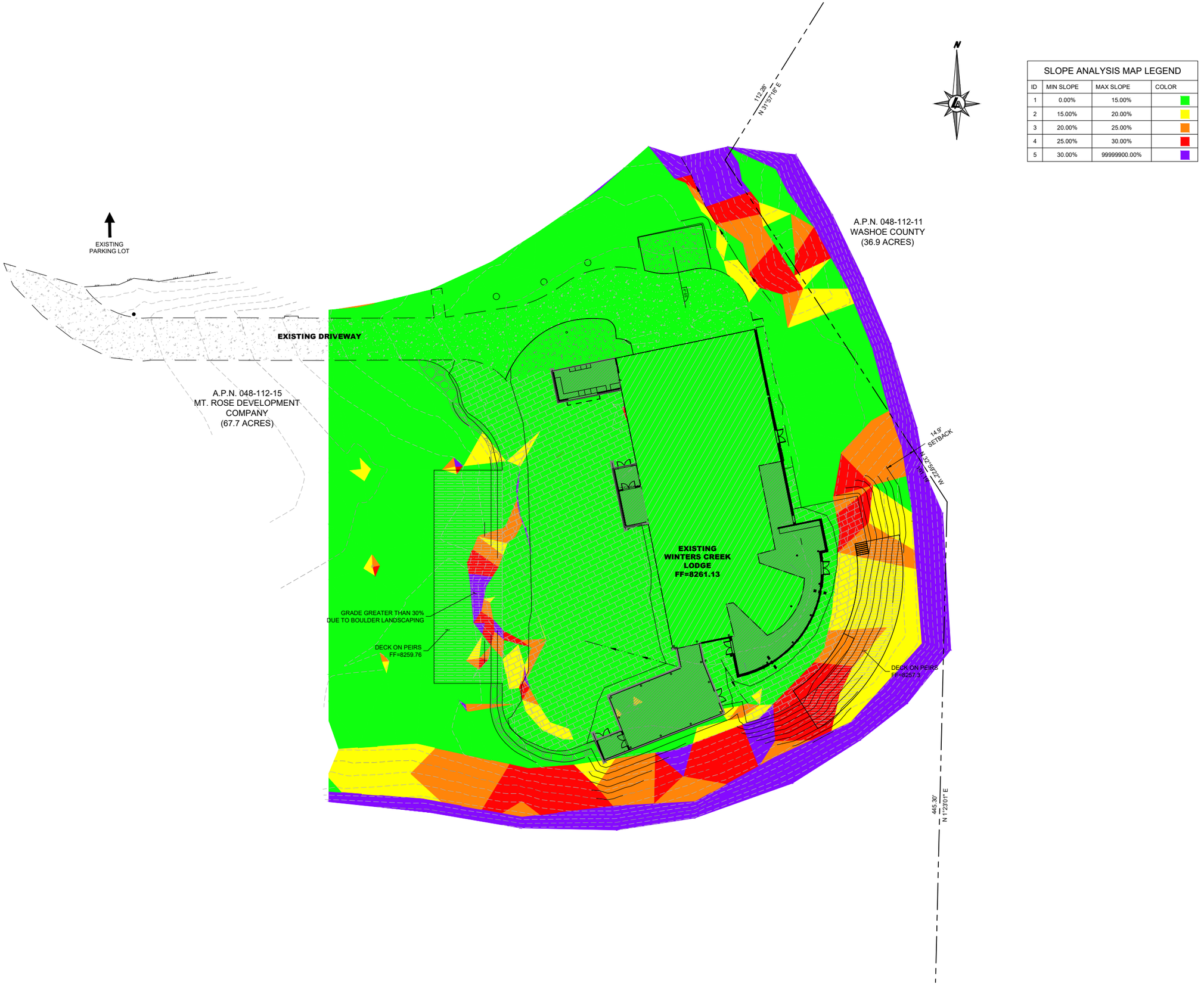

SLOPE ANALYSIS MAP LEGEND			
ID	MIN SLOPE	MAX SLOPE	COLOR
1	0.00%	15.00%	
2	15.00%	20.00%	
3	20.00%	25.00%	
4	25.00%	30.00%	
5	30.00%	99999900.00%	

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PROFESSIONAL ENGINEER
STATE OF NEVADA
EDWARD C. THOMAS
9/13/2019
CIVIL
No. 9740
EXP. 6/30/20

MT. ROSE/SKI TAHOE

SUP FOR MT. ROSE/SKI TAHOE FACILITIES EXPANSION AND UPGRADE

WINTERS CREEK LODGE - SLOPE ANALYSIS MAP

NEVADA
WASHOE COUNTY

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 2019

BAR IS 1 INCH ON ORIGINAL DRAWING
0 1"=20'
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

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DESIGNED BY:	KMK/ECT
CHECKED BY:	ECT
JOB NO.:	9764.100

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APPENDIX D

LUMOS & ASSOCIATES

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Reno
9222 Prototype Drive
Reno, Nevada 89521
775.827.6111

September 6, 2019

Kris Klein, P.E.
Washoe County Community Services
1001 E. 9th Street
Reno, NV 89520

Subject: **Mt. Rose Special Use Permit Application**
Winters Creek Lodge Preliminary Septic System Analysis

Dear Ms Klein:

Mt. Rose/Ski Tahoe constructed its Winters Creek Lodge in 2010. Community sanitary sewer is not readily available at the Winters Creek Lodge site, so the lodge and adjacent maintenance building are served by a commercial septic system. The system was designed by Black Eagle Consulting and was permitted through the Nevada Division of Environmental Protection (NDEP).

The existing septic system consists of a 3,000 gallon grease interceptor for the lodge's kitchen, a 1,000 gallon septic tank for just the maintenance building, a 6,000 gallon septic tank for just the lodge, a dosing tank, and a 5-trench standard disposal field. Effluent from the maintenance building septic tank is pumped to the dosing tank prior to discharge into the disposal field.

In their May 27, 2009 report titled, "Commercial Septic System Design Report, East Bowl Ski Lodge and Maintenance Building, Mt. Rose Ski Tahoe Resort, Washoe County, Nevada," Black Eagle Consulting describes the design criteria for the on-site disposal system. Black Eagle considered two methods for sizing the septic tank for the lodge. The first method, defined by NDEP, calls for sizing the tank based upon the larger of the daily flow calculated by fixture units or by use and occupancy tables. The second method as described by NDEP Fact Sheet WTS-23 allows for the septic tank to be sized based upon actual flow data.

The fixture unit method indicated a septic tank capacity 4,925 gallons. The use and occupancy table method gave wildly varying results of !0,000 to 30,000 gallons for septic tank sizing. The WTS-23 method resulted in a septic tank capacity of 4,097 gallons.

Black Eagle determined that the use and occupancy method was not representative of actual use and rejected its results entirely. They determined that historic water usage was used as a proxy for wastewater generation and applied a 25% safety factor was along with an additional 20% growth factor for an estimated flow rate of 5,945 gallons per day. From this they selected a 6,000 septic tank as an appropriate size which allowed for a reasonable amount of growth at the facility.

In the fixture unit method, Black Eagle calculated a total of 157 fixture units. According to Appendix H of the International Plumbing Code, for 100 fixture units, a 3,500 gallon septic tank is required. For fixture units in excess of 100, the septic tank must be increased in size by 25 gallons per fixture unit above 100. The result is (3,500 gallons)+[(57 f.u.)(25 gal/f.u.)] = 4,925 gallons.

In its proposed expansion, Mt. Rose/Ski Tahoe does not intend to expand its kitchen facilities, but it does intend to add three urinals and one water closet to the men's restroom. These additional fixtures will result in the need for an additional 300 gallons of capacity for the septic tank. {[(3 urinals)(2 f.u./urinal)]+[(1 WC)(6 f.u./WC)]}*(25 gal/f.u.) = 300 gallons.

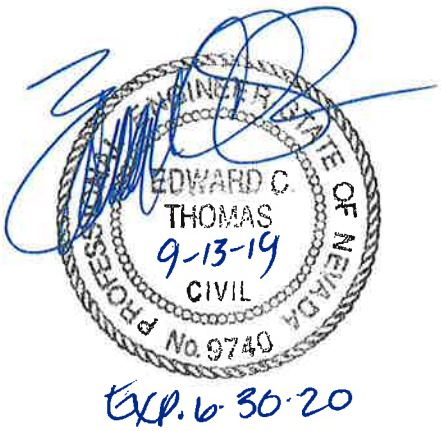
Adding the additional septic tank capacity to the originally-computed septic tank capacity results in a septic tank size of 5,225 gallons. This is still less than the 6,000 gallon septic tank capacity.

Based upon the above calculations, the proposed expansion of the Winters Creek Lodge will not exceed the capacity of the existing commercial septic system.

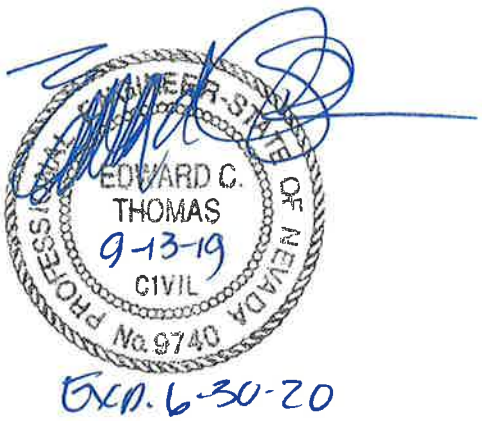
If you have any questions, please do not hesitate to contact me at 775.827.6111.

Sincerely,

Edward C. Thomas, P.E., LEED AP
Senior Engineer



CONCEPTUAL DRAINAGE REPORT
For
MT. ROSE
ATOMA BRIGE



Prepared For:

Mt. Rose/Ski Tahoe
PO Box 5838
Tahoe City, CA 96145

Prepared By:
Kristin Kramer, P.E.
Ed Thomas, P.E.

LUMOS & ASSOCIATES

Lumos & Associates, Inc.
9222 Prototype Drive
Reno, NV 89521
(775) 827-6111

JN 9764.100
September 2019

TABLE OF CONTENTS

[File Doc: L:\LAProj\9764.100 - Atoma Bridge\Civil\Hydrology\Report\9764.100-Conceptual Drainage Report.docx]

LIST OF FIGURES

LIST OF TABLES

TABLE OF APPENDENICES

1. INTRODUCTION

This document is presented as a Conceptual Drainage Report in support of the proposed Atoma Bridge project at Mt. Rose Ski Tahoe. This report is to provide support for the Special Use Permit (SUP) for the developed area as required by Washoe County.

Mt. Rose Ski Tahoe intends to develop upon assessor parcel numbers (APNs) 048-112-14, 048-112-13 and 048-111-11, in addition to the Mount Rose Highway (SR-431) right-of-way. The two parcels south of the highway corridor are owned by Mt. Rose Development Company, while the parcel to the north is owned by the United States Forest Service (USFS). The Atoma Bridge crossing will span approximately 100 feet across Mount Rose Highway and will be fully contained within the NDOT right of way. The project area south of the highway is bordered to the east by the existing Mt. Rose ski area. Area north of the highway is currently undeveloped. Refer to Figure 1 for a vicinity map of the area. The disturbed area accounts for approximately 13 acres, with 4 acres being located on USFS property. The project is within Sections 19 and 20 of Township 17, Range 19.

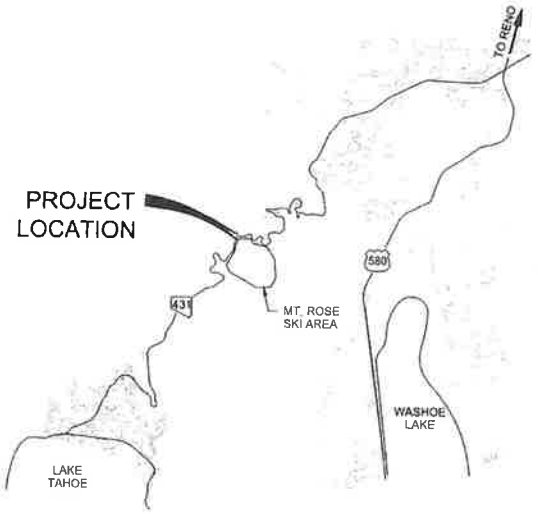


Figure 1: Vicinity Map

1.1. Existing Site Description

The site is located on the northwest corner of the Mt. Rose ski area. An existing paved parking area is situated near the future highway crossing. Dirt/gravel access roads are around the project site to provide connectivity within the ski area. With exception to these improvements, the rest of the project site is currently undeveloped, with groundcover consisting of forest coverings. The topography is relatively steep, with slopes generally ranging from 6-15 percent. The upper portion of the site is situated on a natural ridge line. Flows typically sheet flow to the east and west of the ridge. A portion of flow is intercepted by an existing swale at the existing parking lot. The swale directs flows to the highway drainage ditch via culverts and open channel. The area north of the highway generally sheet flows to the north. The entire site is part of the Galena Creek hydrologic basin.

1.2. Proposed Project Description

The proposed Atoma Bridge will be developed upon approximately 13 acres. The design will feature a 100ft bridge span with retaining walls, an upper ski unload station with ski run (approximately 0.25 miles), and a mid-mountain ski unload station (at the lift angle point) with access routes to the lower ski trails. The ski run surface will consist of natural soils. Drainage improvements include two new swales along the east side of the run, which route flows to the existing parking lot drainage system. Runoff on the east side of the run will sheet flow, as it does in the existing condition. Runoff from the upper improvements will be routed to the existing drainage swale along the highway. The area north of the highway will continue to sheet flow with minimal changes to the existing drainage patterns.

1.3. FEMA FIRM Panels

Based on a review of the Flood Insurance Rate Map Index (panel 32031C3325G dated March 2009), the site is in an un-mapped area of the Federal Emergency Management Agency (FEMA). The project site is, therefore identified as Flood Hazard Zone X (unshaded), which is defined as areas determined to be outside the 500-year floodplain. A FIRMette of the project site is included in Appendix A.

2. METHODOLOGY

According to the drainage guidelines for Washoe County Development Code and Truckee Meadows Regional Drainage Manual (TMRDM), the Rational Formula Method was used to generate peak discharges for all drainage hydrologic basins [1]. The peak discharges for the project were calculated using:

$$\text{Design Discharge, } Q = C\ I\ A$$

Where:

Q = maximum rate of runoff (cfs),
A = contributing basin area (acres),
C = runoff coefficient,
I = average rainfall intensity for a duration equal to the T_c (in/hr),
T_c = time of concentration, T_c (minutes).

Rational runoff coefficients (C-values) for the local design were applied from the TMRDM. The selected values for forest coverings consist of 0.05 and 0.30 for the 5- and 100-year events, respectively. Time of Concentration was determined from equations provided in the TMRDM. The minimum time of concentration for undeveloped areas is 10 minutes, as defined by TMRDM. Precipitation values were computed using National Oceanic and Atmospheric Administration's (NOAA's) Point Precipitation Frequency Estimates function available on the NOAA website [2].

3. HISTORIC DRAINAGE SYSTEM

Characteristics of the historic drainage patterns were considered in the study. The proposed ski run alignment follows the natural ridge of the mountain. Sheet flow occurs to the east and west of the ridge. At the existing parking lot, east of the run, flows are channelized into a swale. The swale routes flows to existing culvert structures below the parking lot. All flows uphill of Mt. Rose Highway ultimately enter the roadside swale. The area of the highway generally sheet flows to the north. As no change to landcover will occur in the proposed condition, drainage calculations for the existing condition were determined unnecessary.

4. PROPOSED DRAINAGE SYSTEM

Development of the project will involve the ski trail, highway bridge, ski lift, unloading stations and associated drainage swales. The proposed improvements will have no impact on the existing ground cover. The area uphill of the existing parking lot will enter proposed swales. The swales route flows to the existing culverts below the parking lot. Area west of the ski trail north of the highway will sheet flow, similar to historic drainage patters.

To appropriately size the drainage swales, two subbasins were delineated based on proposed grading. Reference the drainage exhibit in Appendix C for the schematic. Rational C-values were assigned based upon forest land coverage. The peak runoff rate calculated for the developed portion of the site is summarized in Table 1. Swales were sized to handle the 100-year peak flow while providing a minimum of 6 inches of freeboard.

Table 1: Proposed Peak Flow Summary

Subbasin ID	Description	Area [ac]	C_5	C_{100}	I_5 [in/hr]	I_{100} [in/hr]	Q_5 [cfs]	Q_{100} [cfs]
P_01	South Swale	1.04	0.05	0.30	2.22	4.97	0.12	1.55
P_02	North Swale	0.23	0.05	0.30	2.09	4.67	0.02	0.32

Natural Resources Conservation Service Web Soil Survey was used to determine the Hydrologic Soil Group (HSG). The entire site is classified a Group A, indicating soils having the highest infiltration rates (with low runoff potential). As the proposed condition results in no changes to land cover and low runoff potential is apparent, stormwater detention is unnecessary.

All calculations can be found in Appendix B.

5. WATER QUALITY

As required by the TMRDM, Low Impact Development (LID) methods of treating runoff will be required to address water quality. Flow-based controls will be designed to treat runoff from the 2-year storm event (WQ_F). In the proposed condition, no new impervious area will be generated. Riprap calculations for the swales have been performed to determine median stone diameter of 6 inches (Class 150). In all swales, the WQ_F produces a depth of flow that is less than the median stone diameter. The swales will effectively remove pollutants to meet the Truckee Meadows Structural Controls Design and Low Impact Development Manual [3]. As a result, the design and analysis will provide water quality treatment of all on-site runoff.

6. CONCLUSIONS

The project, as proposed, will allow for the construction of the proposed Atoma bridge, ski trail, and ski lift unloading stations. Drainage improvements to the site shall convey flows above the parking lot via swales. In all other areas, sheet flow will occur in a similar manner to the historic conditions. Development of the project will result in no increase in impervious ground cover. In addition, the site is located entirely in HSG A. As a result, stormwater detention facilities have been determined unnecessary. Water quality of the runoff will all be controlled by swales above the existing parking lot. The design and hydrologic studies of the proposed tank have been conducted in compliance with the drainage guidelines for Washoe County and TMRDM.

7. REFERENCES

[1] Washoe County, "Truckee Meadows Regional Drainage Manual," Reno, 2009.

[2] National Oceanic and Atmospheric Administration (NOAA), "Atlas 14 Precipitation-Frequency Atlas," 2018. [Online]. Available: https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk.

[3] NCE, "Truckee Meadows Structural Controls Design and Low Impact Development Manual," Reno, NV, April 2015.

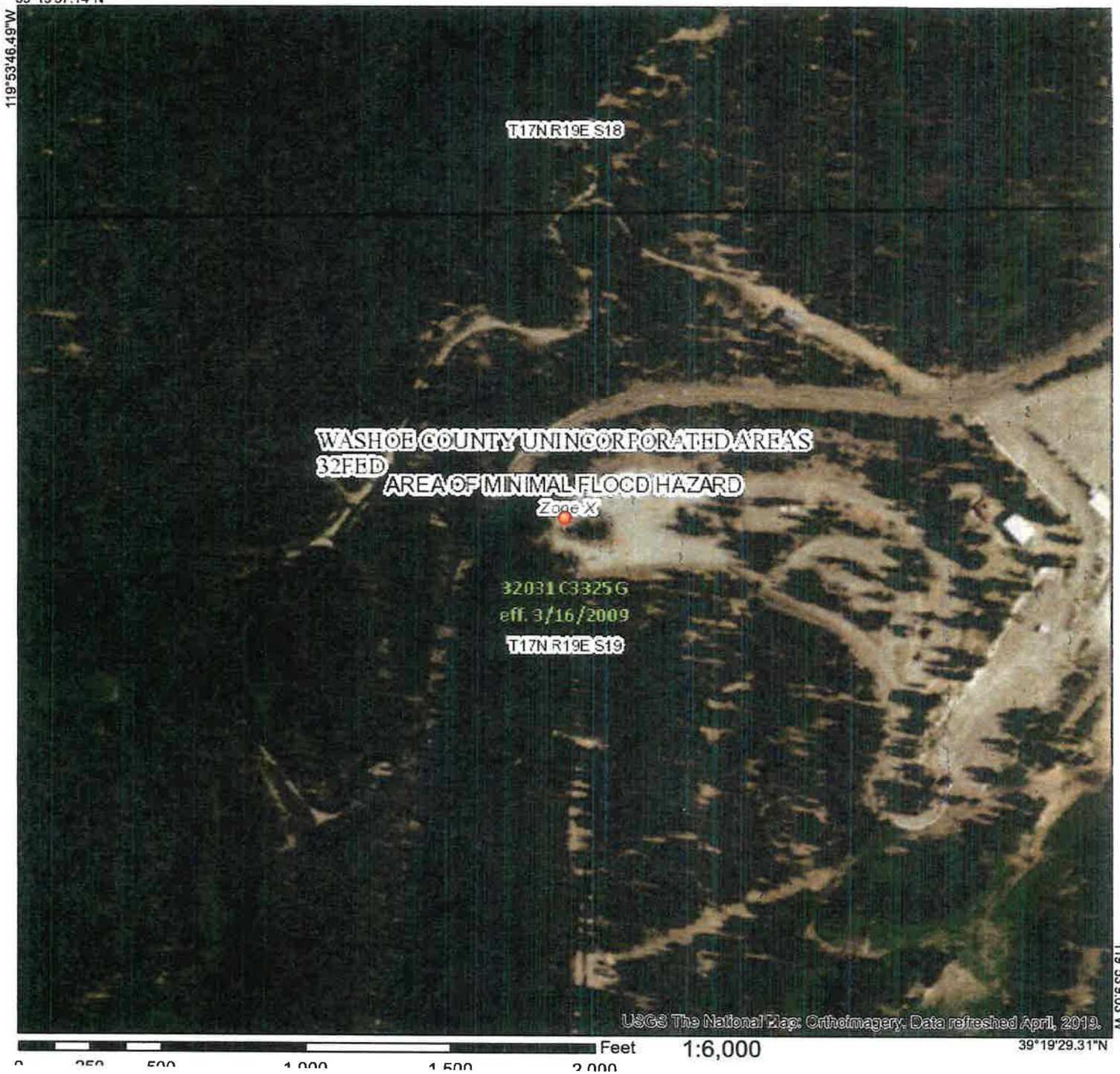
[4] Washoe County, "Washoe County Development Code," Reno, 2019.

Appendix A

BACKGROUND DATA

National Flood Hazard Layer FIRMette

FEMA



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Ar
- of 1% annual chance flood with avera
- depth less than one foot or with drain
- areas of less than one square mile Zor
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Z

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chanc
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approxim point selected by the user and does not repre an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/28/2019 at 3:22:35 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

NOAA Atlas 14, Volume 1, Version 5
Location name: Incline Village, Nevada, USA*
Latitude: 39.3281°, Longitude: -119.89°
Elevation: 8365.86 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	1.79 (1.56-2.09)	2.23 (1.96-2.62)	2.92 (2.51-3.42)	3.55 (3.02-4.14)	4.56 (3.79-5.36)	5.46 (4.42-6.53)	6.53 (5.06-7.93)	7.82 (5.81-9.78)	9.92 (6.86-12.8)	11.9 (7.76-15.8)
10-min	1.36 (1.19-1.60)	1.70 (1.48-1.99)	2.22 (1.91-2.60)	2.70 (2.30-3.16)	3.47 (2.89-4.08)	4.16 (3.36-4.97)	4.97 (3.85-6.04)	5.96 (4.42-7.45)	7.55 (5.23-9.74)	9.05 (5.91-12.0)
15-min	1.12 (0.980-1.32)	1.40 (1.23-1.64)	1.84 (1.58-2.15)	2.23 (1.90-2.61)	2.87 (2.38-3.38)	3.44 (2.78-4.10)	4.10 (3.18-4.99)	4.92 (3.65-6.16)	6.24 (4.32-8.05)	7.48 (4.88-9.94)
30-min	0.758 (0.660-0.888)	0.944 (0.826-1.11)	1.24 (1.06-1.45)	1.50 (1.28-1.76)	1.93 (1.60-2.27)	2.32 (1.87-2.76)	2.76 (2.14-3.36)	3.31 (2.46-4.14)	4.20 (2.91-5.42)	5.04 (3.29-6.69)
60-min	0.469 (0.409-0.549)	0.584 (0.511-0.685)	0.765 (0.658-0.896)	0.930 (0.794-1.09)	1.20 (0.993-1.41)	1.43 (1.16-1.71)	1.71 (1.33-2.08)	2.05 (1.52-2.57)	2.60 (1.80-3.35)	3.12 (2.04-4.14)
2-hr	0.314 (0.280-0.354)	0.391 (0.348-0.438)	0.490 (0.432-0.548)	0.572 (0.501-0.644)	0.695 (0.594-0.783)	0.802 (0.668-0.918)	0.924 (0.750-1.08)	1.09 (0.854-1.30)	1.37 (1.02-1.69)	1.63 (1.17-2.09)
3-hr	0.264 (0.237-0.294)	0.328 (0.298-0.365)	0.400 (0.359-0.445)	0.459 (0.411-0.510)	0.536 (0.474-0.602)	0.603 (0.523-0.682)	0.672 (0.574-0.769)	0.784 (0.656-0.911)	0.965 (0.788-1.15)	1.14 (0.902-1.41)
6-hr	0.206 (0.184-0.228)	0.255 (0.229-0.284)	0.309 (0.275-0.346)	0.350 (0.310-0.392)	0.402 (0.352-0.454)	0.441 (0.381-0.501)	0.477 (0.405-0.547)	0.518 (0.433-0.603)	0.575 (0.471-0.679)	0.624 (0.504-0.750)
12-hr	0.147 (0.131-0.165)	0.185 (0.164-0.207)	0.229 (0.203-0.257)	0.263 (0.231-0.297)	0.309 (0.268-0.351)	0.343 (0.294-0.393)	0.378 (0.318-0.439)	0.413 (0.341-0.484)	0.457 (0.367-0.548)	0.490 (0.385-0.598)
24-hr	0.125 (0.109-0.146)	0.157 (0.137-0.184)	0.200 (0.174-0.235)	0.236 (0.204-0.277)	0.286 (0.244-0.336)	0.327 (0.276-0.384)	0.369 (0.309-0.437)	0.414 (0.342-0.494)	0.478 (0.386-0.574)	0.529 (0.420-0.643)
2-day	0.081 (0.069-0.097)	0.102 (0.087-0.123)	0.134 (0.113-0.161)	0.160 (0.135-0.193)	0.198 (0.164-0.238)	0.229 (0.189-0.276)	0.262 (0.213-0.319)	0.298 (0.239-0.365)	0.350 (0.274-0.433)	0.392 (0.301-0.493)
3-day	0.064 (0.055-0.076)	0.082 (0.070-0.097)	0.109 (0.093-0.129)	0.131 (0.111-0.156)	0.164 (0.138-0.195)	0.191 (0.159-0.228)	0.221 (0.182-0.264)	0.254 (0.206-0.305)	0.301 (0.238-0.367)	0.340 (0.264-0.419)
4-day	0.055 (0.048-0.065)	0.071 (0.061-0.084)	0.096 (0.082-0.113)	0.117 (0.100-0.138)	0.147 (0.124-0.173)	0.173 (0.145-0.203)	0.201 (0.166-0.237)	0.231 (0.189-0.275)	0.276 (0.220-0.333)	0.314 (0.246-0.382)
7-day	0.038 (0.032-0.045)	0.049 (0.042-0.058)	0.067 (0.057-0.079)	0.082 (0.070-0.096)	0.104 (0.087-0.122)	0.122 (0.102-0.143)	0.141 (0.117-0.166)	0.162 (0.133-0.193)	0.193 (0.155-0.232)	0.219 (0.173-0.264)
10-day	0.031 (0.026-0.036)	0.040 (0.034-0.047)	0.055 (0.047-0.065)	0.067 (0.057-0.079)	0.084 (0.071-0.098)	0.098 (0.082-0.115)	0.113 (0.094-0.133)	0.129 (0.106-0.152)	0.151 (0.122-0.181)	0.170 (0.136-0.205)
20-day	0.021 (0.018-0.024)	0.027 (0.024-0.031)	0.037 (0.032-0.042)	0.044 (0.038-0.051)	0.055 (0.047-0.063)	0.063 (0.054-0.073)	0.072 (0.061-0.084)	0.082 (0.068-0.096)	0.095 (0.078-0.112)	0.105 (0.086-0.126)
30-day	0.017 (0.015-0.020)	0.022 (0.019-0.026)	0.030 (0.026-0.035)	0.036 (0.031-0.042)	0.045 (0.038-0.052)	0.051 (0.044-0.059)	0.059 (0.049-0.068)	0.066 (0.055-0.077)	0.076 (0.063-0.090)	0.085 (0.069-0.101)
45-day	0.014 (0.012-0.016)	0.018 (0.016-0.021)	0.025 (0.021-0.028)	0.029 (0.025-0.033)	0.036 (0.031-0.041)	0.041 (0.035-0.047)	0.046 (0.039-0.053)	0.052 (0.044-0.060)	0.060 (0.049-0.069)	0.066 (0.054-0.077)
60-day	0.012 (0.010-0.014)	0.016 (0.014-0.018)	0.021 (0.018-0.025)	0.025 (0.022-0.029)	0.031 (0.026-0.035)	0.035 (0.029-0.040)	0.039 (0.032-0.045)	0.043 (0.035-0.050)	0.048 (0.040-0.056)	0.052 (0.043-0.062)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical

Appendix B

HYDROLOGIC & HYDRAULIC COMPUTATIONS

LUMOS ASSOCIATES
9222 PROTOTYPE DRIVE
RENO, NV 89521

MT. ROSE ATOMA BRIDGE
CONCEPTUAL DRAINAGE REPORT
COMPOSITE RUNOFF COEFFICIENTS

CALC: KMK
9764.100-Rational
9/4/2019

Landcover Classification	C_5	C_{100}
Forest	0.05	0.30
Roof	0.85	0.87
-		
-		
-		
-		

Subbasin ID	**P_01**	**P_02**				
Drainage Direction	South Swale	North Swale				
Total Area, A [ac]	**1.04**	**0.23**				

Composite Areas [ac]							
	Forest	1.04	0.23				
	Roof	0.00	0.00				
	-						
	-						
	-						
	-						

Area Check	✔	✔				

Composite C_5	**0.05**	**0.05**				
Composite C_{100}	**0.30**	**0.30**				

		Subbasin ID	P_01	P_02		
		Drainage Direction	South Swale	North Swale		
		Area, A [sf]	45302.4	10018.8		
		Area, A [ac]	1.04	0.23		
Coef.	C	Composite C_5	0.05	0.05		
		Composite C_{100}	0.30	0.30		
Initial Overland	T_i	Flow Runoff Coefficient, C_5 "R"	0.05	0.05		
		Flow Length, L [ft] [1]	50	150		
		Land Slope, s [%]	20.0	8.67		
		Initial Overland Time: T_i [min]	4.92	11.27		
Travel Time	T_t	Flow Length, L [ft]	880	90		
		Channel Slope, s [%]	8.98	20.0		
		Travel Time Coefficient [3]	1.50	1.50		
		Average Velocity, V_5 [ft/s]	4.49	6.71		
		Travel Time: T_t [min]	3.26	0.22		
ToC & Intensity		Land Classification (Urban or Vegetated)	Vege.	Vege.		
	T_c	Time of Concentration, T_c [min]	8.19	11.49		
	Urban. Check	Required? - Y/N	Y	Y		
		Total Length: L_{total} [ft]	930	240		
		Time of Concentration - Check, $T_{c,check}$ [min]	15.2	11.3		
	$T_{c,final}$	**Final ToC, $T_{c,final}$ [min]**	**10.00**	**11.33**		
	I [2]	2-yr Intensity I_2 [in/hr]	1.70	1.60		
		5-yr Intensity I_5 [in/hr]	2.22	2.09		
		100-yr Intensity I_{100} [in/hr]	4.97	4.67		
Flow	Q	2-yr Flow, Q_2 [cfs]	0.09	0.02		
		5-yr Flow, Q_5 [cfs]	0.12	0.02		
		Design 100-yr Flow, Q_{100} [cfs]	**1.55**	**0.32**		

[1] Maximum of 500 feet

[2] From NOAA Atlas 14

[3] From Gigure 701 TMRDM

$$T_i = \frac{1.8(1.1 - R)L_o^{1/2}}{s^{1/3}}$$

$$T_t = \frac{L}{60V}$$

$$T_{c,check} = \frac{L_{total}}{180} + 10$$

Swale ID	*TMRDM Equation*	**SWALE_01**	**SWALE_02**	
Adjacent Roadway/Superpad		South Swale	North Swale	
2yr Flow, Q_2 [cfs]		**0.09**	**0.02**	
5yr Flow, Q_5 [cfs]		**0.12**	**0.02**	
Design 100yr Flow, Q_{100} [cfs]		**1.55**	**0.32**	
Shape		Triangular	Triangular	
Side Slope, z		2	2	
Bottom Width, b		0	0	
Longitudinal Slope, s [ft/ft]		0.090	0.200	
Vegetation		Rip-Rap	Rip-Rap	
Manning's n, n		0.035	0.035	
Calculated Normal Depth, yo [ft]		0.43	0.20	
Area, A [ft^2]		0.37	0.08	
Design Velcity, v [fps]		4.23	3.85	
Top Width, T [ft]		1.71	0.82	
Hydraulic Radius, R_h [ft]		0.21	0.10	
Froude Number, F_r	*eq802*	1.61	2.12	
Supercritical Check [1]		*YES*	*YES*	
Selected Freeboard, FB_{req} [ft]		0.50	0.50	
Top Width Required, T_{req} [ft]		3.7	2.8	
Top Width Rounded, T [ft]		**4.0**	**3.0**	
Selected Top Width, T [ft]		**4.0**	**4.0**	
Design Depth, D [ft]		**1.00**	**1.00**	
Channel Freeboard, FB [ft]		**0.57**	**0.80**	
Meets Required Freeboard?		✔	✔	

[1] Channels with a Froude number within a range of 0.86 and 1.13 should be designed as a supercritical channel.

$$R_H = A/T \qquad F_r = \frac{V}{(gD)^{1/2}}$$

$$Q = \frac{1.486}{n} A R_H^{2/3} S^{1/2}$$

Channel/Swale Riprap Sizing

From Truckee Meadows Regional Drainage Manual (eq. 842)

$$D_{50} = \frac{(0.05)v^2(s^{0.34})}{(s_s - 1)^{1.332}}$$

Where

v	Channel velocity [fps]
S	Longitudinal channel slope [ft/ft]
S_s	Specific gravity of rock = 2.50
D_{50}	Rock size [ft]

				Calculated		Selected		
Channel ID	v [fps]	S [ft/ft]	S_s [ft/ft]	D_{50} [1] [ft]	D_{50} [1] [in]	Riprap Class	D_{50} [2] [in]	Riprap Thick. [in]
SWALE_01	4.23	0.09	2.5	0.23	2.8	CL 150	6.0	12
SWALE_02	3.85	0.20	2.5	0.25	3.0	CL 150	6.0	12

[1] Design requirement for D_{50}

[2] Selected value for D_{50} per Standard Specifications

[3] All channel sections to use a Class C riprap for bedding with a 12-inch thickness

TABLE 200.07.04-I

Percentage by Mass Passing Sieve	Sieve Size (Inches)					
	Class 150	Class 300	Class 400	Class 550	Class 700	Class 900
100	10	20	30	40	48	60
70 – 85	9	18	27	36	45	54
30 – 50	6	12	18	24	30	36
5 – 15	2	5	7	12	18	24
0	1	2	3	6	8	12
D_{50} [1]	6	12	16	22	28	35

1. Mean Stone Size

Appendix C

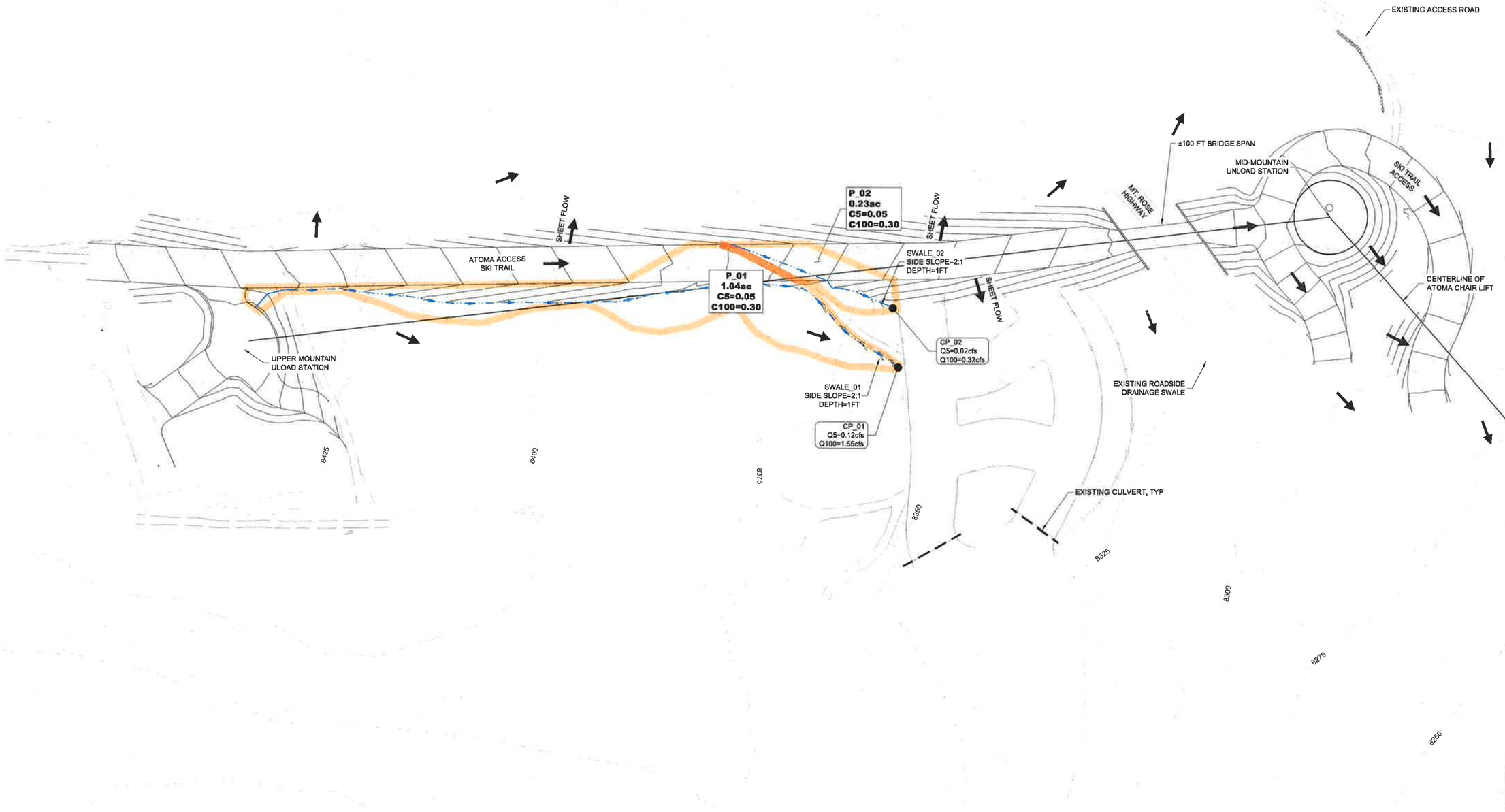
DRAINAGE EXHIBITS

LEGEND

- PROPERTY LINE
- EXISTING PAVEMENT
- PROPOSED ROADWAY
- EXISTING CULVERT/SD
- PROPOSED CULVERT/SD
- HYDRO SUBBASIN
- TIME OF CONCENTRATION PATH
- PROPOSED SWALE
- EXISTING SWALE

NOTES

1. RAINFALL DEPTHS (FROM NOAA):
   5YR24HR = 4.80 IN
   100YR24HR = 8.87 IN



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MT. ROSE/SKI TAHOE

MT. ROSE - ATOMA BRIDGE
CONCEPTUAL DRAINAGE REPORT
DRAINAGE EXHIBIT

WASHOE

NEVADA

RENO

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION
SEPTEMBER 2019

BAR IS 1 INCH ON ORIGINAL DRAWING
0 70'

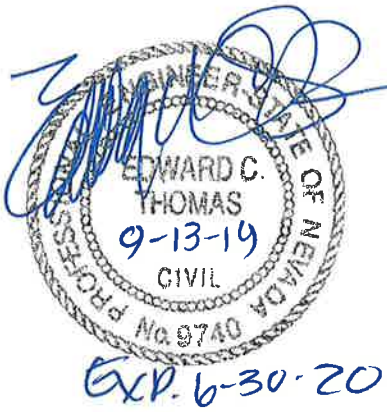
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

D1.0

DRAWN BY:	KMK
DESIGNED BY:	KMK
CHECKED BY:	ECT
JOB NO.:	9764.100

L:\LAP\9764.100 - Atoma Bridge\Civil\Hydrology\DWG\9764.100HYDR0.dwg,D1.0,
09/04/2019 10:51 pm Kramer

CONCEPTUAL DRAINAGE REPORT
For
MT. ROSE
MAINTENANCE BUILDING



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JN 9764.300
September 2019

TABLE OF CONTENTS

[File Doc: L:\LAProj\9764.400 - Galena Water Tank\Civil\Hydrology\Report\9764.400-Conceptual Drainage Report.docx]

LIST OF FIGURES

LIST OF TABLES

TABLE OF APPENDENICES

1. INTRODUCTION

This document is presented as a Conceptual Drainage Report in support of the proposed 12,000 sq. ft. maintenance building for Mt. Rose Ski Tahoe. This report is to provide support for the Special Use Permit (SUP) for the developed area as required by Washoe County.

Mt. Rose Ski Tahoe intends to develop upon assessor parcel numbers (APNs) 048-112-13 and 048-112-14, owned by Mt. Rose Development Company. The subject area is bound by Mount Rose Highway to the north/west and the Mt. Rose ski area to the south/east. An existing parking lot, owned and maintained by Mt. Rose, is located near the proposed tank site. Refer to Figure 1 for a vicinity map of the area. The disturbed area accounts for approximately 4.4 acres. The entire project is within Section 19, Township 17 and Range 19.

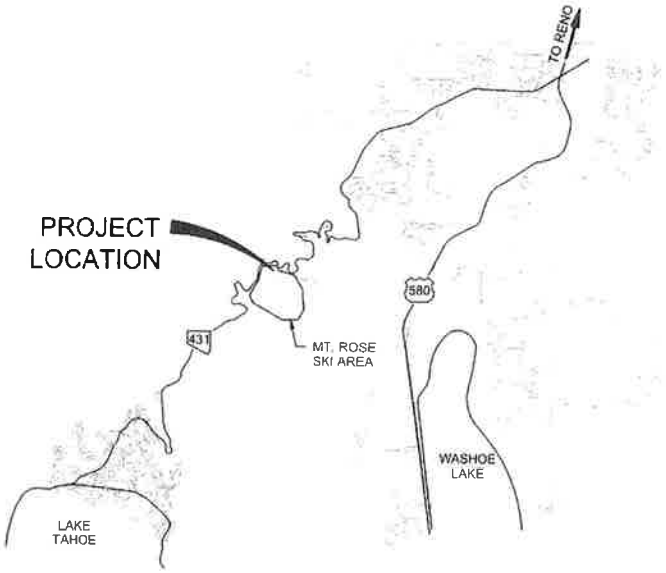


Figure 1: Vicinity Map

1.1. Existing Site Description

The site is located on the northern portion of the Mt. Rose ski area. An existing paved parking lot with access driveways is located directly north of the project site. Dirt/gravel access roads above the project site provide connectivity to the existing facilities in the ski area. With exception to these improvements, the rest of the project site is currently undeveloped, with groundcover consisting of forest coverings. The topography is moderate in the area of the future building, with slopes around 10 percent. The site drains generally to the north and as overland flow prior to entering existing swales at the paved roadway.

1.2. Proposed Project Description

The proposed maintenance building and surface improvements will be developed upon approximately 4.4 acres. The design will feature a paved driveway, perimeter gravel access road, concrete walkways, snow cat parking, utility pads, and drainage improvements. Drainage improvements extend to collector swales around the site. On the uphill side of the cut slope, two collector swales route flow away from the high point. A small swale along the perimeter access road will collect nuisance flow from the building and gravel access. The swales to the east directed flow to an existing drop inlet at the paved roadway. The swales to the west and north direct flow to an existing roadside swale.

1.3. FEMA FIRM Panels

Based on a review of the Flood Insurance Rate Map Index (panel 32031C3325G dated March 2009), the site is in an un-mapped area of the Federal Emergency Management Agency (FEMA). The project site is, therefore identified as Flood Hazard Zone X (unshaded), which is defined as areas determined to be outside the 500-year floodplain. A FIRMette of the project site is included in Appendix A.

2. METHODOLOGY

According to the drainage guidelines for Washoe County Development Code and Truckee Meadows Regional Drainage Manual (TMRDM), the Rational Formula Method was used to generate peak discharges for all drainage hydrologic basins [1]. The peak discharges for the project were calculated using:

$$\text{Design Discharge, } Q = C\ I\ A$$

Where:

Q = maximum rate of runoff (cfs),
A = contributing basin area (acres),
C = runoff coefficient,
I = average rainfall intensity for a duration equal to the T_c (in/hr),
T_c = time of concentration, T_c (minutes).

Rational runoff coefficients (C-values) for the local design were applied from the TMRDM. The selected values are presented in Table 1. C-values for local subbasins were defined for the 5- and 100-year events based on the percentage of roof and natural coverage. Time of Concentration was determined from equations provided in the TMRDM. The minimum time of concentration is 10 minutes for undeveloped areas and 5 minutes for urban areas, as defined by TMRDM. Precipitation values were computed using National Oceanic and Atmospheric Administration's (NOAA's) Point Precipitation Frequency Estimates function available on the NOAA website [2].

Table 1: Selected Rational C Values

Landcover Classification	C_5	C_{100}
Forest	0.05	0.30
Roof	0.85	0.87
Gravel	0.25	0.50
Paved	0.88	0.93

3. HISTORIC DRAINAGE SYSTEM

A single hydrologic drainage basin was delineated based on existing topography. A summary of the calculations is provided in Table 2. Refer to Appendix C for the existing conditions drainage exhibit.

Table 2: Existing Peak Flow Summary

Subbasin ID	Description	Area [ac]	C_5	C_{100}	I_5 [in/hr]	I_{100} [in/hr]	Q_5 [cfs]	Q_{100} [cfs]
E_overall	Overall	3.91	0.05	0.30	1.49	3.36	0.29	3.94

As a result of the analysis, it was determined 3.94 cfs is generated from the existing site for the 100-year storm event. All calculations can be found in Appendix B.

4. PROPOSED DRAINAGE SYSTEM

Development of the project will involve the construction of the maintenance building, paved driveway, access road, concrete sidewalk/pads, and drainage swales. The uphill runoff will enter collector swales, located at the top of the cut slope. Nuisance flow generated from the building roof and access road will be collected in minor swales. All swales will tie in to the existing drainage system, near the paved parking lot.

To appropriately size drainage swales, the proposed site was divided into five sub-basins. In addition, an overall drainage basin was delineated to provide a comparison to the existing condition. Reference the proposed drainage exhibit in Appendix C for the proposed drainage schematic. Composite Rational C-values were determined based upon percentage of post-development land cover. The peak runoff rate calculated for the individual drainage basins is summarized in Table 3. Flows at specific concentration points (CPs) are included in Table 4.

Table 3: Proposed Subbasin Peak Flow Summary

Subbasin ID	Description	Area [ac]	C_5	C_{100}	I_5 [in/hr]	I_{100} [in/hr]	Q_5 [cfs]	Q_{100} [cfs]
P_overall	Overall	3.91	0.23	0.44	1.97	4.39	1.80	7.56
P_01	to CP_01	0.14	0.05	0.30	2.22	4.97	0.02	0.21
P_02	to CP_02	0.25	0.61	0.72	2.37	5.30	0.36	0.95
P_03	to CP_03	0.3	0.26	0.48	2.01	4.48	0.16	0.65
P_04	to CP_04	0.12	0.05	0.30	2.13	4.76	0.01	0.17
P_05	to CP_05	0.12	0.05	0.30	2.10	4.69	0.01	0.17

Table 4: Concentration Point Peak Flow Summary

CP ID	Description	Q_5 [cfs]	Q_{100} [cfs]
CP_01	P_01 + P_02	0.38	1.16
CP_02	P_02	0.36	0.95
CP_03	P_03 + P_04	0.17	0.82
CP_04	P_04	0.01	0.17
CP_05	P_05	0.01	0.17

The 100-year peak rate of runoff for the entire site was determined to be 7.56 cfs. This is a 3.62 cfs increase from the existing condition. Natural Resources Conservation Service Web Soil Survey was used to determine the Hydrologic Soil Group (HSG). The entire site is classified a Group A, indicating soils having the highest infiltration rates (with low runoff potential). As the proposed condition results in a small generated flow and low runoff potential is apparent, stormwater detention is determined unnecessary.

The Manning's equation was used to size the collector swales, with an additional 6 inches of freeboard. Riprap sizing for the swales was preformed per equations in the TMRDM. Calculations have determined a Class 150 riprap with a 12 inch thickness will be sufficient for the swale design. Twelve inches of Class C riprap will be used for the bedding material. Outlet protection design will be provided at the time of final design. All calculations can be found in Appendix B.

5. WATER QUALITY

As required by the TMRDM, Low Impact Development (LID) methods of treating runoff will be required to address water quality. Flow-based controls will be designed to treat runoff from the 2-year storm event (WQ_F). A portion of the improved areas will drain to proposed swales. Riprap calculations for the swales have been performed to determine median stone diameter of 6 inches (Class 150). In all swales, the WQ_F produces a depth of flow that is less or approximately equal to the diameter. The swales will effectively remove pollutants to meet the Truckee Meadows Structural Controls Design and Low Impact Development Manual [3].

6. CONCLUSIONS

The project, as proposed, will allow for the construction of the maintenance building for Mt. Rose Ski Tahoe. Drainage improvements to the site shall convey anticipated flows via a network of swales and overladn flow. Development of the project will result in a minor increase to generated flow. As the site is located entirely in HSG A, stormwater detention facilities have been determined unnecessary. Water quality of the runoff will all be controlled by swales along the access road and near the driveway. The design and hydrologic studies of the proposed tank have been conducted in compliance with the drainage guidelines for Washoe County and TMRDM.

7. REFERENCES

[1] Washoe County, "Truckee Meadows Regional Drainage Manual," Reno, 2009.

[2] National Oceanic and Atmospheric Administration (NOAA), "Atlas 14 Precipitation-Frequency Atlas," 2018. [Online]. Available: https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk.

[3] NCE, "Truckee Meadows Structural Controls Design and Low Impact Development Manual," Reno, NV, April 2015.

[4] Washoe County, "Washoe County Development Code," Reno, 2019.

Appendix A

BACKGROUND DATA

National Flood Hazard Layer FIRMette

FEMA

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOU

- SPECIAL FLOOD HAZARD AREAS
  - Without Base Flood Elevation (BFE) Zone A, V, A99
  - With BFE or Depth Zone AE, AO, AH, VE, A
  - Regulatory Floodway
- OTHER AREAS OF FLOOD HAZARD
  - 0.2% Annual Chance Flood Hazard, A of 1% annual chance flood with avera depth less than one foot or with drair areas of less than one square mile Zo
  - Future Conditions 1% Annual Chance Flood Hazard Zone X
  - Area with Reduced Flood Risk due to Levee. See Notes. Zone X
  - Area with Flood Risk due to Levee Zon
- OTHER AREAS
  - NO SCREEN Area of Minimal Flood Hazard Zone X
  - Effective LOMRs
  - Area of Undetermined Flood Hazard Z
- GENERAL STRUCTURES
  - Channel, Culvert, or Storm Sewer
  - Levee, Dike, or Floodwall
- OTHER FEATURES
  - 20.2 / 17.5 Cross Sections with 1% Annual Chanc
  - Water Surface Elevation
  - Coastal Transect
  - 513 Base Flood Elevation Line (BFE)
  - Limit of Study
  - Jurisdiction Boundary
  - Coastal Transect Baseline
  - Profile Baseline
  - Hydrographic Feature
- MAP PANELS
  - Digital Data Available
  - No Digital Data Available
  - Unmapped

N

The pin displayed on the map is an approxim point selected by the user and does not repre an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/5/2019 at 11:39:38 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

NOAA Atlas 14, Volume 1, Version 5
Location name: Incline Village, Nevada, USA*
Latitude: 39.3276°, Longitude: -119.8887°
Elevation: 8380.08 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	1.79 (1.56-2.09)	2.23 (1.96-2.62)	2.92 (2.51-3.42)	3.55 (3.02-4.14)	4.56 (3.79-5.36)	5.46 (4.42-6.53)	6.53 (5.06-7.93)	7.82 (5.81-9.78)	9.92 (6.86-12.8)	11.9 (7.76-15.8)
10-min	1.36 (1.19-1.60)	1.70 (1.48-1.99)	2.22 (1.91-2.60)	2.70 (2.30-3.16)	3.47 (2.89-4.08)	4.16 (3.36-4.97)	4.97 (3.85-6.04)	5.96 (4.42-7.45)	7.55 (5.23-9.74)	9.05 (5.91-12.0)
15-min	1.12 (0.980-1.32)	1.40 (1.23-1.64)	1.84 (1.58-2.15)	2.23 (1.90-2.61)	2.87 (2.38-3.38)	3.44 (2.78-4.10)	4.10 (3.18-4.99)	4.92 (3.65-6.16)	6.24 (4.32-8.05)	7.48 (4.88-9.94)
30-min	0.758 (0.660-0.888)	0.944 (0.826-1.11)	1.24 (1.06-1.45)	1.50 (1.28-1.76)	1.93 (1.60-2.27)	2.32 (1.87-2.76)	2.76 (2.14-3.36)	3.31 (2.46-4.14)	4.20 (2.91-5.42)	5.04 (3.29-6.69)
60-min	0.469 (0.409-0.549)	0.584 (0.511-0.685)	0.765 (0.658-0.896)	0.930 (0.794-1.09)	1.20 (0.993-1.41)	1.43 (1.16-1.71)	1.71 (1.33-2.08)	2.05 (1.52-2.57)	2.60 (1.80-3.35)	3.12 (2.04-4.14)
2-hr	0.314 (0.280-0.354)	0.391 (0.348-0.438)	0.490 (0.432-0.548)	0.572 (0.501-0.644)	0.695 (0.594-0.783)	0.802 (0.668-0.918)	0.924 (0.750-1.08)	1.09 (0.854-1.30)	1.37 (1.02-1.69)	1.63 (1.17-2.09)
3-hr	0.264 (0.237-0.294)	0.328 (0.298-0.365)	0.400 (0.359-0.445)	0.459 (0.411-0.510)	0.536 (0.474-0.602)	0.603 (0.523-0.682)	0.672 (0.574-0.769)	0.784 (0.656-0.911)	0.965 (0.788-1.15)	1.14 (0.902-1.41)
6-hr	0.206 (0.184-0.228)	0.255 (0.229-0.284)	0.309 (0.275-0.346)	0.350 (0.310-0.392)	0.402 (0.352-0.454)	0.441 (0.381-0.501)	0.477 (0.405-0.547)	0.518 (0.433-0.603)	0.575 (0.471-0.679)	0.624 (0.504-0.750)
12-hr	0.147 (0.131-0.165)	0.185 (0.164-0.207)	0.229 (0.203-0.257)	0.263 (0.231-0.297)	0.309 (0.268-0.351)	0.343 (0.294-0.393)	0.378 (0.318-0.439)	0.413 (0.341-0.484)	0.457 (0.367-0.548)	0.490 (0.385-0.598)
24-hr	0.125 (0.109-0.146)	0.157 (0.137-0.184)	0.200 (0.174-0.235)	0.236 (0.204-0.277)	0.286 (0.244-0.336)	0.327 (0.276-0.384)	0.369 (0.309-0.437)	0.414 (0.342-0.494)	0.478 (0.386-0.574)	0.529 (0.420-0.643)
2-day	0.081 (0.069-0.097)	0.102 (0.087-0.123)	0.134 (0.113-0.161)	0.160 (0.135-0.193)	0.198 (0.164-0.238)	0.229 (0.189-0.276)	0.262 (0.213-0.319)	0.298 (0.239-0.365)	0.350 (0.274-0.433)	0.392 (0.301-0.493)
3-day	0.064 (0.055-0.076)	0.082 (0.070-0.097)	0.109 (0.093-0.129)	0.131 (0.111-0.156)	0.164 (0.138-0.195)	0.191 (0.159-0.228)	0.221 (0.182-0.264)	0.254 (0.206-0.305)	0.301 (0.238-0.367)	0.340 (0.264-0.419)
4-day	0.055 (0.048-0.065)	0.071 (0.061-0.084)	0.096 (0.082-0.113)	0.117 (0.100-0.138)	0.147 (0.124-0.173)	0.173 (0.145-0.203)	0.201 (0.166-0.237)	0.231 (0.189-0.275)	0.276 (0.220-0.333)	0.314 (0.246-0.382)
7-day	0.038 (0.032-0.045)	0.049 (0.042-0.058)	0.067 (0.057-0.079)	0.082 (0.070-0.096)	0.104 (0.087-0.122)	0.122 (0.102-0.143)	0.141 (0.117-0.166)	0.162 (0.133-0.193)	0.193 (0.155-0.232)	0.219 (0.173-0.264)
10-day	0.031 (0.026-0.036)	0.040 (0.034-0.047)	0.055 (0.047-0.065)	0.067 (0.057-0.079)	0.084 (0.071-0.098)	0.098 (0.082-0.115)	0.113 (0.094-0.133)	0.129 (0.106-0.152)	0.151 (0.122-0.181)	0.170 (0.136-0.205)
20-day	0.021 (0.018-0.024)	0.027 (0.024-0.031)	0.037 (0.032-0.042)	0.044 (0.038-0.051)	0.055 (0.047-0.063)	0.063 (0.054-0.073)	0.072 (0.061-0.084)	0.082 (0.068-0.096)	0.095 (0.078-0.112)	0.105 (0.086-0.126)
30-day	0.017 (0.015-0.020)	0.022 (0.019-0.026)	0.030 (0.026-0.035)	0.036 (0.031-0.042)	0.045 (0.038-0.052)	0.051 (0.044-0.059)	0.059 (0.049-0.068)	0.066 (0.055-0.077)	0.076 (0.063-0.090)	0.085 (0.069-0.101)
45-day	0.014 (0.012-0.016)	0.018 (0.016-0.021)	0.025 (0.021-0.028)	0.029 (0.025-0.033)	0.036 (0.031-0.041)	0.041 (0.035-0.047)	0.046 (0.039-0.053)	0.052 (0.044-0.060)	0.060 (0.049-0.069)	0.066 (0.054-0.077)
60-day	0.012 (0.010-0.014)	0.016 (0.014-0.018)	0.021 (0.018-0.025)	0.025 (0.022-0.029)	0.031 (0.026-0.035)	0.035 (0.029-0.040)	0.039 (0.032-0.045)	0.043 (0.035-0.050)	0.048 (0.040-0.056)	0.052 (0.043-0.062)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical

Appendix B

HYDROLOGIC & HYDRAULIC COMPUTATIONS

LUMOS ASSOCIATES
9222 PROTOTYPE DRIVE
RENO, NV 89521

MT. ROSE MAINTENANCE BUILDING
CONCEPTUAL DRAINAGE REPORT
COMPOSITE RUNOFF COEFFICIENTS

CALC: KMK
9764.300-Rational
9/5/2019

Landcover Classification	C_5	C_{100}
Forest	0.05	0.30
Roof	0.85	0.87
Gravel	0.25	0.50
Paved	0.88	0.93
-		
-		
-		

Subbasin ID	**E_overall**	**P_overall**	**P_01**	**P_02**	**P_03**	**P_04**	**P_05**		
Drainage Direction	Overall	Overall	to CP_01	to CP_02	to CP_03	to CP_04	to CP_05		
Total Area, A [ac]	**3.91**	**3.91**	**0.14**	**0.25**	**0.30**	**0.12**	**0.12**		
Composite Areas [ac]									
Forest	3.91	2.82	0.14	0.03	0.11	0.12	0.12		
Roof	0.00	0.30	0.00	0.15	0.00	0.00	0.00		
Gravel	0.00	0.28	0.00	0.06	0.15	0.00	0.00		
Paved	0.00	0.51	0.00	0.01	0.04	0.00	0.00		
-									
-									
-									
Area Check	✓	✓	✓	✓	✓	✓	✓		
Composite C_5	**0.05**	**0.23**	**0.05**	**0.61**	**0.26**	**0.05**	**0.05**		
Composite C_{100}	**0.30**	**0.44**	**0.30**	**0.72**	**0.48**	**0.30**	**0.30**		

		Subbasin ID	E_overall	P_overall	P_01	P_02
		Drainage Direction	Overall	Overall	to CP_01	to CP_02
		Area, A [sf]	170319.6	170319.6	6098.4	10890
		Area, A [ac]	3.91	3.91	0.14	0.25
Coef.	C	Composite C_5	0.05	0.23	0.05	0.61
		Composite C_{100}	0.30	0.44	0.30	0.72
Initial Overland	T_i	Flow Runoff Coefficient, C_5 "R"	0.05	0.23	0.05	0.61
		Flow Length, L [ft] [1]	420	440	100	110
		Land Slope, s [%]	6.0	12.7	9.7	2.0
		Initial Overland Time: T_i [min]	21.37	14.01	8.86	7.32
Travel Time	T_t	Flow Length, L [ft]	300	70	130	90
		Channel Slope, s [%]	8.67	7.14	9.23	0.50
		Travel Time Coefficient [3]	1.50	1.50	1.50	1.50
		Average Velocity, V_5 [ft/s]	4.42	4.01	4.56	1.06
		Travel Time: T_t [min]	1.13	0.29	0.48	1.41
ToC & Intensity		Land Classification (Urban or Vegetated)	Vege.	Urban	Vege.	Urban
	T_c	Time of Concentration, T_c [min]	22.50	14.30	9.34	8.74
	Urban Check	Required? - Y/N	N	Y	N	Y
		Total Length: L_{total} [ft]	-	510	-	200
		Time of Concentration - Check, $T_{c,check}$ [min]	-	12.8	-	11.1
	$T_{c,final}$	**Final ToC, $T_{c,final}$ [min]**	**22.50**	**12.83**	**10.00**	**8.74**
	I [2]	2-yr Intensity I_2 [in/hr]	1.14	1.50	1.70	1.81
		5-yr Intensity I_5 [in/hr]	1.49	1.97	2.22	2.37
		100-yr Intensity I_{100} [in/hr]	3.36	4.39	4.97	5.30
Flow	Q	2-yr Flow, Q_2 [cfs]	0.22	1.37	0.01	0.28
		5-yr Flow, Q_5 [cfs]	0.29	1.80	0.02	0.36
		Design 100-yr Flow, Q_{100} [cfs]	**3.94**	**7.56**	**0.21**	**0.95**

[1] Maximum of 500 feet

[2] From NOAA Atlas 14

[3] From Gigure 701 TMRDM

$$T_i = \frac{1.8(1.1 - R)L_o^{1/2}}{s^{1/3}}$$

$$T_t = \frac{L}{60V}$$

$$T_{c,check} = \frac{L_{total}}{180} + 10$$

		Subbasin ID	P_03	P_04	P_05
		Drainage Direction	to CP_03	to CP_04	to CP_05
		Area, A [sf]	13068	5227.2	5227.2
		Area, A [ac]	0.30	0.12	0.12
Coef.	C	Composite C_5	0.26	0.05	0.05
		Composite C_{100}	0.48	0.30	0.30
Initial Overland	T_i	Flow Runoff Coefficient, C_5 "R"	0.26	0.05	0.05
		Flow Length, L [ft] [1]	35	160	140
		Land Slope, s [%]	2.0	11.9	7.9
		Initial Overland Time: T_i [min]	7.09	10.48	11.25
Travel Time	T_t	Flow Length, L [ft]	380	115	
		Channel Slope, s [%]	0.50	9.00	
		Travel Time Coefficient [3]	1.50	1.50	
		Average Velocity, V_5 [ft/s]	1.06	4.50	
		Travel Time: T_t [min]	5.97	0.43	
ToC & Intensity		Land Classification (Urban or Vegetated)	Urban	Vege.	Vege.
	T_c	Time of Concentration, T_c [min]	13.07	10.90	11.25
	Urban. Check	Required? - Y/N	Y	N	N
		Total Length: L_{total} [ft]	415	-	-
		Time of Concentration - Check, $T_{c,check}$ [min]	12.3	-	-
	$T_{c,final}$	**Final ToC, $T_{c,final}$ [min]**	**12.31**	**10.90**	**11.25**
	I [2]	2-yr Intensity I_2 [in/hr]	1.53	1.63	1.60
		5-yr Intensity I_5 [in/hr]	2.01	2.13	2.10
		100-yr Intensity I_{100} [in/hr]	4.48	4.76	4.69
Flow	Q	2-yr Flow, Q_2 [cfs]	0.12	0.01	0.01
		5-yr Flow, Q_5 [cfs]	0.16	0.01	0.01
		Design 100-yr Flow, Q_{100} [cfs]	**0.65**	**0.17**	**0.17**

[1] Maximum of 500 feet

[2] From NOAA Atlas 14

[3] From Gigure 701 TMRDM

$$T_i = \frac{1.8(1.1 - R)L_o^{1/2}}{s^{1/3}}$$

$$T_t = \frac{L}{60V}$$

$$T_{c,check} = \frac{L_{total}}{180} + 10$$

Swale ID	**SWALE_01**	**SWALE_02**	**SWALE_03**	**SWALE_04**	**SWALE_05**
Description	P_01 + P_02	P_02	P_03 + P_04	P_04	P_05
2yr Flow, Q_2 [cfs]	**0.29**	**0.28**	**0.13**	**0.01**	**0.01**
5yr Flow, Q_5 [cfs]	**0.38**	**0.36**	**0.17**	**0.01**	**0.01**
Design 100yr Flow, Q_{100} [cfs]	**1.16**	**0.95**	**0.82**	**0.17**	**0.17**
Shape	Triangular	Triangular	Triangular	Triangular	Triangular
Side Slope, z	2	2	2	2	2
Bottom Width, b	0	0	0	0	0
Longitudinal Slope, s [ft/ft]	0.050	0.010	0.005	0.067	0.080
Vegetation	Rip-Rap	Rip-Rap	Rip-Rap	Rip-Rap	Rip-Rap
Manning's n, n	0.035	0.035	0.035	0.035	0.035
Calculated Normal Depth, yo [ft]	0.43	0.54	0.58	0.20	0.19
Area, A [ft^2]	0.37	0.58	0.67	0.08	0.07
Design Velcity, v [fps]	3.15	1.64	1.22	2.18	2.33
Top Width, T [ft]	1.71	2.15	2.32	0.79	0.76
Hydraulic Radius, R_h [ft]	0.21	0.27	0.29	0.10	0.10
Froude Number, F_r	1.20	0.56	0.40	1.22	1.33
Supercritical Check [1]	*YES*	*NO*	*NO*	*YES*	*YES*
Selected Freeboard, FB_{req} [ft]	0.50	0.50	0.50	0.50	0.50
Top Width Required, T_{req} [ft]	3.7	4.1	4.3	2.8	2.8
Top Width Rounded, T [ft]	**4.0**	**5.0**	**5.0**	**3.0**	**3.0**
Selected Top Width, T [ft]	**5.0**	**5.0**	**5.0**	**5.0**	**5.0**
Design Depth, D [ft]	**1.25**	**1.25**	**1.25**	**1.25**	**1.25**
Channel Freeboard, FB [ft]	**0.82**	**0.71**	**0.67**	**1.05**	**1.06**
Meets Required Freeboard?	✔	✔	✔	✔	✔

[1] Channels with a Froude number within a range of 0.86 and 1.13 should be designed as a supercritical channel.

$$R_H = {}^{A}/_{T} \qquad F_r = \frac{V}{(gD)^{1/2}}$$

$$Q = \frac{1.486}{n} A R_H^{2/3} S^{1/2}$$

Channel/Swale Riprap Sizing

From Truckee Meadows Regional Drainage Manual (eq. 842)

$$D_{50} - \frac{(0.05)v^2(s^{0.34})}{(s_s - 1)^{1.332}}$$

Where

v	Channel velocity [fps]
S	Longitudinal channel slope [ft/ft]
S_s	Specific gravity of rock = 2.50
D_{50}	Rock size [ft]

Input				Calculated		Selected		
Channel ID	v [fps]	S [ft/ft]	S_s [ft/ft]	D_{50} [1] [ft]	D_{50} [1] [in]	Riprap Class	D_{50} [2] [in]	Riprap Thick. [in]
SWALE_01	3.15	0.050	2.5	0.10	1.3	CL 150	6.0	12
SWALE_02	1.64	0.010	2.5	0.02	0.2	CL 150	6.0	12
SWALE_03	1.22	0.005	2.5	0.01	0.1	CL 150	6.0	12
SWALE_04	2.18	0.067	2.5	0.06	0.7	CL 150	6.0	12
SWALE_05	2.33	0.080	2.5	0.07	0.8	CL 150	6.0	12

[1] Design requirement for D_{50}

[2] Selected value for D_{50} per Standard Specifications

[3] All channel sections to use a Class C riprap for bedding with a 12-inch thickness

TABLE 200.07.04-I

Percentage by Mass Passing Sieve	Sieve Size (Inches)					
	Class 150	Class 300	Class 400	Class 550	Class 700	Class 900
100	10	20	30	40	48	60
70 – 85	9	18	27	36	45	54
30 – 50	6	12	18	24	30	36
5 – 15	2	5	7	12	18	24
0	1	2	3	6	8	12
D_{50} (1)	6	12	16	22	28	35

1. Mean Stone Size

Appendix C

DRAINAGE EXHIBITS

LEGEND

- PROPERTY LINE
- EXISTING PAVEMENT
- PROPOSED ROADWAY
- EXISTING CULVERT/SD
- PROPOSED CULVERT/SD
- HYDRO SUBBASIN
- TIME OF CONCENTRATION PATH
- PROPOSED SWALE
- EXISTING SWALE

NOTES

1. RAINFALL DEPTHS (FROM NOAA):
   5YR24HR = 2.63 IN
   100YR24HR = 4.71 IN

SUBBASIN SUMMARY

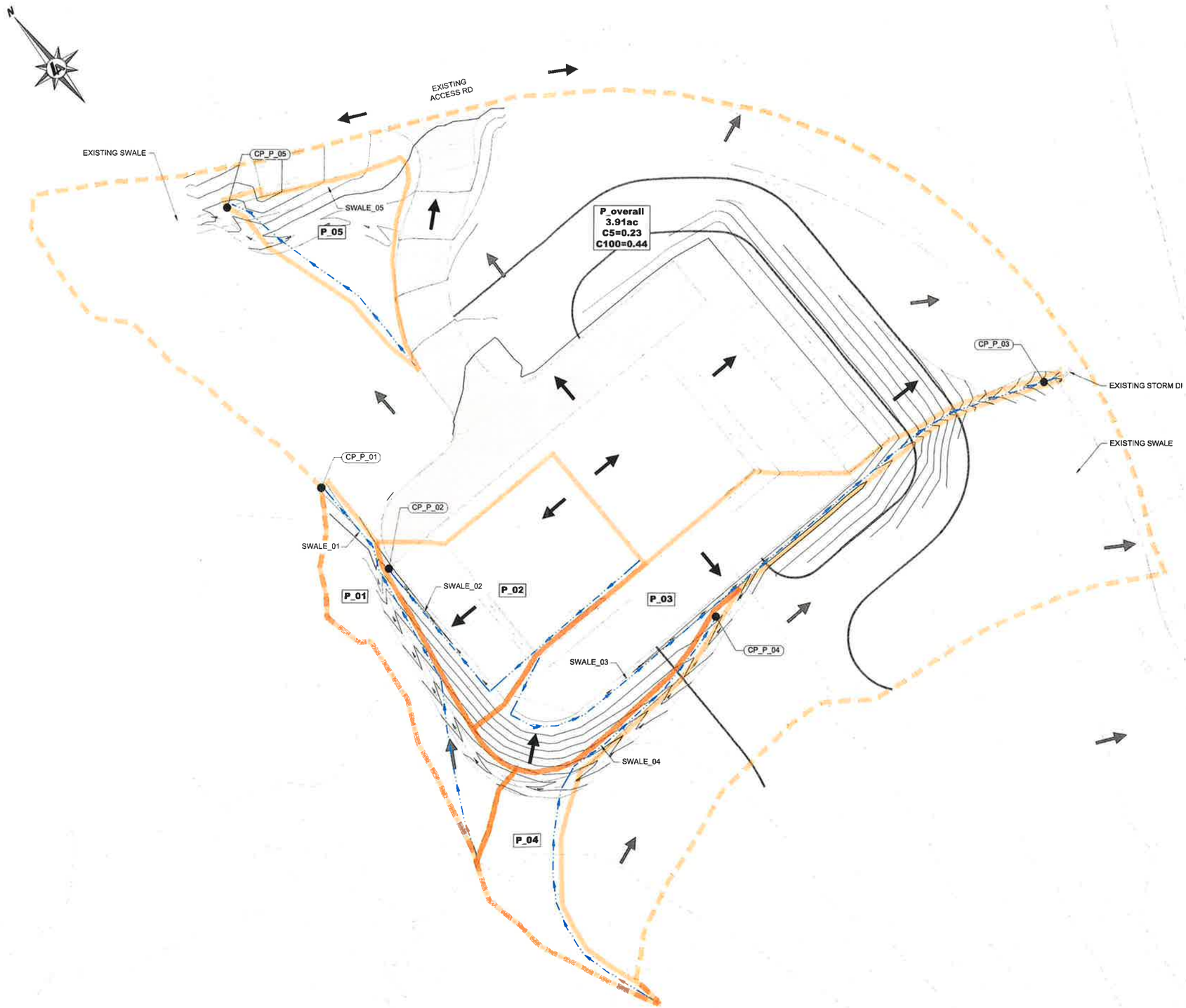
Basin ID	Area [ac]	C_5	C_{100}	Q_5 [cfs]	Q_{100} [cfs]
P_overall	3.91	0.23	0.44	1.80	7.56
P_01	0.14	0.05	0.30	0.02	0.21
P_02	0.25	0.61	0.72	0.36	0.95
P_03	0.3	0.26	0.48	0.16	0.65
P_04	0.12	0.05	0.30	0.01	0.17
P_05	0.12	0.05	0.30	0.01	0.17

SWALE SUMMARY

Swale ID	Shape	Side Slope	Top Width [ft]	Q_{100} [cfs]	Q_5 [cfs]
SWALE_01	TRI	2	5	1.16	0.38
SWALE_02	TRI	2	5	0.95	0.36
SWALE_03	TRI	2	5	0.82	0.17
SWALE_04	TRI	2	5	0.17	0.01
SWALE_05	TRI	2	5	0.17	0.01

CONCENTRATION POINT SUMMARY

CP ID	Description	Q_{100} [cfs]	Q_5 [cfs]
CP_01	P_01 + P_02	1.16	0.38
CP_02	P_02	0.95	0.36
CP_03	P_03 + P_04	0.82	0.17
CP_04	P_04	0.17	0.01
CP_05	P_05	0.17	0.01



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MT. ROSE/SKI TAHOE

MT. ROSE - MAINTENANCE BUILDING
CONCEPTUAL DRAINAGE REPORT
PROPOSED DRAINAGE EXHIBIT

RENO | WASHOE | NEVADA

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION

BAR IS 1 INCH ON ORIGINAL DRAWING
0 30"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

D2.0

DRAWN BY:	KMK
DESIGNED BY:	KMK
CHECKED BY:	ECT
JOB NO.:	9764.400

C:\Users\kkramer\appdata\local\temp\AcPublish_11688\9764.300WRBRD.dwg,D2.0, 09/05/2019 05:45 pm, kkramer

CONCEPTUAL DRAINAGE REPORT
For
MT. ROSE
GALENA WATER TANK

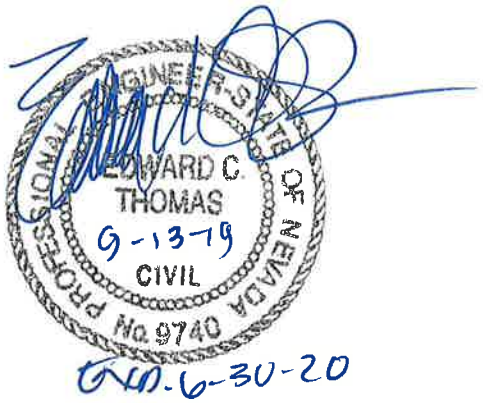

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TABLE OF CONTENTS

[File Doc: L:\LAProj\9764.400 - Galena Water Tank\Civil\Hydrology\Report\9764.400-Conceptual Drainage Report.docx]

LIST OF FIGURES

LIST OF TABLES

TABLE OF APPENDENICES

1. INTRODUCTION

This document is presented as a Conceptual Drainage Report in support of the proposed 5 million gallon water storage tank for Mt. Rose Ski Tahoe. This report is to provide support for the Special Use Permit (SUP) for the developed area as required by Washoe County.

Mt. Rose Ski Tahoe intends to develop upon assessor parcel numbers (APN) 048-120-22 (owned by the United States Forest Service) and 048-112-12 (owned by Mt. Rose Ski Tahoe). The subject area is bound by Mount Rose Highway to the south/west and the Mt. Rose ski area to the north/east. An existing water tank and maintenance building, owned and maintained by Mt. Rose, is located near the proposed tank site. Refer to Figure 1 for a vicinity map of the area. The disturbed area accounts for approximately 3.2 acres, with 1.9 acres being located on USFS property. The entire project is within Section 20, Township 17 and Range 19.

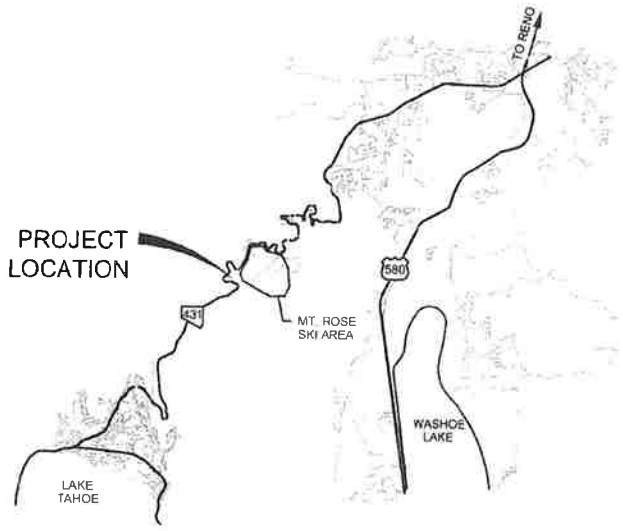


Figure 1: Vicinity Map

1.1. Existing Site Description

The site is located on the southwest corner of the Mt. Rose ski area. An existing maintenance building and water tank are located directly north of the project site. Dirt/gravel access roads provide connectivity to the existing facilities from Mt. Rose Highway. In addition, an existing ski run boarders the project site to the east. With exception to these improvements, the rest of the project site is currently undeveloped, with groundcover consisting of forest coverings. The topography near the future tank footprint is around five percent while the uphill watershed has more severe slopes, ranging from 20-50 percent. The site drains generally to the north as overland flow prior to entering an existing swale in the north.

1.2. Proposed Project Description

The proposed 5 million gallon water tank will be developed upon approximately 3.2 acres. The design will feature a tank pad, perimeter access road, retaining wall and drainage improvements. Drainage improvements extend to collector swales and culvert structures. On the uphill side of the retaining wall, two collector swales route flow from the high point to the culverts in the north. A small swale along the perimeter of the tank access road will collect nuisance flow from the tank roof. The swales are directed to culverts at the existing access roads. Runoff will ultimately be routed to an existing drainage swale north of the tank site. Grading improvements will not impact the existing ski run to the east.

1.3. FEMA FIRM Panels

Based on a review of the Flood Insurance Rate Map Index (panel 32031C3325G dated March 2009), the site is in an un-mapped area of the Federal Emergency Management Agency (FEMA). The project site is, therefore identified as Flood Hazard Zone X (unshaded), which is defined as areas determined to be outside the 500-year floodplain. A FIRMette of the project site is included in Appendix A.

2. METHODOLOGY

According to the drainage guidelines for Washoe County Development Code and Truckee Meadows Regional Drainage Manual (TMRDM), the Rational Formula Method was used to generate peak discharges for all drainage hydrologic basins [1]. The peak discharges for the project were calculated using:

$$\text{Design Discharge, } Q = C\ I\ A$$

Where:

Q = maximum rate of runoff (cfs),
A = contributing basin area (acres),
C = runoff coefficient,
I = average rainfall intensity for a duration equal to the T_c (in/hr),
T_c = time of concentration, T_c (minutes).

Rational runoff coefficients (C-values) for the local design were applied from the TMRDM. The selected values are presented in Table 1. C-values for local subbasins were defined for the 5- and 100-year events based on the percentage of roof and natural coverage. Time of Concentration was determined from equations provided in the TMRDM. The minimum time of concentration for undeveloped areas is 10 minutes, as defined by TMRDM. Precipitation values were computed using National Oceanic and Atmospheric Administration's (NOAA's) Point Precipitation Frequency Estimates function available on the NOAA website [2].

Table 1: Selected Rational C Values

Landcover Classification	C_5	C_{100}
Forest	0.05	0.30
Roof	0.85	0.87

3. HISTORIC DRAINAGE SYSTEM

A single hydrologic drainage basin was delineated based on existing topography. A summary of the calculations is provided in Table 2. Refer to Appendix C for the existing conditions drainage exhibit.

Table 2: Existing Peak Flow Summary

Subbasin ID	Description	Area [ac]	C_5	C_{100}	I_5 [in/hr]	I_{100} [in/hr]	Q_5 [cfs]	Q_{100} [cfs]
Eoverall	Overall	13.2	0.05	0.30	1.84	4.06	1.21	16.07

As a result of the analysis, it was determined 16.07 cfs is generated from the existing site for the 100-year storm event. All calculations can be found in Appendix B.

4. PROPOSED DRAINAGE SYSTEM

Development of the project will involve the construction of the water tank, access road, retaining wall, drainage swales, and culverts. The uphill runoff will enter collector swales, located at the top of the retaining wall. Nuisance flow generated from the water tank roof and access road will be collected in a minor swale at the bottom of the retaining wall. Culverts will collect flows from the east and west swales, and direct flow to the existing swale in the north.

To appropriately size drainage facilities, the proposed site was divided into two sub-basins. Reference the proposed drainage exhibit in Appendix C for the proposed drainage schematic. Composite Rational C-values were determined based upon percentage of post-development land cover. The peak runoff rate calculated for the developed portion of the site is summarized in Table 3.

Table 3: Proposed Peak Flow Summary

Subbasin ID	Description	Area [ac]	C_5	C_{100}	I_5 [in/hr]	I_{100} [in/hr]	Q_5 [cfs]	Q_{100} [cfs]
Poverall	Overall	13.2	0.08	0.32	1.84	4.06	1.83	17.06
P_01	East Swale	10.25	0.07	0.31	1.84	4.06	1.25	12.98
P_02	West Swale	2.95	0.11	0.34	1.89	4.20	0.60	4.22

The 100-year peak rate of runoff for the entire site was determined to be 17.06 cfs. This is a 1 cfs increase from the existing condition. Natural Resources Conservation Service Web Soil Survey was used to determine the Hydrologic Soil Group (HSG). The entire site is classified a Group A, indicating soils having the highest infiltration rates (with low runoff potential). As the proposed condition results in minimal changes to land cover and low runoff potential is apparent, stormwater detention is unnecessary.

Culvert structures for the east and west areas have been evaluated using Autodesk Hydraflow Express Extension. Outlet protection design will be provided at the time of final design. The Manning's equation was used to size the collector swales, while ensuring 6 inches of freeboard. All calculations can be found in Appendix B.

5. WATER QUALITY

As required by the TMRDM, Low Impact Development (LID) methods of treating runoff will be required to address water quality. Flow-based controls will be designed to treat runoff from the 2-year storm event (WQ_F). All improvements to the site drain to a proposed swale. Riprap calculations for the swales have been performed to determine median stone diameter of 6 inches (Class 150). In all swales, the WQ_F produces a depth of flow that is less or approximately equal to the diameter. The swales will effectively remove pollutants to meet the Truckee Meadows Structural Controls Design and Low Impact Development Manual [3]. The LID manual's Design Guidance Worksheets and riprap calculations are included in Appendix B. As a result, the design and analysis will provide water quality treatment of all on-site runoff.

6. CONCLUSIONS

The project, as proposed, will allow for the construction of a water tank for Mt. Rose Ski Tahoe. Drainage improvements to the site shall convey anticipated flows via a network of swales and culverts. Development of the project will result in a negligible increase in impervious ground cover. In addition, the site is located entirely in HSG A. As a result, stormwater detention facilities have been determined unnecessary. Water quality of the runoff will all be controlled by swales along the proposed retaining wall and access road. The design and hydrologic studies of the proposed tank have been conducted in compliance with the drainage guidelines for Washoe County and TMRDM.

7. REFERENCES

[1] Washoe County, "Truckee Meadows Regional Drainage Manual," Reno, 2009.

[2] National Oceanic and Atmospheric Administration (NOAA), "Atlas 14 Precipitation-Frequency Atlas," 2018. [Online]. Available: https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk.

[3] NCE, "Truckee Meadows Structural Controls Design and Low Impact Development Manual," Reno, NV, April 2015.

[4] Washoe County, "Washoe County Development Code," Reno, 2019.

Appendix A

BACKGROUND DATA

National Flood Hazard Layer FIRMette

FEMA

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Are of 1% annual chance flood with averag depth less than one foot or with draina areas of less than one square mile *Zon*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zo*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approxima point selected by the user and does not repre an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/15/2019 at 8:47:15 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

NOAA Atlas 14, Volume 1, Version 5
Location name: Incline Village, Nevada, USA*
Latitude: 39.3156°, Longitude: -119.8973°
Elevation: 8788.3 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	1.84 (1.60-2.14)	2.28 (1.99-2.68)	2.98 (2.57-3.48)	3.61 (3.08-4.21)	4.64 (3.86-5.44)	5.56 (4.50-6.60)	6.64 (5.17-8.03)	7.97 (5.93-9.88)	10.1 (7.03-12.9)	12.1 (7.98-16.0)
10-min	1.39 (1.22-1.63)	1.73 (1.52-2.03)	2.27 (1.96-2.65)	2.75 (2.35-3.21)	3.53 (2.94-4.14)	4.23 (3.43-5.03)	5.05 (3.94-6.11)	6.06 (4.52-7.52)	7.69 (5.36-9.83)	9.24 (6.07-12.2)
15-min	1.15 (1.00-1.34)	1.44 (1.26-1.68)	1.88 (1.62-2.19)	2.28 (1.94-2.65)	2.92 (2.43-3.42)	3.50 (2.83-4.16)	4.18 (3.25-5.05)	5.01 (3.73-6.22)	6.36 (4.43-8.13)	7.64 (5.02-10.0)
30-min	0.776 (0.676-0.906)	0.966 (0.846-1.13)	1.26 (1.09-1.47)	1.53 (1.31-1.79)	1.97 (1.64-2.30)	2.35 (1.91-2.80)	2.81 (2.19-3.40)	3.37 (2.51-4.18)	4.28 (2.98-5.47)	5.14 (3.38-6.76)
60-min	0.480 (0.419-0.560)	0.598 (0.524-0.700)	0.781 (0.673-0.912)	0.948 (0.811-1.11)	1.22 (1.01-1.43)	1.46 (1.18-1.73)	1.74 (1.36-2.10)	2.09 (1.56-2.59)	2.65 (1.84-3.39)	3.18 (2.09-4.19)
2-hr	0.322 (0.288-0.362)	0.400 (0.357-0.449)	0.500 (0.443-0.560)	0.584 (0.513-0.657)	0.709 (0.608-0.798)	0.818 (0.686-0.936)	0.944 (0.771-1.10)	1.11 (0.878-1.32)	1.40 (1.05-1.71)	1.66 (1.21-2.11)
3-hr	0.271 (0.244-0.301)	0.337 (0.307-0.374)	0.410 (0.369-0.455)	0.469 (0.422-0.521)	0.549 (0.486-0.615)	0.618 (0.538-0.698)	0.691 (0.593-0.789)	0.804 (0.676-0.932)	0.988 (0.810-1.17)	1.16 (0.929-1.42)
6-hr	0.213 (0.191-0.236)	0.264 (0.238-0.293)	0.319 (0.285-0.356)	0.361 (0.321-0.403)	0.414 (0.364-0.466)	0.454 (0.394-0.514)	0.491 (0.420-0.561)	0.534 (0.450-0.619)	0.595 (0.493-0.699)	0.648 (0.529-0.775)
12-hr	0.154 (0.137-0.172)	0.193 (0.172-0.216)	0.238 (0.211-0.267)	0.274 (0.241-0.308)	0.321 (0.279-0.364)	0.357 (0.307-0.407)	0.394 (0.332-0.454)	0.429 (0.356-0.502)	0.475 (0.385-0.567)	0.509 (0.404-0.618)
24-hr	0.134 (0.117-0.157)	0.169 (0.148-0.197)	0.215 (0.188-0.251)	0.254 (0.220-0.297)	0.308 (0.264-0.360)	0.351 (0.299-0.411)	0.397 (0.335-0.467)	0.446 (0.371-0.528)	0.514 (0.419-0.613)	0.569 (0.456-0.686)
2-day	0.087 (0.075-0.104)	0.111 (0.095-0.133)	0.145 (0.123-0.173)	0.174 (0.147-0.208)	0.215 (0.180-0.257)	0.249 (0.206-0.299)	0.286 (0.234-0.345)	0.325 (0.263-0.394)	0.382 (0.302-0.469)	0.428 (0.332-0.534)
3-day	0.069 (0.059-0.081)	0.088 (0.075-0.104)	0.117 (0.100-0.138)	0.141 (0.120-0.167)	0.176 (0.149-0.209)	0.206 (0.172-0.244)	0.238 (0.196-0.284)	0.273 (0.222-0.327)	0.324 (0.258-0.393)	0.366 (0.286-0.450)
4-day	0.059 (0.051-0.070)	0.076 (0.065-0.090)	0.102 (0.088-0.121)	0.125 (0.107-0.147)	0.157 (0.133-0.185)	0.184 (0.155-0.217)	0.214 (0.178-0.253)	0.247 (0.202-0.293)	0.295 (0.235-0.356)	0.335 (0.263-0.408)
7-day	0.041 (0.035-0.048)	0.053 (0.045-0.062)	0.072 (0.061-0.084)	0.088 (0.075-0.103)	0.111 (0.094-0.130)	0.130 (0.109-0.152)	0.151 (0.125-0.178)	0.174 (0.142-0.206)	0.206 (0.166-0.248)	0.234 (0.185-0.282)
10-day	0.033 (0.028-0.039)	0.043 (0.037-0.050)	0.059 (0.050-0.069)	0.072 (0.061-0.084)	0.090 (0.075-0.105)	0.104 (0.087-0.122)	0.120 (0.100-0.141)	0.137 (0.113-0.162)	0.161 (0.130-0.193)	0.181 (0.145-0.218)
20-day	0.022 (0.019-0.026)	0.029 (0.025-0.034)	0.039 (0.034-0.045)	0.047 (0.041-0.054)	0.059 (0.050-0.067)	0.067 (0.057-0.078)	0.077 (0.065-0.089)	0.087 (0.073-0.102)	0.101 (0.083-0.119)	0.112 (0.091-0.133)
30-day	0.018 (0.016-0.021)	0.024 (0.021-0.028)	0.032 (0.028-0.037)	0.039 (0.033-0.045)	0.048 (0.041-0.055)	0.055 (0.047-0.064)	0.063 (0.053-0.073)	0.070 (0.059-0.082)	0.082 (0.067-0.096)	0.090 (0.073-0.108)
45-day	0.015 (0.013-0.017)	0.020 (0.017-0.022)	0.026 (0.023-0.030)	0.032 (0.027-0.036)	0.039 (0.033-0.044)	0.044 (0.038-0.050)	0.050 (0.042-0.057)	0.056 (0.047-0.064)	0.064 (0.053-0.074)	0.070 (0.058-0.083)
60-day	0.013 (0.011-0.015)	0.017 (0.014-0.020)	0.023 (0.019-0.026)	0.027 (0.023-0.031)	0.033 (0.028-0.038)	0.037 (0.031-0.043)	0.041 (0.035-0.048)	0.045 (0.038-0.053)	0.051 (0.042-0.060)	0.055 (0.046-0.066)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical

Appendix B

HYDROLOGIC & HYDRAULIC COMPUTATIONS

Landcover Classification	C_5	C_{100}
Forest	0.05	0.30
Roof	0.85	0.87
Rangeland	0.20	0.50
-		
-		
-		

Subbasin ID	**$E_{overall}$**	**$P_{overall}$**	**P_01**	**P_02**		
Drainage Direction	Overall	Overall	East Swale	West Swale		
Area, A [ac]	**13.20**	**13.20**	**10.25**	**2.95**		

Composite Areas [ac]							
	Forest	13.20	12.78	10.04	2.74		
	Roof	0.00	0.42	0.21	0.21		
	Rangeland	0.00	0.00	0.00	0.00		
	-						
	-						
	-						
	Area Check	✓	✓	✓	✓		

Composite C_5	**0.05**	**0.08**	**0.07**	**0.11**		
Composite C_{100}	**0.30**	**0.32**	**0.31**	**0.34**		

		Subbasin ID	Eoverall	Poverall	P_01	P_02
		Drainage Direction	Overall	Overall	East Swale	West Swale
		Area, A [sf]	574992	574992	446490	128502
		Area, A [ac]	13.20	13.20	10.25	2.95
Coef.	C	Composite C_5	0.05	0.08	0.07	0.11
		Composite C_{100}	0.30	0.32	0.31	0.34
Initial Overland	T_i	Flow Runoff Coefficient, C_5 "R"	0.05	0.05	0.05	0.05
		Flow Length, L [ft] [1]	500	500	500	500
		Land Slope, s [%]	28.00	28.00	28.00	27.00
		Initial Overland Time: T_i [min]	13.92	13.92	13.92	14.09
Travel Time	T_t	Flow Length, L [ft]	740	740	740	370
		Channel Slope, s [%]	15.14	15.81	15.81	8.38
		Travel Time Coefficient [3]	1.50	1.50	1.50	1.50
		Average Velocity, V_5 [ft/s]	5.84	5.96	5.96	4.34
		Travel Time: T_t [min]	2.11	2.07	2.07	1.42
ToC & Intensity	T_c	Time of Concentration, T_c [min]	16.03	15.99	15.99	15.51
	Urban. Check	Required? - Y/N	Y	Y	Y	Y
		Total Length: L_{total} [ft]	1240	1240	1240	870
		Time of Concentration - Check, $T_{c,check}$ [min]	16.9	16.9	16.9	14.8
	$T_{c,final}$	**Final ToC, $T_{c,final}$ [min]**	**16.03**	**15.99**	**15.99**	**14.83**
	I [2]	2-yr Intensity I_2 [in/hr]	1.11	1.11	1.11	1.15
		5-yr Intensity I_5 [in/hr]	1.84	1.84	1.84	1.89
		100-yr Intensity I_{100} [in/hr]	4.06	4.06	4.06	4.20
Flow	Q	2-yr Flow, Q_2 [cfs]	0.73	1.11	0.76	0.36
		5-yr Flow, Q_5 [cfs]	1.21	1.83	1.25	0.60
		Design 100-yr Flow, Q_{100} [cfs]	**16.07**	**17.06**	**12.98**	**4.22**

[1] Maximum of 500 feet

[2] From NOAA Atlas 14

[3] From Gigure 701 TMRDM

$$T_i = \frac{1.8(1.1 - R)L_o^{1/2}}{s^{1/3}}$$

$$T_t = \frac{L}{60V}$$

$$T_{c,check} = \frac{L_{total}}{180} + 10$$

Swale ID	*TMRDM Equation*	**SWALE_01**	**SWALE_02**	
Adjacent Roadway/Superpad		East Swale	West Swale	
5yr Flow, Q_5 [cfs]		**1.25**	**0.60**	
Design 100yr Flow, Q_{100} [cfs]		**12.98**	**4.22**	
Shape		Triangular	Triangular	
Side Slope, z		2	2	
Bottom Width, b		0	0	
Longitudinal Slope, s [ft/ft]		0.010	0.010	
Vegetation		Rip-Rap	Rip-Rap	
Manning's n, n		0.035	0.035	
Calculated Normal Depth, yo [ft]		1.43	0.94	
Area, A [ft^2]		4.11	1.77	
Design Velcity, v [fps]		3.16	2.38	
Top Width, T [ft]		5.73	3.76	
Hydraulic Radius, R_h [ft]		0.72	0.47	
Froude Number, F_r	*eq802*	0.66	0.61	
Supercritical Check [1]		*NO*	*NO*	
Freeboard-Subcritical, FB_{sub} [ft] [2]	*eq849*	0.65	0.59	
Freeboard-Supercritical, FB_{super} [ft] [3]	*eq856*	1.09	1.06	
Required Freeboard, FB_{req} [ft]		0.50	0.50	
Top Width Required, T_{req} [ft]		7.7	5.8	
Top Width Rounded, T [ft]		**8.0**	**6.0**	
Selected Top Width, T [ft]		**8.0**	**8.0**	
Design Depth, D [ft]		**2.00**	**2.00**	
Channel Freeboard, FB [ft]		**0.57**	**1.06**	
Meets Required Freeboard?		✔	✔	

[1] Channels with a Froude number within a range of 0.86 and 1.13 should be designed as a supercritical channel.

[2] For subcritical flow, the minimum freeboard shall be determined by Eqn. 849, but shall not be less than 6 in.

[3] For supercritical flow, the minimum freeboard shall be determined by Eqn. 856, but shall not be less than 6 in.

$$R_H = {}^{A}/_{T} \qquad F_r = \frac{V}{(gD)^{1/2}}$$

$$Q = \frac{1.486}{n} A R_H^{2/3} S^{1/2}$$

Culvert Report

Culvert_01 (East)

Invert Elev Dn (ft)	= 8747.50
Pipe Length (ft)	= 75.00
Slope (%)	= 2.67
Invert Elev Up (ft)	= 8749.50
Rise (in)	= 18.0
Shape	= Circular
Span (in)	= 18.0
No. Barrels	= 1
n-Value	= 0.012
Culvert Type	= Circular Concrete
Culvert Entrance	= Groove end projecting (C)
Coeff. K,M,c,Y,k	= 0.0045, 2, 0.0317, 0.69, 0.2

Embankment

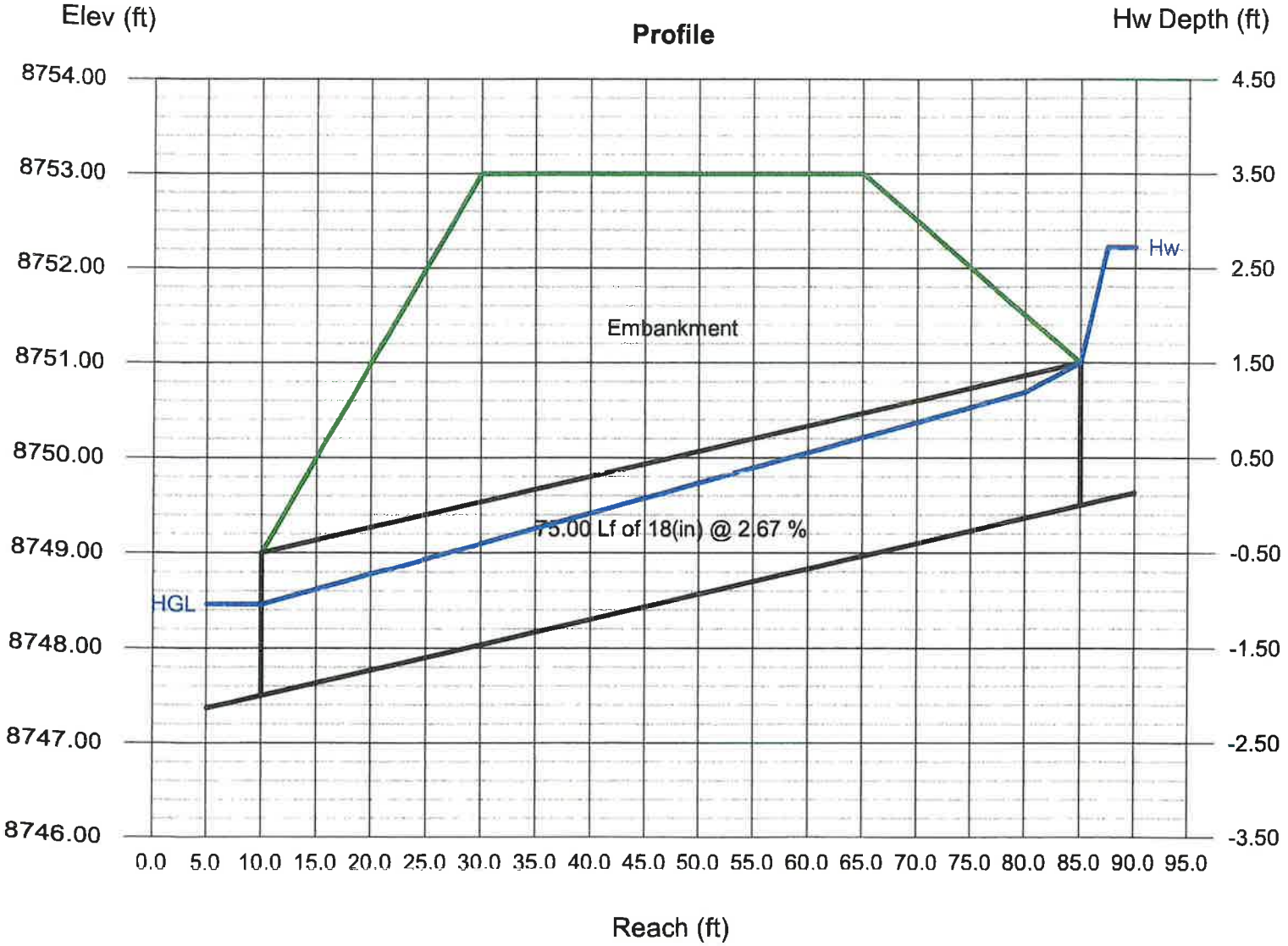
Top Elevation (ft)	= 8753.00
Top Width (ft)	= 35.00
Crest Width (ft)	= 10.00

Calculations

Qmin (cfs)	= 12.98
Qmax (cfs)	= 12.98
Tailwater Elev (ft)	= Normal

Highlighted

Qtotal (cfs)	= 12.98
Qpipe (cfs)	= 12.98
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 10.91
Veloc Up (ft/s)	= 7.75
HGL Dn (ft)	= 8748.46
HGL Up (ft)	= 8750.85
Hw Elev (ft)	= 8752.23
Hw/D (ft)	= 1.82
Flow Regime	= Inlet Control



Culvert Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Friday, Aug 16 2019

Culvert_02 (West)

Invert Elev Dn (ft)	= 8734.80
Pipe Length (ft)	= 102.00
Slope (%)	= 16.86
Invert Elev Up (ft)	= 8752.00
Rise (in)	= 12.0
Shape	= Circular
Span (in)	= 12.0
No. Barrels	= 1
n-Value	= 0.012
Culvert Type	= Circular Concrete
Culvert Entrance	= Groove end projecting (C)
Coeff. K,M,c,Y,k	= 0.0045, 2, 0.0317, 0.69, 0.2

Embankment

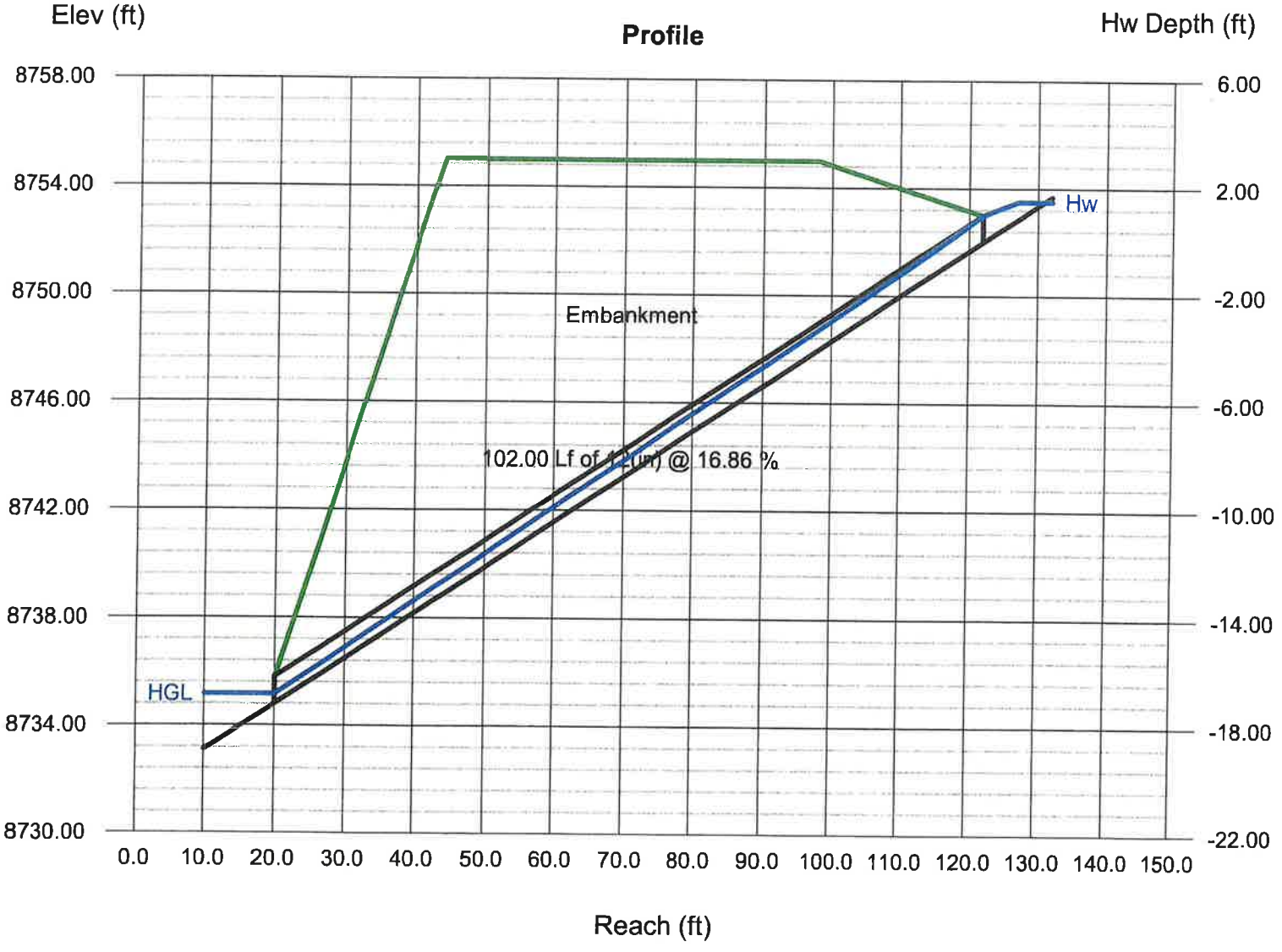
Top Elevation (ft)	= 8755.00
Top Width (ft)	= 54.00
Crest Width (ft)	= 150.00

Calculations

Qmin (cfs)	= 4.22
Qmax (cfs)	= 4.22
Tailwater Elev (ft)	= Normal

Highlighted

Qtotal (cfs)	= 4.22
Qpipe (cfs)	= 4.22
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 16.95
Veloc Up (ft/s)	= 5.84
HGL Dn (ft)	= 8735.15
HGL Up (ft)	= 8752.87
Hw Elev (ft)	= 8753.52
Hw/D (ft)	= 1.52
Flow Regime	= Inlet Control



Channel/Swale Riprap Sizing

From Truckee Meadows Regional Drainage Manual (eq. 842)

$$D_{50} = \frac{(0.05)v^2(s^{0.34})}{(s_s - 1)^{1.332}}$$

Where

v	Channel velocity [fps]
S	Longitudinal channel slope [ft/ft]
S_s	Specific gravity of rock = 2.50
D_{50}	Rock size [ft]

				Calculated		Selected		
Channel ID	v [fps]	S [ft/ft]	S_s [ft/ft]	D_{50} [1] [ft]	D_{50} [1] [in]	Riprap Class	D_{50} [2] [in]	Riprap Thick. [in]
SWALE_01	3.16	0.01	2.5	0.06	0.7	CL 150	6.0	12
SWALE_02	2.38	0.01	2.5	0.03	0.4	CL 150	6.0	12

[1] Design requirement for D_{50}

[2] Selected value for D_{50} per Standard Specifications

[3] All channel sections to use a Class C riprap for bedding with a 12-inch thickness

TABLE 200.07.04-I

Percentage by Mass Passing Sieve	Sieve Size (Inches)					
	Class 150	Class 300	Class 400	Class 550	Class 700	Class 900
100	10	20	30	40	48	60
70 – 85	9	18	27	36	45	54
30 – 50	6	12	18	24	30	36
5 – 15	2	5	7	12	18	24
0	1	2	3	6	8	12
D_{50} (1)	6	12	16	22	28	35

1. Mean Stone Size

Appendix C

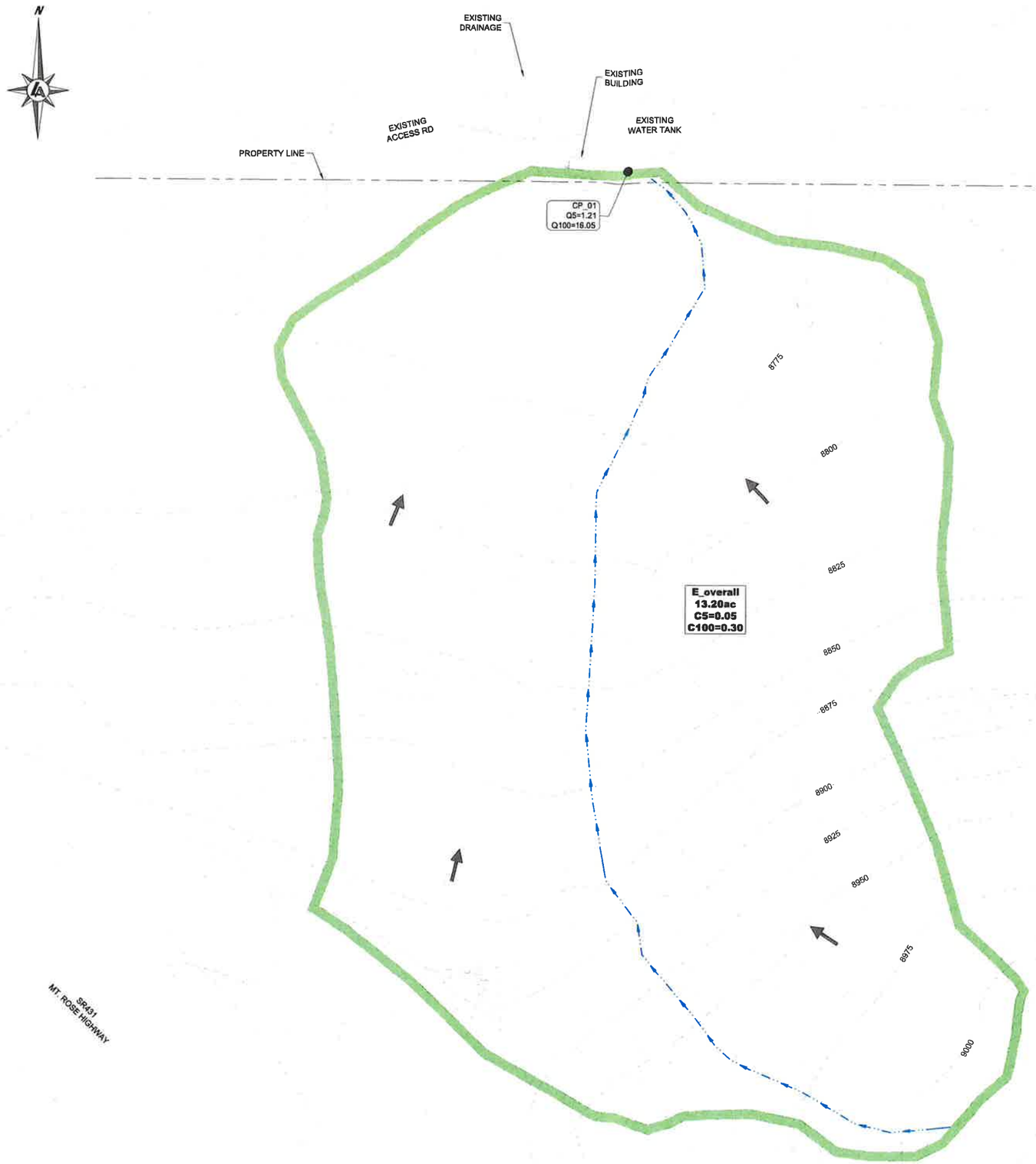
DRAINAGE EXHIBITS

LEGEND

- PROPERTY LINE
- EXISTING PAVEMENT
- PROPOSED ROADWAY
- EXISTING CULVERT/SD
- PROPOSED CULVERT/SD
- HYDRO SUBBASIN
- TIME OF CONCENTRATION PATH
- PROPOSED SWALE
- EXISTING SWALE

NOTES

1. RAINFALL DEPTHS (FROM NOAA):
   5YR24HR = 2.63 IN
   100YR24HR = 4.71 IN



LUMOS & ASSOCIATES
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CARSON CITY, NV 89703
TEL: 775.883.7077
WWW.LUMOSINC.COM

MT. ROSE/SKI TAHOE

MT. ROSE - GALENA WATER TANK
CONCEPTUAL DRAINAGE REPORT
EXISTING DRAINAGE EXHIBIT

WASHOE | NEVADA | RENO

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION

BAR IS 1 INCH ON ORIGINAL DRAWING
0 80'

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

D1.0

DRAWN BY:	KMK
DESIGNED BY:	KMK
CHECKED BY:	ET
JOB NO.:	9784.400

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LEGEND

- PROPERTY LINE
- EXISTING PAVEMENT
- PROPOSED ROADWAY
- EXISTING CULVERT/SD
- PROPOSED CULVERT/SD
- HYDRO SUBBASIN
- TIME OF CONCENTRATION PATH
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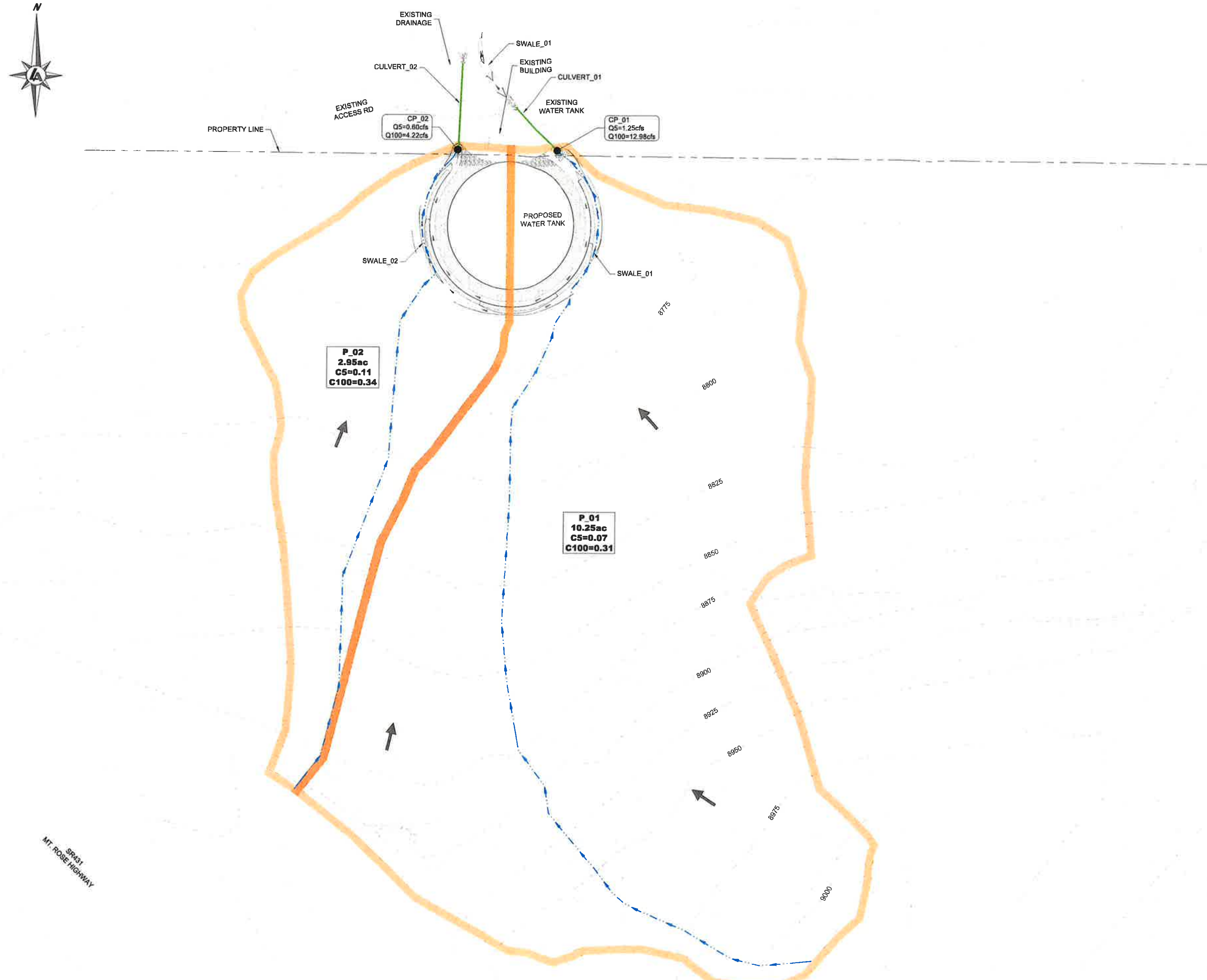
- EXISTING SWALE

NOTES

1. RAINFALL DEPTHS (FROM NOAA):
   5YR24HR = 2.63 IN
   100YR24HR = 4.71 IN



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08/27/2019 01:15 pm Kkramer

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MT. ROSE/SKI TAHOE

MT. ROSE - GALENA WATER TANK
CONCEPTUAL DRAINAGE REPORT
PROPOSED DRAINAGE EXHIBIT

RENO WASHOE NEVADA

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION

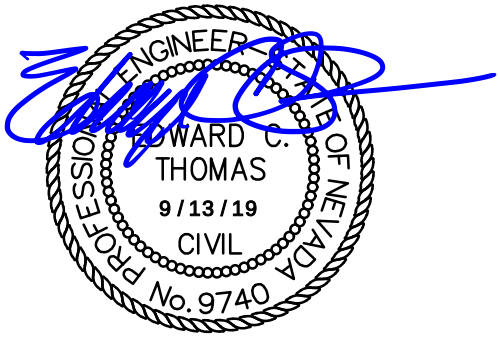
BAR IS 1 INCH ON ORIGINAL DRAWING
0 60'

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

D2.0

DRAWN BY: KMK
DESIGNED BY: KMK
CHECKED BY: ET
JOB NO.: 9764.400

CONCEPTUAL DRAINAGE REPORT
For
MT. ROSE/SKI TAHOE
WINTERS CREEK LODGE EXPANSION



EXP. 6/30/20

Prepared For:

Mt. Rose/Ski Tahoe
PO Box 5838
Tahoe City, CA 96145

Prepared By:
Kristin Kramer, P.E.
Ed Thomas, P.E.

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(775) 827-6111

JN 9764.400
September 2019

TABLE OF CONTENTS

[File Doc: L:\LAProj\9764.200 - Winters Creek Lodge Schematics\Civil\Hydrology\Report\9764.200-Conceptual Drainage Report.docx]

LIST OF FIGURES

LIST OF TABLES

TABLE OF APPENDENICES

1. INTRODUCTION

This document is presented as a Conceptual Drainage Report in support of the building expansion and associated improvements for the Winters Creek Lodge. This report is to provide support for the Special Use Permit (SUP) for the developed area as required by Washoe County.

Mt. Rose Ski Tahoe intends to develop upon assessor parcel numbers (APN) 048-112-15 (owned by Mt. Rose Development Company). The subject area is bound by an existing parking lot to the north, the Mt. Rose ski area to the west, and undeveloped land to the south and east. The existing lodge is owned and operated by Mt. Rose/Ski Tahoe. Refer to Figure 1 for a vicinity map of the area. The disturbed area accounts for approximately 2.6 acres, all located on private property. The entire project is within Section 0, Township 17 and Range 19.

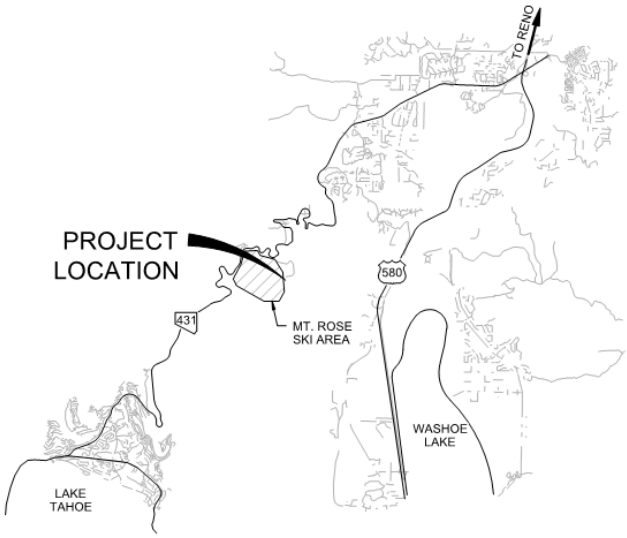


Figure 1: Vicinity Map

1.1. Existing Site Description

The site is located on the east corner of the Mt. Rose ski area. An existing 1 mile paved road (State Route 878) provides access to the Winters Creek Lodge from Mt. Rose Highway (SR-431). The facility includes a restaurant/bar area and hardscaped outdoor seating space. Existing utilities extend to a primary OSDS disposal field west of the building in addition to water and fire connections. Areas adjacent to the improvements consist of natural gravel soils with sparse vegetation coverings. The topography around the building is mild with slopes under 5 percent and generally drains away from the building as sheet flow. Terrain quickly drops to the east, with more severe slopes, ranging from 20-50 percent. The entire site is within the Winters Creek drainage subbasin, which routes flows directly to Washoe Lake, prior to entering Steamboat Creek and ultimately the Truckee River.

1.2. Proposed Project Description

The proposed building expansion will allow for additional restaurant capacity and bar seating. In addition, improvements at the southeast corner will extend to a new outdoor deck seating to accommodate more patrons. To the west of the building, additional hardscaped area and a second elevated deck will be included. The design will also feature a new trash enclosure pad and necessary utility connections. Drainage patterns for the proposed condition will mimic the historic conditions, and route flow away from the building as sheet flow.

1.3. FEMA FIRM Panels

Based on a review of the Flood Insurance Rate Map Index (panel 32031C3325G dated March 2009), the site is in an un-mapped area of the Federal Emergency Management Agency (FEMA). The project site is, therefore identified as Flood Hazard Zone X (unshaded), which is defined as areas determined to be outside the 500-year floodplain. A FIRMette of the project site is included in Appendix A.

2. METHODOLOGY

According to the drainage guidelines for Washoe County Development Code and Truckee Meadows Regional Drainage Manual (TMRDM), the Rational Formula Method was used to generate peak discharges for all drainage hydrologic basins [1]. The peak discharges for the project were calculated using:

$$\text{Design Discharge, } Q = C\ I\ A$$

Where:

Q = maximum rate of runoff (cfs),
A = contributing basin area (acres),
C = runoff coefficient,
I = average rainfall intensity for a duration equal to the T_c (in/hr),
T_c = time of concentration, T_c (minutes).

Rational runoff coefficients (C-values) for the local design were applied from the TMRDM. The selected values are presented in Table 1. C-values for local subbasins were defined for the 5- and 100-year events based on the percentage of roof and natural coverage. Time of Concentration was determined from equations provided in the TMRDM. The minimum time of concentration for undeveloped areas is 10 minutes, as defined by TMRDM. Precipitation values were computed using National Oceanic and Atmospheric Administration's (NOAA's) Point Precipitation Frequency Estimates function available on the NOAA website [2].

Table 1: Selected Rational C Values

Landcover Classification	C_5	C_{100}
Forest	0.05	0.30
Roof	0.85	0.87
Paved	0.88	0.93
Natural Coverage, Gravel	0.25	0.50

3. HISTORIC DRAINAGE SYSTEM

A single hydrologic drainage basin was delineated based on existing topography. A summary of the calculations is provided in Table 2. Refer to Appendix C for the existing conditions drainage exhibit.

Table 2: Existing Peak Flow Summary

Subbasin ID	Description	Area [ac]	C_5	C_{100}	I_5 [in/hr]	I_{100} [in/hr]	Q_5 [cfs]	Q_{100} [cfs]
E_overall	Overall	1.09	0.57	0.71	2.33	5.35	1.46	4.16

As a result of the analysis, it was determined 4.16 cfs is generated from the existing site for the 100-year storm event. All calculations can be found in Appendix B.

4. PROPOSED DRAINAGE SYSTEM

Expansion of the existing lodge and associated improvements will slightly increase the impervious area. Drainage patterns will mimic the historic conditions to sheet flow away from the building at minimal slopes.

To evaluate the proposed site, a single drainage basin was delineated. Reference the proposed drainage exhibit in Appendix C for the proposed drainage schematic. Composite Rational C-values were determined based upon percentage of post-development land cover. The peak runoff rate calculated for the developed portion of the site is summarized in Table 3.

Table 3: Proposed Peak Flow Summary

Subbasin ID	Description	Area [ac]	C_5	C_{100}	I_5 [in/hr]	I_{100} [in/hr]	Q_5 [cfs]	Q_{100} [cfs]
P_overall	Overall	1.09	0.73	0.82	2.64	6.04	2.11	5.39

The 100-year peak rate of runoff for the entire site was determined to be 5.39 cfs. This is a 1.2 cfs increase from the existing condition. Natural Resources Conservation Service Web Soil Survey was used to determine the Hydrologic Soil Group (HSG). The entire site is classified a Group A, indicating soils having the highest infiltration rates (with low runoff potential). As the proposed condition results in minimal changes to land cover and low runoff potential is apparent, stormwater detention is unnecessary.

All calculations can be found in Appendix B.

5. WATER QUALITY

As required by the TMRDM, Low Impact Development (LID) methods of treating runoff will be required to address water quality. Flow-based controls will be designed to treat runoff from the 2-year storm event (WQ_F). The design will effectively remove pollutants to meet the Truckee Meadows Structural Controls Design and Low Impact Development Manual [3]. As a result, the design and analysis will provide water quality treatment of all on-site runoff.

6. CONCLUSIONS

The project, as proposed, will allow for the expansion of the Winters Creek Lodge. Grading improvements to the site shall convey anticipated flows away from the building via sheet flow. Expansion of the facility will result in a slight increase in impervious ground cover, resulting in an approximately 1cfs increase to 100-year peak flow. The Natural Resource Conservation Service was used to assess the HSG which resulted in the site entirely within Group A. As a result, stormwater detention facilities have been determined unnecessary. Water quality of the runoff will all be controlled in the final design. The design and hydrologic studies of the proposed tank have been conducted in compliance with the drainage guidelines for Washoe County and TMRDM.

7. REFERENCES

[1] Washoe County, "Truckee Meadows Regional Drainage Manual," Reno, 2009.

[2] National Oceanic and Atmospheric Administration (NOAA), "Atlas 14 Precipitation-Frequency Atlas," 2018. [Online]. Available: https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk.

[3] NCE, "Truckee Meadows Structural Controls Design and Low Impact Development Manual," Reno, NV, April 2015.

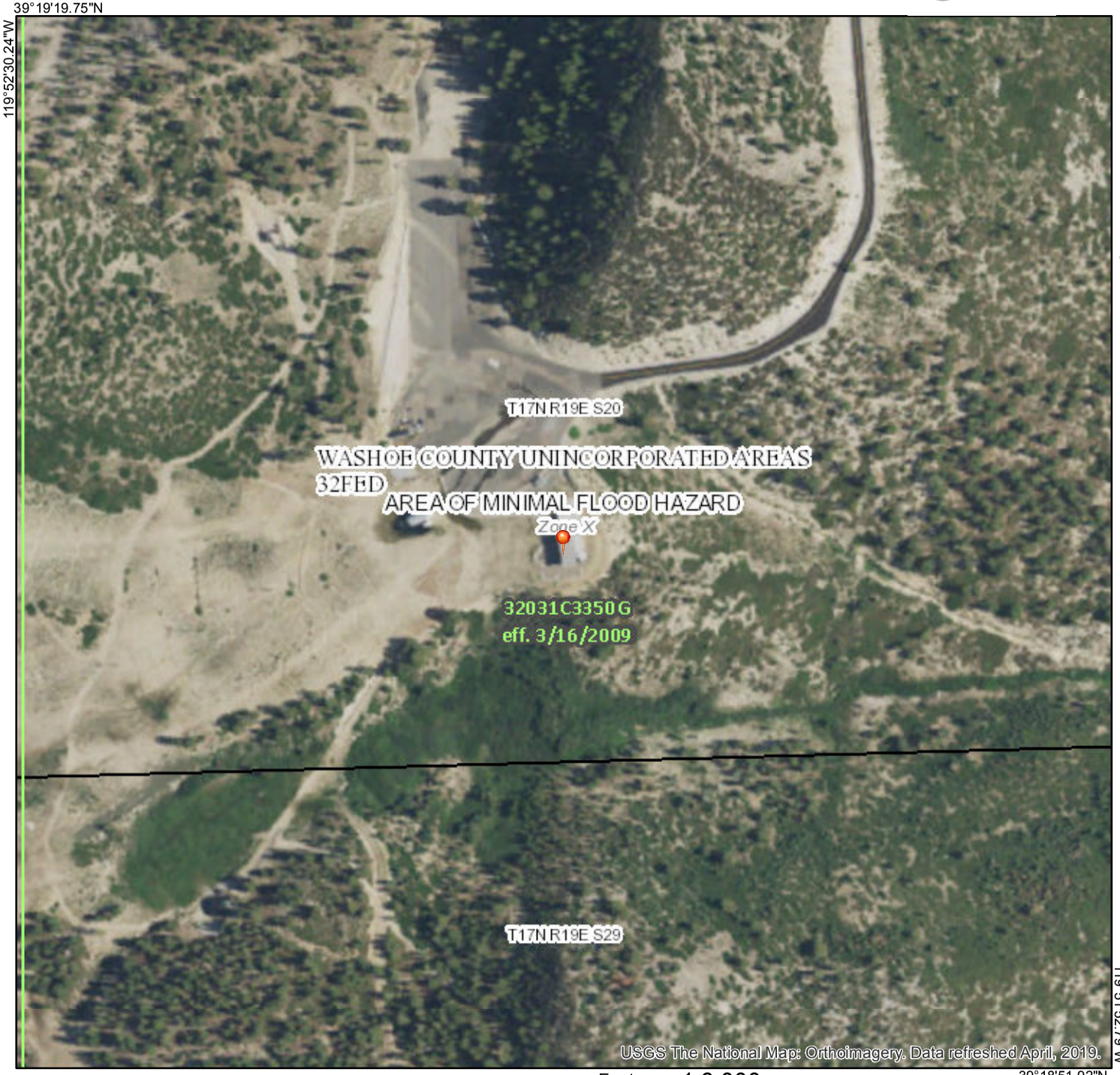
[4] Washoe County, "Washoe County Development Code," Reno, 2019.

Appendix A

BACKGROUND DATA

National Flood Hazard Layer FIRMette

FEMA



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/11/2019 at 6:49:05 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

NOAA Atlas 14, Volume 1, Version 5
Location name: Washoe Valley, Nevada, USA*
Latitude: 39.3183°, Longitude: -119.8698°
Elevation: 8291.01 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**1.61** (1.39-1.88)	**2.00** (1.75-2.36)	**2.64** (2.26-3.11)	**3.23** (2.75-3.79)	**4.18** (3.46-4.93)	**5.04** (4.04-6.05)	**6.04** (4.66-7.38)	**7.26** (5.35-9.13)	**9.23** (6.36-12.0)	**11.1** (7.19-14.7)
10-min	**1.22** (1.06-1.43)	**1.52** (1.33-1.79)	**2.00** (1.72-2.36)	**2.45** (2.09-2.88)	**3.18** (2.63-3.76)	**3.83** (3.08-4.60)	**4.60** (3.54-5.62)	**5.53** (4.08-6.95)	**7.03** (4.84-9.10)	**8.41** (5.47-11.2)
15-min	**1.01** (0.880-1.19)	**1.26** (1.10-1.48)	**1.66** (1.42-1.95)	**2.03** (1.72-2.38)	**2.62** (2.18-3.11)	**3.17** (2.54-3.80)	**3.80** (2.93-4.64)	**4.57** (3.37-5.74)	**5.80** (4.00-7.52)	**6.96** (4.52-9.26)
30-min	**0.682** (0.592-0.800)	**0.848** (0.740-1.00)	**1.12** (0.958-1.31)	**1.36** (1.16-1.60)	**1.77** (1.46-2.09)	**2.13** (1.71-2.56)	**2.56** (1.97-3.12)	**3.08** (2.27-3.87)	**3.91** (2.69-5.06)	**4.68** (3.04-6.24)
60-min	**0.422** (0.366-0.495)	**0.525** (0.458-0.619)	**0.691** (0.593-0.814)	**0.845** (0.719-0.993)	**1.09** (0.906-1.29)	**1.32** (1.06-1.58)	**1.58** (1.22-1.93)	**1.90** (1.40-2.39)	**2.42** (1.67-3.13)	**2.90** (1.88-3.86)
2-hr	**0.282** (0.250-0.317)	**0.349** (0.310-0.393)	**0.440** (0.388-0.494)	**0.516** (0.450-0.582)	**0.630** (0.536-0.711)	**0.730** (0.604-0.836)	**0.842** (0.680-0.984)	**0.997** (0.776-1.21)	**1.26** (0.931-1.58)	**1.49** (1.07-1.95)
3-hr	**0.233** (0.208-0.260)	**0.289** (0.262-0.324)	**0.355** (0.318-0.397)	**0.408** (0.365-0.456)	**0.480** (0.421-0.539)	**0.539** (0.466-0.612)	**0.603** (0.511-0.692)	**0.705** (0.587-0.824)	**0.873** (0.707-1.06)	**1.03** (0.810-1.31)
6-hr	**0.175** (0.156-0.196)	**0.218** (0.195-0.244)	**0.266** (0.236-0.298)	**0.302** (0.267-0.340)	**0.349** (0.304-0.395)	**0.383** (0.329-0.437)	**0.416** (0.351-0.479)	**0.453** (0.375-0.529)	**0.505** (0.410-0.600)	**0.550** (0.438-0.667)
12-hr	**0.122** (0.109-0.137)	**0.153** (0.136-0.172)	**0.191** (0.169-0.215)	**0.220** (0.193-0.248)	**0.258** (0.223-0.294)	**0.287** (0.245-0.329)	**0.316** (0.265-0.367)	**0.345** (0.284-0.406)	**0.383** (0.306-0.460)	**0.411** (0.322-0.504)
24-hr	**0.095** (0.083-0.111)	**0.119** (0.104-0.140)	**0.152** (0.132-0.178)	**0.179** (0.154-0.210)	**0.216** (0.185-0.254)	**0.247** (0.209-0.290)	**0.279** (0.233-0.330)	**0.312** (0.257-0.373)	**0.359** (0.290-0.433)	**0.397** (0.314-0.484)
2-day	**0.060** (0.051-0.071)	**0.076** (0.065-0.090)	**0.098** (0.084-0.118)	**0.117** (0.099-0.141)	**0.144** (0.120-0.173)	**0.166** (0.137-0.201)	**0.190** (0.155-0.231)	**0.215** (0.173-0.264)	**0.251** (0.197-0.312)	**0.281** (0.215-0.355)
3-day	**0.048** (0.041-0.057)	**0.061** (0.053-0.073)	**0.081** (0.070-0.096)	**0.098** (0.083-0.116)	**0.122** (0.103-0.144)	**0.142** (0.118-0.168)	**0.163** (0.135-0.195)	**0.187** (0.152-0.224)	**0.221** (0.175-0.269)	**0.249** (0.194-0.307)
4-day	**0.042** (0.036-0.050)	**0.054** (0.047-0.064)	**0.073** (0.063-0.085)	**0.088** (0.076-0.103)	**0.110** (0.094-0.130)	**0.129** (0.109-0.152)	**0.150** (0.125-0.177)	**0.173** (0.141-0.204)	**0.206** (0.164-0.247)	**0.233** (0.183-0.283)
7-day	**0.029** (0.025-0.034)	**0.037** (0.032-0.044)	**0.051** (0.043-0.059)	**0.062** (0.053-0.072)	**0.078** (0.066-0.091)	**0.091** (0.076-0.106)	**0.105** (0.087-0.123)	**0.121** (0.099-0.142)	**0.143** (0.115-0.171)	**0.162** (0.129-0.195)
10-day	**0.023** (0.020-0.027)	**0.030** (0.026-0.036)	**0.042** (0.036-0.048)	**0.050** (0.043-0.059)	**0.063** (0.053-0.073)	**0.073** (0.061-0.085)	**0.084** (0.070-0.098)	**0.096** (0.079-0.113)	**0.112** (0.091-0.134)	**0.126** (0.101-0.152)
20-day	**0.016** (0.014-0.018)	**0.020** (0.018-0.023)	**0.028** (0.024-0.032)	**0.033** (0.029-0.038)	**0.041** (0.035-0.047)	**0.047** (0.040-0.054)	**0.054** (0.045-0.062)	**0.060** (0.051-0.071)	**0.070** (0.058-0.083)	**0.078** (0.063-0.093)
30-day	**0.013** (0.011-0.015)	**0.017** (0.014-0.019)	**0.022** (0.019-0.026)	**0.027** (0.023-0.031)	**0.033** (0.028-0.038)	**0.038** (0.032-0.044)	**0.043** (0.036-0.050)	**0.048** (0.040-0.056)	**0.056** (0.046-0.066)	**0.062** (0.050-0.074)
45-day	**0.010** (0.009-0.012)	**0.013** (0.012-0.015)	**0.018** (0.016-0.020)	**0.022** (0.019-0.024)	**0.026** (0.023-0.030)	**0.030** (0.026-0.034)	**0.034** (0.029-0.039)	**0.038** (0.032-0.044)	**0.043** (0.036-0.050)	**0.047** (0.039-0.056)
60-day	**0.009** (0.008-0.010)	**0.012** (0.010-0.014)	**0.016** (0.013-0.018)	**0.019** (0.016-0.021)	**0.023** (0.019-0.026)	**0.025** (0.022-0.029)	**0.028** (0.024-0.033)	**0.031** (0.026-0.036)	**0.035** (0.029-0.041)	**0.038** (0.031-0.045)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical

Appendix B

HYDROLOGIC & HYDRAULIC COMPUTATIONS

Landcover Classification	C_5	C_{100}
Forest	0.05	0.30
Roof	0.85	0.87
Paved	0.88	0.93
Natural Coverage, Gravel	0.25	0.50
-		
-		
-		

Subbasin ID	**E_overall**	**P_overall**							
Drainage Direction	Overall	Overall							
Total Area, A [ac]	**1.09**	**1.09**							

Composite Areas [ac]										
	Forest	0.00	0.00							
	Roof	0.20	0.29							
	Paved	0.37	0.56							
	Natural Coverage, Gravel	0.52	0.24							
	-									
	-									
	-									

Area Check	✔	✔							

Composite C_5	**0.57**	**0.73**							
Composite C_{100}	**0.71**	**0.82**							

		Subbasin ID	E_overall	P_overall		
		Drainage Direction	Overall	Overall		
		Area, A [sf]	47480.4	47480.4		
		Area, A [ac]	1.09	1.09		
Coef.	C	Composite C_5	0.57	0.73		
		Composite C_{100}	0.71	0.82		
Initial Overland	T_i	Flow Runoff Coefficient, C_5 "R"	0.57	0.88		
		Flow Length, L [ft] [1]	130	115		
		Land Slope, s [%]	3.5	2.0		
		Initial Overland Time: T_i [min]	7.14	3.37		
Travel Time	T_t	Flow Length, L [ft]				
		Channel Slope, s [%]				
		Travel Time Coefficient [3]				
		Average Velocity, V_5 [ft/s]				
		Travel Time: T_t [min]	0.00	0.00		
ToC & Intensity		Land Classification (Urban or Vegetated)	Urban	Urban		
	T_c	Time of Concentration, T_c [min]	7.14	3.37		
	Urban. Check	Required? - Y/N	Y	Y		
		Total Length: L_{total} [ft]	130	115		
		Time of Concentration - Check, $T_{c,check}$ [min]	10.7	10.6		
	$T_{c,final}$	**Final ToC, $T_{c,final}$ [min]**	**7.14**	**5.00**		
	I [2]	2-yr Intensity I_2 [in/hr]	1.77	2.00		
		5-yr Intensity I_5 [in/hr]	2.33	2.64		
		100-yr Intensity I_{100} [in/hr]	5.35	6.04		
Flow	Q	2-yr Flow, Q_2 [cfs]	1.11	1.60		
		5-yr Flow, Q_5 [cfs]	1.46	2.11		
		Design 100-yr Flow, Q_{100} [cfs]	**4.16**	**5.39**		

[1] Maximum of 500 feet

[2] From NOAA Atlas 14

[3] From Figure 701 TMRDM

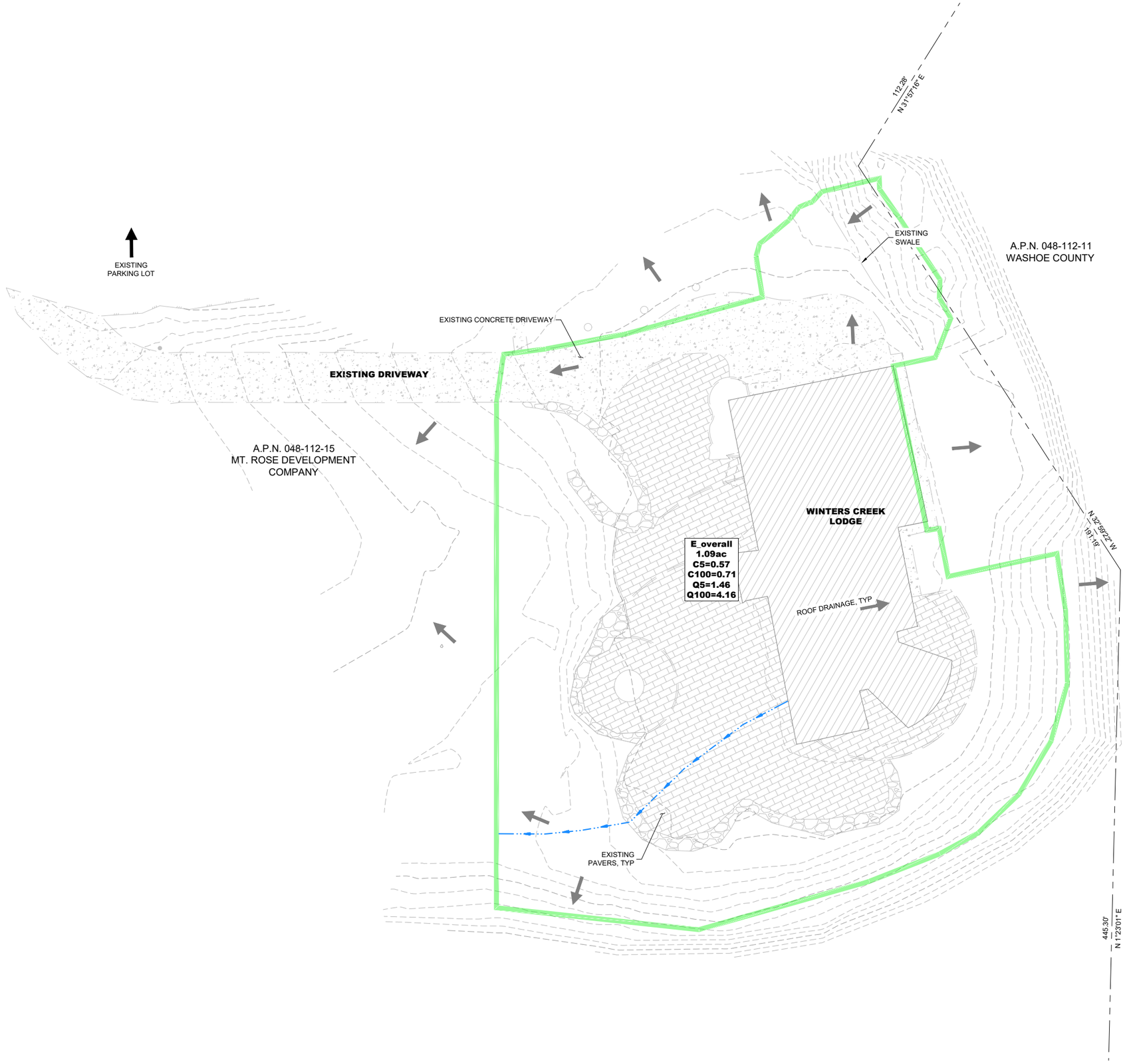
$$T_i = \frac{1.8(1.1 - R)L_o^{1/2}}{s^{1/3}}$$

$$T_t = \frac{L}{60V}$$

$$T_{c,check} = \frac{L_{total}}{180} + 10$$

Appendix C

DRAINAGE EXHIBITS



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LEGEND

- PROPERTY LINE
- EXISTING PAVEMENT
- PROPOSED ROADWAY
- EXISTING CULVERT/SD
- PROPOSED CULVERT/SD
- HYDRO SUBBASIN
- TIME OF CONCENTRATION PATH
- PROPOSED SWALE
- EXISTING SWALE

NOTES

1. RAINFALL DEPTHS (FROM NOAA):
   5YR24HR = 3.65 IN
   100YR24HR = 6.69 IN

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CARSON CITY, NV 89703
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WWW.LUMOSINC.COM

MT. ROSE/SKI TAHOE

SUP FOR MT. ROSE/SKI TAHOE
CONCEPTUAL DRAINAGE REPORT
EXISTING DRAINAGE EXHIBIT

WASHOE COUNTY, NEVADA

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION

BAR IS 1 INCH ON ORIGINAL DRAWING
0 20'
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

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DESIGNED BY:	KMK
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JOB NO.:	9764.400

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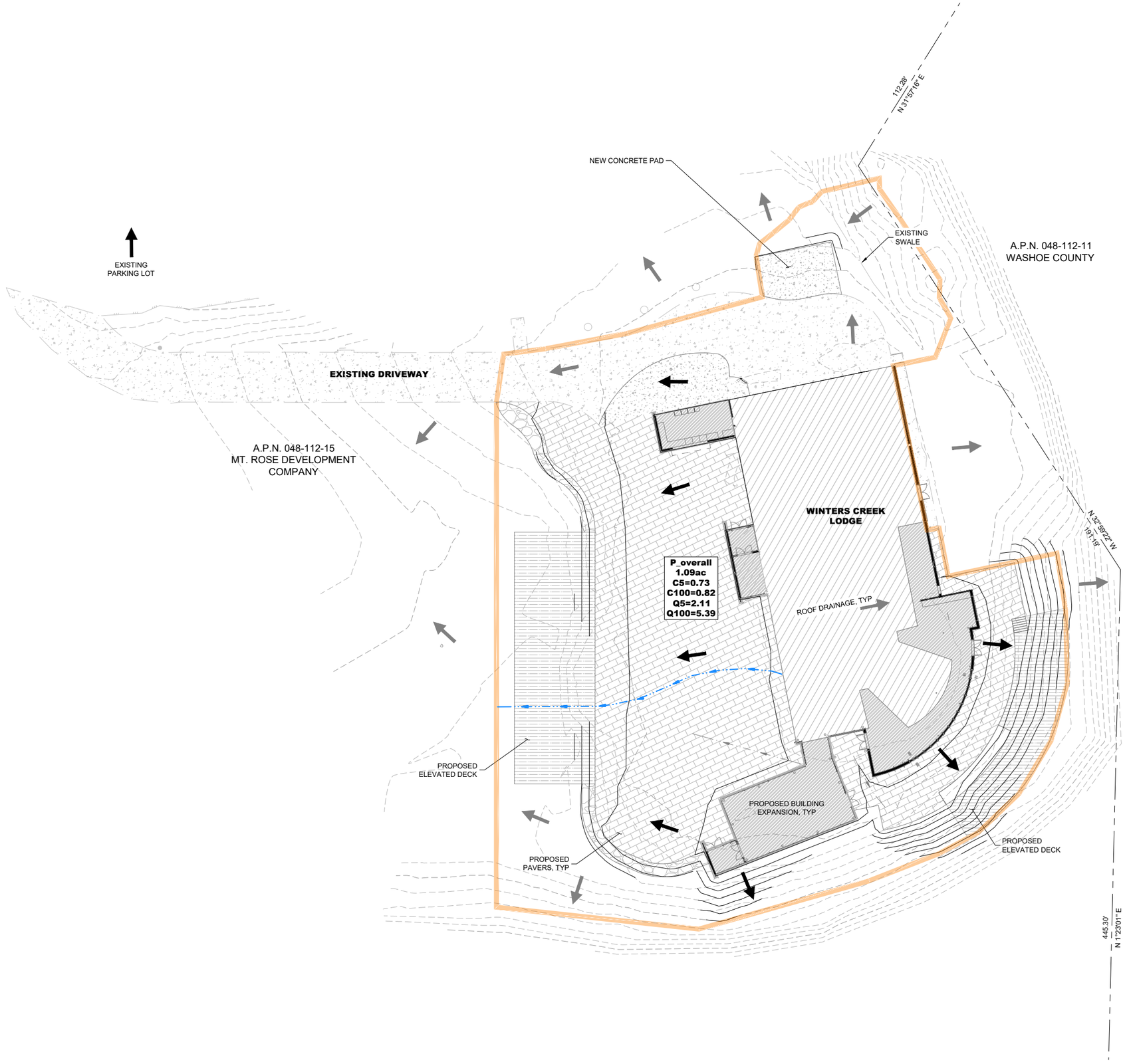

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MT. ROSE/SKI TAHOE

SUP FOR MT. ROSE/SKI TAHOE
CONCEPTUAL DRAINAGE REPORT
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WASHOE COUNTY NEVADA

REV	DATE	DESCRIPTION	BY

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Mr. Paul Senft
Mt. Rose Ski Tahoe
22222 Mt. Rose Highway
Reno, NV 89511

Project No.: 0094-12-1
September 10, 2019

RE: Geotechnical Summary
Mt. Rose Ski Tahoe Improvements
Washoe County, Nevada

Dear Mr. Senft:

Black Eagle Consulting, Inc. (BEC) is pleased to present this geotechnical summary of the proposed Mt. Rose Ski Tahoe Improvements project to be constructed within the overall ski resort premises located on Mt. Rose Highway in Washoe County, Nevada. The projects are in initial planning and development, and an application for a special use permit is planned to be submitted to Washoe County. The project will ultimately involve the design and construction of a 5-million-gallon water storage tank located within the southwestern limits of the premises, the Atoma Expansion including new lifts and a pedestrian (skier/ boarder) bridge crossing Mt. Rose Highway, a proposed maintenance building located southwest of the west parking lot, a proposed addition to the Winters Creek Lodge located in the eastern portion of the premises, and various ancillary buildings throughout the developed portions of the Mt. Rose Ski Tahoe premises. This geotechnical summary report is to be used for planning and special use submittal purposes and will need to be supplemented with field exploration, laboratory testing, and geotechnical analyses for the final design and construction of specific projects that are planned in the improvements. It is our understanding the improvements will be completed in phases.

Black Eagle Consulting, Inc. has previously completed geotechnical investigations throughout the Mt. Rose Ski Tahoe premises, including expansions to the east and west parking lots, the East Water Tank, the East Bowl and Chutes lift improvements, percolation testing and septic design for the Winters Creek Lodge, and the Mt. Rose Highway Upper Access Drive.

Black Eagle Consulting, Inc. is currently beginning work on geotechnical investigations for the currently proposed water tank, maintenance building, and Winters Creek Lodge expansion projects. We are also currently providing geotechnical consulting services for the initial planning and preliminary design of the proposed bridge across Mt. Rose Highway.

Project Description

As noted above, the project will involve the design and construction of several improvements throughout the overall Mt. Rose Ski Tahoe premises. The proposed 5-million-gallon water tank will be a bolted steel storage tank that will be founded on Portland cement concrete (PCC) shallow ring foundations, and the base will be placed on compacted aggregate base. The tank is expected to be 150 feet in diameter; as such, interior footings may be necessary to support the roof. The maintenance building will be a single-story, 12,000-square-foot, wood-framed or concrete masonry unit block structure that will be supported on PCC shallow footings and will have a PCC slab-on-grade floor. The lodge expansion will include a 1- or 2-story, wood-framed addition supported on

PCC shallow footings with a PCC slab-on-grade floor. The maintenance building and addition are expected to require minimal cuts and fills on the order of 3 feet. The Atoma Expansion will involve opening new ski terrain north of Mt. Rose Highway. Site improvements will include construction of a new ski lift with a mid-station that spans Mt. Rose Highway, tree clearing, conversion of an existing building to restrooms, and a bridge across Mt. Rose Highway (Atoma Bridge) under the ski lift crossing. Grading for the improvements is expected to vary but is generally expected to be less than 10 feet of cuts and fills except for the water tank, where mainly cuts of up to 15 feet will occur. These cuts will be supported by a segmental block retaining wall.

Site Conditions

The overall Mt. Rose Ski Tahoe site is located in the Carson Range between Reno and Lake Tahoe and consists of approximately 1,100 acres of mountainous terrain on Slide Mountain in Washoe County, Nevada. The site is located in Sections 18, 19, 20, 29 and 30, Township 17 North, Range 19 East, Mt. Diablo Meridian. The ski area is currently located south of Mt. Rose Highway and is proposed to be expanded to the north of the highway.

The overall site area includes steep terrain surrounding Slide Mountain sloping east down to Washoe Valley and sloping north down to Galena Creek. Overall vertical relief is over 1,500 feet, but local relief within specific project areas is limited to less than 30 feet. The land is sparsely to heavily vegetated by pine forest with limited underbrush. Portions of the main and east base areas include asphalt concrete pavement parking areas and driveways along with associated stormwater facilities. Within the base areas are multiple lodge and maintenance facilities. Public master utilities are present in the area with the exception of water and sewer which are provided by well and on-site disposal, respectively.

Geologic and General Soil Conditions

The site lies on the northern and eastern slopes of Slide Mountain in an area mapped by the Nevada Bureau of Mines and Geology (NBMG) as *Undivided granitic pluton(s?) (Cretaceous), Glacial deposits (late Pleistocene),* and *Landslide deposits (Holocene to late Pleistocene)* (Hinz et. al, 2014). In general, the vast majority of the site is granitic bedrock; however, the main and east base areas, where most development is planned, are surfaced by glacial deposits. A landslide deposit is located along the northern flank of Slide Mountain at the base of the area known as the "Chutes." The majority of the proposed development areas are within glacial deposits described by the NBMG as *Unsorted of poorly sorted sand, gravel, and boulders (till). Granitic rocks typically moderately to highly weathered. Surfaces typically smoother, with fewer preserved boulders, relative to* Qgm_2. *Equivalent to the Tahoe Till of Blackwelder (1931).* The water tank site and portions of the Atoma Expansion include granitic bedrock described as *Composed of granite, granodiorite, quartz monzonite, monzodiorite, and diorite. Locally contains abundant mafic enclaves (up to 50% by volume).* No development is proposed in the landslide deposits.

Based on previous exploration in the area, the site materials are generally non-plastic silty sand with gravel soils in a cobble-boulder matrix. The granitic bedrock typically has a weathering rind several feet thick of grus, making it excavatable through intermediate depths (5 to 10 feet). Hard bedrock materials can be present locally.

While groundwater lies at considerable depths, seasonal snowmelt seepage is common during spring and early summer and is possible through fractured rock at any time of the year.

Geologic Hazards

The Mt. Rose Ski Tahoe lies within an area with a high potential for strong earthquake shaking. The seismic design criteria for proposed structures will be addressed in the geotechnical investigations for specific projects that are being performed or will be performed by BEC.

No Earthquake Hazards Map is available for the project location. The geologic map (Hinz et. al, 2014) and the NBMG's *MyHazard's* web-mapping tool (NBMG, 2019) identify the nearest fault approximately ½ mile east of the Winters Creek Lodge area. This fault, the Little Valley fault, is mapped as being Holocene in age. Based on the available mapping, no additional fault investigation or mitigation in the form of building/structure setbacks is necessary for the structures proposed in the improvements.

The area is mapped as Zone X, or areas determined to be outside the 500-year flood plain (Federal Emergency Management Agency, 2009a and 2009b). Depending on specific terrain features, debris flows are possible in canyons and ravines during flash flooding events. As noted previously, landslide deposits are mapped in the area, but no development is currently planned within these areas.

The site should exhibit a moderate potential for dust generation during dry months. No other geologic hazards were identified.

Discussion and Conclusions

The site is geotechnically suitable for the proposed improvement projects. Soils within the main and east base areas are expected to be granular sand and gravel deposits with considerable cobbles and boulders and to contain non-plastic to low plasticity fines with no or low expansion potential. Isolated areas (water tank site and new lift towers/ stations) should expect to encounter granitic bedrock with varying degrees of weathering/ hardness. The granular soils and granitic bedrock will provide adequate foundation support for the proposed improvements when properly prepared. When excavated, the native granular materials can be reused as structural fill. The presence of bedrock, cobbles and boulders should be anticipated and will result in excavation difficulty. The geotechnical constraints associated with oversized cobbles and boulders or bedrock will be addressed in BEC's individual geotechnical investigation reports.

Closing

This report has been prepared in general accordance with accepted geotechnical practices to provide an overall geotechnical summary and expected constraints for the planning of the proposed improvements. As noted earlier, individual, project-specific geotechnical investigations will be completed with detailed geotechnical recommendations for the design and construction of the proposed improvements.

We appreciate having the opportunity to work with you on this project. If you have any questions regarding our findings, please contact us.

Sincerely,

Black Eagle Consulting, Inc.

Vimal P. Vimalaraj, P.E.
Engineering Division Manager

Copies to: Addressee (1 copy and PDF via email)
Mr. David Snelgrove, A.I.C.P., CFA, Inc. (6 copies and PDF via email)
Mr. Edward Thomas, P.E., LEED AP , Lumos and Associates (PDF via email)

JP:PV:cjr

References

Federal Emergency Management Agency (FEMA), 2009a (March 16, 2009), *Flood Insurance Rate Map 32031C3325G, Washoe County, Nevada*.

FEMA, 2009b (March 16, 2009), *Flood Insurance Rate Map 32031C3350G, Washoe County, Nevada*.

Hinz, N.H., Ramelli, A.R., and Faulds, J. E., 2014, *Preliminary Geologic Map of the Mt. Rose Quadrangle, Washoe County, Nevada,* Nevada Bureau of Mines and Geology, Open-File Report 14-7.

Nevada Bureau of Mines and Geology (NBMG), 2019, *My Hazard's* web-mapping tool, located at https://gisweb.unr.edu/MyHAZARDS/, accessed September 2019.

SOLAEGUI
ENGINEERS

September 12 2019

Mr. Richard Ojevolk, P.E.
Nevada Department of Transportation
P.O. Box 190
Sparks, Nevada 89431

Re: Mt Rose Ski Tahoe, Traffic Update Letter

Dear OJ:

This letter contains the findings of our traffic engineering review of the updated Mt Rose Ski Tahoe application for the ski resort expansion project located on State Route 431, the Mt Rose Highway. The updated site plan shows the Atoma expansion area which includes a new ski run, a new ski lift, a skier bridge over the Mt Rose Highway and a variety of other ski resort improvements at the lodges and around the facility. Many of the improvements are enhancements to the existing resort services and are not anticipated to increase trip generation at the existing ski resort. The new ski run and ski lift are the major improvements in this package. Increased traffic generated by the new ski run and lift was addressed in the traffic study prepared for and included in the Forset Service environmental impact review documents. At copy of that traffic study is attached.

The balance of this letter will address vehicle and pedestrian traffic loading over the new Mt Rose Highway bridge. The winter traffic mix crossing the bridge includes the 18,000 pound, 34 feet long, 18 feet wide snow grooming tractor, snow mobiles and skiers. The snow grooming tractor does not contact the ground with tires on axles. It runs on tracks that support the vehicle over a large surface area. The summer traffic mix crossing the bridge includes standard pickup trucks and two person ATVs. No summer foot traffic is anticipated. Mt Rose Ski Tahoe staff provided estimates of the volume of traffic among these categories. That information is summarized in Table 1.

Solaegui Engineers Ltd. • 715 H Street • Sparks, Nevada 89431 • 775/358-1004 • FAX 775/358-1098
Civil & Traffic Engineers
e-mail: psolaegui@aol.com

TABLE 1
ESTIMATED TRAFFIC OVER THE BRIDGE

TRAFFIC TYPES	NUMBER BY TYPE	CROSSINGS PER DAY	DAILY VOLUME TOTAL
WINTER TRAFFIC			
Snow Grooming Tractor	1	4	4
Skiers	400	4	1,600
Snow Mobiles	4	5	20
SUMMER TRAFFIC			
Pickups and ATVs	2	8	16
Hikers	0	0	0

As indicated in the attached traffic study the updated project generates 620 average daily trips with 65 AM peak hour trips and 75 PM peak hour trips. The peak hour traffic was thoroughly analyzed even though the trip totals are below the Washoe County 80 peak hour trip threshold that triggers the need for a traffic study.

We trust that this information will be adequate for your review. Please contact us if you have questions or comments.

Very truly yours,
SOLAEGUI ENGINEERS, LTD.

Paul W. Solaegui, P.E.

REGISTERED PROFESSIONAL ENGINEER STATE OF NEVADA No. 7163 PAUL W. SOLAEGUI CIVIL

9-12-19
EXP 6-30-20

Enclosures
Letters/ Mt Rose Ski Tahoe 2019 Traffic Letter

SOLAEGUI
ENGINEERS, LTD

MT. ROSE SKI RESORT
ATOMA AREA

TRAFFIC ANALYSIS

NOVEMBER, 2014

Prepared by:
Solaegui Engineers, Ltd.
715 H Street
Sparks, Nevada 89431
(775) 358-1004

TABLE OF CONTENTS

LIST OF FIGURES

MT. ROSE SKI RESORT
ATOMA AREA

TRAFFIC ANALYSIS

EXECUTIVE SUMMARY

The Mt. Rose Ski Resort is located in Washoe County, Nevada. The existing resort is located south of Mt. Rose Highway (State Route 431) near the summit of the highway. Mt. Rose operates as a *wintertime-only*, day use resort – between November and April. It has no overnight accommodations. Mt. Rose has proposed to expand its lift and terrain network north of Mt. Rose Highway, onto National Forest System lands. The purpose of this study is to address the proposed expansion's impact upon the adjacent street network. The existing Mt. Rose Highway/project access intersection has been identified for intersection capacity analysis for the 2015 existing, 2015 existing plus project, 2035 base, and 2035 base plus project Saturday and Sunday traffic volume scenarios.

The proposed expansion of the Mt. Rose Ski Resort in the Atoma Area will include the construction of additional skiing facilities located north of Mt. Rose Highway. The project is expected to generate 620 average weekend trips with 65 trips occurring during the weekend AM peak hour, 55 trips occurring during the midday peak hour, and 75 trips occurring during the weekend PM peak hour.

Traffic generated by the proposed expansion of the Mount Rose Ski Resort in the Atoma Area will have some impact on the adjacent street network. The following recommendations are made to mitigate project traffic impacts.

It is recommended that any required signing, striping or traffic control improvements comply with Nevada Department of Transportation and Washoe County requirements.

INTRODUCTION

Mt. Rose Ski Tahoe operates a portion of its terrain under special use permit from the Humboldt-Toiyabe National Forest (HTNF). It is a *wintertime-only*, day use resort, and typically operates between November and April. It has no overnight accommodations. Mt. Rose has submitted a proposal to the HTNF to expand its lift and trail network across (north) of the Mt. Rose Highway into an area referred to as "Atoma." Mt. Rose's proposal for the Atoma Area includes construction of a dozen beginner/intermediate ski trails to be served by a new chairlift. The proposed chairlift, and a skier bridge, are proposed to extend over the Mt. Rose Highway in order to tie the Atoma Area into Mt. Rose's existing terrain network. The HTNF is currently preparing an environmental impact statement (EIS) to disclose and document the potential effects of this proposal on the physical, biological and human environments.

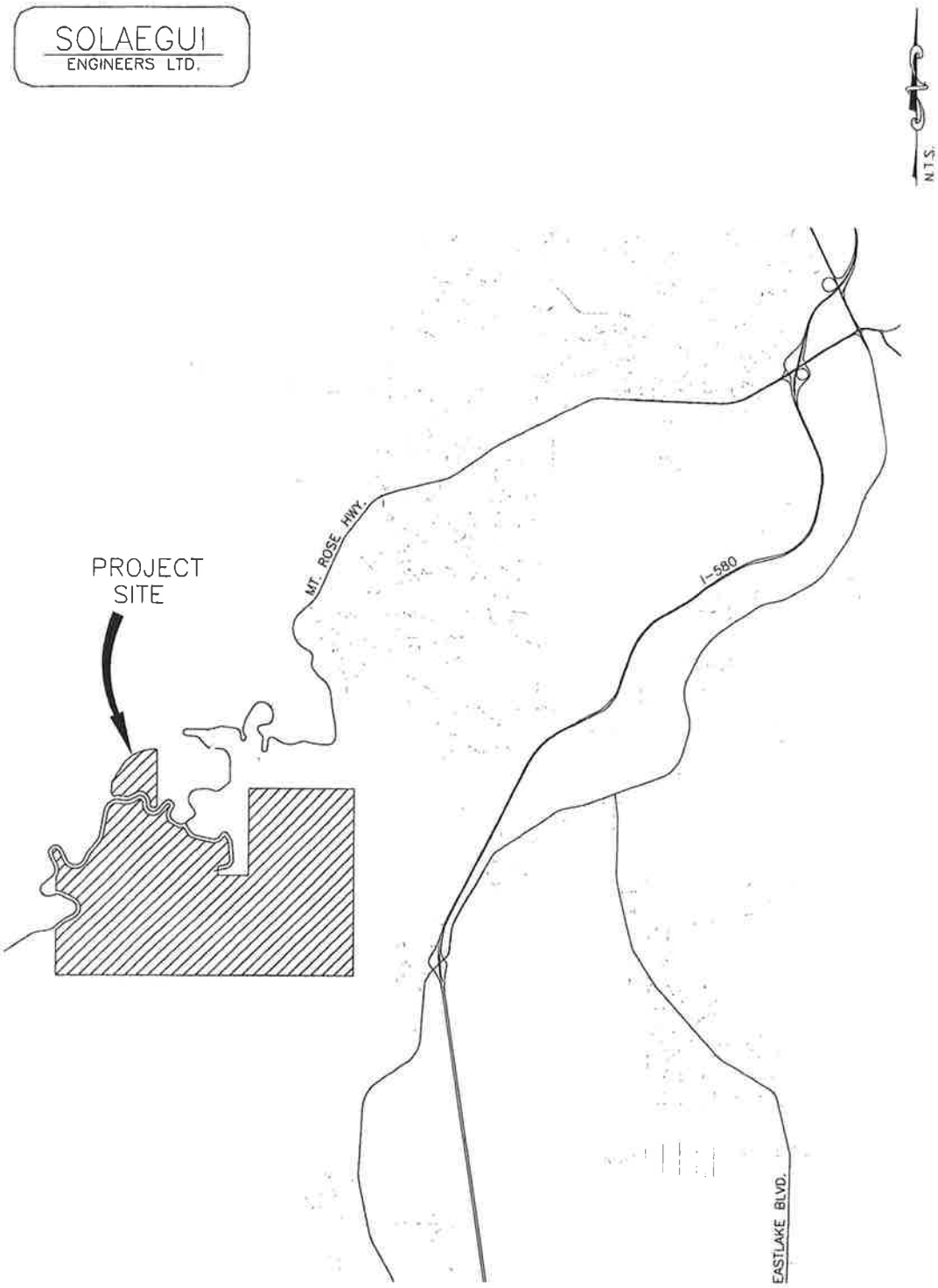
STUDY AREA

The Mt. Rose Ski Resort is located in Washoe County, Nevada. The existing resort is located south of Mt. Rose Highway (State Route 431) near the summit of the highway. The proposed lift and terrain expansion will occur north of Mt. Rose Highway, on National Forest System lands managed by the HTNF. The approximate location of the site is shown in Figure 1. The purpose of this study is to address the proposed expansion's impact upon the adjacent street network. The existing Mt. Rose Highway/project access intersection has been identified for intersection capacity analysis for the 2015 existing, 2015 existing plus project, 2035 base, and 2035 base plus project Saturday and Sunday traffic volume scenarios. The traffic study scope of work was established in a joint Nevada Department of Transportation, Humboldt- Toiyabe National Forest and Mt. Rose Ski Tahoe scoping meeting.

Note: This study is not a standard report being submitted with a development application. This study has been prepared at the request of NDOT in support of an EIS that is being prepared by the HTNF for proposed projects at Mt. Rose Ski Tahoe. Because the EIS is being prepared outside of the ski season, actual traffic counts on the Mt. Rose Highway cannot be obtained for use in this traffic analysis. The base traffic counts for Mt. Rose's *wintertime-only* operations have been factored from available published data in the region and it is our opinion that this is the best available information. The trip generation data is based on daily skier visit data for Mt. Rose's 2012/13 season, as well as historic data collected at another, comparable out of state ski resort (of similar size and location to Mt. Rose). Trip generation has been factored to be conservative but is again considered the best available information. At such time that Mt. Rose seeks a NDOT right of way occupancy permit (following approval of proposed projects from the HTNF) it is anticipated that this study will be updated, as appropriate.

EXISTING AND PROPOSED LAND USES

The project site currently contains existing ski facilities and amenities on both private lands owned by Mt. Rose and National Forest System lands managed by the HTNF. Adjacent land generally



MT. ROSE SKI RESORT ATOMA AREA

VICINITY MAP
FIGURE 1

includes undeveloped land with some scattered residential dwelling units. The proposed expansion of the Mt. Rose Ski Resort in the Atoma Area will include the construction of additional skiing terrain located north of Mt. Rose Highway. Mt. Rose's existing parking lots are assumed to be able to accommodate additional vehicles that are generated as a result of the proposed expansion. Parking adequacy has not been identified as part of this traffic study scope of work.

EXISTING AND PROPOSED ROADWAYS AND INTERSECTIONS

Mt. Rose Highway (State Route 431) is a two-lane roadway with one through lane in each direction in the vicinity of Mt. Rose Ski Resort. The speed limit is posted for 45 miles per hour near the project site. Roadway improvements generally include paved travel lanes with graded shoulders. Mt. Rose Highway is striped with a solid double-yellow centerline and solid white edge lines in the vicinity of the resort.

The existing Mt. Rose Highway/project access intersection is an unsignalized three-leg intersection with stop sign control at the south approach. The east approach contains one shared left turn-through lane. The west approach contains one shared through-right turn lane. The south approach is a wide project access roadway with no lane marking serving the existing parking. The driveway approach contains sufficient width for separate vehicle queuing for the left and right turn egress movements.

Mt. Rose offers two options for day skier parking: at the main base area (Mt. Rose side) and at the East Bowl Side. The main base area and East Bowl Side are separated by approximately 0.75 mile on the Mt Rose Highway (SR 431). A total of 2,940 day parking spaces are available at Mt. Rose, approximately 1,100 of which are at the East Bowl Side.

TRIP GENERATION

In order to assess the magnitude of traffic impacts of the proposed development on the key intersection, trip generation rates and peak hours related to Mt. Rose's *wintertime-only* operations had to be determined. Trip generation volumes were obtained from the environmental consultant preparing the EIS for the project.

Trip generation was developed for the 10th highest day which represents both a Saturday and Sunday in January. Trip generation was also developed for the AM, midday, and PM peak hours of the weekend days. The 10th highest day typically reflects a Saturday or Sunday during Christmas, Martin Luther King Day, President's Weekend or Spring Break holiday periods. During these periods guests anticipate longer lift lines, busy parking lots and some peak period traffic congestion. Mt. Rose provided daily skier visit data for the 2012/13 season for use in identifying the 10th highest day. In the absence of actual daily and peak hour turning movement counts at Mt. Rose's two SR 431 access points, daily and peak hour factors were applied from 7-day hourly directional counts recently performed in support of an EIS for a day ski area in Colorado (Eldora Ski Area) which is comparably sized and located with Mt. Rose. Data were collected during a Spring Break week. The

2011-12 annual skier visits and 10th highest skier day counts were quite comparable to Mt. Rose skier count data from the 2012-13 season.

The trip generation volumes were forwarded to Nevada Department of Transportation staff and subsequently accepted. Table 1 shows a summary of the Saturday and Sunday average daily traffic (ADT) volumes and peak hour volumes generated by the proposed expansion.

TABLE 1
TRIP GENERATION

LAND USE	ADT	AM PEAK HOUR		MIDDAY PEAK HOUR		PM PEAK HOUR	
		IN	OUT	IN	OUT	IN	OUT
Ski Resort Expansion	620	65	0	30	25	10	65

As shown in Table 1 the project is expected to generate 620 average weekend trips with 65 trips occurring during the weekend AM peak hour, 55 trips occurring during the midday peak hour, and 75 trips occurring during the weekend PM peak hour.

TRIP DISTRIBUTION AND ASSIGNMENT

The distribution of the trip generation volumes to the project access intersection was based on a review of zip code data for existing season pass holders and a review of existing peak hour count data at the project access. The zip code data indicates a distribution of 95% to the east and 5% to the west and the existing traffic count data produces a distribution of 75% to the east and 25% to the west. After extensive coordination with Nevada Department of Transportation staff it was determined that a distribution of 85% to the east and 15% to the west should be used for the analysis. The trip generation volumes shown in Table 1 were subsequently assigned to the project access intersection based on this distribution. Figure 2 shows the project trip assignment during the Saturday and Sunday peak hours.

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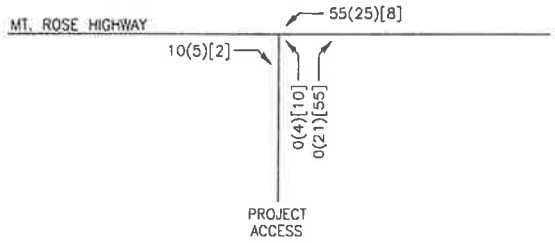
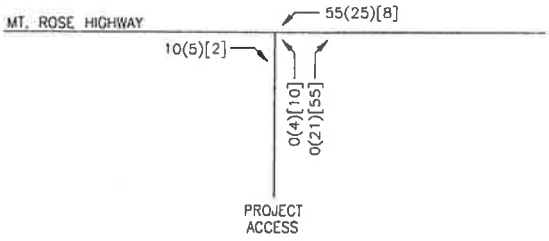


SATURDAY

LEGEND
- AM PEAK HOUR
(-) MIDDAY PEAK HOUR
[-] PM PEAK HOUR



SUNDAY

MT. ROSE SKI RESORT ATOMA AREA
TRIP ASSIGNMENT
FIGURE 2

EXISTING AND PROJECTED TRAFFIC VOLUMES

The 2015 existing peak hour turning movement volumes at the existing project access intersection were developed based on existing January traffic count data on Mt. Rose Highway obtained from the Nevada Department of Transportation and from trip generation estimates for the existing ski resort obtained from the environmental consultant preparing the EIS for the project. Figure 3 shows the 2015 existing Saturday and Sunday turning movement volumes at the Mt. Rose Highway/ project access intersection for the AM, midday, and PM peak hours. The 2015 existing peak hour turning movement volumes were developed by Solaegui Engineers and subsequently submitted, reviewed, and accepted by Nevada Department of Transportation staff. Figure 4 shows the 2015 existing plus project turning movement volumes at the key intersection. The 2015 existing plus project turning movements were obtained by adding the trip assignment volumes shown on Figure 2 to the 2015 existing turning movement volumes shown on Figure 3.

Figure 5 shows the 2035 base turning movement volumes at the project access intersection for the Saturday and Sunday AM, midday, and PM peak hours. The 2035 base traffic volumes were estimated by applying a 0.5% average annual growth rate to the 2015 existing through volumes on Mt. Rose Highway. The growth rate was derived from 20-year historic traffic count data obtained from the Nevada Department of Transportation's (NDOT) Annual Traffic Report for count station 310369 on Mt. Rose Highway. Figure 6 shows the 2035 base plus project turning movement volumes at the key intersection. The 2035 base plus project turning movements were obtained by adding the trip assignment volumes shown on Figure 2 to the 2035 base turning movement volumes shown on Figure 5.

Mt. Rose contains a total of 2,940 parking spaces divided between the main base area (Mt. Rose side) and East Bowl Side. Approximately 1,100 spaces are provided at the East Bowl Side. The 2015 existing and 2035 base turning movement volumes at the project access account for 80% of the project traffic going to the main base area, with the remaining 20% at the East Bowl Side. All of the trips generated by the expansion are assigned to the main access location because all the beginner / intermediate terrain is located near that access. The east bowl access was not identified as a key intersection during the traffic study scoping meeting.

INTERSECTION CAPACITY ANALYSIS

The Mt. Rose Highway/project access intersection was analyzed for capacity based on procedures presented in the 2010 *Highway Capacity Manual (HCM)*, prepared by the Transportation Research Board, for unsignalized intersections using the Highway Capacity computer software.

The result of capacity analysis is a level of service (LOS) rating for each unsignalized intersection minor movement. Level of service is a qualitative measure of traffic operating conditions where a letter grade "A" through "F", corresponding to progressively worsening traffic operation, is assigned to the minor movement.

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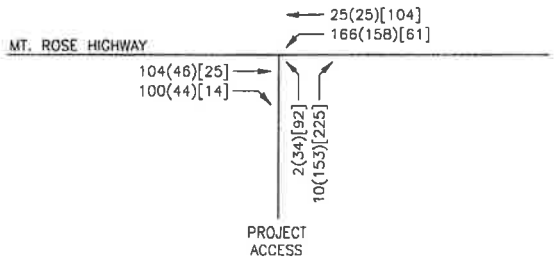
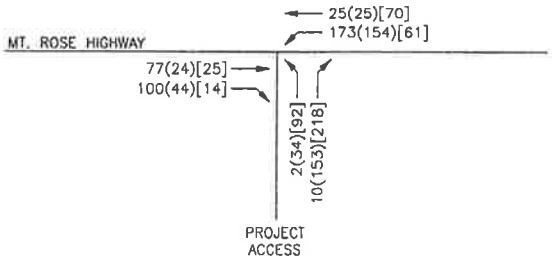


SATURDAY

LEGEND
- AM PEAK HOUR
(-) MIDDAY PEAK HOUR
[-] PM PEAK HOUR



SUNDAY

MT. ROSE SKI RESORT ATOMA AREA
2015 EXISTING TURNING MOVEMENT VOLUMES
FIGURE 3

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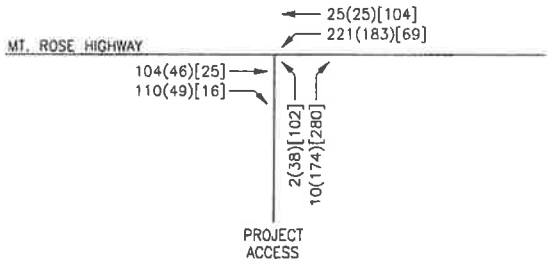
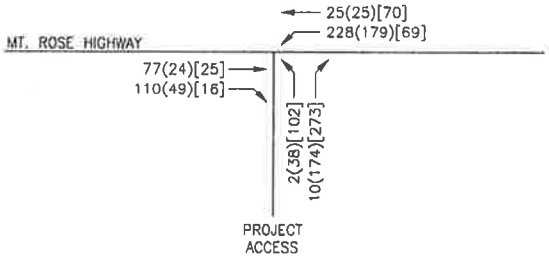


SATURDAY

LEGEND
– AM PEAK HOUR
(–) MIDDAY PEAK HOUR
[–] PM PEAK HOUR



SUNDAY

MT. ROSE SKI RESORT ATOMA AREA
2015 EXISTING + PROJECT TURNING MOVEMENT VOLUMES
FIGURE 4

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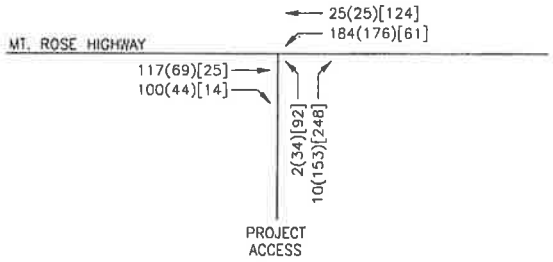
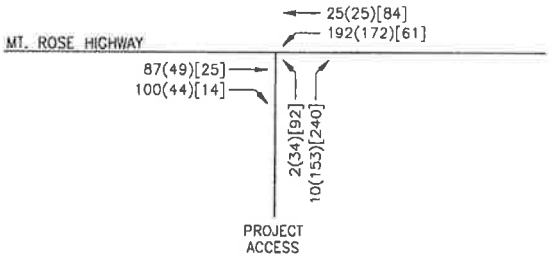


SATURDAY

LEGEND
– AM PEAK HOUR
(–) MIDDAY PEAK HOUR
[–] PM PEAK HOUR



SUNDAY

MT. ROSE SKI RESORT ATOMA AREA
2035 BASE TURNING MOVEMENT VOLUMES
FIGURE 5

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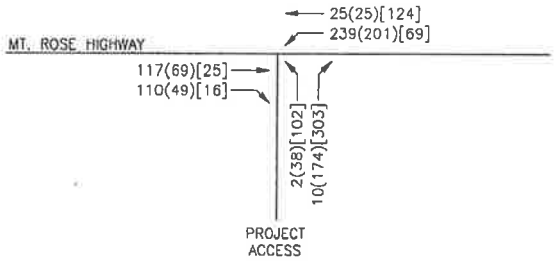
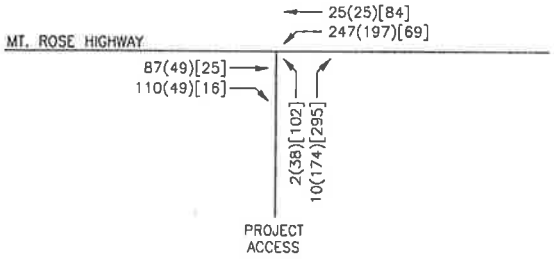


SATURDAY

LEGEND
- AM PEAK HOUR
(-) MIDDAY PEAK HOUR
[-] PM PEAK HOUR



SUNDAY

MT. ROSE SKI RESORT ATOMA AREA
2035 BASE + PROJECT TURNING MOVEMENT VOLUMES
FIGURE 6

The *Highway Capacity Manual* defines level of service for stop controlled intersections in terms of computed or measured control delay for each minor movement. Level of service is not defined for the intersection as a whole. The level of service criteria for unsignalized intersections is shown in Table 2.

TABLE 2
LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

LEVEL OF SERVICE	*DELAY RANGE (SEC/VEH)*
A	*≤10*
B	*>10 and ≤15*
C	*>15 and ≤25*
D	*>25 and ≤35*
E	*>35 and ≤50*
F	*>50*

Table 3 shows a summary of the level of service and delay results for the Saturday 2015 existing, 2015 existing plus project, 2035 base, and 2035 base plus project scenarios. The capacity worksheets are included in the Appendix.

TABLE 3
INTERSECTION LEVEL OF SERVICE AND DELAY RESULTS (SATURDAY)

INTERSECTION MOVEMENT	2015 EXISTING			2015 EXISTING + PROJECT			2035 BASE			2035 BASE + PROJECT		
	AM	MID	PM	AM	MID	PM	AM	MID	PM	AM	MID	PM
Mt. Rose/Access												
WB Left-Thru	A8.1	A7.7	A7.4	A8.3	A7.8	A7.4	A8.2	A7.8	A7.4	A8.4	A7.9	A7.4
NB Left-Right	A9.9	B10.7	B11.5	B10.3	B11.2	B12.5	B10.1	B11.1	B11.9	B10.5	B11.7	B13.0

Table 4 shows a summary of the level of service and delay results for the Sunday 2015 existing, 2015 existing plus project, 2035 base, and 2035 base plus project scenarios. The capacity worksheets are included in the Appendix.

TABLE 4
INTERSECTION LEVEL OF SERVICE AND DELAY RESULTS (SUNDAY)

INTERSECTION MOVEMENT	2015 EXISTING			2015 EXISTING + PROJECT			2035 BASE			2035 BASE + PROJECT		
	AM	MID	PM	AM	MID	PM	AM	MID	PM	AM	MID	PM
Mt. Rose/Access												
WB Left-Thru	A8.0	A7.7	A7.4	A8.2	A7.7	A7.4	A8.1	A7.8	A7.4	A8.3	A7.8	A7.4
NB Left-Right	A9.7	B10.4	B11.3	B10.1	B10.9	B12.2	A9.9	B10.8	B11.6	B10.3	B11.4	B12.6

The existing Mt. Rose Highway/project access existing driveway intersection was analyzed as an unsignalized three-leg intersection with stop sign control at the south approach for all scenarios. For the 2015 existing traffic volumes the intersection critical movements operate at LOS B or better for all Saturday and Sunday peak hours. For the 2015 existing plus project traffic volumes the intersection critical movements are anticipated to continue to operate at LOS B or better for all Saturday and Sunday peak hours. For the 2035 base traffic volumes the intersection critical movements are anticipated to operate at LOS B or better for all Saturday and Sunday peak hours. For the 2035 base plus project traffic volumes the intersection critical movements are anticipated to continue to operate at LOS B or better for all Saturday and Sunday peak hours. The intersection was analyzed with single lanes at the east, west and south approaches.

The need for an exclusive westbound to southbound left turn lane on Mt. Rose Highway at the project access was reviewed based on NDOT's Access Management System and Standards, July 1999. Table 4.8 of the access management standards lists design hour volumes and operating speeds which necessitate the installation of left turn lanes on two-lane roads. The traffic volumes to be considered include advancing traffic volumes, opposing traffic volumes, and the percent of advancing traffic which is turning left. An exclusive left turn lane is not required on Mt. Rose Highway at the project access for the projected AM, midday, and PM peak hours during the Saturday and Sunday scenarios based on the 45 mile per hour posted speed limit on Mt. Rose Highway.

This study is not a standard report being submitted with a development application. The study is being used as a traffic information document in an environmental impact study. It is being prepared during non-ski season months when actual traffic counts cannot be obtained. The base traffic counts are factored from available published data in the region and is in our opinion the best available information. The trip generation data is based on historic data collected at another out of state ski resort and has been factored to be conservative but is again considered the best available information. At such time that Mt. Rose seeks a NDOT right of way occupancy permit (following approval of proposed projects from the HTNF) it is anticipated that this study will be updated, as appropriate.

RECOMMENDATIONS

Traffic generated by the proposed expansion of the Mount Rose Ski Resort in the Atoma Area will have some impact on the adjacent street network. The following recommendations are made to mitigate project traffic impacts.

It is recommended that any required signing, striping or traffic control improvements comply with Nevada Department of Transportation and Washoe County requirements.

APPENDIX

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst: MSH
Agency/Co.: Solaegui Engineers
Date Performed: 10/9/2014
Analysis Time Period: Saturday AM Peak Hour
Intersection: Mt. Rose & Main Access
Jurisdiction: NDOT
Units: U. S. Customary
Analysis Year: 2015 Existing
Project ID: Mt. Rose Ski Resort
East/West Street: Mt. Rose Highway
North/South Street: Main Access
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		104	100	166	25	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		115	111	184	27	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR		LT	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	2		10			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	2		11			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage		No	/			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		184		13				
C(m) (vph)		1342		749				
v/c		0.14		0.02				
95% queue length		0.48		0.05				
Control Delay		8.1		9.9				
LOS		A		A				
Approach Delay				9.9				
Approach LOS				A				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst:	MSH
Agency/Co.:	Solaegui Engineers
Date Performed:	10/9/2014
Analysis Time Period:	Saturday Midday Peak Hour
Intersection:	Mt. Rose & Main Access
Jurisdiction:	NDOT
Units: U. S. Customary	
Analysis Year:	2015 Existing
Project ID: Mt. Rose Ski Resort	
East/West Street:	Mt. Rose Highway
North/South Street:	Main Access
Intersection Orientation: EW	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		46	44	158	25	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		51	48	175	27	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR		LT	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	34		153			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	37		170			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		175		207				
C(m) (vph)		1494		840				
v/c		0.12		0.25				
95% queue length		0.40		0.97				
Control Delay		7.7		10.7				
LOS		A		B				
Approach Delay				10.7				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst:	MSH
Agency/Co.:	Solaegui Engineers
Date Performed:	10/9/2014
Analysis Time Period:	Saturday PM Peak Hour
Intersection:	Mt. Rose & Main Access
Jurisdiction:	NDOT
Units: U. S. Customary	
Analysis Year:	2015 Existing
Project ID: Mt. Rose Ski Resort	
East/West Street:	Mt. Rose Highway
North/South Street:	Main Access
Intersection Orientation: EW	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		25	14	61	104	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		27	15	67	115	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration		TR		LT		
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	92		225			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	102		250			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No	/		/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		67		352				
C(m) (vph)		1567		900				
v/c		0.04		0.39				
95% queue length		0.13		1.88				
Control Delay		7.4		11.5				
LOS		A		B				
Approach Delay				11.5				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst: MSH
Agency/Co.: Solaegui Engineers
Date Performed: 10/9/2014
Analysis Time Period: Saturday AM Peak Hour
Intersection: Mt. Rose & Main Access
Jurisdiction: NDOT
Units: U. S. Customary
Analysis Year: 2015 Existing + Project
Project ID: Mt. Rose Ski Resort
East/West Street: Mt. Rose Highway
North/South Street: Main Access
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		104	110	221	25	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		115	122	245	27	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR	LT		
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	2		10			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	2		11			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		245		13				
C(m) (vph)		1330		696				
v/c		0.18		0.02				
95% queue length		0.67		0.06				
Control Delay		8.3		10.3				
LOS		A		B				
Approach Delay				10.3				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst:	MSH
Agency/Co.:	Solaegui Engineers
Date Performed:	10/9/2014
Analysis Time Period:	Saturday Midday Peak Hour
Intersection:	Mt. Rose & Main Access
Jurisdiction:	NDOT
Units: U. S. Customary	
Analysis Year:	2015 Existing + Project
Project ID: Mt. Rose Ski Resort	
East/West Street:	Mt. Rose Highway
North/South Street:	Main Access
Intersection Orientation: EW	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		46	49	183	25	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		51	54	203	27	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR	LT		
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	38		174			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	42		193			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		203		235				
C(m) (vph)		1486		812				
v/c		0.14		0.29				
95% queue length		0.47		1.20				
Control Delay		7.8		11.2				
LOS		A		B				
Approach Delay				11.2				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst:	MSH
Agency/Co.:	Solaegui Engineers
Date Performed:	10/9/2014
Analysis Time Period:	Saturday PM Peak Hour
Intersection:	Mt. Rose & Main Access
Jurisdiction:	NDOT
Units: U. S. Customary	
Analysis Year:	2015 Existing + Project
Project ID: Mt. Rose Ski Resort	
East/West Street:	Mt. Rose Highway
North/South Street:	Main Access
Intersection Orientation: EW	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		25	16	69	104	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		27	17	76	115	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR	LT		
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	102		280			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	113		311			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		76		424				
C(m) (vph)		1564		898				
v/c		0.05		0.47				
95% queue length		0.15		2.57				
Control Delay		7.4		12.5				
LOS		A		B				
Approach Delay				12.5				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst:	MSH
Agency/Co.:	Solaegui Engineers
Date Performed:	10/9/2014
Analysis Time Period:	Saturday AM Peak Hour
Intersection:	Mt. Rose & Main Access
Jurisdiction:	NDOT
Units: U. S. Customary	
Analysis Year:	2035 Base
Project ID: Mt. Rose Ski Resort	
East/West Street:	Mt. Rose Highway
North/South Street:	Main Access
Intersection Orientation: EW	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		117	100	184	25	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		130	111	204	27	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR		LT	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	2		10			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	2		11			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No	/		/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		204		13				
C(m) (vph)		1326		719				
v/c		0.15		0.02				
95% queue length		0.54		0.06				
Control Delay		8.2		10.1				
LOS		A		B				
Approach Delay				10.1				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst:	MSH
Agency/Co.:	Solaegui Engineers
Date Performed:	10/9/2014
Analysis Time Period:	Saturday Midday Peak Hour
Intersection:	Mt. Rose & Main Access
Jurisdiction:	NDOT
Units: U. S. Customary	
Analysis Year:	2035 Base
Project ID: Mt. Rose Ski Resort	
East/West Street:	Mt. Rose Highway
North/South Street:	Main Access
Intersection Orientation: EW	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		69	44	176	25	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		76	48	195	27	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided		/			
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR	LT		
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	34		153			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	37		170			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		195		207				
C(m) (vph)		1463		795				
v/c		0.13		0.26				
95% queue length		0.46		1.04				
Control Delay		7.8		11.1				
LOS		A		B				
Approach Delay				11.1				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst:	MSH
Agency/Co.:	Solaegui Engineers
Date Performed:	10/9/2014
Analysis Time Period:	Saturday PM Peak Hour
Intersection:	Mt. Rose & Main Access
Jurisdiction:	NDOT
Units: U. S. Customary	
Analysis Year:	2035 Base
Project ID: Mt. Rose Ski Resort	
East/West Street:	Mt. Rose Highway
North/South Street:	Main Access
Intersection Orientation: EW	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		25	14	61	124	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		27	15	67	137	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR		LT	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	92		248			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	102		275			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No	/		/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		67		377				
C(m) (vph)		1567		898				
v/c		0.04		0.42				
95% queue length		0.13		2.10				
Control Delay		7.4		11.9				
LOS		A		B				
Approach Delay				11.9				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst: MSH
Agency/Co.: Solaegui Engineers
Date Performed: 10/9/2014
Analysis Time Period: Saturday AM Peak Hour
Intersection: Mt. Rose & Main Access
Jurisdiction: NDOT
Units: U. S. Customary
Analysis Year: 2035 Base + Project
Project ID: Mt. Rose Ski Resort
East/West Street: Mt. Rose Highway
North/South Street: Main Access
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		117	110	239	25	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		130	122	265	27	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR		LT	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	2		10			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	2		11			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No	/		/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		265		13				
C(m) (vph)		1313		666				
v/c		0.20		0.02				
95% queue length		0.75		0.06				
Control Delay		8.4		10.5				
LOS		A		B				
Approach Delay				10.5				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst: MSH
Agency/Co.: Solaegui Engineers
Date Performed: 10/9/2014
Analysis Time Period: Saturday Midday Peak Hour
Intersection: Mt. Rose & Main Access
Jurisdiction: NDOT
Units: U. S. Customary
Analysis Year: 2035 Base + Project
Project ID: Mt. Rose Ski Resort
East/West Street: Mt. Rose Highway
North/South Street: Main Access
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		69	49	201	25	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		76	54	223	27	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR	LT		
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	38		174			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	42		193			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		223		235				
C(m) (vph)		1455		768				
v/c		0.15		0.31				
95% queue length		0.54		1.30				
Control Delay		7.9		11.7				
LOS		A		B				
Approach Delay				11.7				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst:	MSH
Agency/Co.:	Solaegui Engineers
Date Performed:	10/9/2014
Analysis Time Period:	Saturday PM Peak Hour
Intersection:	Mt. Rose & Main Access
Jurisdiction:	NDOT
Units: U. S. Customary	
Analysis Year:	2035 Base + Project
Project ID: Mt. Rose Ski Resort	
East/West Street:	Mt. Rose Highway
North/South Street:	Main Access
Intersection Orientation: EW	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		25	16	69	124	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		27	17	76	137	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR		LT	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	102		303			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	113		336			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		76		449				
C(m) (vph)		1564		895				
v/c		0.05		0.50				
95% queue length		0.15		2.87				
Control Delay		7.4		13.0				
LOS		A		B				
Approach Delay				13.0				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst:	MSH
Agency/Co.:	Solaegui Engineers
Date Performed:	10/9/2014
Analysis Time Period:	Sunday AM Peak Hour
Intersection:	Mt. Rose & Main Access
Jurisdiction:	NDOT
Units: U. S. Customary	
Analysis Year:	2015 Existing
Project ID: Mt. Rose Ski Resort	
East/West Street:	Mt. Rose Highway
North/South Street:	Main Access
Intersection Orientation: EW	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		77	100	173	25	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		85	111	192	27	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR		LT	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	2		10			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	2		11			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		192		13				
C(m) (vph)		1377		773				
v/c		0.14		0.02				
95% queue length		0.48		0.05				
Control Delay		8.0		9.7				
LOS		A		A				
Approach Delay				9.7				
Approach LOS				A				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst:	MSH
Agency/Co.:	Solaegui Engineers
Date Performed:	10/9/2014
Analysis Time Period:	Sunday Midday Peak Hour
Intersection:	Mt. Rose & Main Access
Jurisdiction:	NDOT
Units: U. S. Customary	
Analysis Year:	2015 Existing
Project ID: Mt. Rose Ski Resort	
East/West Street:	Mt. Rose Highway
North/South Street:	Main Access
Intersection Orientation: EW	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		24	44	154	25	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		26	48	171	27	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided		/			
RT Channelized?						
Lanes		1	0	0	1	
Configuration		TR		LT		
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	34		153			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	37		170			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		171		207				
C(m) (vph)		1526		872				
v/c		0.11		0.24				
95% queue length		0.38		0.92				
Control Delay		7.7		10.4				
LOS		A		B				
Approach Delay				10.4				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst:	MSH
Agency/Co.:	Solaegui Engineers
Date Performed:	10/9/2014
Analysis Time Period:	Sunday PM Peak Hour
Intersection:	Mt. Rose & Main Access
Jurisdiction:	NDOT
Units: U. S. Customary	
Analysis Year:	2015 Existing
Project ID: Mt. Rose Ski Resort	
East/West Street:	Mt. Rose Highway
North/South Street:	Main Access
Intersection Orientation: EW	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		25	14	61	70	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		27	15	67	77	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided		/			
RT Channelized?						
Lanes		1	0	0	1	
Configuration		TR		LT		
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	92		218			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	102		242			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		67		344				
C(m) (vph)		1567		914				
v/c		0.04		0.38				
95% queue length		0.13		1.77				
Control Delay		7.4		11.3				
LOS		A		B				
Approach Delay				11.3				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst:	MSH
Agency/Co.:	Solaegui Engineers
Date Performed:	10/9/2014
Analysis Time Period:	Sunday AM Peak Hour
Intersection:	Mt. Rose & Main Access
Jurisdiction:	NDOT
Units: U. S. Customary	
Analysis Year:	2015 Existing + Project
Project ID: Mt. Rose Ski Resort	
East/West Street:	Mt. Rose Highway
North/South Street:	Main Access
Intersection Orientation: EW	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		77	110	228	25	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		85	122	253	27	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR		LT	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	2		10			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	2		11			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No	/		/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		253		13				
C(m) (vph)		1364		719				
v/c		0.19		0.02				
95% queue length		0.68		0.06				
Control Delay		8.2		10.1				
LOS		A		B				
Approach Delay				10.1				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst:	MSH
Agency/Co.:	Solaegui Engineers
Date Performed:	10/9/2014
Analysis Time Period:	Sunday Midday Peak Hour
Intersection:	Mt. Rose & Main Access
Jurisdiction:	NDOT
Units: U. S. Customary	
Analysis Year:	2015 Existing + Project
Project ID: Mt. Rose	Ski Resort
East/West Street:	Mt. Rose Highway
North/South Street:	Main Access
Intersection Orientation: EW	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		24	49	179	25	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		26	54	198	27	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided		/			
RT Channelized?						
Lanes		1	0	0	1	
Configuration		TR		LT		
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	38		174			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	42		193			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		198		235				
C(m) (vph)		1518		844				
v/c		0.13		0.28				
95% queue length		0.45		1.14				
Control Delay		7.7		10.9				
LOS		A		B				
Approach Delay				10.9				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst:	MSH
Agency/Co.:	Solaegui Engineers
Date Performed:	10/9/2014
Analysis Time Period:	Sunday PM Peak Hour
Intersection:	Mt. Rose & Main Access
Jurisdiction:	NDOT
Units: U. S. Customary	
Analysis Year:	2015 Existing + Project
Project ID: Mt. Rose Ski Resort	
East/West Street:	Mt. Rose Highway
North/South Street:	Main Access
Intersection Orientation: EW	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		25	16	69	70	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		27	17	76	77	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided		/			
RT Channelized?						
Lanes		1	0	0	1	
Configuration		TR		LT		
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	102		273			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	113		303			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		76		416				
C(m) (vph)		1564		912				
v/c		0.05		0.46				
95% queue length		0.15		2.42				
Control Delay		7.4		12.2				
LOS		A		B				
Approach Delay				12.2				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst:	MSH
Agency/Co.:	Solaegui Engineers
Date Performed:	10/9/2014
Analysis Time Period:	Sunday AM Peak Hour
Intersection:	Mt. Rose & Main Access
Jurisdiction:	NDOT
Units: U. S. Customary	
Analysis Year:	2035 Base
Project ID: Mt. Rose Ski Resort	
East/West Street:	Mt. Rose Highway
North/South Street:	Main Access
Intersection Orientation: EW	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		87	100	192	25	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		96	111	213	27	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided /			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration		TR		LT		
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	2		10			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	2		11			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		213		13				
C(m) (vph)		1364		745				
v/c		0.16		0.02				
95% queue length		0.55		0.05				
Control Delay		8.1		9.9				
LOS		A		A				
Approach Delay				9.9				
Approach LOS				A				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst:	MSH
Agency/Co.:	Solaegui Engineers
Date Performed:	10/9/2014
Analysis Time Period:	Sunday Midday Peak Hour
Intersection:	Mt. Rose & Main Access
Jurisdiction:	NDOT
Units: U. S. Customary	
Analysis Year:	2035 Base
Project ID: Mt. Rose	Ski Resort
East/West Street:	Mt. Rose Highway
North/South Street:	Main Access
Intersection Orientation: EW	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		49	44	172	25	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		54	48	191	27	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR	LT		
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	34		153			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	37		170			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		191		207				
C(m) (vph)		1490		823				
v/c		0.13		0.25				
95% queue length		0.44		1.00				
Control Delay		7.8		10.8				
LOS		A		B				
Approach Delay				10.8				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst:	MSH
Agency/Co.:	Solaegui Engineers
Date Performed:	10/9/2014
Analysis Time Period:	Sunday PM Peak Hour
Intersection:	Mt. Rose & Main Access
Jurisdiction:	NDOT
Units: U. S. Customary	
Analysis Year:	2035 Base
Project ID: Mt. Rose Ski Resort	
East/West Street:	Mt. Rose Highway
North/South Street:	Main Access
Intersection Orientation: EW	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		25	14	61	84	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		27	15	67	93	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration		TR		LT		
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	92		240			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	102		266			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		67		368				
C(m) (vph)		1567		915				
v/c		0.04		0.40				
95% queue length		0.13		1.96				
Control Delay		7.4		11.6				
LOS		A		B				
Approach Delay				11.6				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst:	MSH
Agency/Co.:	Solaegui Engineers
Date Performed:	10/9/2014
Analysis Time Period:	Sunday AM Peak Hour
Intersection:	Mt. Rose & Main Access
Jurisdiction:	NDOT
Units: U. S. Customary	
Analysis Year:	2035 Base + Project
Project ID: Mt. Rose Ski Resort	
East/West Street:	Mt. Rose Highway
North/South Street:	Main Access
Intersection Orientation: EW	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		87	110	247	25	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		96	122	274	27	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR		LT	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	2		10			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	2		11			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		274		13				
C(m) (vph)		1352		690				
v/c		0.20		0.02				
95% queue length		0.76		0.06				
Control Delay		8.3		10.3				
LOS		A		B				
Approach Delay				10.3				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst:	MSH
Agency/Co.:	Solaegui Engineers
Date Performed:	10/9/2014
Analysis Time Period:	Sunday Midday Peak Hour
Intersection:	Mt. Rose & Main Access
Jurisdiction:	NDOT
Units: U. S. Customary	
Analysis Year:	2035 Base + Project
Project ID: Mt. Rose Ski Resort	
East/West Street:	Mt. Rose Highway
North/South Street:	Main Access
Intersection Orientation: EW	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		49	49	197	25	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		54	54	218	27	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR		LT	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	38		174			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	42		193			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		218		235				
C(m) (vph)		1483		795				
v/c		0.15		0.30				
95% queue length		0.52		1.24				
Control Delay		7.8		11.4				
LOS		A		B				
Approach Delay				11.4				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst:	MSH
Agency/Co.:	Solaegui Engineers
Date Performed:	10/9/2014
Analysis Time Period:	Sunday PM Peak Hour
Intersection:	Mt. Rose & Main Access
Jurisdiction:	NDOT
Units: U. S. Customary	
Analysis Year:	2035 Base + Project
Project ID: Mt. Rose Ski Resort	
East/West Street:	Mt. Rose Highway
North/South Street:	Main Access
Intersection Orientation: EW	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		25	16	69	84	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		27	17	76	93	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration		TR		LT		
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	102		295			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	113		327			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		76		440				
C(m) (vph)		1564		911				
v/c		0.05		0.48				
95% queue length		0.15		2.68				
Control Delay		7.4		12.6				
LOS		A		B				
Approach Delay				12.6				
Approach LOS				B				

APPENDIX E

WASHOE COUNTY
NEVADA

Board of Adjustment Action Order

Special Use Permit Case No. SB11-015

Decision:	Approval with Conditions
Decision Date:	February 2, 2012
Applicant:	Mount Rose Ski Tahoe
Assigned Planner:	Trevor Lloyd - Senior Planner Washoe County Department of Community Development Phone: 775.328.3620 E-Mail: tlloyd@washoecounty.us

Project Description: To allow the phased improvements to the Mt. Rose Ski Tahoe ski resort. The proposed improvements include the removal of two existing ski lifts (Ponderosa and Galena) and the replacement with a new single ski lift, the extension of an existing ski lift (Lakeview lift), expansion of the mountain terrain to include new ski trails and a new surface lift, the expansion of the existing Rose lodge by approximately ±30,000 square feet, the relocation of a ±5,000 square foot maintenance building, the construction of two snowmaking ponds, the construction of a relocated access road off of Mt. Rose Hwy., the construction of a new ±3,000 square foot on mountain restaurant, the construction of a ±15,000 seasonal locker building and the construction of a new terrain park ski lift on the slide side of the resort. The proposed improvements are projected to be phased over a 15 year timeframe.

Notice is hereby given that the Washoe County Board of Adjustment granted approval with conditions of the above referenced case number based on the findings in accordance with Washoe County Development Code Article 810. If no appeals have been filed within 10 days after the date of decision, the approval by the Washoe County Board of Adjustment is final. If filed, an appeal stays any further action on the permit until final resolution of the appeal. If the end of the appeal period falls on a non-business day, the appeal period shall be extended to include the next business day. An appeal shall be filed in accordance with the provisions found in Article 810 of the Washoe County Development Code.

This Action Order of approval is granted subject to the attached conditions and Washoe County development standards. Please contact the planner assigned to your project at the above-referenced phone number within 7 days of receipt of this Order to review the steps necessary to satisfy the Conditions of Approval. A business license, certificate of occupancy or final approval shall not be issued until all of the Conditions of Approval (attached) are satisfied. Additionally, compliance shall be required with all federal, state and local statutes, ordinances and regulations applicable to the approved project.

This Action Order does not authorize grading or building without issuance of the necessary permits from the Washoe County Building and Safety Department.

Washoe County
Community Development

Bill Whitney
Secretary to the Board of Adjustment

BW/TL/ds (SB11-015 Mount Rose Ski Tahoe Action Order)

Attachments:

- Conditions of Approval

xc: Representatives: Lisa Foster, lfnevada@sbcglobal.net

Action Order xc: Greg Salter, Esq., District Attorney's Office; Carol Buonanoma, Assessor's Office (CAAS); Theresa Wilkins, Assessor's Office; Don Jeppson, AIA, Department of Building & Safety; Jim Shaffer, Environmental Health Services, District Health Department; Alan Reich, P.E., Department of Water Resources; Kimble Corbridge/Leo Vesely, P.E., Public Works Department, Engineering Division; Kurt Latipow, Washoe County Fire Services Coordinator; Mark Regan, Sierra Fire Protection District; West Washoe Valley Citizen Advisory Board, Chair, Galena Steamboat Citizen Advisory Board

WASHOE COUNTY
NEVADA

Conditions of Approval

Special Use Permit Case No. SB11-015

The project approved under Special Use Permit Case No: SB11-015 shall be carried out in accordance with the Conditions of Approval granted by the Board of Adjustment on February 2, 2012. Conditions of Approval are requirements placed on a permit or development by each reviewing agency. These Conditions of Approval may require submittal of documents, applications, fees, inspections, amendments to plans, and more. These conditions do not relieve the applicant of the obligation to obtain any other approvals and licenses from relevant authorities required under any other act.

Unless otherwise specified, all conditions related to the approval of this Special Use Permit shall be met or financial assurance must be provided to satisfy the conditions of approval prior to issuance of a grading or building permit. The agency responsible for determining compliance with a specific condition shall determine whether the condition must be fully completed or whether the applicant shall be offered the option of providing financial assurance. All agreements, easements, or other documentation required by these conditions shall have a copy filed with the County Engineer and the Department of Community Development.

Compliance with the conditions of approval related to this Special Use Permit is the responsibility of the applicant, his/her successor in interest, and all owners, assignees, and occupants of the property and their successors in interest. Failure to comply with any of the conditions imposed in the approval of the Special Use Permit may result in the initiation of revocation procedures.

Washoe County reserves the right to review and revise the conditions of approval related to this Special Use Permit should it be determined that a subsequent license or permit issued by Washoe County violates the intent of this approval.

For the purpose of conditions imposed by Washoe County, "may" is permissive and "shall" or "must" is mandatory.

Conditions of Approval are usually complied with at different stages of the proposed project. Those stages are typically:

- Prior to permit issuance (i.e., grading permits, building permits, etc.).
- Prior to obtaining a final inspection and/or a certificate of occupancy.
- Prior to the issuance of a business license or other permits/licenses.
- Some "Conditions of Approval" are referred to as "Operational Conditions". These conditions must be continually complied with for the life of the project or business.

The Washoe County Commission oversees many of the reviewing agencies/departments with the exception of the following agencies.

- **The DISTRICT BOARD OF HEALTH, through the Washoe County Health District, has jurisdiction over all public health matters in the Health District.**

Any conditions set by the District Health Department must be appealed to the District Board of Health.

- **The RENO-TAHOE AIRPORT AUTHORITY is directed and governed by its own Board. Therefore, any conditions set by the Reno-Tahoe Airport Authority must be appealed to their Board of Trustees.**

- **The REGIONAL TRANSPORTATION COMMISSION (RTC) is directed and governed by its own board. Therefore, any conditions set by the Regional Transportation Commission must be appealed to that Board.**

FOLLOWING ARE CONDITIONS OF APPROVAL REQUIRED BY THE REVIEWING AGENCIES. EACH CONDITION MUST BE MET TO THE SATISFACTION OF THE ISSUING AGENCY.

Washoe County Community Development

1. The following conditions are requirements of the Department of Community Development, which shall be responsible for determining compliance with these conditions.

Contact Name – Trevor Lloyd, 775.328.3620

a. The applicant shall demonstrate substantial conformance to the plans approved as part of this special use permit. The Department of Community Development shall determine compliance with this condition.

b. The applicant shall submit building plans and complete construction of all phases of this project within 15 years from the approval date by Washoe County. In order to demonstrate progress, the applicant shall complete at least one improvement within each five year increment.

c. The applicant shall attach a copy of the action order approving this project to all administrative permit applications (including building permits) applied for as part of this special use permit.

d. A note shall be placed on all construction drawings and grading plans stating:

NOTE

Should any prehistoric or historic remains/artifacts be discovered during site development, work shall temporarily be halted at the specific site and the State Historic Preservation Office of the Department of Museums, Library and Arts shall be notified to record and photograph the site. The period of temporary delay shall be limited to a maximum of two (2) working days from the date of notification.

e. Prior to any ground disturbing activity, the applicant shall submit a landscaping/architectural design plan to the Department of Community Development for review and approval by the Design Review Committee. Said

plan shall address, but not be limited to: type and color of building materials, general architectural design, and signage and exterior lighting if applicable.

f. The following **Operational Conditions** shall be required for the life of the project/business:

1. This special use permit shall remain in effect until or unless it is revoked or is inactive for one year.

2. Failure to comply with the conditions of approval shall render this approval null and void. Compliance with this condition shall be determined by the Department of Community Development.

3. The applicant and any successors shall direct any potential purchaser/operator of the site and/or the special use permit to meet with the Department of Community Development to review conditions of approval prior to the final sale of the site and/or the special use permit. Any subsequent purchaser/operator of the site and/or the special use permit shall notify the Department of Community Development of the name, address, telephone number, and contact person of the new purchaser/operator within 30 days of the final sale.

4. This special use permit shall remain in effect as long as the business is in operation and maintains a valid business license.

g. The applicant shall provide signage/markers and rope or fencing around each of the snowmaking ponds at all times to provide warnings and keep people away from the ponds.

Washoe County Department of Public Works

2. The following conditions are requirements of the Engineering Division, which shall be responsible for determining compliance with these conditions.

Contact Name – Leo Vesely, 775.328.8032

a. A complete set of construction improvement drawings, including an on-site grading plan, shall be submitted to the County Engineer for approval when applying for a building/grading permit. Grading shall comply with best management practices (BMP's) and shall include detailed plans for grading, site drainage, erosion control (including BMP locations and installation details), pollution control, slope stabilization, and mosquito abatement. Placement or disposal of any excavated materials shall be indicated on the grading plan. Silts shall be controlled on-site and not allowed onto adjacent properties.

b. For construction areas larger than 1 acre, the owner/developer shall obtain from the Nevada Division of Environmental Protection a Stormwater Discharge Permit for construction and submit a copy to the Engineering Division prior to issuance of a grading permit.

c. For construction areas larger than 1 acre, the owner/developer shall complete and submit the Construction Permit Submittal Checklist, the Performance Standards Compliance Checklist and pay the Construction Stormwater

Inspection Fee prior to obtaining a grading permit. The County Engineer shall determine compliance with this condition.

d. All disturbed areas left undeveloped for more than 30 days shall be treated with a dust palliative. Disturbed areas left undeveloped for more than 45 days shall be revegetated. Methods and seed mix must be approved by the County Engineer with technical assistance from the Washoe-Storey Conservation District. The applicant shall submit a revegetation plan to the Washoe-Storey Conservation District for review.

e. A grading bond of $1,500/acre of disturbed area shall be provided to the Engineering Division prior to any grading.

f. Cross-sections indicating cuts and fills shall be submitted when applying for a grading permit. Estimated total volumes shall be indicated.

g. The developer shall provide documentation of access to the site to the satisfaction of the County Engineer.

h. Approved Encroachment Permits shall be obtained from the Nevada Department of Transportation (NDOT), for use of State right-of-way and a copy of said permit sent to the Engineering Division. The County Surveyor shall determine compliance with this condition.

i. A detailed hydrology/hydraulic report prepared by a registered engineer shall be submitted to the Engineering Division for review and approval. The report shall include the locations, points of entry and discharge, flow rates and flood limits of all 5- and 100-year storm flows impacting both the site and offsite areas and the methods for handling those flows. The report shall include all storm drain pipe and ditch sizing calculations and a discussion of and mitigation measures for any impacts on existing offsite drainage facilities and properties.

j. Any increase in storm water runoff resulting from the site grading and based upon the 5 and 100-year storms shall be detained and/or mitigated on site to the satisfaction of the County Engineer.

k. The developer shall provide pretreatment for petrochemicals and silt for all storm drainage from the site to the satisfaction of the County Engineer.

l. The maximum permissible flow velocity (that which does not cause scour) shall be determined for all proposed channels and open ditches. The determination shall be based on a geotechnical analysis of the channel sli, proposed channel lining and channel cross section, and it shall be in accordance with acceptable engineering publications/calculations. Appropriate linings shall be provided for all proposed channels and open ditches such that the 100-year flows do not exceed the maximum permissible flow velocity. The County Engineer shall be responsible for determining compliance with this condition.

m. A note shall be placed on the improvement plans stating that at no time shall natural drainage be impeded.

n. Any easement documents recorded for the project shall include an exhibit map that shows the location and limits of the easement in relationship to the project. The County Engineer shall determine compliance with this condition.

o. Any existing easements or utilities that conflict with the project shall be relocated, quitclaimed, and/or abandoned, as appropriate. The County Engineer shall determine compliance with this condition.

p. All slopes steeper than 3:1 shall be mechanically stabilized to control erosion. As an alternative to riprap, an engineered solution (geofabric, etc.) may be acceptable. The County Engineer shall determine compliance with this condition.

Washoe County Department of Water Resources (DWR)

3. The following conditions are requirements of the Department of Water Resources, which shall be responsible for determining compliance with these conditions.

Contact Name – Alan Reich, 775.954.4600

a. The applicant shall dedicate necessary water rights for the requested uses prior to issuance of building permit(s). The dedication of water rights shall be in accordance with Article 422 and the Forest Area Plan. Water rights must be in good standing with the State of Nevada Division of Water Resources and the point of diversion, place and manner of use must be acceptable to the DWR. The subject water rights will then be made available to the Applicant via a water sale agreement, which will then lease the water rights back to the Applicant for 99 years, at no cost to the Applicant.

b. The applicant shall pay all applicable fees resulting from Special Assessment District 29 (SAD29).

c. Improvement plans shall be reviewed and approved by DWR prior to the release of building permits. They shall be in compliance with Washoe County Design Standards or design standards acceptable to Washoe County, NAC445A, and be designed by a Professional Engineer licensed to practice in the State of Nevada.

d. Inspection of all sanitary sewer improvements shall be accomplished by DWR staff or the Engineer of Record.

e. All fees shall be paid in accordance with Washoe County Ordinance prior to the release of building permits.

f. All applicable sanitary sewer connection fees shall be paid prior to release of any building permits.

g. A master sanitary sewer report for the entire proposed project shall be prepared and submitted by the applicant's engineer at the time of the initial submittal for the first phase which addresses:

i. the estimated sewage flows generated by the project(s),

ii. projected sewage flows from potential or existing development within tributary areas,

iii. the impact on capacity of existing infrastructure,

iv. slope of pipe, invert elevation and rim elevation for all manholes,

v. and proposed collection line sizes, on-site and off-site alignment, and half-full velocities.

h. No building permits shall be released until an application for service is received and a sewer lateral permit is issued.

i. No permanent structures (including rockery or retaining walls, building's, etc.) shall be allowed within or upon any County maintained utility easement.

j. A 20-foot minimum sanitary sewer and access easement shall be granted to Washoe County over any public sanitary sewer facilities not located in a dedicated right of way.

k. A 12-foot wide all weather sanitary sewer access road shall be constructed to facilitate access to public sanitary sewer manholes not within a paved street.

Washoe County District Health Department

4. The following conditions are requirements of the District Health Department, which shall be responsible for determining compliance with these conditions. The District Board of Health has jurisdiction over all public health matters in the Health District. Any conditions set by the District Health Department must be appealed to the District Board of Health.

Contact Name – Bryan Tyre, 775.328.2434

a. Construction plans and equipment specifications for any foodhandling facilities, detailing food storage and preparation areas, shall be submitted to the health District for review and approval prior to the issuance of a building permit. Foodhandling facilities shall comply with requirements stipulated in the Washoe County District Board of Health Regulations Governing Food Establishments and with requirements of the appropriate disposal service.

b. Garbage facilities, dumpsters, and compactors shall have raised washdown pads which drain into a sanitary sewer. Refer to Sections 100.025 and 100.040 of the Washoe County District Board of Health Regulations Governing Food Establishments.

c. All land disturbing activities during construction phases, such as, but not limited to, grading, excavation, cut and fill, etc., must be done with effective dust control measures consistent with Washoe County District Board of Health Regulations Governing Air Quality Management, Section 040.030. Disturbances greater than 1 acre in size must obtain an approved dust control plan prior to beginning work.

Washoe County District Health Department – Vector Borne Diseases

5. The following conditions are requirements of the District Health Department, which shall be responsible for determining compliance with these conditions. The District Board of Health has jurisdiction over all public health matters in the Health District. Any

conditions set by the District Health Department must be appealed to the District Board of Health.

Contact Name – Jim Shaffer, 775.328.2434

a. The proposed snow making ponds will require the standard detail of placing 6-8 inch rock on the side slopes of the ponds perimeter.

b. Prior to approval of any grading permit and or building permit the above detail designs is required on the civil plans.

Sierra Fire Protection District

6. The following conditions are requirements of the Sierra Fire Protection District, which shall be responsible for determining compliance with these conditions.

Contact Name – Mark Regan, 775.849.1108

a. Have a Wildfire Hazard Mitigation Plan in place before construction begins.

b. Meet fire flow requirements for the Rose Base Lodge expansion. 3,750gpm duration of 4 hours. New water tanks will meet NFPA 22 and new fire service mains will meet NFPA 24.

c. Provide remote FDC to the Rose Base Lodge and mountain restaurant.

d. Update the fire hydrants to a Storz steamer port in place of a 4.33 x 5" port.

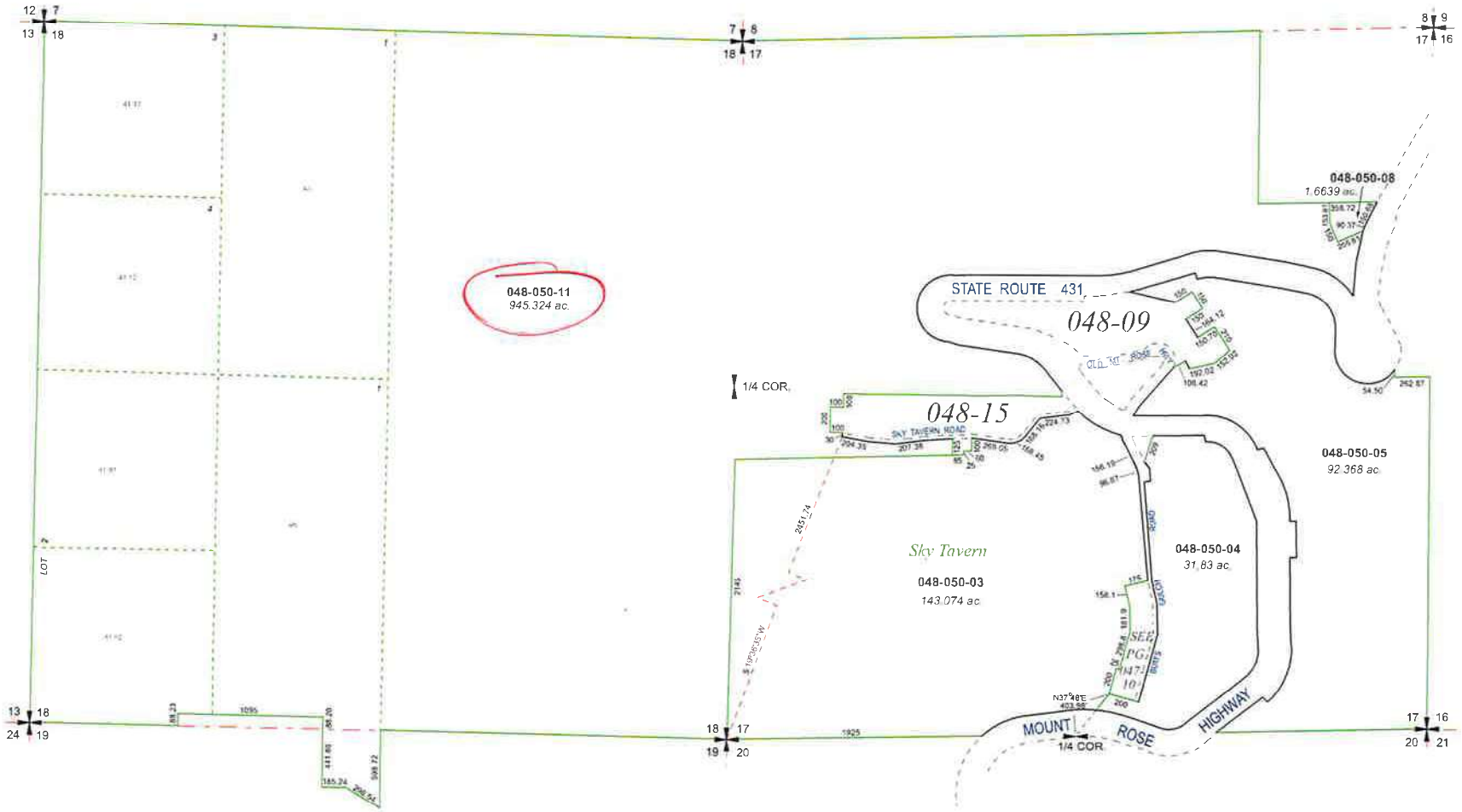
e. New buildings to be built to meet the 2006IFC and Washoe County Chapter 60. Fire sprinklers are required in Rose Base Lodge, mountain restaurant, seasonal locker room and the new maintenance building.

f. Need to provide approved transportation up to the mountain restaurant. The fire equipment can't access the restaurant.

g. Provide a supply of firefighting equipment on site of the mountain restaurant

*** End of Conditions ***

SECTION 18 & PORTIONS OF SECTIONS 17 & 19, T17N - R19E



Assessor's Map Number

048-05

STATE OF NEVADA

WASHOE COUNTY

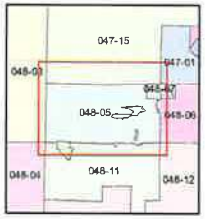
ASSESSOR'S OFFICE

Joshua G. Wilson, Assessor

1001 East Ninth Street
Building D
Reno, Nevada 89512
(775) 328-2231

Feet:
0 200 400 600 800

1 inch = 800 feet



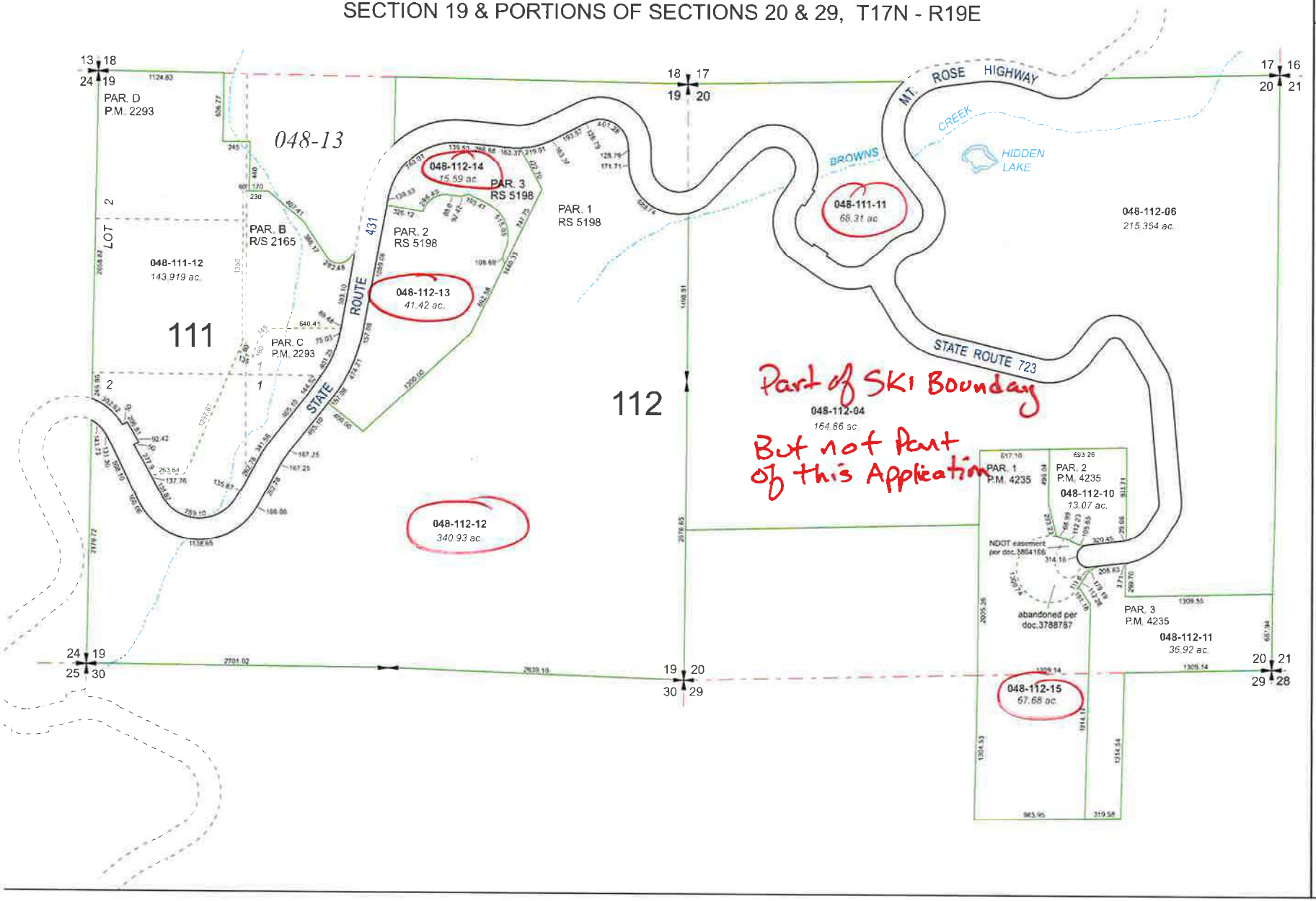
created by: TWT 10/13/2009

last updated: CFB 10/11/2019, 12/06/2013

area previously shown on map(s)

NOTE: This map was prepared for the use of t
Washoe County Assessor for assessment and
illustrative purposes only. It does not represen
a survey of the premises. No liability is assum
as to the sufficiency or accuracy of the data
delineated hereon.

SECTION 19 & PORTIONS OF SECTIONS 20 & 29, T17N - R19E



Assessor's Map Number

048-11

STATE OF NEVADA

WASHOE COUNTY

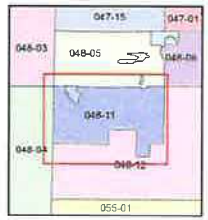
ASSESSOR'S OFFICE

Joshua G. Wilson, Assessor

1001 East Ninth Street
Building D
Reno, Nevada 89512
(775) 328-2231

Feet
0 100200 400 600 800

1 inch = 800 feet



created by: KSB 2/02/2010

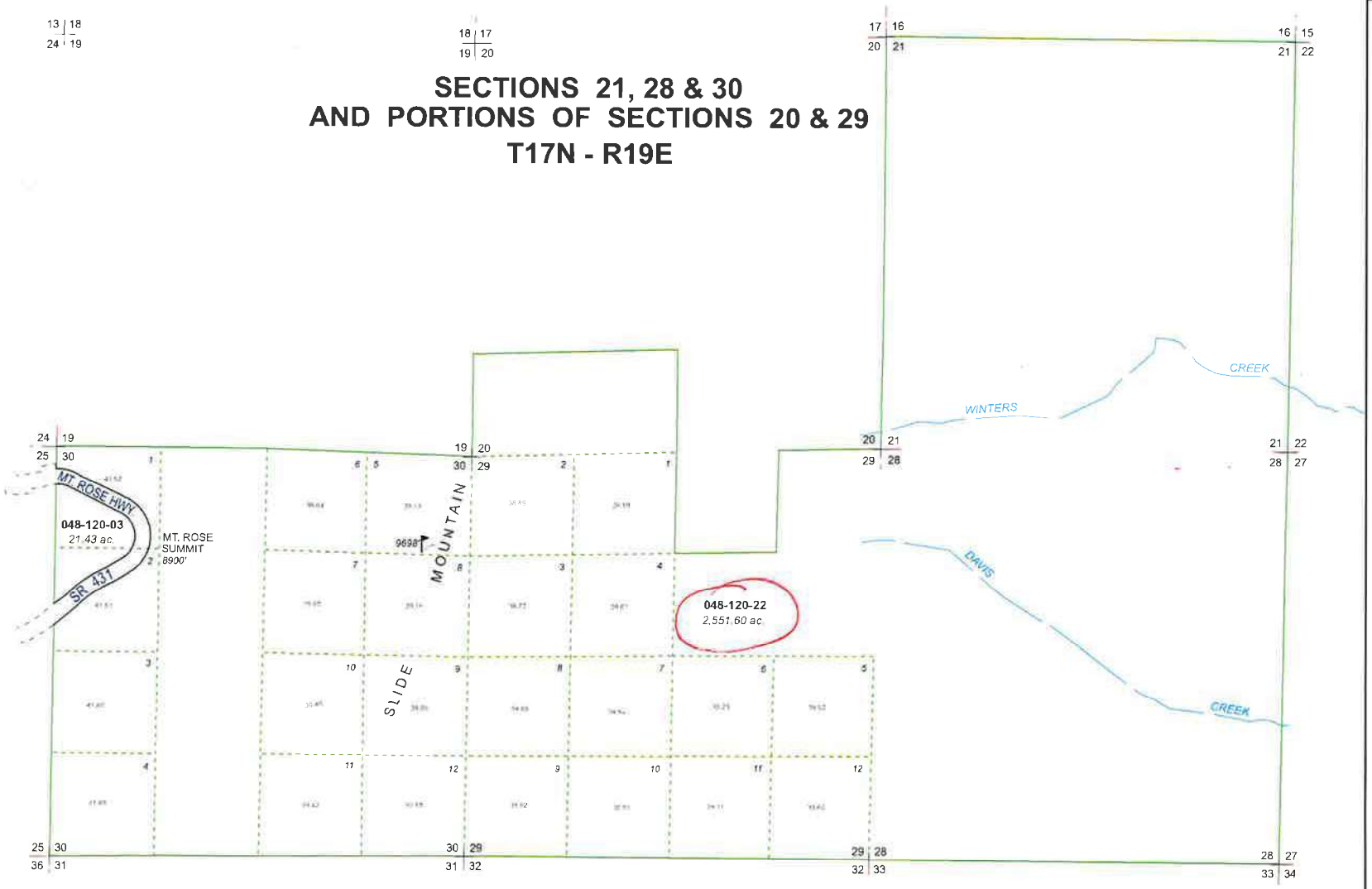
last updated: KSB 2/16/10, CFB 4/01/10

area previously shown on map(s)

045-52

NOTE: This map was prepared for the use of t
Washoe County Assessor for assessment and
illustrative purposes only. It does not represent
a survey of the premises. No liability is assume
as to the sufficiency or accuracy of the data
delineated hereon.

SECTIONS 21, 28 & 30
AND PORTIONS OF SECTIONS 20 & 29
T17N - R19E



Assessor's Map Number

048-12

STATE OF NEVADA

WASHOE COUNTY

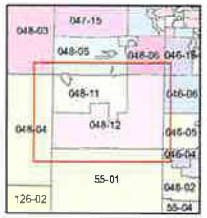
ASSESSOR'S OFFICE

Joshua G. Wilson, Assesso

1001 East Ninth Street
Building D
Reno, Nevada 89512
(775) 328-2231

Feet
0 165330 660 990 1,320

1 inch = 1,320 feet



created by: TWT 10/14/2009

last updated:

area previously shown on map(s)

NOTE: This map was prepared for the use of t
Washoe County Assessor for assessment and
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Washoe County Treasurer
Tammi Davis

Washoe County Treasurer
P.O. Box 30039, Reno, NV 89520-3039
ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Bill Detail

Back to Account Detail | Change of Address | Print this Page

Washoe County Parcel Information

Parcel ID	Status	Last Update
04811212	Active	9/12/2019 2:07:27 AM

Current Owner:
MT ROSE DEVELOPMENT CO
22222 MOUNT ROSE HWY
RENO, NV 89511

SITUS:
22222 MOUNT ROSE HWY
WCTY NV

Taxing District
4000

Geo CD:

Legal Description

Range 19 SubdivisionName _UNSPECIFIED Township 17 Section 19 Lot 1 Block

Installments

Period	Due Date	Tax Year	Tax	Penalty/Fee	Interest	Total Due
INST 1	8/19/2019	2019	$0.00	$0.00	$0.00	$0.00
INST 2	10/7/2019	2019	$26,043.80	$0.00	$0.00	$26,043.80
INST 3	1/6/2020	2019	$26,043.80	$0.00	$0.00	$26,043.80
INST 4	3/2/2020	2019	$26,043.80	$0.00	$0.00	$26,043.80
		Total Due:	**$78,131.40**	**$0.00**	**$0.00**	**$78,131.40**

Tax Detail

	Gross Tax	Credit	Net Tax
State of Nevada	$5,465.64	$0.00	$5,465.64
Truckee Meadows Fire Dist	$17,361.46	$0.00	$17,361.46
Washoe County	$44,744.35	$0.00	$44,744.35
Washoe County Sc	$36,603.75	$0.00	$36,603.75
PLEASANT VALLEY WATER BASIN	$0.86	$0.00	$0.86
Total Tax	**$104,176.06**	**$0.00**	**$104,176.06**

Payment History

Tax Year	Bill Number	Receipt Number	Amount Paid	Last Paid
2019	2019171974	B19.72038	$26,044.66	8/23/2019

Pay By Check

Please make checks payable to:
WASHOE COUNTY TREASURER

Mailing Address:
P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

Change of Address

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Reno, NV 89512-2845

Washoe County Treasurer
Tammi Davis

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ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Bill Detail

Back to Account Detail | Change of Address | Print this Page

Washoe County Parcel Information

Parcel ID	Status	Last Update
04811213	Active	9/12/2019 2:07:27 AM

Current Owner:
MT ROSE DEVELOPMENT CO
22222 MOUNT ROSE HWY
RENO, NV 89511

SITUS:
0 MOUNT ROSE HWY
WASHOE COUNTY NV

Taxing District
4000

Geo CD:

Legal Description

Township 17 Section 19 Lot 2 Block Range 19 SubdivisionName _UNSPECIFIED

Installments

Period	Due Date	Tax Year	Tax	Penalty/Fee	Interest	Total Due
INST 1	8/19/2019	2019	$0.00	$0.00	$0.00	$0.00
INST 2	10/7/2019	2019	$493.74	$0.00	$0.00	$493.74
INST 3	1/6/2020	2019	$493.73	$0.00	$0.00	$493.73
INST 4	3/2/2020	2019	$493.73	$0.00	$0.00	$493.73
		Total Due:	**$1,481.20**	**$0.00**	**$0.00**	**$1,481.20**

Tax Detail

	Gross Tax	Credit	Net Tax
State of Nevada	$123.22	($18.96)	$104.26
Truckee Meadows Fire Dist	$391.42	($72.51)	$318.91
Washoe County	$1,008.77	($155.24)	$853.53
Washoe County Sc	$825.24	($127.00)	$698.24
PLEASANT VALLEY WATER BASIN	$0.86	$0.00	$0.86
Total Tax	**$2,349.51**	**($373.71)**	**$1,975.80**

Payment History

Tax Year	Bill Number	Receipt Number	Amount Paid	Last Paid
2019	2019172464	B19.72042	$494.60	8/23/2019

Pay By Check

Please make checks payable to:
WASHOE COUNTY TREASURER

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P.O. Box 30039
Reno, NV 89520-3039

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Reno, NV 89512-2845

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Reno, NV 89512-2845

Washoe County Treasurer
Tammi Davis

Washoe County Treasurer
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ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Bill Detail

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Washoe County Parcel Information

Parcel ID	Status	Last Update
04811214	Active	9/12/2019 2:07:27 AM

Current Owner:
MT ROSE DEVELOPMENT CO
22222 MOUNT ROSE HWY
RENO, NV 89511

SITUS:
0 MOUNT ROSE HWY
WASHOE COUNTY NV

Taxing District
4000

Geo CD:

Legal Description

Township 17 Section 19 Lot 3 Block Range 19 SubdivisionName _UNSPECIFIED

Installments

Period	Due Date	Tax Year	Tax	Penalty/Fee	Interest	Total Due
INST 1	8/19/2019	2019	$0.00	$0.00	$0.00	$0.00
INST 2	10/7/2019	2019	$1,230.86	$0.00	$0.00	$1,230.86
INST 3	1/6/2020	2019	$1,230.85	$0.00	$0.00	$1,230.85
INST 4	3/2/2020	2019	$1,230.85	$0.00	$0.00	$1,230.85
		Total Due:	**$3,692.56**	**$0.00**	**$0.00**	**$3,692.56**

Tax Detail

	Gross Tax	Credit	Net Tax
State of Nevada	$258.31	$0.00	$258.31
Truckee Meadows Fire Dist	$820.52	$0.00	$820.52
Washoe County	$2,114.65	$0.00	$2,114.65
Washoe County Sc	$1,729.94	$0.00	$1,729.94
PLEASANT VALLEY WATER BASIN	$0.86	$0.00	$0.86
Total Tax	**$4,924.28**	**$0.00**	**$4,924.28**

Payment History

Tax Year	Bill Number	Receipt Number	Amount Paid	Last Paid
2019	2019172482	B19.72036	$1,231.72	8/23/2019

Pay By Check

Please make checks payable to:
WASHOE COUNTY TREASURER

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P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
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Reno, NV 89512-2845

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Reno, NV 89512-2845

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Tammi Davis

Washoe County Treasurer
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ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Bill Detail

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Washoe County Parcel Information

Parcel ID	Status	Last Update
04811215	Active	9/12/2019 2:07:27 AM

Current Owner:
MT ROSE DEVELOPMENT COMPANY
22222 MOUNT ROSE HWY
RENO, NV 89511

SITUS:
21333 MOUNT ROSE HWY
WCTY NV

Taxing District
4000

Geo CD:

Legal Description

Range 19 Lot 1 SubdivisionName _UNSPECIFIED Township 17

Installments

Period	Due Date	Tax Year	Tax	Penalty/Fee	Interest	Total Due
INST 1	8/19/2019	2019	$0.00	$0.00	$0.00	$0.00
INST 2	10/7/2019	2019	$5,154.30	$0.00	$0.00	$5,154.30
INST 3	1/6/2020	2019	$5,154.30	$0.00	$0.00	$5,154.30
INST 4	3/2/2020	2019	$5,154.30	$0.00	$0.00	$5,154.30
		Total Due:	**$15,462.90**	**$0.00**	**$0.00**	**$15,462.90**

Tax Detail

	Gross Tax	Credit	Net Tax
State of Nevada	$1,081.70	$0.00	$1,081.70
Truckee Meadows Fire Dist	$3,435.99	$0.00	$3,435.99
Washoe County	$8,855.31	$0.00	$8,855.31
Washoe County Sc	$7,244.21	$0.00	$7,244.21
Total Tax	**$20,617.21**	**$0.00**	**$20,617.21**

Payment History

Tax Year	Bill Number	Receipt Number	Amount Paid	Last Paid
2019	2019172015	B19.45091	$5,154.31	8/13/2019

Pay By Check

Please make checks payable to:
WASHOE COUNTY TREASURER

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P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

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1001 E 9th Street
Reno, NV 89512-2845

Washoe County Treasurer
Tammi Davis

Washoe County Treasurer
P.O. Box 30039, Reno, NV 89520-3039
ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Bill Detail

Back to Account Detail | Change of Address | Print this Page

Washoe County Parcel Information

Parcel ID	Status	Last Update
04805011	Active	9/12/2019 2:07:27 AM

Current Owner:
UNITED STATES OF AMERICA
NONE
RENO, NV 00000

SITUS:
0 MOUNT ROSE HWY
WCTY NV

Taxing District
4000

Geo CD:

Legal Description

Range 19 SubdivisionName _UNSPECIFIED Section 18 Township 17

Installments

Period	Due Date	Tax Year	Tax	Penalty/Fee	Interest	Total Due
INST 1	8/19/2019	2019	$0.00	$0.00	$0.00	$0.00
		Total Due:	**$0.00**	**$0.00**	**$0.00**	**$0.00**

Tax Detail

	Gross Tax	Credit	Net Tax
State of Nevada	$562.47	($562.47)	$0.00
Truckee Meadows Fire Dist	$1,786.66	($1,786.66)	$0.00
Washoe County	$4,604.63	($4,604.63)	$0.00
Washoe County Sc	$3,766.87	($3,766.87)	$0.00
Total Tax	**$10,720.63**	**($10,720.63)**	**$0.00**

Payment History

No Payment Records Found

Pay By Check

Please make checks payable to:
WASHOE COUNTY TREASURER

Mailing Address:
P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

Change of Address

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(775) 328-3642

Address change requests may also be mailed to:
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1001 E 9th Street
Reno, NV 89512-2845

Washoe County Treasurer
Tammi Davis

Washoe County Treasurer
P.O. Box 30039, Reno, NV 89520-3039
ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Account Detail

Back to Account Detail | Change of Address | Print this Page

CollectionCart

	Items	Total		
Collection Cart	0	$0.00	Checkout	View

Pay Online

No payment due for this account.

Washoe County Parcel Information

Parcel ID	Status	Last Update
04811111	Active	9/12/2019 2:07:27 AM

Current Owner:
UNITED STATES OF AMERICA

NONE
RENO, NV 00000

SITUS:
22215 MOUNT ROSE HWY

Taxing District
4000

Geo CD:

Legal Description

Range 19 SubdivisionName _UNSPECIFIED Section 20 Township 17

Tax Bill (Click on desired tax year for due dates and further details)

Tax Year	Net Tax	Total Paid	Penalty/Fees	Interest	Balance Due
2019	$0.00	$0.00	$0.00	$0.00	$0.00
2018	$0.00	$0.00	$0.00	$0.00	$0.00
2017	$0.00	$0.00	$0.00	$0.00	$0.00
2016	$0.00	$0.00	$0.00	$0.00	$0.00
2015	$0.00	$0.00	$0.00	$0.00	$0.00
				Total	$0.00

Disclaimer

- ALERTS: If your real property taxes are delinquent, the search results displayed may not reflect the correct amount owing. Please contact our office for the current amount due.
- For your convenience, online payment is available on this site. E-check payments are accepted without a fee. However, a service fee does apply for online credit card payments. See Payment Information for details.

Pay By Check

Please make checks payable to:
WASHOE COUNTY TREASURER

Mailing Address:
P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

Payment Information

Special Assessment District

Installment Date Information

Assessment Information

Washoe County Treasurer
Tammi Davis

Washoe County Treasurer
P.O. Box 30039, Reno, NV 89520-3039
ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Account Detail

Back to Account Detail | Change of Address | Print this Page

CollectionCart

	Items	Total	
Collection Cart	0	$0.00	Checkout View

Pay Online

No payment due for this account.

Washoe County Parcel Information

Parcel ID	Status	Last Update
04812022	Active	9/12/2019 2:07:27 AM

Current Owner:
UNITED STATES OF AMERICA

NONE
RENO, NV 00000

SITUS:
22900 MOUNT ROSE HWY
WASHOE COUNTY NV

Taxing District
4000

Geo CD:

Legal Description

SubdivisionName _UNSPECIFIED Section 20 21 Township 17 Range 19

Tax Bill (Click on desired tax year for due dates and further details)

Tax Year	Net Tax	Total Paid	Penalty/Fees	Interest	Balance Due
2019	$0.00	$0.00	$0.00	$0.00	$0.00
2018	$0.00	$0.00	$0.00	$0.00	$0.00
2017	$0.00	$0.00	$0.00	$0.00	$0.00
2016	$0.00	$0.00	$0.00	$0.00	$0.00
2015	$0.00	$0.00	$0.00	$0.00	$0.00
				Total	$0.00

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Pay By Check

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WASHOE COUNTY TREASURER

Mailing Address:
P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

Payment Information

Special Assessment District

Installment Date Information

Assessment Information

Washoe County Treasurer
Tammi Davis

Washoe County Treasurer
P.O. Box 30039, Reno, NV 89520-3039
ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Bill Detail

Back to Account Detail | Change of Address | Print this Page

Washoe County Parcel Information

Parcel ID	Status	Last Update
04811212	Active	9/12/2019 2:07:27 AM

Current Owner:
MT ROSE DEVELOPMENT CO
22222 MOUNT ROSE HWY
RENO, NV 89511

SITUS:
22222 MOUNT ROSE HWY
WCTY NV

Taxing District
4000

Geo CD:

Legal Description

Range 19 SubdivisionName _UNSPECIFIED Township 17 Section 19 Lot 1 Block

Installments

Period	Due Date	Tax Year	Tax	Penalty/Fee	Interest	Total Due
INST 1	8/19/2019	2019	$0.00	$0.00	$0.00	$0.00
INST 2	10/7/2019	2019	$26,043.80	$0.00	$0.00	$26,043.80
INST 3	1/6/2020	2019	$26,043.80	$0.00	$0.00	$26,043.80
INST 4	3/2/2020	2019	$26,043.80	$0.00	$0.00	$26,043.80
		Total Due:	**$78,131.40**	**$0.00**	**$0.00**	**$78,131.40**

Tax Detail

	Gross Tax	Credit	Net Tax
State of Nevada	$5,465.64	$0.00	$5,465.64
Truckee Meadows Fire Dist	$17,361.46	$0.00	$17,361.46
Washoe County	$44,744.35	$0.00	$44,744.35
Washoe County Sc	$36,603.75	$0.00	$36,603.75
PLEASANT VALLEY WATER BASIN	$0.86	$0.00	$0.86
Total Tax	**$104,176.06**	**$0.00**	**$104,176.06**

Payment History

Tax Year	Bill Number	Receipt Number	Amount Paid	Last Paid
2019	2019171974	B19.72038	$26,044.66	8/23/2019

Pay By Check

Please make checks payable to:
WASHOE COUNTY TREASURER

Mailing Address:
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Reno, NV 89520-3039

Overnight Address:
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Reno, NV 89512-2845

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Address change requests may also be mailed to:
Washoe County Assessor
1001 E 9th Street
Reno, NV 89512-2845

Washoe County Treasurer
P.O. Box 30039, Reno, NV 89520-3039
ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Washoe County Treasurer
Tammi Davis

Bill Detail

Back to Account Detail | Change of Address | Print this Page

Washoe County Parcel Information

Parcel ID	Status	Last Update
04811213	Active	9/12/2019 2:07:27 AM

Current Owner:
MT ROSE DEVELOPMENT CO
22222 MOUNT ROSE HWY
RENO, NV 89511

SITUS:
0 MOUNT ROSE HWY
WASHOE COUNTY NV

Taxing District
4000

Geo CD:

Legal Description

Township 17 Section 19 Lot 2 Block Range 19 SubdivisionName _UNSPECIFIED

Installments

Period	Due Date	Tax Year	Tax	Penalty/Fee	Interest	Total Due
INST 1	8/19/2019	2019	$0.00	$0.00	$0.00	$0.00
INST 2	10/7/2019	2019	$493.74	$0.00	$0.00	$493.74
INST 3	1/6/2020	2019	$493.73	$0.00	$0.00	$493.73
INST 4	3/2/2020	2019	$493.73	$0.00	$0.00	$493.73
		Total Due:	**$1,481.20**	**$0.00**	**$0.00**	**$1,481.20**

Tax Detail

	Gross Tax	Credit	Net Tax
State of Nevada	$123.22	($18.96)	$104.26
Truckee Meadows Fire Dist	$391.42	($72.51)	$318.91
Washoe County	$1,008.77	($155.24)	$853.53
Washoe County Sc	$825.24	($127.00)	$698.24
PLEASANT VALLEY WATER BASIN	$0.86	$0.00	$0.86
Total Tax	**$2,349.51**	**($373.71)**	**$1,975.80**

Payment History

Tax Year	Bill Number	Receipt Number	Amount Paid	Last Paid
2019	2019172464	B19.72042	$494.60	8/23/2019

Pay By Check

Please make checks payable to:
WASHOE COUNTY TREASURER

Mailing Address:
P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

Change of Address

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Reno, NV 89512-2845

Washoe County Treasurer
Tammi Davis

Washoe County Treasurer
P.O. Box 30039, Reno, NV 89520-3039
ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Bill Detail

Back to Account Detail | Change of Address | Print this Page

Washoe County Parcel Information

Parcel ID	Status	Last Update
04811214	Active	9/12/2019 2:07:27 AM

Current Owner:
MT ROSE DEVELOPMENT CO
22222 MOUNT ROSE HWY
RENO, NV 89511

SITUS:
0 MOUNT ROSE HWY
WASHOE COUNTY NV

Taxing District
4000

Geo CD:

Legal Description

Township 17 Section 19 Lot 3 Block Range 19 SubdivisionName _UNSPECIFIED

Installments

Period	Due Date	Tax Year	Tax	Penalty/Fee	Interest	Total Due
INST 1	8/19/2019	2019	$0.00	$0.00	$0.00	$0.00
INST 2	10/7/2019	2019	$1,230.86	$0.00	$0.00	$1,230.86
INST 3	1/6/2020	2019	$1,230.85	$0.00	$0.00	$1,230.85
INST 4	3/2/2020	2019	$1,230.85	$0.00	$0.00	$1,230.85
		Total Due:	**$3,692.56**	**$0.00**	**$0.00**	**$3,692.56**

Tax Detail

	Gross Tax	Credit	Net Tax
State of Nevada	$258.31	$0.00	$258.31
Truckee Meadows Fire Dist	$820.52	$0.00	$820.52
Washoe County	$2,114.65	$0.00	$2,114.65
Washoe County Sc	$1,729.94	$0.00	$1,729.94
PLEASANT VALLEY WATER BASIN	$0.86	$0.00	$0.86
Total Tax	**$4,924.28**	**$0.00**	**$4,924.28**

Payment History

Tax Year	Bill Number	Receipt Number	Amount Paid	Last Paid
2019	2019172482	B19.72036	$1,231.72	8/23/2019

Pay By Check

Please make checks payable to:
WASHOE COUNTY TREASURER

Mailing Address:
P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

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(775) 328-3642

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1001 E 9th Street
Reno, NV 89512-2845

Washoe County Treasurer
P.O. Box 30039, Reno, NV 89520-3039
ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Washoe County Treasurer
Tammi Davis

Bill Detail

Back to Account Detail | Change of Address | Print this Page

Washoe County Parcel Information

Parcel ID	Status	Last Update
04811215	Active	9/12/2019 2:07:27 AM

Current Owner:
MT ROSE DEVELOPMENT COMPANY
22222 MOUNT ROSE HWY
RENO, NV 89511

SITUS:
21333 MOUNT ROSE HWY
WCTY NV

Taxing District
4000

Geo CD:

Legal Description

Range 19 Lot 1 SubdivisionName _UNSPECIFIED Township 17

Installments

Period	Due Date	Tax Year	Tax	Penalty/Fee	Interest	Total Due
INST 1	8/19/2019	2019	$0.00	$0.00	$0.00	$0.00
INST 2	10/7/2019	2019	$5,154.30	$0.00	$0.00	$5,154.30
INST 3	1/6/2020	2019	$5,154.30	$0.00	$0.00	$5,154.30
INST 4	3/2/2020	2019	$5,154.30	$0.00	$0.00	$5,154.30
		Total Due:	**$15,462.90**	**$0.00**	**$0.00**	**$15,462.90**

Tax Detail

	Gross Tax	Credit	Net Tax
State of Nevada	$1,081.70	$0.00	$1,081.70
Truckee Meadows Fire Dist	$3,435.99	$0.00	$3,435.99
Washoe County	$8,855.31	$0.00	$8,855.31
Washoe County Sc	$7,244.21	$0.00	$7,244.21
Total Tax	**$20,617.21**	**$0.00**	**$20,617.21**

Payment History

Tax Year	Bill Number	Receipt Number	Amount Paid	Last Paid
2019	2019172015	B19.45091	$5,154.31	8/13/2019

Pay By Check

Please make checks payable to:
WASHOE COUNTY TREASURER

Mailing Address:
P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

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Reno, NV 89512-2845

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Email: tax@washoecounty.us

Washoe County Treasurer
Tammi Davis

Bill Detail

Back to Account Detail | Change of Address | Print this Page

Washoe County Parcel Information

Parcel ID	Status	Last Update
04805011	Active	9/12/2019 2:07:27 AM

Current Owner:
UNITED STATES OF AMERICA
NONE
RENO, NV 00000

SITUS:
0 MOUNT ROSE HWY
WCTY NV

Taxing District
4000

Geo CD:

Legal Description

Range 19 SubdivisionName _UNSPECIFIED Section 18 Township 17

Installments

Period	Due Date	Tax Year	Tax	Penalty/Fee	Interest	Total Due
INST 1	8/19/2019	2019	$0.00	$0.00	$0.00	$0.00
		Total Due:	**$0.00**	**$0.00**	**$0.00**	**$0.00**

Tax Detail

	Gross Tax	Credit	Net Tax
State of Nevada	$562.47	($562.47)	$0.00
Truckee Meadows Fire Dist	$1,786.66	($1,786.66)	$0.00
Washoe County	$4,604.63	($4,604.63)	$0.00
Washoe County Sc	$3,766.87	($3,766.87)	$0.00
Total Tax	**$10,720.63**	**($10,720.63)**	**$0.00**

Payment History

No Payment Records Found

Pay By Check

Please make checks payable to:
WASHOE COUNTY TREASURER

Mailing Address:
P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

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Reno, NV 89512-2845

Washoe County Treasurer
Tammi Davis

Washoe County Treasurer
P.O. Box 30039, Reno, NV 89520-3039
ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Account Detail

Back to Account Detail | Change of Address | Print this Page

CollectionCart

Collection Cart	Items	Total	Checkout	View
	0	$0.00		

Pay Online

No payment due for this account.

Washoe County Parcel Information

Parcel ID	Status	Last Update
04811111	Active	9/12/2019 2:07:27 AM

Current Owner:
UNITED STATES OF AMERICA

NONE
RENO, NV 00000

SITUS:
22215 MOUNT ROSE HWY

Taxing District
4000

Geo CD:

Legal Description

Range 19 SubdivisionName _UNSPECIFIED Section 20 Township 17

Tax Bill (Click on desired tax year for due dates and further details)

Tax Year	Net Tax	Total Paid	Penalty/Fees	Interest	Balance Due
2019	$0.00	$0.00	$0.00	$0.00	$0.00
2018	$0.00	$0.00	$0.00	$0.00	$0.00
2017	$0.00	$0.00	$0.00	$0.00	$0.00
2016	$0.00	$0.00	$0.00	$0.00	$0.00
2015	$0.00	$0.00	$0.00	$0.00	$0.00
				Total	$0.00

Disclaimer

- ALERTS: If your real property taxes are delinquent, the search results displayed may not reflect the correct amount owing. Please contact our office for the current amount due.
- For your convenience, online payment is available on this site. E-check payments are accepted without a fee. However, a service fee does apply for online credit card payments. See Payment Information for details.

Pay By Check

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WASHOE COUNTY TREASURER

Mailing Address:
P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

Payment Information

Special Assessment District

Installment Date Information

Assessment Information

Washoe County Treasurer
Tammi Davis

Washoe County Treasurer
P.O. Box 30039, Reno, NV 89520-3039
ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Account Detail

Back to Account Detail | Change of Address | Print this Page

CollectionCart

Collection Cart	Items	Total	Checkout	View
	0	$0.00		

Pay Online

No payment due for this account.

Washoe County Parcel Information

Parcel ID	Status	Last Update
04812022	Active	9/12/2019 2:07:27 AM

Current Owner:
UNITED STATES OF AMERICA

NONE
RENO, NV 00000

SITUS:
22900 MOUNT ROSE HWY
WASHOE COUNTY NV

Taxing District
4000

Geo CD:

Legal Description

SubdivisionName _UNSPECIFIED Section 20 21 Township 17 Range 19

Tax Bill (Click on desired tax year for due dates and further details)

Tax Year	Net Tax	Total Paid	Penalty/Fees	Interest	Balance Due
2019	$0.00	$0.00	$0.00	$0.00	$0.00
2018	$0.00	$0.00	$0.00	$0.00	$0.00
2017	$0.00	$0.00	$0.00	$0.00	$0.00
2016	$0.00	$0.00	$0.00	$0.00	$0.00
2015	$0.00	$0.00	$0.00	$0.00	$0.00
				Total	$0.00

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WASHOE COUNTY TREASURER

Mailing Address:
P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

Payment Information

Special Assessment District

Installment Date Information

Assessment Information

Permit No. 80237

THE STATE OF NEVADA

PERMIT TO APPROPRIATE WATER

Name of applicant:	**MT ROSE DEVELOPMENT COMPANY**
Source:	**UNDERGROUND**
Basin:	**PLEASANT VALLEY**
Manner of Use:	**RECREATIONAL**
Period of Use:	**OCTOBER 1ST TO MAY 1ST**
Priority Date:	**10/22/2010**

****

APPROVAL OF STATE ENGINEER

This is to certify that I have examined the foregoing application, and do hereby grant the same, subject to the following limitations and conditions:

This permit is issued subject to existing rights. It is understood that the amount of water herein granted is only a temporary allowance and that the final water right obtained under this permit will be dependent upon the amount of water actually placed to beneficial use. It is also understood that this right must allow for a reasonable lowering of the static water level. This well shall be equipped with a two (2) inch opening for measuring depth to water. If the well is flowing, a valve must be installed and maintained to prevent waste. A totalizing meter must be installed and maintained in the discharge pipeline near the point of diversion and accurate measurements must be kept of water placed to beneficial use. The totalizing meter must be installed before any use of water begins, or before the Proof of Completion of Work is filed. This source is located within an area designated by the State Engineer, pursuant to NRS 534.030. The State retains the right to regulate the use of the water herein granted at any and all times.

A separate totalizing meter must be installed and the amount of water pumped from this source for quasi-municipal and snowmaking purposes shall be reported separately. The Permittee shall keep monthly records of the amount of water pumped from this well for both uses and the consumptive use portions must be calculated. These records must be submitted to the State Engineer on an annual basis within 30 days after the end of each calendar year. Under no circumstances shall the maximum net consumptive use duty of 131.669 acre-feet annually be exceeded.

This permit does not extend the permittee the right of ingress and egress on public, private or corporate lands.

The well must be sealed with cement grout, concrete grout or neat cement from ground level to 100 feet.

The totally combined duty of water that may be withdrawn from the well under Permit 67914, Certificate 17118; Permit 67915, Certificate 17119; Permit 67916, Certificate 17120; Permit 67917, Certificate 17121; Permit 67918, Certificate 17122; Permits 79024 and 80237 shall not exceed 386.669 acre-feet annually and the net consumptive use duty of water under these permits shall not exceed 131.669 acre-feet annually.

The issuance of this permit does not waive the requirements that the permit holder obtain other permits from State, Federal and local agencies.

(Continued on Page 2)

The place of use of this permit is limited to that area lying totally within the Pleasant Valley Hydrographic Basin (6-088).

The point of diversion and place of use are as described on the submitted application to support this permit.

The amount of water to be appropriated shall be limited to the amount which can be applied to beneficial use, **and not to exceed 0.60 cubic feet per second for non-consumptive purposes (snowmaking).**

Work must be prosecuted with reasonable diligence and proof of completion of work shall be filed on or before: **March 26, 2012**

Water must be placed to beneficial use and proof of the application of water to beneficial use shall be filed on or before: **March 26, 2016**

Map in support of proof of beneficial use shall be filed on or before: **N/A**

IN TESTIMONY WHEREOF, I, JASON KING, P.E.,

State Engineer of Nevada, have hereunto set my hand and the seal of my office, this 8th day of **June**, A.D. **2011**

J. K. P.E.

State Engineer

Completion of work filed _____

Proof of beneficial use filed _____

Cultural map filed _____

Certificate No. _____ Issued _____

General Information

Application: 67914 **Status: CERTIFICATE** **Certificate:** 17118 Start new search

General

Owner(s):	MT. ROSE DEVELOPMENT COMPANY	**Basin:**	PLEASANT VALLEY - 088
Sub Basin:		**Basin Status:**	DESIGNATED
Region:	TRUCKEE RIVER BASIN	**County:**	WASHOE
Water Resource Specialist:	[illegible]		

Previous Applications (Base Rights)

Change of App No.	POD	POU	MOU
		Y	

Source:	UNDERGROUND	**Source Description:**	
Project Name:		**Decree Name:**	
Use:	QUASI-MUNICIPAL		
Period Start:	0101	**Period End:**	1231

Point of Diversion Information:

Qtr-Qtr:	Qtr:	Section:	Township:	Range:
SW	SW	19	17N	19E

Duty Balance:	31.669 AFA	**Div Balance:**	0.0438	
Acre-Feet Storage:	0	**Well Logs:**		Well Log Nos.: 17231
Remarks:				

General Information

Application: 67915 **Status: CERTIFICATE** **Certificate: 12119** Start new search

General

Owner(s):	MT. ROSE DEVELOPMENT COMPANY	Basin:	PLEASANT VALLEY - 088
Sub Basin:		Basin Status:	DESIGNATED
Region:	TRUCKEE RIVER BASIN	County:	WASHOE
Water Resource Specialist:			

Previous Applications (Base Rights)

Change of App No.	POD	POU	MOU
		Y	

Source:	UNDERGROUND	Source Description:	
Project Name:		Decree Name:	
Use:	QUASI-MUNICIPAL		
Period Start:	0101	Period End:	1231

Point of Diversion Information:

Qtr-Qtr:	Qtr:	Section:	Township:	Range:
SW	SW	19	17N	19E

Duty Balance:	4.99 AFA	Div Balance:	0.01	
Acre-Feet Storage:	0	Well Logs:	Well Log Nos.:	
Remarks:				

General Information

Application: 67917 **Status: CERTIFICATE** **Certificate: 17121** Start new search

General

Owner(s):	MT. ROSE DEVELOPMENT COMPANY	**Basin:**	PLEASANT VALLEY - 088
Sub Basin:		**Basin Status:**	DESIGNATED
Region:	TRUCKEE RIVER BASIN	**County:**	WASHOE
Water Resource Specialist:	[illegible]		

Previous Applications (Base Rights)

Change of App No.	POD	POU	MOU
		Y	

Source:	UNDERGROUND	**Source Description:**	
Project Name:		**Decree Name:**	
Use:	QUASI-MUNICIPAL		
Period Start:	0101	**Period End:**	1231

Point of Diversion Information:

Qtr-Qtr:	Qtr:	Section:	Township:	Range:
SW	SW	19	17N	19E

Duty Balance:	31.669 AFA	**Div Balance:**	0.0438	
Acre-Feet Storage:	0	**Well Logs:**		Well Log Nos.: [illegible]
Remarks:				

General Information

Application: 67918 **Status: CERTIFICATE** **Certificate:** 17122 Start new search

General

Owner(s):	MT. ROSE DEVELOPMENT COMPANY	**Basin:**	PLEASANT VALLEY - 088
Sub Basin:		**Basin Status:**	DESIGNATED
Region:	TRUCKEE RIVER BASIN	**County:**	WASHOE
Water Resource Specialist:	[illegible]		

Previous Applications (Base Rights)

Change of App No.	POD	POU	MOU
		Y	

Source:	UNDERGROUND	**Source Description:**	
Project Name:		**Decree Name:**	
Use:	QUASI-MUNICIPAL		
Period Start:	0101	**Period End:**	1231

Point of Diversion Information:

Qtr-Qtr:	Qtr:	Section:	Township:	Range:
SW	SW	19	17N	19E

Duty Balance:	31.669 AFA	**Div Balance:**	0.0438		
Acre-Feet Storage:	0	**Well Logs:**		Well Log Nos.:	[illegible]
Remarks:					

General Information

Application: 79024 **Status: CERTIFICATE** **Certificate: 19859** Start new search

General

Owner(s):	MT. ROSE DEVELOPMENT COMPANY	**Basin:**	PLEASANT VALLEY - 088
Sub Basin:		**Basin Status:**	DESIGNATED
Region:	TRUCKEE RIVER BASIN	**County:**	WASHOE
Water Resource Specialist:	[illegible]		

Previous Applications (Base Rights)

Change of App No.	POD	POU	MOU
[illegible]	Y	Y	Y

Source:	UNDERGROUND	**Source Description:**	
Project Name:		**Decree Name:**	
Use:	QUASI-MUNICIPAL		
Period Start:	0101	**Period End:**	1231

Point of Diversion Information:

Qtr-Qtr:	Qtr:	Section:	Township:	Range:
SW	SW	19	17N	19E

Duty Balance:	31.669 AFA	**Div Balance:**	0.0438		
Acre-Feet Storage:	0	**Well Logs:**		Well Log Nos.:	[illegible]
Remarks:					

Point of diversion

General Information

Application: 68664 | **Status:** CERTIFICATE | **Certificate:** 18254 Start new search

General

Owner(s):	MT. ROSE DEVELOPMENT COMPANY	**Basin:**	WASHOE VALLEY - 089
Sub Basin:		**Basin Status:**	DESIGNATED
Region:	TRUCKEE RIVER BASIN	**County:**	WASHOE

Previous Applications (Base Rights)

Change of App No.	POD	POU	MOU
25682		Y	

Source:	SPRING	**Source Description:**	UNNAMED SPRING #2	Zephyr Springs Slide Mt.
Project Name:		**Decree Name:**		
Use:	COMMERCIAL			
Period Start:	0101	**Period End:**	1231	

Point of Diversion Information:

Qtr-Qtr:	Qtr:	Section:	Township:	Range:
NW	NE	29	17N	19E

Duty Balance:	21.34 AFA	**Div Balance:**	0.03	
Acre-Feet Storage:	0	**Well Logs:**		Well Log Nos.:
Remarks:				

General Information

Application: 25724 | **Status: CERTIFICATE** | **Certificate: 9629** Start new search

General

Owner(s):	MT. ROSE DEVELOPMENT COMPANY	**Basin:**	WASHOE VALLEY - 089
Sub Basin:		**Basin Status:**	DESIGNATED
Region:	TRUCKEE RIVER BASIN	**County:**	WASHOE

Previous Applications (Base Rights)

No previous applications found

Source:	SPRING	**Source Description:**	UNNAMED SPRING NO. 1
Project Name:		**Decree Name:**	
Use:	COMMERCIAL		
Period Start:	0101	**Period End:**	1231

Bruce's Slide Mt.

Point of Diversion Information:

Qtr-Qtr:	Qtr:	Section:	Township:	Range:
SE	NW	29	17N	19E

Duty Balance:	36.182331 AFA	**Div Balance:**	0.05
Acre-Feet Storage:	0	**Well Logs:**	Well Log Nos.:
Remarks:			

General Information

Application: 19098 | **Status: CERTIFICATE** | **Certificate: 6630** | Start new search

General

Owner(s):	MT ROSE DEVELOPMENT CO.	**Basin:**	PLEASANT VALLEY - 088
Sub Basin:		**Basin Status:**	DESIGNATED
Region:	TRUCKEE RIVER BASIN	**County:**	WASHOE

Previous Applications (Base Rights)

No previous applications found

Source:	UNDERGROUND	**Source Description:**	Kit Carson Rose Sid
Project Name:		**Decree Name:**	
Use:	QUASI-MUNICIPAL		
Period Start:	0101	**Period End:**	1231

Point of Diversion Information:

Qtr-Qtr:	Qtr:	Section:	Township:	Range:
NW	SE	19	17N	19E

Duty Balance:	4.818173 AFA	**Div Balance:**	0.2	
Acre-Feet Storage:	0	**Well Logs:**		Well Log Nos.:
Remarks:				

ndep
NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
protecting the future for generations

STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

June 23rd, 2009

Dal Hunter, Ph.D., P.E.
Black Eagle Consulting
1345 Capital Blvd.
Reno, NV 89502

SUBJECT: **Plans Approval** of the proposed 6,000 gallon & 1000 gallon OSDS systems for Mountain Rose Ski Resort, located in Washoe County, Nevada. **GNEVSODS09-L-40223**

Mr. Hunter:

The Nevada Division of Environmental Protection (NDEP) has reviewed your letter and plans, dated June 23rd, 2009. Upon review, NDEP hereby approves the plans for the construction of a 6,000 gallon & 1000 gallon OSDS system along with their corresponding absorption systems for Mountain Rose Ski Resort, located in Washoe County, Nevada. Please verify by letter, and engineer's stamp (Nevada P.E.), that construction of these septic systems was completed according to the approved plans. A Notice of Inclusion (NOI) application must be filed when these new system is built in order to be included under the general permit **GNEVOSDS09**. **Please note that this approval is for the treatment & disposal of domestic sewage only; industrial waste disposal is strictly prohibited.** The approval to construct these OSDS systems expires on June 23rd, 2010.

As a reminder, additions, modifications and/or repairs to any commercial septic system, excluding emergency repairs or actions to protect human life and the environment, shall be designed by a professional engineer certified by the State of Nevada, and be submitted and approved by NDEP prior to any work taking place. In the case of emergency repairs, the responsible party shall notify the NDEP within one (1) business day, and in writing in five (5) business days of the reason for repairs and actions taken.

If you have any questions or if there is anything else you would like me to help you with, please contact me at (775) 687-9468.

Respectfully;

Alexi Lanza, P. E.
Permits Branch - Bureau of Water Pollution Control
Nevada Division of Environmental Protection

Copies: Mt. Rose Ski Tahoe – Attn. Paul Senft – G.M. – 22222 Mt. Rose Highway, Reno, NV 89511
File GNEVSODS09-L-40223

Mt. Rose Ski Tahoe Peak Parking Lot Usage 2013-2018

Following is parking data provided by parking lot attendants to Mt. Rose Ski Tahoe Management for parking use at the Mt. Rose Parking Lots during the holiday peak seasons between 2013 and 2018. The use of parking during peak season times rarely ever reaches capacity. Only two times during the past 6 years have all of the parking lot areas been identified to be "full" December 29, 2015 and December 30, 2018 were the only days where the lots were identified to be full.

Guest parking-meter 2013

	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	29-Dec	30-Dec	31-Dec	1-Jan	2-Jan	3-Jan	4-Jan	5-Jan
#7	EMP 1/2	EMP 3/4	EMP 3/4	EMP 1/2	EMP 3/4	EMP 3/4	EMP 3/4	empty	empty	empty	empty	empty	empty	empty	empty
#6	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty
#5	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty
#4D full	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty
#4C 3/4	empty		empty	empty	empty			empty	empty	empty	empty	empty	empty	empty	empty
#4B 1/2	empty			empty				Employee	Employee	Employee	empty	empty	Employee	Employee	empty
#3										empty	empty	empty	empty	empty	empty
#2										1/4 full	Employee	Employee			Employee
Lot #1															

	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	29-Dec	30-Dec	31-Dec	1-Jan	2-Jan	3-Jan	4-Jan	5-Jan
Total visits	2,469	3,318	3,169	2,394	2,853	3,171	3,090	2,567	2,123	1,778	1,292	2,028	1,879	1,726	1,005
Ticket buyers	1,604	2,828	2,605	1,904	2,385	2,635	2,454	1,881	1,734	1,322	705	1,567	1,333	846	289
PH	865	490	564	490	468	536	636	686	389	456	587	461	546	880	716

Guest parking-meter 2014

	Sun 21-Dec	Mon 22-Dec	Tues 23-Dec	Wed 24-Dec	Thur 25-Dec	Fri 26-Dec	Sat 27-Dec	Sun 28-Dec	Mon 29-Dec	Tues 30-Dec	Wed 31-Dec	Thur 1-Jan	Fri 2-Jan	Sat 3-Jan	Sun 4-Jan
Sky Tavern	N/A	N/A	N/A	N/A	Employee	Employee	Employee	Employee	Employee	Employee	Employee	Employee	N/A	N/A	N/A
#7	EMP 1/2	EMP 3/4	EMP 3/4	EMP 1/2	empty	empty		empty	empty	empty	empty	empty	EMP 1/2	EMP 1/2	EMP 1/2
#6	empty	empty	empty	empty						empty	empty				empty
#5	empty	empty	empty	empty						empty	empty				empty
#4D full	empty	empty	empty	empty						empty	empty				empty
#4C 3/4	empty	empty								empty					
#4B 1/2	empty														
#3															
#2															
Lot #1															

	21-Dec	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	29-Dec	30-Dec	31-Dec	1-Jan	2-Jan	3-Jan	4-Jan
Total visits	1,666	3,193	3,830	1,880	3,952	4,713	5,177	4,447	3,693	2,264	3,133	3,517	4,451	3,510	2,362
Ticket buyers	1,026	2,325	2,747	1,603	2,938	3,698	3,836	3,167	3,329	1,528	2,041	2,023	3,022	1,980	723
PH	640	868	1,083	277	1,014	1,015	1,341	1,280	364	736	1,092	1,494	1,429	1,530	1,639

Guest parking-meter 2015

	Sat 19-Dec	Sun 20-Dec	Mon 21-Dec	Tues 22-Dec	Wed 23-Dec	Thur 24-Dec	Fri 25-Dec	Sat 26-Dec	Sun 27-Dec	Mon 28-Dec	Tues 29-Dec	Wed 30-Dec	Thur 31-Dec	Fri 1-Jan	Sat 2-Jan	Sun 3-Jan
Sky Tavern	N/A	N/A	N/A	N/A	N/A	N/A	Employee	Employee	Employee	Employee	Employee	Employee	N/A	N/A	N/A	N/A
#7	EMP 75%	EMP 75%	empty	empty	empty	empty	empty	75%	25%	25%	100%	empty	EMP 60%	EMP 60%	EMP	empty
#6	empty	empty	empty	empty	empty	empty	empty					empty	empty	empty	empty	empty
#5	empty	empty	empty	empty	empty	empty	empty					empty	empty	empty	empty	empty
#4 D full	empty	empty	empty	empty		empty	empty						empty	empty	empty	empty
#4 C 3/4	empty	empty	empty	empty		empty							empty	empty	empty	empty
#4 A&B 1/2	empty		empty	empty										empty	empty	EMP
#3	25%		empty	25%										75%	75%	25%
#2			empty													
Lot #1																

Midweek	0	0	3	39	170	36	69	5	5	100	142	103	116	69	0	2
Total Passes	0	0	80	755	1983	799	1551	1542	2119	795	1644	1377	1730	1454	1504	1841
My pass	NA	NA	1	0	1	0	0	0	0	1	0	0	0	0	NA	NA
Dependents	28	22	1	14	29	20	42	24	38	30	36	21	32	27	40	41
Total Impact	**28**	**22**	**4**	**53**	**199**	**56**	**111**	**29**	**43**	**130**	**178**	**124**	**148**	**96**	**40**	**43**

Guest parking-meter 2016

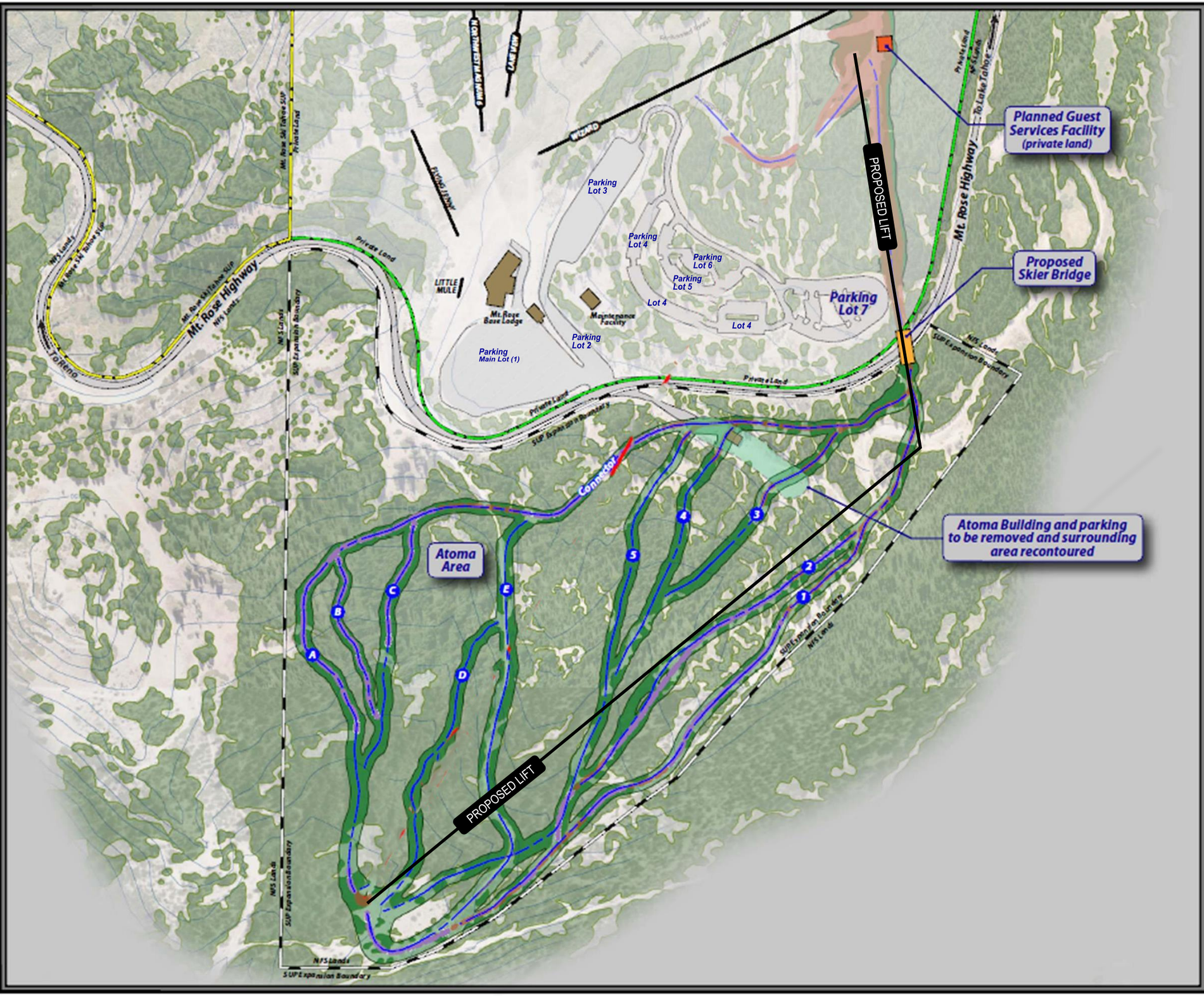
	Sat	Sun	Mon	Tues	Wed	Thur	Fri	Sat	Sun	Mon	Tues	Wed	Thur	Fri	Sat	Sun
	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	29-Dec	30-Dec	31-Dec	1-Jan
Sky Tavern	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Employee	Employee	Employee	Employee	Employee	Employee	N/A
#7	EMP 50%	empty	empty	empty	empty	empty	empty	Employee	Employee	empty	60%	95%	5%	empty	empty	empty
#6	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty				empty	empty	empty
#5	empty	empty	empty	empty	empty	empty	empty	empty	empty					empty	empty	empty
#4 D full	empty	empty	empty	empty	empty	empty	empty	empty						empty	empty	empty
#4 C 3/4	empty	Employee	Employee	Employee	Employee	Employee	Employee	empty						empty	empty	empty
#4 A&B 1/2		Employee	Employee	Employee	Employee	Employee	Employee	empty						empty	empty	Employee
#3		75%	50%	50%	25%		empty									empty
#2			75%	75%			empty									empty
Lot #1							50%									80%
Midweek	4	5	223	202	69	204	8	4	7	4	11	13	12	5	3	3
My pass	1	0	12	5	6	7	3	0	1	1	2	2	2	4	0	0
Dependents	25	35	21	21	9	30	8	40	39	3	0	0	0	0	0	0
Total Passes	2446	2369	1382	1246	1761	1813	290	2149	1489	2228	1463	1666	1494	1692	2045	616
Total Impact	29	40	244	223	78	234	16	44	46	7	11	13	12	5	3	3

Guest parking-meter 2017

	Sat	Sun	Mon	Tues	Wed	Thur	Fri	Sat	Sun	Mon	Tues	Wed	Thur	Fri	Sat	Sun
	16-Dec	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	29-Dec	30-Dec	31-Dec
Sky Tavern	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	empty	Employee	EE 184	EE 193	EE 176	N/A	N/A
#7	empty	empty	empty	empty	empty	empty	empty	Employee	Employee	Employee	empty	25%	empty	empty	Employee	Employee
#6	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty	empty		empty	empty	empty	empty
#5	empty	empty	empty	empty	empty	empty	empty	empty		empty	empty		50%	empty	empty	empty
#4 D full	empty	empty	empty	empty	empty	empty	empty	empty		empty	empty			empty	empty	empty
#4 C 3/4	empty	Employee	Employee	Employee	empty	Employee	Employee	empty			empty			empty	empty	empty
#4 A&B 1/2	Employee	Employee	Employee	Employee	empty	Employee	Employee	empty						empty	empty	empty
#3	50%	75%	50%	50%	empty	50%	50%	50%							50%	50%
#2					Employee											
Lot #1																
Total Visits	1955	2279	981	1213	906	1946	2429	2955	3648	3219	3376	4289	4191	3510	2917	3471
Tickets	505	550	360	791	356	864	854	1361	2349	1929	2277	3288	3186	2442	1924	1705
Season Pass	1450	1729	621	422	550	1082	1575	1594	1299	1290	1099	1001	1005	1068	993	1766

Guest parking-meter 2018

	Sat	Sun	Mon	Tues	Wed	Thur	Fri	Sat	Sun	Mon	Tues	Wed	Thur	Fri	Sat	Sun
	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	29-Dec	30-Dec	31-Dec	1-Jan	2-Jan	3-Jan	4-Jan	5-Jan	6-Jan
Sky Tavern	N/A	N/A	N/A	N/A	EE's 208	EE's 209	EE's 208	EE's 209	EE's 199	empty	empty	empty	empty	empty	N/A	N/A
#7	EE's 238	EE's 224	EE's 216	EE's 202	empty	empty	empty	empty	10%	empty	empty	empty	60%	empty	empty	empty
#6	empty	empty	empty	empty	empty	empty	empty	empty		empty	empty	empty	80%	empty	empty	empty
#5	empty	empty	empty	empty	empty	empty	empty	empty		empty	empty	empty	80%	empty	empty	empty
#4 D full	empty	empty	empty	empty	empty	empty	empty	empty		empty	empty	empty	60%	empty	empty	empty
#4 C 3/4	empty	empty	empty	empty	empty	empty		54 vehicles		EE's 184	EE's 176	EE's 179	EE's 166	EE's 204	EE's 211	EE's 189
#4 A&B 1/2	empty		empty	empty	20 vehicles					Employee	Employee	Employee	Employee	Employee	Employee	Employee
#3	65%		30%	75%						40%	60%	80%	50%	75%	empty	empty
#2	50%		50%							<20 vehicles	50%				empty	empty
Lot #1			90%							80%	85%				empty	empty
Slide	100 vehicles	20%	30%	50%	40%	100 vehicles	120 vehicles	35%	85%	35%	30%	20%	55%	45%	0%	0%
Total Visits	2365	2948	2326	3499	3196	3605	3772	3593	4834	2627	2461	2980	4146	2986	1369	1821
Tickets	905	1857	1637	1723	2006	2762	2648	2261	2524	1672	1181	1757	2790	1435	637	464
Season Pass	1460	1091	689	1776	1190	843	1124	1332	2310	955	1280	1223	1356	1551	732	1357
	all pass ok ------>				Premier pass only------->				all pass ok------>				$49 ticks			
EE's working	325	321	288	281	312	288	292	320	290	272	234	234	237	260	308	274
EE's PV	1.37	1.43	1.33	1.39	1.50	1.38	1.4	1.4	1.45	1.47	1.32	1.3	1.42	1.27	1.45	1.44



MT. ROSE SKI TAHOE - ATOM
ENVIRONMENTAL IMPACT ST

FIGURE 3
ALTERNATIVE 2
PROPOSED ACTIO
ATOMA DETAIL

LEGEND:

- Existing Trail
- Proposed Trail Clearing
- Proposed Trail Grading
- Proposed Snowmaking Install Disturbance
- Planned Facilities
- SUP Boun
- Propo Boun Expa
- Priva Boun
- Exist Lift
- Prop Lift
- Propo Buildi and R

Note:
Snowmaking coverage is proposed for trails 1, 2 Connector trail (USFS Lands), and planned for t trails on the Rose side of the Mt. Rose Highway (

CONTOUR INTERVAL: 25'

0 200 400

Final Environmental Impact Statement

Mt. Rose Ski Tahoe
Atoma Area Expansion

HUMBOLDT-TOIYABE NATIONAL FOREST

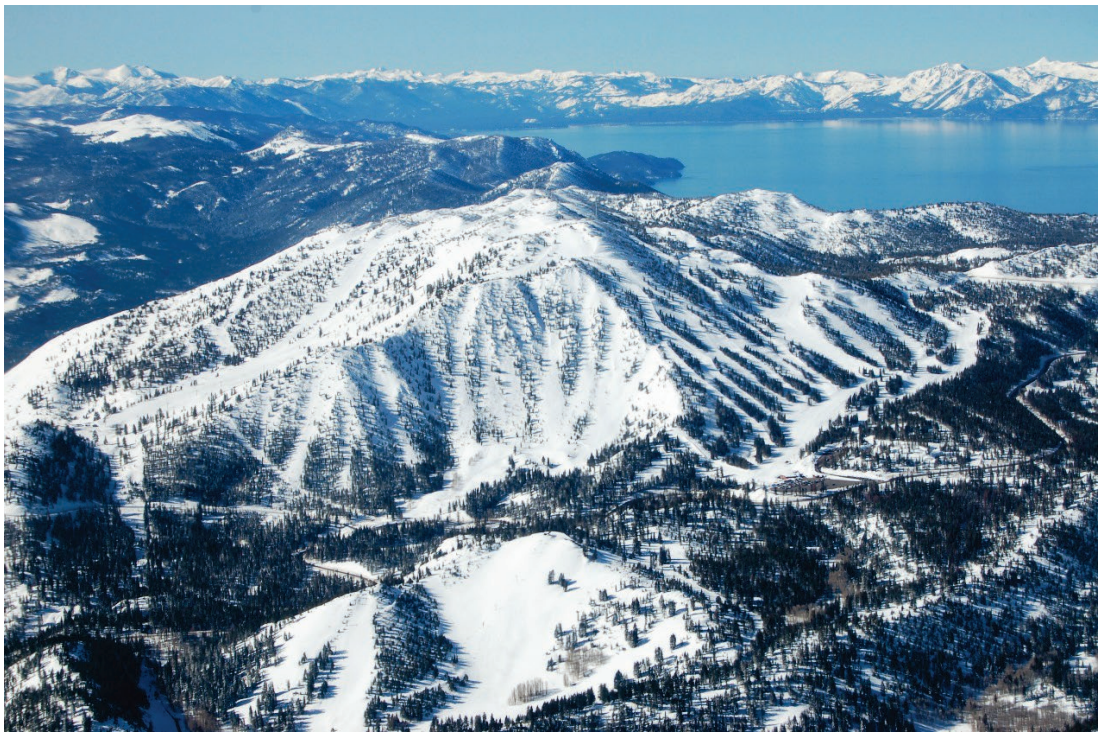
Washoe County, Nevada

United States
Department of
Agriculture

Forest
Service

Intermountain
Region

February 2019



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ABSTRACT

Mt. Rose Ski Tahoe Atoma Area Expansion

Final Environmental Impact Statement

Humboldt-Toiyabe National Forest

Washoe County, Nevada

T17N R19E Section 18 and 19

Lead Agency: USDA Forest Service

Cooperating Agency: Nevada Department of Transportation

Responsible Official: William A. Dunkelberger, Forest Supervisor
1200 Franklin Way, Sparks, Nevada 89431

For Information Contact: Marnie Bonesteel, Team Leader
Humboldt-Toiyabe National Forest
1200 Franklin Way, Sparks, Nevada 89431
(775) 352-1240

Abstract: This final Environmental Impact Statement (FEIS) has been prepared to analyze and disclose the environmental effects of ski area projects proposed by Mt. Rose Ski Tahoe. The ski area is located on the Humboldt-Toiyabe National Forest in Washoe County, Nevada and operates in accordance with the terms and conditions of a special use permit (SUP), which is administered by the Carson Ranger District, United States Forest Service (Forest Service). The Forest Service is responding to the application for special use authorization for the proposed uses and will decide whether to amend a ski area term SUP for a permit boundary expansion and construction, operation and maintenance of new ski terrain and associated facilities connecting to the existing base area, and under what terms and conditions the use would be permitted. Alternative 2 includes the following elements: expanding the SUP Boundary; a chairlift servicing the Atoma Area; eleven new ski trails in the Atoma Area; installation of water pipeline to provide new snowmaking coverage; a skier bridge that would span the Mt. Rose Highway linking existing terrain at the main ski area and proposed terrain in the Atoma Area; and a water storage tank to support snowmaking. Additionally, Alternative 2 includes the removal of the Atoma building, and a Forest Plan Amendment that would restrict any future development of commercial uses on approximately 3,446 acres of National Forest System land acquired in 1994, except for the 112-acre Atoma Area and 131 acres of the Chutes. All components of Alternative 3 are the same as was described for Alternative 2, except there would be a two-lift configuration of chairlifts (Chairlift A and Chairlift B) to service the Atoma Area and a restroom would be included on the north side of the Mt. Rose Highway in the Atoma Area. Components of Alternative 2,

Alternative 3, and connected actions that are closely related to action alternatives are detailed in Chapter 2.

This FEIS contains the Purpose and Need for the Proposed Action; direct, indirect, and cumulative impacts of implementing the alternatives; and Management Requirements developed to reduce or avoid potential adverse environmental effects. Three alternatives are analyzed in detail in this FEIS: Alternative 1 (No Action) and two action alternatives, Alternative 2 and Alternative 3.

The Mt. Rose Ski Tahoe Atoma Area Expansion project is subject to the objection procedures of Title 36 Code of Federal Regulations (CFR) Part 218, Subparts A and B, and 36 CFR Part 219 Subpart B. The proposed project activities are subject to 36 CFR Part 218 and the proposed Forest Plan Amendment is subject to procedures in 36 CFR Part 219.

Objections on the draft Record of Decision (draft ROD) will be accepted for 45 days following publication of the legal notice in the *Reno Gazette Journal*. The date of this legal notice is the exclusive means for calculating the time to file an objection. Those wishing to object should not rely upon dates or timeframe information provided by any other source. Only those who submitted timely and specific written comments regarding the proposed project during a public comment period established by the responsible official are eligible to file an objection under 36 CFR Parts 218 and 219.

Hardcopies of the Draft ROD and FEIS may be reviewed at either the South Valleys Library at 15650 Wedge Parkway, Reno, NV 89511 or the Incline Village Library at 845 Alder Avenue, Incline Village, NV 89451. The documents are also available online at http://www.fs.usda.gov/project/?project=41487.

Written objections must be addressed to: Reviewing Officer, Intermountain Region USFS, 324 25th Street, Ogden UT, 84401. Objections may be submitted via fax to: (801) 625-5277. The business hours for those submitting hand-delivered objections are 8:00 a.m. to 4:30 p.m., Monday through Friday, excluding federal holidays. Electronic objections, in common formats (.doc, .pdf, .rtf, .txt), may be submitted to: objections-intermtn-regional-office@fs.fed.us with Subject: Mt. Rose Atoma. Objections may also be uploaded to the “Comments/Objection on Project” section of the project website at http://www.fs.usda.gov/project/?project=41487.

Summary

The proposed improvements analyzed in this document constitute a federal action that has the potential to affect the quality of the human environment on public land administered by the United States Forest Service (Forest Service). Therefore, these projects must be analyzed pursuant to the National Environmental Policy Act of 1969 (NEPA). Under NEPA, federal agencies must carefully consider environmental concerns in their decision-making processes and provide relevant information to the public for review and comment.

The Forest Service, Humboldt-Toiyabe National Forest (HTNF) has prepared this final Environmental Impact Statement (FEIS) in compliance with NEPA and other relevant federal and state laws and regulations. This FEIS contains analyses consistent with NEPA, Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] Parts 1500–1508), and Forest Service policy. The Forest Service is the lead agency for this FEIS, and the Nevada Department of Transportation (NDOT) is a cooperating agency because of their jurisdiction on the Mt. Rose Highway.

This FEIS documents the direct, indirect, and cumulative environmental effects on the human and biological environment anticipated to result from implementation of elements of the action alternatives. Additionally, it is intended to ensure that planning considers the environmental and social values of the Analysis Area and that potential resource conflicts are identified, minimized and/or avoided.

A. Summary of the Purpose and Need for the Proposed Action

Forest Service's Purpose and Need

The purpose of this federal action is to respond to Mt. Rose Ski Tahoe's special-use authorization application to implement actions from their accepted master development plan (MDP) to improve the quality of the ski area's recreational offerings on National Forest System (NFS) land. The purpose is to improve the recreation experience by increasing the ski area terrain for lower level skiers and riders that will provide for the natural learning progression at the resort. Currently, the ski area provides limited beginner terrain and lacks the terrain needed for advanced beginners. The ski area also lacks the capacity for water storage that can provide a consistent quality snow surface throughout the resort during low snow years. Developing ski trails in the Atoma Area provides more advanced beginner and low intermediate skiers and riders separation from the ski runs at the base resort and the terrain needed for natural learning progression. Providing additional water storage would allow Mt. Rose Ski Tahoe capacity to provide consistent snow coverage on popular trails regardless of natural snow conditions.

Meeting the Applicant's Purpose and Need

Mt. Rose Ski Tahoe has taken steps through the development of its MDP to enhance its overall recreation appeal. The primary purpose for the proposed improvements considered in this document is to implement mountain and base area projects on NFS land and adjacent private land that would enhance the recreation experience for skiers.

Mt. Rose Ski Tahoe's has identified two primary objectives in meeting its and the Forest Service's Purpose and Need and include:

- Provide additional terrain at Mt. Rose Ski Tahoe that is comfortable and appropriate for lower-level skiers.
- Enhance Mt. Rose Ski Tahoe's ability to provide a consistent and quality snow surface on key ski terrain throughout the season.

B. Summary of the Alternatives Analyzed in this Final Environmental Impact Statement

This FEIS analyzes the No Action Alternative (analyzed in this document as Alternative 1), the Proposed Action (analyzed in this document as Alternative 2) and Alternative 3.

According to Section 1508.25 of CEQ Regulations for Implementing NEPA, connected actions are closely related; therefore, they should be discussed in the same impact statement. Actions are connected if they: automatically trigger other actions, which may require environmental impact statements; cannot or will not proceed unless other actions are taken previously or simultaneously; or are interdependent parts of a larger action and depend on the larger action for their justification.

Alternative 1 – No Action

Under this alternative, Mt. Rose Ski Tahoe's special use permit (SUP) would not be amended to expand the permit area and to allow the proposed actions and uses, and no Forest Plan Amendment would be necessary. The No Action Alternative represents a continuation of existing management practices without changes, additions, or upgrades to existing conditions (refer to Figure 1). Future development may occur, although a separate NEPA analysis of any future project would be required.

Alternative 2

The Proposed Action is to amend the existing SUP by expanding the ski area permit boundary by approximately 112 acres to incorporate a portion of the Atoma Area, and to construct, operate, and maintain ski terrain and associated facilities. The Proposed Action includes 31 acres of clearing and/or grading on NFS land and 8 acres of clearing and/or grading on private land to accommodate the following components:

- An Amendment to the SUP to increase the SUP boundary by 112 acres from 544 acres to 656 acres in the Atoma Area to provide for expanded beginner terrain at Mt. Rose Ski Tahoe.
- Construct eleven new ski trails totaling 26 acres to provide safe, accessible terrain for novice and beginner skiers. A gate would be added on the Old Mt. Rose Highway to preclude vehicle access into the Atoma Area during the ski season.
- Provide capacity to circulate up to 2,000 skiers per hour by installing a 3,500-foot-long chairlift, including towers and bottom and top terminals.
- Provide a skiable connection between existing terrain at the main ski area and proposed terrain in the Atoma Area by constructing an approximately 130-foot-long skier bridge spanning the Mt. Rose Highway. The bridge would have a minimum clearance of 18 feet

from the highway. The skier bridge would have a minimum width of 30 feet to safely accommodate a variety of abilities.

- Provide snowmaking coverage on five trails in the Atoma Area (Trails 1, 2, A, B, and C; refer to Figure 3). Install 1.3 miles of 8- to 12-inch diameter water pipeline to cover approximately 20 acres, 17 acres of which would be located on NFS land. Approximately 1 additional mile of water pipeline would be installed within existing ski trails on private land from the water tank across the proposed bridge to the Atoma Area (requiring approximately 3 acres of disturbance on private land).
- Improve Mt. Rose Ski Tahoe's ability to store water for snowmaking during periods of higher precipitation with the installation of a water tank at the Galena trail (refer to Figure 2). The tank would be approximately 155 feet in diameter and 40 feet in height, with a capacity of between 13 and 15 acre feet (approximately 5 million gallons) of water, and would require associated infrastructure to connect it to the existing snowmaking system. The additional stored water would benefit the Atoma Area terrain as well as provide additional capacity for snowmaking elsewhere at Mt. Rose Ski Tahoe.
- Amend the Forest Plan to restrict future commercial development on 3,446 acres of NFS land. The proposed amendment is as follows:

  Land acquired through the 1994 Galena Resort Land Exchange located within Management Area 2 (Carson Front), with the exception of the proposed Atoma Area and the Chutes.

  Standard – *Commercial development shall not be permitted on 3,446 acres of NFS land in the area known as the Galena Land Exchange, with the exception of the proposed Atoma Area (112 acres) and the Chutes (131 acres) already in the Mt. Rose SUP.*
- Accommodate the new Atoma ski terrain by removing the Atoma building, an approximately 2,000-square foot facility, and re-contouring the parking area.

The proposed chairlift and skier bridge highway crossings will be designed to prevent material from skiers (e.g., skis, poles, shoes, hats, bags, etc.) from falling onto the Mt. Rose Highway. This shall include installation of a net under the chairlift. This design element is a Management Requirement included in Alternative 2.

A guest service facility, ski trail, a water line (to provide snowmaking water to the Atoma Area) and a portion of the skier bridge (to cross the Mt. Rose Highway) would be constructed on private land to use of the Atoma Area on NFS land. These private land improvements are considered connected actions, as defined by CEQ.

The proposed ski area expansion would require the Forest Supervisor to decide whether to amend the existing Ski Area Term SUP on NFS land or to select no action. NDOT would need to issue an encroachment permit for the skier bridge that would span the Mt. Rose Highway. Private land improvements associated with the proposal would be on land owned by Mt. Rose Ski Tahoe.

In general, ground disturbance would be associated with the installation of the chairlift, ski trails, skier bridge, water storage tank and water pipeline for snowmaking, and re-contouring of the parking area associated with removal of the Atoma building. Restoration would be required following construction to revegetate all areas of disturbance in the project area. A revegetation plan will be developed and approved by Forest Service specialists and would include at a minimum, appropriate revegetation options, seed mixes and goals for establishing success of revegetation or desirable species. If either action alternative is selected in the Record of Decision,

project construction would commence after agency approvals and permits are obtained. Construction of the project would happen over several construction seasons. Mt. Rose Ski Tahoe would own, operate and maintain the project improvements.

Components of the Proposed Action and details about modifications made in response to scoping comments are presented in Chapter 2.

Alternative 3

All components of Alternative 3 are the same as described for Alternative 2, except that this alternative was developed to align a chairlift to cross the Mt. Rose Highway directly above the skier bridge. This configuration resulted in a two-lift configuration for Alternative 3, which would require approximately 1 acre of additional clearing and grading; Alternative 3 would result in 32 acres of clearing and/or grading on NFS land and 8 acres of clearing and/or grading on private land. In addition, a restroom facility is proposed within the Atoma Area. Alternative 3 includes the following project elements that differ from Alternative 2:

- Install two chairlifts: one 1,650-foot-long chairlift that crosses Mt. Rose Highway directly above the skier bridge to provide the return trip from the Atoma Area to the main ski area and one 3,000-foot-long chairlift to service the terrain within the Atoma Area. The lift alignments would include the top and bottom terminals as well as lift towers along the length of the lifts. The chairlifts would have with a capacity of 2,000 people per hour.
- Install a restroom facility within the Atoma Area to serve visitors and employees using the Atoma Area, without requiring them to return to the main ski area (particularly benefitting the learning programs). This restroom would be accessible from both lifts. The building would be designed to fit into the forest landscape, consistent with the Built Environmental Image Guide and is anticipated to be approximately 15 feet by 20 feet, connecting to existing water, electrical and septic at the existing Atoma building. The restroom would be located east of the existing Atoma building for accessibility; therefore, the existing Atoma building would still need to be removed and the area would be recontoured and rehabilitated.

All other components of Alternative 3 are the same as was described for Alternative 2 and are described in detail in Chapter 2.

C. Public Involvement

The project was listed on the Humboldt-Toiyabe Schedule of Proposed Actions (SOPA) website http://www.fs.usda.gov/project/?project=41487 on April 1, 2013. A scoping notice, dated May 28, 2013, was mailed to approximately 50 community residents, interested individuals, public agencies, and other organizations. The information within the notice provided a brief description of the proposal, the Purpose and Need for action, and illustrative figures. This notice was specifically designed to elicit comments, concerns, and issues pertaining to the proposal. A Notice of Intent (NOI) to prepare an Environmental Impact Statement was published in the *Federal Register* on June 3, 2013. Two public scoping meetings were held, the first on June 18, 2013 at Winters Creek Lodge where seventeen individuals attended and the second on June 19, 2013 at the Forest Supervisors office with six individuals in attendance. Comments were accepted from the following sources: email, web submission, letter, public meetings, fax, and phone.

All comments were reviewed, and issues were categorized by resource or topic. In accordance with 40 CFR § 1501.7(a)(2) significant issues to be analyzed in this FEIS were initially determined from public comments and by the Forest Service Interdisciplinary (ID) Team. Substantive scoping comments can suggest the inclusion of other alternatives for the agency to consider, identify issues that may direct the forthcoming analysis or identify concerns that should be tracked throughout the analysis. A total of 42 specific comments were obtained from ten public comment submittals. Some comment submittals included numerous specific comments, while others had none. These comments were reviewed by the HTNF during Interdisciplinary Team (ID Team) meetings and were considered when developing the alternatives and the analysis.

The draft EIS (DEIS) was prepared and over 80 community residents, interested individuals, public agencies, and other organizations were notified of the request for comments in a letter dated January 8, 2018. A Notice of Availability for the DEIS 90-day comment period was published in the *Federal Register* on January 19, 2018 and a legal notice was published in the Reno Gazette Journal on the same day. Ninety-two comment letters were received on the DEIS. Letters containing substantive comments are included in this FEIS as Appendix C. A response to comments is included in this FEIS as Appendix D.

Tribal Coordination

In accordance with the American Indian Religious Freedom Act of 1978 and Executive Order 13007, *Indian Sacred Sites* consultation and coordination at the earliest stage of project planning was initiated. A memo including a project description and location map was sent to the Washoe Tribe of Nevada and California (Washoe Tribe), Tribal Historic Preservation Officer (THPO) on July 20, 2011. A response was received on August 22, 2011 stating that the Tribe had no specific information regarding the area, but they wanted to be informed as project plans proceeded. The Forest Service conducted additional consultation with the Reno-Sparks Indian Colony (RSIC), and Washoe Tribe in November 2012. A scoping notice was sent to RSIC and the Washoe Tribe on May 28, 2013. The project proposal was presented to the RSIC on June 11, 2015. A copy of the cultural resource inventory report was provided to RSIC on November 10, 2015. The Forest Service met with RSIC on October 18, 2017 and January 8, 2018 where the project was discussed and no issues were raised. The Reno-Sparks Indian Colony, Washoe Tribe of Nevada and California and the Pyramid Lake Paiute Tribe were sent the DEIS on January 9, 2018. The Native American consultation conducted for the Atoma Area is considered current; however, consultation will continue at critical junctures in the NEPA and Section 106 process.

Nevada State Historic Preservation Office

Consultation with the Nevada State Historic Preservation Office on the cultural resource identification efforts, cultural resource evaluations and project effects determination for the Mt. Rose Ski Tahoe – Atoma Area Environmental Impact Statement Heritage Resource Inventory and Evaluation Reports is ongoing. SHPO concurrence will be completed before a final record of decision is signed.

United States Fish and Wildlife Consultation

In accordance with an MOU between the USFWS and the HTNF requiring consultation for candidate species, informal consultation was conducted with the USFWS regarding whitebark pine. In response to this consultation, the Forest Service received a Technical Assistance letter from the USFWS (2015) that included conservation recommendations that correspond with design features incorporated in the Proposed Action.

Scoping Comments

Following public and internal scoping, the Forest Service identified specific areas of concern including potential impacts to the following resources: Roadless Areas, Recreation, Visual Quality, Public Health and Safety, Cultural Resources, Botany and Overstory Vegetation, Forest Health, Wildlife, and Watershed and Soils. These resources and their potential issues from implementing an action alternative are analyzed in detail within this FEIS (refer to Section 1.10). Issues were addressed through: A) development of alternatives to the Proposed Action, B) modification to components of the Proposed Action; and C) Management Requirements. A summary of the identified resource issues is included in the Table ES-1.

The Forest Service decided to address most resource issues through modifications to the Proposed Action and Management Requirements. However, it was determined that concerns regarding a Public Health and Safety resource issue required development of an additional action alternative (per 40 CFR § 1502.10(9)(b)).

The following Public Health and Safety resource issue was identified:

> *A chairlift crossing over the Mt. Rose Highway and parking lots in the Mt. Rose Ski Tahoe ski area has potential to affect the feeling of security for skiers on the chairlift and may pose a risk to motorists from objects (ski equipment, personal objects) falling onto the Mt. Rose Highway or parking lots.*

This issue includes concerns raised by the Forest Service ID Team ranging from the safety of the chairlift riders to safety of vehicles traveling on the highway or parking lots beneath the chairlift. Although Alternative 2 was determinate to be consistent with the American National Standards Institute (ANSI) B77.1 – Passenger Ropeways – Aerial Tramways, Aerial Lifts, Surface Lifts, Tows and Conveyors – Safety Requirements, Alternative 3 was designed to address these concerns.

As outlined in 40 CFR § 1501.7(a)(3), issues which are not carried forward in this environmental review (traffic, climate change, and environmental justice) are presented with a brief explanation of why these issues will not have a significant effect on the human environment (refer to Section 3.1.2).

Comments on the Draft Environmental Impact Statement

Thirty-one substantive comments were identified from the letters and included such topics as developing a ski area in an Inventoried Roadless Area, clarification requests of impacts to human and biological resources, requests for collaboration with the administrators of the Pine Ridge water system, and project design criteria from Nevada Department of Transportation. Comments addressed the following resources: recreation, public health and safety, hydrology, noise, environmental justice, and traffic.

The project description (in Section 1.7 and Section 2.3) was updated to clarify a safety net would be a component of Alternative 2, but it would not be a component of Alternative 3 and that access to the Atoma Area would occur on the Old Mount Rose Highway, not Sky Tavern Road. Section 3.3.2.2 in this FEIS was updated to include clarification about the recreation opportunity spectrum in the roadless area. Section 3.1.2.3 was updated to include 2017 census data. Section 3.11 analysis section was expanded to include effects to local residents on Sky Tavern Road. Section 3.10 was clarified that there would be no direct effects to wetlands. This FEIS was updated with more precise information to identify the distance between an existing community

water system and the proposed ski trails (Figure 8). In Figure 16, the name of the shapefile that was "1994 Galena Resort Land Exchange" in the DEIS has been renamed as "Lands acquired in the 1994 Galena Resort Land Exchange that are included in the Forest Plan Amendment," to clarify which land is included the Forest Plan Amendment. A response to comments is included in this FEIS as Appendix D.

D. Summary of Resource Issues Addressed

Based on the results of Forest Service specialist review and public scoping, the Forest Service identified specific areas of concern. Each of the following issue statements (detailed in Table ES-1 and Chapter 1), were developed as a means of measuring or quantifying the anticipated level of impact on a particular resource. Issues with unavoidable and potentially severe consequences were addressed through modification to the Proposed Action and/or project components (refer to Section 1.10 for specific details). In addition, Management Requirements were developed to address specific impacts (detailed throughout this FEIS and in Appendix A).

Table S-1. Summary of Resource Issues Addressed
INVENTORIED ROADLESS AREAS (IRA)
Issue Statement: The Analysis Area is overlapped by the Rose-Galena Inventoried Roadless Area IRA, which is adjacent to the Mt. Rose Wilderness. Therefore, incorporation of the Atoma Area into Mt. Rose Ski Tahoe's SUP needs to be analyzed for consistency with the Forest Service Roadless Area Conservation Rule of 2001, to determine if further action is necessary.
RECREATION
Issue Statement: The extent and variety of lower-ability level terrain at Mt. Rose Ski Tahoe is insufficient to provide a quality learning progression. The terrain negatively impacts the learning experience by merging with advanced trails and providing limited variety, these issues impact individual learners as well as the Rose Buds Program at Mt. Rose Ski Tahoe
Issue Statement: The lack of snowmaking water storage limits the ski area's ability to produce snow during optimal snowmaking conditions and temperatures. This constraint affects the ski area's ability to provide consistent snow coverage during periods of low snow affecting the quality and reliability of the recreational experience for visitors.
Issue Statement: Expanded developed recreation in the Atoma Area has potential to impact dispersed summer and winter recreation in the Analysis Area by combining both ticketed developed recreation and dispersed recreation activities, and potentially displacing dispersed recreationists.
PUBLIC HEALTH AND SAFETY
Issue Statement: A chairlift crossing over the Mt. Rose Highway and parking lots in the Mt. Rose Ski Tahoe ski area has potential to affect the feeling of security for skiers on the chairlift and may pose a risk to motorists from objects (ski equipment, articles of clothing) falling onto the Mt. Rose Highway or parking lots.
VISUALS
Issue Statement: The proposed chairlift and skier bridge over the Mt. Rose Highway, as well as the tank adjacent the highway, may affect the scenic integrity along the Mt. Rose Highway (a state designated scenic byway) by adding to the developed nature of the landscape.
Issue Statement: Proposed trail grading and tree removal may affect *Partial Retention* in the Analysis Area as developments become increasingly dominant across the landscape.
CULTURAL RESOURCES
Issue Statement: The Atoma Area includes potentially significant cultural resources. Ground disturbing activities associated with the Proposed Actions in the Atoma Area could affect these significant resources directly, through removal or indirectly through degradation.

Table S-1. Summary of Resource Issues Addressed
BOTANY AND OVERSTORY VEGETATION
Issue Statement: Concerns for botanical resources include: ▪ habitat for rare plants ▪ restoration of native plant communities ▪ trails within wetland ▪ management of noxious weeds All of which have potential to be impacted by tree removal and grading associated with the proposed projects.
FOREST HEALTH
Issue Statement: Tree removal for construction and development of the Atoma Area may result in a loss of healthy conifer trees that have not been affected by, or have a potential resistance to, infestations, resulting in a negative impact to Forest Health.
WILDLIFE
Issue Statement: Implementation of proposed projects (including construction and operation) may affect Threatened, Endangered, and Sensitive species (TES) and Management Indicator Species (MIS) wildlife and migratory birds in the Analysis Area by removing identified habitat.
Issue Statement: The proposal includes the removal of numerous live aspen and conifer trees, as well as snags (which provide wildlife habitat), which may have long-term impacts to species that require denser canopy cover and structure for habitat (e.g., flammulated owl and white-headed woodpecker).
WATERSHED AND SOILS
Issue Statement: Placement of the lift towers and terminals, grading, and installation of the snowmaking lines has potential to affect water and soil quality by disturbing soil, and increasing erosion/sedimentation.
Issue Statement: Ski trail construction (spot and full grading) may increase soil sedimentation and result in poor reclamation due to soil compaction and reduced infiltration.
Issue Statement: Ground disturbance and proposed overstory vegetation removal associated with construction and operation of proposed projects has potential to affect wetland function and value.
NOISE
Issue Statement: Construction and ski area operations of the Atoma Area has potential to general additional noise audible to residents in the area.

E. Summary Comparison of Direct and Indirect Environmental Consequences

Table 3, in Section 2.8, includes a summary comparison of environmental consequences, by resource, for each action alternative. Chapter 3 contains detailed information on affected environment and environmental consequences for each resource considered in this analysis.

Contents

List of Tables

1. Purpose and Need for Action

1.1 Introduction

The proposed ski area improvements analyzed in this document constitute a federal action that has the potential to affect the quality of the human environment on National Forest System (NFS) land administered by the Forest Service. Therefore, these projects must be analyzed pursuant to the National Environmental Policy Act of 1969 (NEPA). Under NEPA, federal agencies must carefully consider environmental concerns in their decision-making processes and provide relevant information to the public for review and comment.

The United States Forest Service (Forest Service), Humboldt-Toiyabe National Forest (HTNF), Carson Ranger District has prepared this final Environmental Impact Statement (FEIS) in compliance with NEPA and other relevant federal and state laws and regulations. This FEIS contains analyses consistent with NEPA, Council on Environmental Quality (CEQ) regulations, and Forest Service policy. It documents the direct, indirect, and cumulative environmental effects on the human and biological environment anticipated to result from implementation of the No Action or the action alternatives. Additionally, it is intended to ensure that planning considers the environmental and social values of the Analysis Area and that potential adverse environmental impacts or other resource conflicts are identified, minimized and/or avoided. Additional documentation, including more detailed analyses of resources, may be found in the Project Record at the Supervisor's Office: 1200 Franklin Way, Sparks, NV 89431.

1.2 Background

Mt. Rose Ski Tahoe is located on private and NFS land on Slide Mountain in the Carson Range of the Sierra Nevada Mountains. The NFS land is administered by the Carson Ranger District of the HTNF.[1]

Mt. Rose Ski Tahoe operates under a special use permit (SUP) administered by the HTNF for the use of NFS land. The SUP totals 544 acres.[2] The terms of the SUP require the preparation of a master development plan (MDP), which identifies goals and opportunities for future management of the ski area on NFS land. Mt. Rose Ski Tahoe prepared an MDP in 2003. To date, many of those projects have been implemented. In 2010 an addendum to the 2003 MDP was prepared, which was accepted by the HTNF. This FEIS analyzes projects identified in the 2010 Master Development Plan (MDP) Addendum.

1.3 Project Area

Mt. Rose Ski Tahoe is located in the southwest corner of Washoe County, Nevada approximately 25 miles south of Reno and approximately 32 miles north of Carson City (refer to the Project Vicinity Map). The ski area is accessed via the Mt. Rose Highway (NV Route 431) from either I-580 to the east or NV Route 28, which runs along the northern and eastern shore of Lake Tahoe to the west. Elevations range from approximately 8,000 feet in elevation at the base of the ski slopes to 9,700 feet at the summit.

[1] The Humboldt and Toiyabe National Forests were administratively combined to form the HTNF in 1996. Forest Plans for both the Humboldt and Toiyabe National Forests were finalized in 1986.
[2] This acreage is according to GIS shapefiles provided by the Forest Service.

1.4 Land and Resource Management Plan Direction

The 1986 Toiyabe National Forest Land and Resource Management Plan (1986 Forest Plan), identifies Mt. Rose Ski Tahoe as located within Management Area 2 (Carson Front). The 1986 Forest Plan recognizes that Management Area 2 (Carson Front) provides a diverse set of resources to the population centers located in Washoe Valley, as well as to those situated around Lake Tahoe. Resources such as watershed, wildlife, aesthetics, and recreation are considered important to the quality of life to people in these communities. Management Area 2 (Carson Front) provides a diversity of recreation opportunities, with a focus on dispersed recreation. Intensive recreation management emphasis is prescribed on NFS land along the Mt. Rose Highway. This includes both semi-primitive motorized and non-motorized experiences. The Plan also allows expansion of existing ski areas to be subject to accepted master plans.[3]

1.4.1 History of the Proposed Project

In 2010 the Forest Service accepted an addendum to the MDP from Mt. Rose Ski Tahoe that included proposals to construct a new lift and trails in the Atoma Area and a water impoundment near the upper portion of the *Galena* trail. Elements of the proposal included:

- The Atoma Chairlift
- Atoma Trails
- Snowmaking on the Atoma Trails
- A skier bridge across Mt. Rose Highway

In addition, a guest service facility, ski trail, a water line to provide snowmaking water to the Atoma Area, and a portion of the skier bridge to cross the Mt. Rose Highway were depicted on private land adjacent the existing ski area to facilitate use of the Atoma Area.

Between 2014 and 2017, elements of the proposal were modified to minimize impacts to the human and biological environment. A few design components were changed, such as adding a net under the chairlift where it crosses Mt. Rose Highway (for safety), tree removal for glading between trails has been removed from the project proposal (to minimize impacts to wildlife habitat), the snowmaking impoundment has been changed to a water tank (to eliminate the potential for a dam breach), the ski area installed the Wizard Chairlift and associated beginner terrain on private land in 2015 (eliminating the need for a surface lift that was originally discussed on private land). Finally, in 2016 a third alternative was developed to align the chairlift that crosses Mt. Rose Highway directly above the skier bridge to improve the feeling of safety for people riding the chairlift and minimize the potential for objects dropped from the chairlift to impact motorists traveling on the Mt. Rose Highway. This re-alignment, also resulted in avoiding the chairlift going over the parking lots, further minimizing interaction between objects dropped from the lift and the vehicles below.

This FEIS analyzes three alternatives, the No Action Alternative, Alternative 2, and Alternative 3, which are described in detail in Chapter 2.

[3] USDA Forest Service, 1986 p. IV-83

1.5 Purpose and Need

1.5.1 Forest Service's Purpose and Need

The purpose of this federal action is to respond to Mt. Rose Ski Tahoe's special-use authorization application to implement actions from their accepted MDP to improve the quality of the ski area's recreational offerings on National Forest System (NFS) land. The purpose is to improve the recreation experience by increasing the ski area terrain for lower level skiers and riders that will provide for the natural learning progression at the resort. Currently, the ski area provides limited beginner terrain and lacks the terrain needed for advanced beginners. The ski area also lacks the capacity for water storage that can provide a consistent quality snow surface throughout the resort during low snow years. Developing ski trails in the Atoma Area provides more advanced beginner and low intermediate skiers and riders separation from the ski runs at the base resort and the terrain needed for natural learning progression. Providing additional water storage would allow Mt. Rose Ski Tahoe capacity to provide consistent snow coverage on popular trails regardless of natural snow conditions.

1.5.2 Meeting the Applicant's Purpose and Need

Mt. Rose Ski Tahoe has taken steps through the development of its MDP to enhance its overall recreation appeal. The primary purpose for the proposed improvements considered in this document is to implement mountain and base area projects on NFS land and adjacent private land that would enhance the recreation experience for skiers.[4] Mt. Rose Ski Tahoe's has identified two primary objectives in meeting its and the Forest Service's Purpose and Need and include:

Need #1: Provide additional terrain at Mt. Rose Ski Tahoe that is comfortable and appropriate for lower-level skiers.

Although Mt. Rose Ski Tahoe is well known for its abundance of high quality expert terrain, the terrain used for lower-ability level skiers is negatively impacted by mixing of ability levels and a lack of terrain variety.

Due to the topography within the SUP boundary, lower-ability level terrain (beginner, novice, and low-intermediate) is limited to the frontside, and serviced by the Galena and Wizard Chairlifts. Currently, advanced-intermediate and expert skiers descend through lower-ability level terrain on their way to the base area. This mixing of ability levels is intimidating for lower-level skiers, which is inconsistent with the type of recreational offering that the ski area strives to provide. Although the recently-added Wizard Chairlift and trails created a more secluded beginner area, novice and low-intermediate skiers still share the primary runs down to the main base with advanced and expert skiers. Additionally, because of the limited amount of terrain for lower-ability level skiers, terrain variety, which is an important factor in visitor satisfaction, is very limited. Increasing the terrain available for lower-ability level skiers would engage visitors longer and encourage repeat visits.

As a result of these identified terrain deficiencies (e.g., mixing of ability levels and lack of variety for lower-ability levels), the ski area struggles to provide a full range of terrain that is necessary for the "learning progression," which is critical for skiers as they gain skills and confidence.

[4] The terms "skier," "skiing," "ski," "ski trail," and "skiable," as used within this document, are expressly inclusive of all forms of alpine on-snow recreation including: snowboarding, telemark skiing, adaptive skiing and snowboarding, and other forms of allowable on-snow sliding activities.

Need #2: Enhance Mt. Rose Ski Tahoe's ability to provide a consistent and quality snow surface on key ski terrain throughout the season.

Mt. Rose Ski Tahoe depends on its snowmaking system to ensure a consistent and quality snow surface throughout the season. As described in the 2010 MDP Addendum, Mt. Rose Ski Tahoe prepared an assessment of snowmaking infrastructure and capacities that identified inefficiencies in the ski area's snowmaking system. The current snowmaking infrastructure has a "throughput capacity" (i.e., the total volume of water that can be handled by the system at any one time) of approximately 1,800 gallons per minute (gpm). The resort's primary water supply, which is drawn from wells located on private land and stored in a 500,000-gallon tank located above the *Galena* trail then pumped through the existing snowmaking system, only produces water at a rate of 500 gpm. When snowmaking operations are maximized, the tank becomes depleted quickly and does not fill fast enough to meet demands of the system. This lack of water storage constrains the ski area's ability to maximize the amount of snow produced during optimal snowmaking conditions and temperatures. Therefore, Mt. Rose Ski Tahoe has identified a need to expand their water storage capacity to improve consistency and efficiency of snow production during these periods.

1.6 Alternative 2

Terrain at Mt. Rose Ski Tahoe is relatively steep; however, ideal low-grade terrain is located directly across the Mt. Rose Highway on NFS land in the Atoma Area. Alternative 2 would amend the existing SUP by adding approximately 112 acres to the ski permit boundary to incorporate a portion of the Atoma Area. This would facilitate the construction of a lift and associated ski terrain. The Atoma Area would be developed with eleven ski trails and incorporated into Mt. Rose Ski Tahoe's lift and terrain network, increasing the SUP area from 544 acres to approximately 656 acres. The 112 acres of added terrain in the Atoma Area would consist entirely of lower-ability level trails amounting to approximately 26 acres. It also improves the recreation experience for lower-ability level skiers by providing appropriate terrain that is separated from advanced skier traffic.

Alternative 2 includes 31 acres of clearing and/or grading on NFS land and 8 acres of clearing and/or grading on private land to accommodate the following project components:

- Amend the SUP to increase the SUP boundary by 112 acres from 544 acres to 656 acres to include the Atoma Area to provide for expanded beginner terrain at Mt. Rose Ski Tahoe.
- Construct eleven new ski trails totaling 26 acres to provide safe, accessible terrain for novice and beginner skiers. A gate would be added on the Old Mt. Rose Highway to preclude vehicle access into the Atoma Area during the ski season.
- Provide capacity to circulate up to 2,000 skiers per hour by installing a 3,500-foot-long chairlift, including towers and bottom and top terminals.
- Provide a skiable connection between existing terrain at the main ski area and proposed terrain in the Atoma Area by constructing an approximately 130-foot-long skier bridge spanning the Mt. Rose Highway. The bridge would have a minimum clearance of 18 feet from the highway. The skier bridge would have a minimum width of 30 feet to safely accommodate a variety of skier abilities. The skier bridge would be required to be constructed prior to construction of the Atoma Area (e.g., tree removal, ski trails, ski lift). This requirement ensures that the connection to the Atoma Area is made prior to removing vegetation or cutting ski trails.

- Provide snowmaking coverage on five trails in the Atoma Area (Trails 1, 2, A, B, and C; refer to Figure 3). Install 1.3 miles of 8- to 12-inch diameter water pipeline totaling approximately 20 acres, 17 acres of which would be located on NFS land. Approximately 1 additional mile of water pipeline would be installed within existing ski trails on private land from the water tank across the proposed bridge to the Atoma Area.
- Improve Mt. Rose Ski Tahoe's ability to store water for snowmaking during periods of higher precipitation with the installation of a water tank at the Galena trail (refer to Figure 2). The tank would be approximately 155 feet in diameter and 40 feet in height, with a capacity of between 13 and 15 acre feet (approximately 5 million gallons) of water, and would require associated infrastructure to connect it to the existing snowmaking system. The additional stored water would benefit the Atoma Area terrain as well as provide additional capacity for snowmaking elsewhere at Mt. Rose Ski Tahoe.
- Amend the Forest Plan to restrict future commercial development on 3,446 acres of NFS land. The proposed amendment is as follows:

  Land acquired through the 1994 Galena Resort Land Exchange located within, Management Area 2 (Carson Front), with the exception of the proposed Atoma Area and the Chutes).

  Standard – *Commercial development shall not be permitted on 3,446 acres of NFS land in the area known as the Galena Land Exchange with the exception of the proposed Atoma Area (112 acres) and the Chutes (131 acres) already in the Mt. Rose SUP.*
- Accommodate the new Atoma ski terrain by removing the Atoma building, an approximately 2,000-square foot facility, and re-contouring the parking area.

The proposed chairlift and skier bridge highway crossings will be designed to prevent objects from skiers (e.g., skis, poles, shoes, hats, bags, etc.) from falling onto the Mt. Rose Highway. This shall include installation of a net under the chairlift. This design element is a Management Requirement included in Alternative 2.

According to Section 1508.25 of CEQ Regulations for Implementing NEPA, connected actions are closely related; therefore, they should be discussed in the same impact statement. Actions are connected if they: automatically trigger other actions, which may require environmental impact statements; cannot or will not proceed unless other actions are taken previously or simultaneously; or are interdependent parts of a larger action and depend on the larger action for their justification. A guest service facility, ski trail, a water line (to provide snowmaking water to the Atoma Area) and a portion of the skier bridge (to cross the Mt. Rose Highway) would be constructed on private land. These private land improvements are considered connected actions, as defined by CEQ. Alternative 2 is described in detail in Chapter 2 and depicted on Figures 2 and 3.

1.7 Alternative 3

All components of Alternative 3 are the same as described for Alternative 2, except that this alternative was developed to align a chairlift to cross the Mt. Rose Highway directly above the skier bridge. This configuration resulted in a two-lift configuration for Alternative 3 which would require approximately 1 acre of additional clearing and grading; Alternative 3 would result in 32 acres of clearing and/or grading on NFS land and 8 acres of clearing and/or grading on private land. In addition, a restroom facility is proposed within the Atoma Area. Alternative 3 includes the following project elements that differ from Alternative 2:

- Install two chairlifts: one 1,650-foot-long chairlift that crosses Mt. Rose Highway directly above the skier bridge to provide return from the Atoma Area to the main ski area and one 3,000-foot-long chairlift to service the terrain within the Atoma Area. The chairlift alignments would include the top and bottom terminals as well as lift towers along the length of the lifts. The chairlifts would have a capacity of 2,000 people per hour. A safety net is not anticipated to be installed under either chairlift in Alternative 3. Chairlift A is a traditional chairlift that travels over trees and ski trails, and operations and maintenance would be similar to any other chairlift at the resort. Chairlift B would run directly over the bridge, which would allow retrieval of dropped objects, maintenance, and for emergency egress.
- Install a restroom facility within the Atoma Area to serve visitors and employees using the Atoma Area, without requiring them to return to the main ski area (particularly benefitting the learning programs). This restroom would be accessible from both lifts. The building would be designed fit into the forest landscape, consistent with the Built Environmental Image Guide and is anticipated to be approximately 15 feet by 20 feet, connecting to existing water, electrical and septic at the existing Atoma building.

All other components of Alternative 3 are the same as was described for Alternative 2:

- Amend the SUP to increase the SUP boundary from 544 acres to 656 acres to include the Atoma Area to provide for expanded beginner terrain at Mt. Rose Ski Tahoe.
- Construct eleven new ski trails totaling 26 acres to provide safe, accessible terrain for novice and beginner skiers. A gate would be added on the Old Mt. Rose Highway to preclude vehicle access into the Atoma Area during the ski season.
- Provide a skiable connection between existing terrain at the main ski area and proposed terrain in the Atoma Area by constructing an approximately 130-foot-long skier bridge spanning the Mt. Rose Highway. The skier bridge would have a minimum width of 30 feet to safely accommodate a variety of skier abilities.
- Provide snowmaking coverage on five trails in the Atoma Area (Trails 1, 2, A, B, and C; refer to Figure 3). Install 1.3 miles of 8- to 12-inch diameter water pipeline totaling approximately 20 acres, 17 acres of which would be located on NFS land. Approximately 1 additional mile of water pipeline would be installed within existing ski trails on private land from the water tank across the proposed bridge to the Atoma Area.
- Improve Mt. Rose Ski Tahoe's ability to store water for snowmaking during periods of higher precipitation with the installation of a water tank at the Galena trail (refer to Figure 2). The tank would be approximately 155 feet in diameter and 40 feet in height, with a capacity of between 13 and 15 acre feet (approximately 5 million gallons) of water, and would require associated infrastructure to connect it to the existing snowmaking system. The additional stored water would benefit the Atoma Area terrain as well as provide additional capacity for snowmaking elsewhere at Mt. Rose Ski Tahoe.
- Amend the Forest Plan to restrict future commercial development on 3,446 acres of NFS land. The proposed amendment is as follows:

  Land acquired through the 1994 Galena Resort Land Exchange located within Management Area 2 (Carson Front), with the exception of the proposed Atoma Area and the Chutes).

Standard – *Commercial development shall not be permitted on 3,446 acres of NFS land in the area known as the Galena Land Exchange with the exception of the proposed Atoma Area (112 acres) and the Chutes (131 acres) already in the Mt. Rose SUP.*

- Accommodate the new Atoma ski terrain by removing the Atoma building, an approximately 2,000-square foot facility, and re-contouring the parking area. The restroom would be located east of the existing Atoma building for accessibility; therefore, the existing Atoma building would still need to be removed and the area would be recontoured and rehabilitated.

According to 40 CFR § 1508.25 of CEQ Regulations for Implementing NEPA, connected actions are closely related; therefore, they should be discussed in the same impact statement. Actions are connected if they: automatically trigger other actions, which may require environmental impact statements; cannot or will not proceed unless other actions are taken previously or simultaneously; or are interdependent parts of a larger action and depend on the larger action for their justification. A guest service facility, ski trail, a water line (to provide snowmaking water to the Atoma Area) and a portion of the skier bridge (to cross the Mt. Rose Highway) would be constructed on private land to use of the Atoma Area on NFS land. These private land improvements are considered connected actions, as defined by CEQ. Alternative 3 is described in detail in Chapter 2 and depicted on Figures 4 and 5.

1.8 Decision Framework

The HTNF Forest Supervisor (the Deciding Official) will decide:

- Whether to amend the SUP to expand the SUP area and authorize the uses as proposed or modify the proposed uses;
- Under what terms and conditions a permit should be issued; and
- Whether to amend the Toiyabe Land and Resource Management Plan (LRMP) consistent with on the National Forest Management Act.

Based on the analysis documented within this FEIS, the Responsible Official, the Forest Supervisor for the HTNF, will decide whether to select Alternative 1 – No Action, Alternative 2 – Proposed Action, or Alternative 3. The Forest Supervisor is not required to choose either an action alternative or the No Action Alternative described herein but may select components of an action alternative or develop an entirely new alternative created from components of each. In addition to determining which alternative to select, the Forest Supervisor will also identify which Management Requirements are necessary, as based on the information provided in this FEIS.

1.9 Public Involvement

Discussions with multiple stakeholder groups representing recreation organizations, local government, and the Nevada Department of Transportation began in 2013, including an oversnow tour of the Atoma Area on January 30, 2013. The project was listed on the Humboldt-Toiyabe Schedule of Proposed Actions (SOPA) website http://www.fs.usda.gov/project/?project=41487 on April 1, 2013. A scoping notice dated May 28, 2013 was mailed to 45 community residents, interested individuals, public agencies, and other organizations requesting comments on the proposal. A news release was sent to local media outlets on May 31, 2013 announcing the project and a Notice of Intent to Prepare an Environmental Impact Statement (NOI) was published in the *Federal Register* on June 3, 2013. Two public scoping meetings were held, the first on June 18, 2013 at Winters Creek Lodge where seventeen individuals attended and the second on June 19,

2013 at the Forest Supervisors office with six individuals in attendance. During the scoping period, the HTNF received ten comment letters. In accordance with 40 CFR § 1501.7(a)(2) significant issues to be analyzed in this FEIS were initially determined from public comments and by the Forest Service Interdisciplinary Team. Substantive scoping comments can suggest the inclusion of other alternatives for the agency to consider, identify issues that may direct the forthcoming analysis or identify concerns that should be tracked throughout the analysis. A total of forty-two substantive comments were obtained from ten public comment submittals. Some comment submittals included numerous substantive comments, while others had none. These comments were discussed by the HTNF during Interdisciplinary Team (ID Team) meetings. The ID Team identified the following issues for analysis in this FEIS: recreation; inventoried roadless areas (IRAs); public health and safety; visual quality; cultural; botany and overstory vegetation; forest health; wildlife; and watershed and soils. A summary of the identified resource issues is included in this chapter.

As outlined in 40 CFR § 1501.7(a)(3), issues that are not carried forward in this environmental review (e.g., traffic, climate change, and environmental justice) are presented with a brief explanation of why these issues will not have a significant effect on the human environment in Section 3.1.2. A summary of the identified resource issues is provided in Section 1.10.

The DEIS was prepared and over 80 community residents, interested individuals, public agencies, and other organizations were notified of the request for comments in a letter dated January 8, 2018. A Notice of Availability for the DEIS 90-day comment period was published in the *Federal Register* on January 19, 2018 and a legal notice was published in the Reno Gazette Journal on the same day. The DEIS was made available on the project website at http://www.fs.usda.gov/project/?project=41487. Hardcopies were available at South Valleys Library, 15650 Wedge Parkway, Reno, NV 89511 and Incline Village Library 845 Alder Avenue, Incline Village, NV 89451. A news release was sent to news outlets on January 19, 2018. Ninety-two comment letters were received on the DEIS. A total of 31 substantive comments were identified from the letters ranging from questions about developing a ski area in an Inventoried Roadless Area to clarification of impacts to human and biological resources and requests for collaboration with the administrators of the Pine Ridge water system and project design criteria from Nevada Department of Transportation. Resource comments included hydrology, noise, health & safety, environmental justice, recreation and traffic.

The project description (in Section 1.7 and Section 2.3) was updated to clarify a safety net would be a component of Alternative 2, but it would not be a component of Alternative 3 and that access to the Atoma Area would occur on the Old Mount Rose Highway, not Sky Tavern Road. Section 3.3.2.2 in this FEIS was updated to include clarification about the recreation opportunity spectrum in the roadless area. Section 3.1.2.3 was updated to include 2017 census data. Section 3.11 analysis section was expanded to include effects to local residents on Sky Tavern Road. Section 3.10 was clarified that there would be no direct effects to wetlands. This FEIS was updated with more precise information to identify the distance between an existing community water system and the proposed ski trails (Figure 8). In Figure 16, the name of the shapefile that was “1994 Galena Resort Land Exchange” in the DEIS has been renamed as “Lands acquired in the 1994 Galena Resort Land Exchange that are included in the Forest Plan Amendment,” to clarify which land is included the Forest Plan Amendment.

A response to comments is included in this FEIS as Appendix D.

Tribal Coordination

In accordance with the American Indian Religious Freedom Act of 1978 and Executive Order 13007, *Indian Sacred Sites* consultation and coordination at the earliest stage of project planning was initiated. A memo including a project description and location map was sent to the Washoe Tribe of Nevada and California (Washoe Tribe), Tribal Historic Preservation Officer (THPO) on July 20, 2011. A response was received on August 22, 2011 stating that the Tribe had no specific information regarding the area, but they wanted to be informed as project plans proceeded. The Forest Service conducted additional consultation with the Reno-Sparks Indian Colony (RSIC), and Washoe Tribe in November 2012. A scoping notice was sent to RSIC and the Washoe Tribe on May 28, 2013. The project proposal was presented to the RSIC on June 11, 2015. A copy of the cultural resource inventory report was provided to RSIC on November 10, 2015. The Forest Service met with RSIC on October 18, 2017 and January 8, 2018 where the project was discussed and no issues were raised. The Reno-Sparks Indian Colony, Washoe Tribe of Nevada and California and the Pyramid Lake Paiute Tribe were sent the DEIS on January 9, 2018. The Native American consultation conducted for the Atoma Area is considered current; however, consultation will continue at critical junctures in the NEPA and Section 106 process.

United States Fish and Wildlife Consultation

In accordance with an MOU between the USFWS and the HTNF requiring consultation for candidate species, informal consultation was conducted with the USFWS regarding whitebark pine. In response to this consultation, the Forest Service received a Technical Assistance letter from the USFWS that included conservation recommendations that correspond with design features incorporated in the Proposed Action.[5]

1.10 Issues

Issues identified in Section 1.10 serve to highlight effects or unintended consequences that may occur from the No Action Alternative or action alternatives, giving opportunities during the analysis to reduce adverse effects and compare trade-offs for the decision maker and public to understand they are analyzed in detail throughout Chapter 3 of this FEIS.[6] Some issues were eliminated from detailed study in this FEIS, and are discussed in Section 3.1.2.

1.10.1 Recreation

Issue Statement: Expanding lower-ability level terrain at Mt. Rose Ski Tahoe would provide a quality learning progression and better accommodate a positive learning experience by separating ability levels and enhancing terrain variety. These issues impact individual learners as well as the Rose Buds Program at Mt. Rose Ski Tahoe.

Issue Statement: Increasing snowmaking water storage would improve the ski area's ability to produce snow during optimal snowmaking conditions and temperatures, enhancing the ski area's ability to provide consistent snow coverage during periods of low snow. Improved snow coverage would affect the quality and reliability of the recreational experience for visitors.

Issue Statement: Expanded developed recreation in the Atoma Area has potential to impact dispersed summer and winter recreation in the Analysis Area by combining both ticketed,

[5] USFWS, 2015
[6] FSH 1909.15 Section 12.4

developed recreation and dispersed recreation activities, and potentially displacing dispersed recreationists.

Analysis Area: Mt. Rose Ski Tahoe SUP area, Atoma Area, and adjacent NFS land used for dispersed recreation

Analytical Indicators:

- Quantification of ski terrain distribution by ability level (existing versus proposed)
- Discussion of lower-ability "learning progression" terrain
- Discussion of snow coverage provided by Mt. Rose Ski Tahoe's snowmaking system
- Overview of dispersed (summer and winter) recreation activities that are currently available within the SUP area, the proposed Atoma Area, and the surrounding National Forest

1.10.2 Inventoried Roadless Areas

Issue Statement: The Analysis Area is overlapped by the Rose-Galena Inventoried Roadless Area (IRA), which is adjacent to the Mt. Rose Wilderness. Therefore, incorporation of the Atoma Area into Mt. Rose Ski Tahoe's SUP needs to be analyzed for consistency with the Forest Service Roadless Area Conservation Rule of 2001, to determine if further action is necessary.

Analysis Area: The 37.5 acres of the proposed Atoma Area SUP boundary expansion overlapped by the Rose-Galena IRA, and the 2,253 acres of the Rose-Galena IRA that were acquired through the Galena Resort Land Exchange and are, therefore, included in the Forest Plan Amendment.

Analytical Indicators:

- Quantification of overlapping acreage between the Roadless Area and the Analysis Area
- Discussion of "Assessment of Wilderness Potential" analysis for the Atoma Area
- Impacts to roadless characteristics of the Analysis Area

1.10.3 Public Health and Safety

Issue Statement: A chairlift crossing over the Mt. Rose Highway and parking lots in the Mt. Rose Ski Tahoe ski area has potential to affect the feeling of security for skiers on the chairlift and may pose a risk to motorists from objects (e.g., ski equipment, articles of clothing) falling onto the Mt. Rose Highway or parking lots.

Analysis Area: The Atoma Area, the Mt. Rose Highway and adjacent private land

Analytical Indicators:

- Identification of consistency with ANSI B77.1 Standard for Ski Chairlift Safety
- Discussion of potential impacts to recreation experience of crossing the highway and parking lots
- Discussion of potential for objects to fall onto the Mt. Rose Highway or parking lots

1.10.4 Visual Resources

Issue Statement: The proposed chairlift and skier bridge over the Mt. Rose Highway, as well as the tank adjacent the highway, may affect the scenic integrity along the Mt. Rose Highway (a state designated scenic byway) by adding to the developed nature of the landscape.

Issue Statement: Proposed trail grading and tree removal may affect the Visual Quality Objective (VQO) of Partial Retention in the Analysis Area as developments become increasingly dominant across the landscape.

Analysis Area: The Mt. Rose Highway corridor in the vicinity of the Mt. Rose Ski Tahoe base area (between mile markers 10 and 11) and NFS land acquired through the Galena Resort Land Exchange

Analytical Indicators:

- Quantification of the extent and duration of the visibility of the proposed chairlift, skier bridge and tank to motorists on the Mt. Rose Highway
- Visual simulations of the proposed chairlift and skier bridge across the Mt. Rose Highway demonstrate the increase in development
- Analysis of the action alternatives on the VQOs for the Mt. Rose Ski Tahoe SUP, as defined by the 1986 Forest Plan, and consistency of proposed projects with the VQO of *Partial Retention*
- Identification of key viewpoints in the Analysis Area and discussion of visibility of proposed projects from all distance zones (*foreground, middleground, background*)
- Analysis of visibility of proposed projects from nearby high elevation areas, including the Mt. Rose Wilderness and the Mt. Rose Trail and dispersed recreation outside but adjacent to designated wilderness

1.10.5 Cultural Resources

Issue Statement: The Atoma Area includes potentially eligible cultural resources. Ground-disturbing activities associated with the proposed projects in the Atoma Area could affect these resources directly, through direct removal or indirectly through degradation.

Analysis Area: The Atoma Area, the proposed water storage area, adjacent private land and NFS land acquired through the Galena Resort Land Exchange

Analytical Indicators:

- Identification of cultural resources in the Analysis Area
- Discussion of the potential impacts cultural resources in the Analysis Area

1.10.6 Botany and Overstory Vegetation[7]

Issue Statement: Concerns for botanical resources include: habitat for rare plants; restoration of native plant communities; trails within wetland; management of noxious weeds. All of which have potential to be impacted by tree removal and grading associated with the proposed projects.

Analysis Area: Areas proposed for ground disturbance in the Atoma Area and the proposed water storage

Analytical Indicators:

- Identification of Threatened, Endangered, and Sensitive (TES) plant habitat/individuals in the Analysis Area
- Impacts to rare plants (known and potential) habitat are evaluated for both short- and long-term effects
    - Potential habitat for Galena Creek rockcress, a rare plant, may be improved through the opening of closed forest canopy conditions in the long term. This will be evaluated though a quantitative assessment of canopy cover and the effects of maintaining these conditions over time for rare plant habitat.
- Identification, mapping and treatment of noxious weeds in the Analysis Area
- Discussion of mountain pine beetle, pine engraver beetle, and white pine blister rust effects throughout the Analysis Area
- Impacts to western white pine "plus trees" that are potentially resistant to white pine blister rust
- Construction of ski trails may result in removal of whitebark pine trees, which is candidate species for listing under the Endangered Species Act (ESA)

1.10.7 Forest Health

Issue Statement: Tree removal for construction and development of the Atoma Area may result in a loss of both healthy and infested conifer trees. Removal of healthy trees that have not been affected by, or have a potential resistance to, infestations, may result in a reduction in healthy forest. Removal of dead and infested trees may result in improving forest health.

Analysis Area: Areas proposed for ground disturbance in the Atoma Area and the proposed water storage tank

Analytical Indicators and Requirements:

- Identification/maintenance of whitebark pine and western white pine "plus trees"
- Identification and removal of insect infested trees including timing and treatment plan
- Vegetation prescriptions for management of remaining tree islands

[7] Overstory vegetation is defined as the highest layer of vegetation in a forest, usually forming the canopy. This is typically comprised of the trees in a forest whose crowns make up the highest layer.

1.10.8 Wildlife

Issue Statement: Implementation of proposed projects (including construction and operation) may affect TES and Management Indicator Species (MIS) wildlife and migratory birds in the Analysis Area by removing identified habitat.

Issue Statement: The proposal includes the removal of numerous live aspen and conifer trees, as well as dead trees/limbs called snags that provide wildlife habitat, which may have long-term impacts to species that require denser canopy cover and structure for habitat (e.g., flammulated owl and white-headed woodpecker).

Analysis Area: The Atoma Area, the water tank location, and adjacent habitat

Analytical Indicators:

- Identification, quantification and analysis of TES and MIS animal and migratory bird habitat in the Analysis Area
- Quantification of the number of trees proposed to be removed, including the size classes, what the resulting overall upper and lower canopy cover would look like under proposed conditions, and if it would be sufficient to maintain wildlife populations

1.10.9 Watershed and Soils

Issue Statement: Placement of the lift towers and terminals, grading, and installation of the snowmaking lines has potential to affect water and soil quality by disturbing soil and increasing erosion/sedimentation.

Issue Statement: Ski trail construction (spot and full grading) may increase soil sedimentation and result in poor reclamation due to soil compaction and reduced infiltration.

Issue Statement: Ground disturbance and proposed overstory vegetation removal associated with construction and operation of proposed projects has potential to affect wetland function and value.

Analysis Area: The subwatershed(s) that encompass ground-disturbing activities

Analytical Indicators:

- Discussion of soil conditions in the Analysis Area
- Quantification (acres) of temporary and permanent ground disturbance in the Analysis Area
- Analysis of increased erosion hazard due to temporary and permanent ground disturbance
- A risk evaluation of the slopes, soils and amount of area to be graded (including reviewing Natural Resources Conservation Service (NRCS) soil data for recommended practices within soil types present)
- Identification of perennial and intermittent stream channels across the Analysis Area in relation to proposed projects
- Identification of waters of the U.S., including wetlands, across the Analysis Area in relation to the action alternatives

1.10.10 Noise

Issue Statement: Construction and ski area operations in the Atoma Area has the potential to generate additional noise audible to residents in the area.

Analysis Area: Homes located adjacent Sky Tavern Ski trail on Sky Tavern Road

Analytical Indicators:

- Discussion of types and duration of construction noise in the Analysis Area
- Discussion of types of operational noise in the Analysis Area

1.11 Applicable Permits

Table 1. Permits that may be applicable with the Action Alternatives

Action	Permit/Approval	Approving Agency
Permit	Encroachment Permit	NDOT
Facilities Construction	Construction Permit	Nevada Division of Environmental Protection (NDEP), Bureau of Air Pollution Control
Facilities Construction	Section 402 National Pollutant Discharge Elimination System (NPDES) Notification for Stormwater Management during Construction	NDEP
Facilities Construction	Section 402 NPDES Notification for General Permit for Discharges of Storm Water Associated with Construction Activity	NDEP
Surface disturbing activities	Surface Area Disturbance Permit and Dust Control Permit	NDEP
Grading, Utilities and Facilities Construction	Building Permit	Washoe County

2. Description of Alternatives

2.1 Introduction

This chapter describes and compares the alternatives considered within this environmental analysis and summarizes the environmental consequences anticipated with implementation of the Proposed Action or by taking no action. As required by Council on Environmental Quality (CEQ), the alternatives considered are presented in comparative form.[8] Management Requirements, including project design features and best management practices, designed to lessen or avoid impacts anticipated to occur as a result of implementation of the Alternative 2 or Alternative 3 are detailed in Appendix A.

Management Requirements are referenced by acronyms pertaining to each issue:

Issue	Acronym
General	G
Air Quality	AQ
Recreation	RT
Public Health and Safety	PHS
Visual Resources	VI
Cultural Resources	CU
Botany	BO
Noxious Weeds	NW
Forest Health	FH
Wildlife and Sensitive Species	WL
Water Resources, Wetlands, and Soils	WA

2.2 Development of the Alternatives

Under CEQ regulations, the Forest Service is required to study, develop, and describe alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources as provided by Section 102(2)(E) of NEPA.[9] No specific number of alternatives is required to be analyzed in detail.

[8] 40 CFR Part 1502
[9] 40 CFR § 1501.2(c)

2.3 Alternatives Considered in Detail

Following public and internal scoping, the Forest Service identified specific areas of concern including potential impacts to Recreation, Inventoried Roadless Areas, Public Health and Safety, Visual Resources, Cultural Resources, Botany and Overstory Vegetation, Forest Health, Wildlife, and Watershed and Soils (these are *Issues*, refer to Section 1.10). These *Issues* are analyzed in detail within this FEIS.

Throughout the analysis, the Forest Service considered addressing potential resource issues through: analysis and disclosure of effects using appropriate resource indicators, additional alternatives, Management Requirements, or modification to the design of the Proposed Action (refer to Section 2.5 for a discussion on Alternatives and Design Options Considered but Eliminated from Detailed Analysis). The Forest Service addressed any "issues" not carried through detailed analysis through Management Requirements and modifications to the action alternatives. A third alternative was developed to address Public Health and Safety.[10] This FEIS includes detailed analysis of the No Action Alternative (Alternative 1), Alternative 2, and Alternative 3. As detailed in the Decision Framework discussion (see Section 1.8), the Responsible Official, the Forest Supervisor for the HTNF, will decide whether to select Alternative 1 – No Action, Alternative 2 – Proposed Action, or Alternative 3. The Forest Supervisor is not required to choose either the No Action Alternative or an action alternative described herein but may select components of an action alternative or develop an entirely new alternative created from components of each. In addition to determining which alternative to select, the Forest Supervisor will also identify which Management Requirements are necessary (including mitigation measures, Project Design Criteria, and Best Management Practices), as based on the information provided in this FEIS.

Figures 1 through 5 in Chapter 6 accompany the review of Alternatives 1, 2, and 3.

2.3.1 Alternative 1 – No Action

The No Action Alternative provides a baseline for comparing the effects of the action alternative(s). Under the No Action Alternative, the Applicant's SUP would not be amended, and the permit area would not be expanded. No new facilities or developed downhill ski terrain opportunities on NFS land as proposed in this analysis by Mt. Rose Ski Tahoe would be approved under the No Action Alternative. The Forest Plan would not be amended.

Mt. Rose Ski Tahoe currently offers approximately 445 acres of cleared ski trails on the slopes of Slide Mountain, including eight chairlifts and more than sixty trails. Two lodges exist at the ski area: the base lodge and Winters Creek Lodge; however, neither are located within the resort's SUP boundary (refer to Figure 1).

Some projects that were approved in the 2001 Mt. Rose/Slide Mountain Decision Notice and Finding of No Significant Impact could still be implemented under the No Action Alternative. These projects include new and modified lifts, along with terrain and snowmaking improvements. These projects were designed to diversify the skiing terrain and amenities offered to meet demands of the public, and to improve the use of East Bowl to diversify the experience and decrease skier densities on the Mt. Rose side of the ski area.

[10] 40 CFR § 1502.10(9)(b)

Despite the potential to implement these projects, there would continue to be deficiencies in terrain offerings for lower-ability level skiers. Additionally, no increase in snowmaking storage capacity would occur beyond the existing 500,000-gallon water storage tank. Water storage for snowmaking would continue to be undersized for the existing snowmaking system; therefore, optimal snow coverage would not be reached.

The Atoma Area would not be included in the ski area's SUP boundary under Alternative 1, so the SUP boundary would not be amended. No bridge, chairlift, or ski trails would be developed in this area. As such, access to and use of the area would remain similar to existing conditions, which is a forested area for dispersed recreation opportunities, as well as wildlife and plant habitat. Informal off-highway parking would continue to be available, and the Atoma Building and parking lot would not be removed.

The Forest Plan would not be amended under the No Action Alternative, thus maintaining the ability for commercial development projects to be proposed within the 3,446 acres of NFS land acquired through the 1994 Galena Resort Land Exchange.

2.3.2 Alternative 2

Under Alternative 2, the Forest Service would authorize an amendment to the SUP to include a boundary expansion to incorporate 112 acres of NFS land in the Atoma Area into Mt. Rose Ski Tahoe's SUP boundary as well as the proposed lift and trail improvements. Adding the Atoma Area would increase the SUP boundary from 544 acres to 656 acres. The Proposed Action includes 31 acres of clearing and/or grading on NFS land and 8 acres of clearing and/or grading on private land to accommodate the following components, which are discussed in more detail in subsequent pages and shown in detail in Figure 3:

- Amend the SUP to increase the SUP boundary from 544 acres to 656 acres to include the Atoma Area to provide for expanded beginner terrain at Mt. Rose Ski Tahoe.
- Construct eleven new ski trails totaling 26 acres to provide safe, accessible terrain for novice and beginner skiers. A gate would be added on the Old Mt. Rose Highway to preclude vehicle access into the Atoma Area during the ski season.
- Provide capacity to circulate up to 2,000 skiers per hour by installing a 3,500-foot-long chairlift, including towers and bottom and top terminals.
- Provide a skiable connection between existing terrain at the main ski area and proposed terrain in the Atoma Area by constructing an approximately 130-foot-long skier bridge spanning the Mt. Rose Highway. The bridge would have a minimum clearance of 18 feet from the highway. The skier bridge would have a minimum width of 30 feet to safely accommodate a variety of skier abilities.
- Provide snowmaking coverage on five trails in the Atoma Area (Trails 1, 2, A, B, and C; refer to Figure 3). Install 1.3 miles of 8- to 12-inch diameter water pipeline totaling approximately 20 acres, 17 acres of which would be located on NFS land. Approximately 1 additional mile of water pipeline would be installed within existing ski trails on private land from the water tank across the proposed bridge to the Atoma Area.
- Improve Mt. Rose Ski Tahoe's ability to store water for snowmaking during periods of higher precipitation with the installation of a water tank at the Galena trail (refer to Figure 2). The tank would be approximately 155 feet in diameter and 40 feet in height, with a capacity of between 13 and 15 acre feet (approximately 5 million gallons) of water, and would require associated infrastructure to connect it to the existing

snowmaking system. The additional stored water would benefit the Atoma Area terrain as well as provide additional capacity for snowmaking elsewhere at Mt. Rose Ski Tahoe.

- Amend the Forest Plan to restrict future commercial development on 3,446 acres of NFS land. The proposed amendment is as follows:

  Land acquired through the 1994 Galena Resort Land Exchange located within, Management Area 2 (Carson Front), with the exception of the proposed Atoma Area and the Chutes).

  Standard – *Commercial development shall not be permitted on 3,446 acres of NFS land in the area known as the Galena Land Exchange with the exception of the proposed Atoma Area (112 acres) and the Chutes (131 acres) already in the Mt. Rose SUP.*

- Accommodate the new Atoma ski terrain by removing the Atoma building, an approximately 2,000-square foot facility, and re-contouring the parking area.

The Proposed Action would be implemented in phases. Although development of the Atoma Area and installation of the water tank could occur simultaneously, developing the connector trail from the main ski area, the skier bridge and trails in the Atoma Area would be phased to protect wildlife habitat. Therefore, no development in the Atoma Area would occur prior installation of the skier bridge. The skier bridge is an essential project in the successful use of the Atoma Area and would, therefore, occur during phase 1 of construction and development of the Atoma Area for skiing.

According to Section 1508.25 of CEQ Regulations for Implementing NEPA, connected actions are closely related; therefore, they should be discussed in the same impact statement. Actions are connected if they: automatically trigger other actions, which may require environmental impact statements; cannot or will not proceed unless other actions are taken previously or simultaneously; or are interdependent parts of a larger action and depend on the larger action for their justification. A guest service facility, ski trail, a water line (to provide snowmaking water to the Atoma Area), and a portion of the skier bridge (to cross the Mt. Rose Highway) would be constructed on private land to use of the Atoma Area on NFS land. These private land improvements are considered connected actions, as defined by CEQ.

2.3.2.1 Atoma Terrain

The Forest Service is proposing to authorize expansion of Mt. Rose Ski Tahoe's current 544-acre Forest Service-administered SUP boundary north of the Mt. Rose Highway (directly across from the base area) by 112 acres, into the Atoma Area. With the inclusion of the Atoma Area, Mt. Rose Ski Tahoe's SUP boundary would increase by approximately 112 acres to approximately 656 acres.

Eleven new ski trails totaling 26 acres of terrain for novice and beginner skiers would be developed in the Atoma Area; requiring removal of 28 acres of trees and vegetation on NFS land and 5 acres on private land to accommodate a trail connection from the main ski area and the skier bridge. The terrain is designed to offer lower-ability level skiers a unique experience that is removed from advanced skier traffic of the main ski area. The proposed Atoma Area trail plan would promote the learning progression of guests and families and includes eleven lower-ability level trails totaling approximately 26 acres. Trails would range from 1,500 to 2,500 feet in length with widths between 50 and 80 feet. These trails are designed to accommodate skiers that are progressing from beginner terrain to intermediate ability level terrain. The trails in the Atoma Area would be narrower than other novice terrain at Mt. Rose Ski Tahoe, but due to the relatively

low angle of the slopes in this area, narrower trails could be designed to be appropriate for lower-ability level skiers. The narrower trail design of this terrain would add variety to the recreation experience. Trails would travel through both natural openings and denser forest and would provide an opportunity to ski in an area that feels more remote and natural than other lower-ability level terrain at the ski area. All proposed trails would be groomed as needed, to maintain a consistent snow surface.

For the purposes of the action alternatives, the eleven trails have been named A–E and 1–5, with one connector trail. Trails A–E are generally located on or east of the Old Mt. Rose Highway. Trails 1–5 are located west of the Old Mt. Rose Highway. The connector trail joins together Trails A–E and Trails 1–5. Specific sections of proposed Trails A–C, 1–5, and the connector trail would be graded to smooth the surface, creating consistent gradients of 10 to 15 percent throughout the trail and maximum gradients just above 20 percent—consistent with trail design for lower-ability level guests (in terms of safety and experience). Proposed grading would total approximately 6 acres (refer to Figure 3).

The existing Atoma building owned by the Forest Service would be removed and the associated parking area would be re-contoured to natural grades to provide for the construction of the connector trail and Trails 3 and 4 (refer to Figures 2 and 3). Natural vegetation along the Mt. Rose Highway would be retained to screen and minimize the visibility of the Atoma Area. Where necessary, a raised, vegetated buffer or guardrail between the Mt. Rose Highway and new skiing terrain would also be installed (refer to Figures 3 and 6).

Tree islands between ski trails throughout the Atoma Area (totaling approximately 49 acres) would be retained. Mt. Rose Ski Tahoe, in conjunction with the HTNF and based on the vegetation prescription plan, would remove select standing dead and/or diseased trees within these islands for a mix of forest health, safety, and operational reasons. Due to the natural spacing of trees throughout the Atoma Area, tree islands may provide a small amount of additional gladed skiing.

Under the Proposed Action, dispersed (“backcountry”) recreational access to NFS land within and adjacent to the Atoma Area would continue to be allowed throughout the winter and summer. A parking plan and access route has been identified to guide dispersed skiers and snowboarders traveling through the ski area permit boundary. It includes parking, access routes and other specifics related to dispersed use. This access is more fully described in Section 3.2 and in Appendix A. The plan will become part of Mt. Rose Ski Tahoe’s annual Operating Plan and will be available on the Mt. Rose Ski Tahoe website for the public to review.

A revegetation plan would be required for the Atoma Area to address any areas that are authorized for grading. This plan would be developed in coordination with the HTNF and would outline conditions such as percent cover of desirable species that best meet the established goals for successful revegetation.

2.3.2.2 Atoma Chairlift

Under Alternative 2, ski terrain in the Atoma Area is proposed to be served by a new chairlift with a capacity of 2,000 people per hour (refer to Figures 2 and 3). The 3,500-foot-long chairlift would span the Mt. Rose Highway, with the bottom terminal located in a flat, open, dry area at an elevation of approximately 7,970 feet on NFS land (refer to Figure 3). The top terminal would be located on private land owned by Mt. Rose Ski Tahoe at an elevation of 8,435 feet. Electrical power would be installed in an underground trench within the *Merlin* trail from an existing

junction box near the top terminal of the Wizard Chairlift to the top terminal of the proposed Atoma Chairlift. Electrical power to the bottom terminal would be installed from the existing power line in the Atoma Area. Installation of power lines would require a 2-foot-wide and 2-foot-deep trench, approximately 300 feet long for the top terminal and approximately 300 feet long for the bottom terminal.

Adequate road access to the top and bottom terminal sites currently exists and would not require vegetation removal. Vegetation removal for the lift line includes approximately 3 acres of clearing on NFS land and 1 acre of clearing on private land. Construction vehicles would access the Atoma Chairlift alignment by using the Old Mt. Rose Highway, or the entrance to the Atoma Nordic parking lot. Vegetation removal for the lift line would require a 65-foot-wide cleared alignment. Vegetation removal would be accomplished with motorized vehicles including front-end loaders and excavators within the lift alignment; trees would be chipped or burned. No access across tree islands would be necessary for construction of the chairlift. Towers would be between 30 and 40 feet tall depending on the location and slope. Tower footings require a 140-square foot disturbance area; concrete footings vary in size but would be contained within this disturbance area.

The chairlift would span approximately 65 feet across the Mt. Rose Highway near the existing Mt. Rose Ski Tahoe base area. Some examples of ski areas where chairlifts and gondolas cross roadways include Breckenridge (CO), Loveland Basin (CO), Deer Valley (UT), Park City (UT), and Stowe (VT). Techniques that have been used at other resorts for ski area and road maintenance and operations were considered in this project. The chairlift would be designed with an automatically closing restraint bar and a net under the chairlift at the Mt. Rose Highway crossing.

In addition, the following Management Requirements are included in the Proposed Action to reduce ski related objects from accidently falling onto the highway, and to guide the construction and use of the chairlift:

- *PHS 1: An operational plan and memorandum of understanding will be developed between Mt. Rose Ski Tahoe and NDOT to define communication and operational protocols for highway maintenance and use of Atoma Area throughout the year. The operational plan will address snow removal protocols that need to be in place during and after storm events to ensure that NDOT is able to perform highway maintenance activities without compromising skier safety. These protocols may include capping and stacking/removing snow and use of trucks, dump trucks and plows rather than blowers, to minimize potential interaction with ski area operations. In addition, a discussion of coordinating with Mt. Rose Ski Tahoe snowcat drivers in emergency situations would likely be included in the plan.*

- *PHS 2: The proposed chairlift and skier bridge highway crossings will be designed to prevent objects from skiers (e.g., skis, poles, shoes, hats, bags, etc.) from falling onto the Mt. Rose Highway. This shall include installation of a net under the chairlift. The net will be designed to allow retrieval of dropped objects, maintenance and for emergency egress to either end of the net. The net would be constructed with materials, and in a manner, that could support the weight of the chair. Mt. Rose Ski Tahoe will post signs and enforce a policy of no tolerance for purposefully dropping/throwing anything from the lift or bridge (e.g., snowballs).*

- *PHS 5: Mt. Rose Ski Tahoe will acquire an occupancy permit for any work performed within the NDOT right-of-way.*

2.3.2.3 Trail and Bridge Connection between Mt. Rose Ski Tahoe and Atoma Area

The proposal is to construct a trail and bridge from the existing terrain network at Mt. Rose Ski Tahoe (on private land) to the proposed Atoma Area (on NFS land). The trail would be located on private land and would branch off the *Galena* trail toward the Mt. Rose Highway. At a minimum, an 8 percent grade is necessary for descending skiers to carry momentum on the trail. Because grades throughout the ski area's private land are relatively flat in areas, grading would be necessary to construct the proposed trail from the private land at the existing ski area to the Atoma Area. Approximately 70,000 cubic yards of fill material would be needed for construction of the trail. This material is expected to come from private property owned by Mt. Rose Ski Tahoe. Approximately 7,000 truckloads would be required, and material would be gathered and stockpiled from local private locations, requiring mostly local travel. The trail would be elevated approximately 25 feet above natural grades and would require retaining walls where it connects to the bridge across the highway (refer to Figure 9).

At the end of the proposed trail on private land, a skier bridge would be required. The proposed skier bridge would be within the NDOT highway right-of-way on private land on the south side of the bridge and on NFS land on the north side of the bridge. The bridge would be owned and maintained by Mt. Rose Ski Tahoe. The proposed bridge would be approximately 130 feet long and a minimum of 30 feet wide to accommodate grooming equipment as well as ticketed and non-ticketed skier access. The bridge would be built to adhere to Washoe County Scenic Byway Guidelines and Forest Service Solar Reflectivity standards and color guidelines. Mt. Rose Ski Tahoe would coordinate with NDOT and the HTNF regarding the design and construction of the skier bridge over the Mt. Rose Highway (refer to Section 3.4 for more details on bridge design).

To support guests using the Atoma Area, and to eliminate the need for them to return to the main base area for basic services, an approximately 2,500-square foot guest services facility would be constructed near the top terminal of the Atoma Chairlift. This facility would allow guests to continue skiing in the Atoma Area without requiring a second lift ride (the Wizard Chairlift) to return to the area. Skiers returning to the main base area would ride the existing *Dragon's Tail* trail from the top terminal of the Atoma Chairlift back down to the Mt. Rose Ski Tahoe base area.

Installing the bridge first, would ensure that the connection necessary to make the Atoma Area successful is installed prior to clearing the treed habitat in the Atoma Area.

2.3.2.4 Trail Construction in the Atoma Area

No new roads are proposed; the ski trail design makes use of the existing road network (including the Old Mt. Rose Highway from the Mt. Rose Highway near the Mt. Rose Parking lots [i.e., from the south]) by incorporating it into the trail plan. Existing roads such as, the old Mt. Rose Highway, Atoma Road and Sky Tavern Road, would also facilitate construction and maintenance of the proposed lift and trail network. Construction staging areas would be located at Mt. Rose Ski Tahoe's existing parking lots on private land, as well as the existing parking area at the Atoma Building on NFS land.

Proposed Trails A–E, 1–5, and the connector trail to the skier bridge have been planned around the topography of the Atoma Area while preserving or avoiding known resources of importance, such as wetlands, cultural resources, and healthy, large and/or important trees, to the extent possible. Trails would be constructed in variable widths ranging from 50 to 80 feet, requiring approximately 20 acres of tree clearing for trail development. Logs would be cut by hand using a chainsaw and stacked with front end loaders. Log piles would be located on existing roads within

the Atoma Area, or on trails identified in the Proposed Action that would be graded in the future, thus consolidating the area of impact. Grading would be accomplished using an excavator or bulldozer. Some rock trucks (off-road dump trucks) may be used to move material when necessary. Landings and graded areas would be restored consistent with Management Requirements developed for this intensity of disturbance. The following Management Requirement was developed to guide restoration of the proposed projects in this FEIS:

❖ *WA 1: Develop a restoration plan for areas that are graded to prevent soil loss and improve revegetation success. Grading plans will include stockpiling top soils. To maintain long-term soil stability and productivity, a site-specific restoration plan will be developed and implemented to reestablish native vegetation on graded trails. Restoration activities may include chipping, seeding, and mulching techniques. All seed mixes will be approved by a Forest Service botanist.*

The following construction techniques would be used to construct the proposed eleven ski trails in the Atoma Area:

- Full tree removal with stump removal (stumps would be unearthed and then ground into chips for use in erosion control)
- Full tree removal with retention of stumps (stumps that are retained would be flush cut)
- Removal of existing stumps from previous forest management activities (within trail limits where necessary)
- Removal of dead trees and trees affected by bark beetles. Trees affected by bark beetles would be burned or chipped. If chipping occurs, chipped material would be spread on site to dry or removed off site after felling to prevent the buildup of bark beetle
- Cutting of limbs off tree branches and bushes
- Rock removal using a combination of manual techniques, explosives, and mechanical means
- Spot grading (site-specific smoothing/reshaping to improve the grade or address a terrain inconsistency; e.g., in isolated areas along a proposed trail)
- Full grading/re-contouring (smoothing/reshaping that is conducted on a larger scale than spot grading; e.g., on the entire length of a proposed trail)
- Adherence to a vegetation prescription for the timing and removal of trees and slash to minimize the spread of insects and disease (refer to Section 3.8 and Appendix A)
- FSM 2081.02 and the Sierra Nevada Forest Plan Amendment (SNFPA) require an invasive plant risk assessment for any ground disturbing action or activity. The Regional Noxious Weed Management Strategy was also used to develop Management Requirements for noxious weeds (refer to Section 3.7 and Appendix A)

Equipment for tree removal (cutting, moving, stacking and loading) would include chainsaws, front end loaders, excavators, and chippers. All temporary ground disturbance related to this activity would be restored to meet goals for success of revegetation or desirable species:

❖ *BO 1: A revegetation plan will be prepared to address soils, plants, to restore project-related ground disturbance. The revegetation plan will be developed in coordination with the HTNF, and will include, at a minimum, appropriate revegetation options, seed mixes, and goals for establishing success of revegetation or desirable species.*

2.3.2.5 Removal of Atoma Building and Parking Area

The Atoma Building was acquired by the Forest Service as part of the Galena Land Exchange.[11] This approximately 2,000-square foot facility was used as a cross-country ski operation when it was owned by Galena Resort. Upon Forest Service acquisition, the facility was used for seasonal housing. The building would be removed and approximately 1.5 acres of the surrounding parking area would be re-contoured and revegetated to match grades for Trails 3, 4, 5 and the connector trail.

2.3.2.6 Maintenance

Typical ski area maintenance would occur throughout the Atoma Area and would be included in their annual operating plan. Actions would include: mowing, tree cutting, and dead tree removal within ski trails and the lift corridor every two to three years, lift maintenance, and infrastructure maintenance such as sign maintenance and trash pickup.

2.3.2.7 Snowmaking

New Snowmaking Coverage

The Proposed Action includes new snowmaking coverage on five trails in the Atoma Area: Trails 1, 2, A, B, and C totaling approximately 20 acres. The majority of snowmaking coverage (approximately 17 acres) would occur on NFS land in the Atoma Area. The remainder of new snowmaking coverage is proposed on the trails accessing the lift and bridge on private land. A water pipeline ranging from 8- to 12-inches in diameter would be installed using a track hoe to dig the trench for the line. The snowmaking line would tie into existing snowmaking on the *Galena* trail and follow the existing *Merlin* trail and cross the skier bridge on private land. Approximately 1.8 acres of temporary ground disturbance would occur for this portion of the snowmaking infrastructure. Except where wetlands have been identified, all snowmaking lines would be buried below the frost line (4 to 6 feet deep).

The following Management Requirements would be required to minimize impacts related to snowmaking:

- *WA 14: Prior to any construction, wetlands will be flagged to ensure impacts are avoided. No snowmaking water lines will be installed within wetlands.*
- *WA 15: The water pipeline for snowmaking will be installed in the same construction season or at the same timeframe as trails will be graded to minimize ground disturbance.*

Water for snowmaking, originating from Mt. Rose Ski Tahoe's well on private land, would be stored in the proposed water tank (described below and identified on Figure 2). The Point of Use would have to be modified with the State of Nevada to include the Atoma Area. Additional information on Mt. Rose Ski Tahoe's snowmaking system is provided in Section 3.2. After construction, restoration techniques would be applied including chipping, seeding, and mulching

[11] As part of the Galena Resort Land Exchange, approximately 3,446 acres of private land in the Galena drainage in the vicinity of Mt. Rose Ski Tahoe were acquired by the HTNF in 1994. Prior to the land exchange, the Atoma Area, in addition to the Chutes portion of Mt. Rose Ski Tahoe's SUP area, was private land and, therefore, precluded use by the public. The land exchange made thousands of acres of relatively accessible terrain open to the public for dispersed recreation in the area surrounding Mt. Rose Ski Tahoe.

techniques (refer to Management Requirement *WA 1*). A Forest Service botanist would approve all seed mixes.

Additional Water Storage

The Proposed Action includes a 5-million gallon water tank to support both existing and proposed snowmaking operations throughout the ski area (refer to Figure 2). The proposed location for the water tank is mostly on NFS land within Mt. Rose Ski Tahoe's existing SUP, with a small portion is on private land owned by the ski area. It is located near the *Around the World* trail in the vicinity of the top terminal of the Galena Chairlift. This site was chosen primarily due to its relatively flat topography and its close proximity to Mt. Rose Ski Tahoe's present road network, snowmaking control building/pump station, and associated existing buried water lines. In addition, this location would not impede existing ski terrain.

The proposed 5-million gallon tank would be approximately 155 feet in diameter and approximately 40 feet in height. The tank would sit on flat level ground with a 6-inch gravel bed and 6-foot steel ring around the perimeter of the tank footprint. The proposed water tank would be constructed of welded steel and would meet all Washoe County design and construction standards. It would require an approximate 10-foot-wide construction/service zone around its entire perimeter. Thus, the total diameter of disturbed area associated with construction of the proposed water tank would be approximately 0.5 acre. The western side of the tank would require some minor grading to develop the flat pad. Grading beyond the 175-foot diameter tank/buffer would be necessary to achieve a 3:1 slope for public and wildlife safety, and for successful revegetation, resulting in a total ground disturbance of approximately 1.2 acres. Approximately 10,000 cubic yards of excess soil material would be used to create the raised ski trail that provides access to the skier bridge.

If approved, the following Management Requirement would apply:

- *G 6: A local building permit will be acquired prior to beginning relevant construction projects.*

Only *one* tank may be placed within the disturbed area analyzed within this FEIS. Any additional tanks would require a new site-specific NEPA analysis.

Within the footprint of the proposed water tank, there are a total of approximately 120 live trees, about 33 percent of which are whitebark pine, with the remaining 66 percent dominated by lodgepole pine, mountain hemlock, and western white pine. Approximately 90 percent of the whitebark pine trees are infected with blister rust or previously attacked by mountain pine beetles, and continued mortality and treefall is likely. Approximately forty whitebark pine trees would be removed by hand with a chainsaw to construct the water tank. The logs would be removed with a front-end loader and either disposed of or chipped for use in erosion control. The area surrounding the water tank would be revegetated following construction. A revegetation plan will be developed and approved by Forest Service specialists and would include at a minimum, appropriate revegetation options, seed mixes, and goals for successful reestablishment of desirable plant species.

The tank would be filled from the ski area's well, which is located on private land. A water line would connect the proposed snowmaking system on private land to the Atoma Area via the proposed chairlift corridor and skier bridge. The waterline would be installed on the underside of the bridge to minimize disruption of traffic and disturbance in the NDOT right-of-way across the

Mt. Rose Highway. The pipe would be insulated, and heating cables would be installed if necessary.

One trench would accommodate all infrastructure related to the proposed water tank. One 6-inch line would originate from the existing well control building that is adjacent to the proposed site, which is located on NFS land. Connecting the proposed water tank to existing plumbing would result in approximately 400 square feet of disturbance. The outlet would consist of a 12-inch pipe connecting the proposed water tank to the outlet from the existing 500,000-gallon tank. Finally, control of the water level in the tank would be accomplished by a transducer that monitors the tank level and controls the fill operation, via a single piece of conduit. The level of control would be a single 0.5-inch piece of conduit line that would carry a cable connected to a transducer that monitors the tank level and controls the fill operation. All three pieces of infrastructure related to the proposed water tank would be housed in two pipes and a single piece of conduit. This trench would be located on the downhill (north) side of the water tank and would sit entirely on private property.

Staging of construction equipment and personnel for the proposed water tank would be on private land that is accessible via existing roads.

2.3.2.8 Forest Plan Amendment

Approximately 3,446 acres of private land in the Galena drainage near Mt. Rose Ski Tahoe were acquired by the HTNF in 1994. The Galena Resort Land Exchange was the result of a decade-long effort by a diverse coalition of interested groups and citizens. Prior to the 1994 Galena Resort Land Exchange, the Atoma Area, in addition to the Chutes portion of the ski area's SUP area, were privately owned. However, as a result of acquisition by the U.S. Government of this property, Forest Service management of these lands automatically falls under the direction of the 1986 Forest Plan (36 CFR § 254.3).

As part of the Proposed Action, the Forest Service proposes a Forest Plan Amendment to restrict commercial development including, but not limited to: resorts, stores, buildings, structures, facilities and organizational camps in all or a part of T 17N R 18E, Sections 13, 15, 21, 23, 24, 25 and T 17 N, R 19 E, Sections 17, 18, 19, 20 (refer to Figure 13). The proposed Forest Plan Amendment would not apply to the approximately 112 acres in the Atoma Area, as well as the 131 acres already included in Mt. Rose Ski Tahoe's SUP area designated as the "Chutes."[12]

Therefore, the Proposed Forest Plan Amendment would include restricting commercial development on 3,446 acres of NFS land:

> *Land acquired through the 1994 Galena Resort Land Exchange located within, Management Area 2 (Carson Front), with the exception of the proposed Atoma Area and the Chutes).*
>
> Standard – *Commercial development shall not be permitted on 3,446 acres of NFS land in the area known as the Galena Land Exchange with the exception of the proposed Atoma Area (112 acres) and the Chutes (131 acres) already in the Mt. Rose SUP.*

[12] USDA Forest Service, 2003

2.3.3 Alternative 3

All components of Alternative 3 are the same as described for Alternative 2, except that this alternative was developed to align a chairlift to cross the Mt. Rose Highway directly above the skier bridge (refer to Figures 4 and 5). This configuration resulted in a two-lift configuration for Alternative 3 which would require approximately 1 acre of additional clearing and grading; Alternative 3 would result in 32 acres of clearing and/or grading on NFS land and 8 acres of clearing and/or grading on private land. In addition, a restroom facility is proposed within the Atoma Area. Alternative 3 includes the following project elements that differ from Alternative 2:

- Install two chairlifts: one 3,000-foot-long chairlift to service the terrain within the Atoma Area and one 1,650-foot-long chairlift to provide access to, and return from, the Atoma Area to the main ski area. The chairlift alignments would include the top and bottom terminals as well as lift towers along the length of the lifts. The chairlifts would each have a capacity of 2,000 people per hour.
- Construct eleven new ski trails totaling 26 acres to provide safe, accessible terrain for novice and beginner skiers. Under Alternative 3 the ski trail acreage would remain the same; however, an additional acre of disturbance would be required surrounding the top terminal of Lift A and bottom terminal of Lift B to improve the skiable connection between these two lifts and the skier bridge.
- Install a restroom facility within the Atoma Area to serve visitors and employees that is accessible from both lifts. The building would be designed fit into the forest landscape, consistent with the Built Environmental Image Guide and is anticipated to be approximately 15 feet by 20 feet, connecting to existing water, electrical and septic at the existing Atoma building.

All other components of Alternative 3 are the same as was described for Alternative 2:

- Amend the SUP to increase the SUP boundary from 544 acres to 656 acres to include the Atoma Area to provide for expanded beginner terrain at Mt. Rose Ski Tahoe.
- A gate would be added on the Old Mt. Rose Highway to preclude vehicle access into the Atoma Area during the ski season.
- Provide a skiable connection between existing terrain at the main ski area and proposed terrain in the Atoma Area by constructing an approximately 130-foot-long skier bridge spanning the Mt. Rose Highway. The skier bridge would have a minimum width of 30 feet to safely accommodate a variety of skier abilities.
- Provide snowmaking coverage on five trails in the Atoma Area (Trails 1, 2, A, B, and C; refer to Figure 3). Install 1.3 miles of 8- to 12-inch diameter water pipeline totaling approximately 20 acres, 17 acres of which would be located on NFS land. Approximately 1 additional mile of water pipeline would be installed within existing ski trails on private land from the water tank across the proposed bridge to the Atoma Area.
- Improve Mt. Rose Ski Tahoe's ability to store water for snowmaking during periods of higher precipitation with the installation of a water tank at the Galena trail (refer to Figure 2). The tank would be approximately 155 feet in diameter and 40 feet in height, with a capacity of between 13 and 15 acre feet (approximately 5 million gallons) of water, and would require associated infrastructure to connect it to the existing snowmaking system. The additional stored water would benefit the Atoma Area terrain as well as provide additional capacity for snowmaking elsewhere at Mt. Rose Ski Tahoe.

- Amend the Forest Plan to restrict future commercial development on 3,446 acres of NFS land. The proposed amendment is as follows:

  Land acquired through the 1994 Galena Resort Land Exchange located within, Management Area 2 (Carson Front), with the exception of the proposed Atoma Area and the Chutes).

  Standard – *Commercial development shall not be permitted on 3,446 acres of NFS land in the area known as the Galena Land Exchange with the exception of the proposed Atoma Area (112 acres) and the Chutes (131 acres) already in the Mt. Rose SUP.*

- Accommodate the new Atoma ski terrain by removing the Atoma building, an approximately 2,000-square foot facility, and re-contouring the parking area.

Alternative 3 would be implemented in phases. Although development of the Atoma Area and installation of the water tank could occur simultaneously, developing the connector trail from the main ski area, the skier bridge and trails in the Atoma Area would be phased to protect wildlife habitat. Therefore, no development in the Atoma Area would occur prior installation of the skier bridge. The skier bridge is an essential project in the successful use of the Atoma Area and would, therefore, occur during phase 1 of construction and development of the Atoma Area for skiing.

According to 40 CFR § 1508.25 of CEQ Regulations for Implementing NEPA, connected actions are closely related; therefore, they should be discussed in the same impact statement. Actions are connected if they: automatically trigger other actions, which may require environmental impact statements; cannot or will not proceed unless other actions are taken previously or simultaneously; or are interdependent parts of a larger action and depend on the larger action for their justification. A guest service facility, ski trail, a water line (to provide snowmaking water to the Atoma Area) and a portion of the skier bridge (to cross the Mt. Rose Highway) would be constructed on private land to use of the Atoma Area on NFS land. These private land improvements are considered connected actions, as defined by CEQ.

2.3.3.1 Atoma Chairlifts A and B

Under Alternative 3, ski terrain in the Atoma Area would be served by two new chairlifts. Alternative 3 was designed to provide an alternative that crosses Mt. Rose Highway above the bridge alignment. This experience may better meet visitor's expectations of a chairlift ride than an open carrier over the highway. In addition, Alternative 3 would avoid going directly above the parking lots.[13]

Atoma Chairlifts A and B would each have a capacity of 2,000 people per hour (refer to Figures 4 and 5). Chairlift A would service the ski terrain in the Atoma Area, would be entirely located on the north side of the Mt. Rose Highway and would be approximately 3,000 feet long. The bottom terminal would be located in a flat, open, dry area at an elevation of approximately 7,970 feet on NFS land (in the same location as the bottom terminal in Alternative 2). The top terminal of Chairlift A would be located directly adjacent the Atoma Road in the southwest corner of the proposed SUP expansion. Chairlift B would provide return from the Atoma Area, would span approximately 65 feet of the Mt. Rose Highway directly above the skier bridge, and would be approximately 1,650 feet long. A safety net is not anticipated to be installed under either chairlift in Alternative 3. Chairlift A is a traditional chairlift that travels over trees and ski trails and

[13] This alignment could also be accomplished using a single lift with a mid-station. Use of two lifts or a single lift alignment that is designed to go over the bridge is an oprational decision and the impacts of each would be equitable.

operations and maintenance would be similar to any other chairlift at the resort. Chairlift B would run directly over the bridge which would allow retrieval of dropped objects, maintenance and for emergency egress.

The bottom terminal of Chairlift B would be located slightly downhill and west of the top terminal of Chairlift A. The top terminal of Chairlift B would be located on private land owned by Mt. Rose Ski Tahoe at an elevation of 8,435 feet (in the same location as the top terminal in Alternative 2). Electrical power to the top terminal of Chairlift B would be installed in an underground trench within an existing trail from an existing junction box near the top terminal of the Wizard Chairlift. Power to the bottom terminal of Chairlift B and the top terminal of Chairlift A would be installed in a ditch within the existing Atoma Road from the Atoma building to the terminals. Power to the bottom terminal would be installed from the existing power line in the Atoma Area. Trenching for power would require a 2-foot-wide and 2-foot-deep trench, approximately 300 feet long for the top terminal and approximately 300 feet long for the bottom terminal.

The following components of construction are identical to those included in Alternative 2, with the addition of the use of the existing Atoma Road for access to the top and bottom lift terminal sites. Adequate road access to the top and bottom terminal sites currently exists. Vegetation removal for the lift line would occur on approximately 3 acres on NFS land and 1 acre on private land. Construction vehicles would access Chairlift A and Chairlift B alignments by using the Old Mt. Rose Highway, or the entrance to the Atoma Nordic parking lot and the Atoma Road. Vegetation removal for the lift line (a 65-foot-wide cleared alignment) would occur by motorized vehicle (front end loaders and excavators) within the lift alignment (no access across tree islands would be necessary for construction of the lift). Towers would be between 30 and 40 feet tall depending on the location and slope. Tower footings require a 140-square foot disturbance for the footings; concrete footings vary in size but would be contained within this disturbance. Construction access along the lift line would occur within the area cleared for the chairlift.

The following Management Requirements are included in Alternative 3 to reduce ski related objects from accidently falling onto the highway and to guide the construction and use of the lift:

- *PHS 1: An operational plan and memorandum of understanding will be developed between Mt. Rose Ski Tahoe and NDOT to define communication and operational protocols for highway maintenance and use of Atoma Area throughout the year. The operational plan will address snow removal protocols that need to be in place during and after storm events to ensure that NDOT is able to perform highway maintenance activities without compromising skier safety. These protocols may include capping and stacking/removing snow and use of trucks, dump trucks and plows rather than blowers, to minimize potential interaction with ski area operations. In addition, a discussion of coordinating with Mt. Rose Ski Tahoe snowcat drivers in emergency situations would likely be included in the plan.*

- *PHS 5: Mt. Rose Ski Tahoe will acquire an occupancy permit for any work performed within the NDOT highway right-of-way.*

2.3.3.2 Restroom Facility

This alternative includes a restroom facility within the Atoma Area to serve visitors and employees. The facility would be accessible from both lifts. The building is anticipated to be approximately 15 feet by 20 feet with two separate, flushing toilets. The facility would connect via approximately 800 feet of pipeline installed within a proposed, graded trail to existing water, electrical, and septic at the existing Atoma building.

2.4 Modifications Made to the Proposed Action

The following modifications were made to the Proposed Action after scoping the project in 2013, based on issues identified with the original proposal.

2.4.1 Snowmaking Water Storage

As identified in Mt. Rose Ski Tahoe's 2010 MDP Addendum, the original proposal included a snowmaking water impoundment near the upper terminal of the Galena Chairlift within Mt. Rose Ski Tahoe's existing SUP area. The site has relatively flat topography and is near the ski area's existing road network, snowmaking control building, and existing buried water lines. A water impoundment was proposed with a storage capacity of between 13 and 15 acre feet of water (approximately 5 million gallons), with a surface area of approximately 1.6 acres and a total disturbance area of roughly 3.5 acres. Preliminary calculations indicated that approximately 50,000 cubic yards of material would have needed to be excavated for construction of the pond impoundment.

Upon further review and consideration throughout the planning process, it was determined that a water tank in approximately the same location as the proposed impoundment would be a more suitable design solution to reduce potential resource and public safety concerns and meet the ski area's long-term operational needs. The water tank has a smaller disturbance footprint of approximately 1.2 acres versus 3.5 acres required for the previously-proposed water impoundment.

2.4.2 Atoma Terrain Network

As identified in the 2013 scoping notice, the original proposal included approximately 49 acres of improved glades in between the eleven proposed trails throughout the Atoma Area. At the time, groomable glades were intended to complement the traditional trails by adding diversity to the lower-level terrain network at the ski area. However, due to concerns with removing habitat in the Atoma Area, tree removal between developed trails is no longer being proposed. Therefore, in between the eleven proposed trails throughout the Atoma Area, the focus will be on the selective removal of dead, dying, and diseased trees to improve the health of the forest, consistent with the vegetation management plan. Due to natural tree spacing, limited gladed tree skiing would likely occur between the developed trails without any tree removal.

2.4.3 Projects on Private Land

To better facilitate access to the Atoma Area and provide additional terrain for the learning progression at Mt. Rose Ski Tahoe, the ski area installed the Wizard Chairlift in 2015 as well as new beginner terrain on the ski area's private land. As a result of the new chairlift, the surface lift that was originally proposed on private land would no longer be necessary.

2.5 Alternatives and Design Options Considered but Eliminated from Detailed Analysis

Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating alternatives that were not developed in detail.[14] The range of alternatives considered by the responsible official includes all reasonable alternatives to the Proposed Action that are analyzed in the document, *as well as* other alternatives eliminated from detailed study. Alternatives not considered in detail may include, but are not limited to, those that fail to meet the Purpose and Need, are technologically infeasible or illegal, or would result in unreasonable environmental harm.[15]

A fundamental component of this project is the development of a lift and trail connection between the existing ski area and proposed skiing in the Atoma Area (refer to Section 1.4.1). The lift and trail plan included in Mt. Rose Ski Tahoe's accepted 2010 MDP Addendum is proposed for numerous operational and guest experience considerations, including skier circulation throughout the Atoma Area, skier access to and from the Atoma Area, and the lift alignment. All of these considerations create an experience that staff at Mt. Rose Ski Tahoe views as critical for the success of new ski terrain in the Atoma Area and the ski resort as a whole. Despite these constraints (crossing the Mt. Rose Highway and the topography of the Atoma Area) a number of design concepts were discussed by the planning team. Some possible design concepts were considered throughout the planning process and were eliminated from detailed consideration in this FEIS, as discussed in the following sections.

2.5.1 Alternate Lift/Trail Configurations for the Atoma Area

The natural terrain gradients in the Atoma Area, although suitable for lower-level skiing and riding, present challenges from a trail planning perspective. Early in the planning process, prior to a formal proposal being made to the HTNF, Mt. Rose Ski Tahoe and ski area planners considered numerous other lift and trail designs for the Atoma Area. However, the plan included in the Mt. Rose Ski Tahoe's 2010 MDP Addendum (Alternative 2) and Alternative 3 are most capable of meeting the Applicant's stated Purpose and Need while minimizing or avoiding resource impacts to the extent possible, including wetlands, cultural resources, soils, and overstory vegetation. Alternate lift/trail configurations for the Atoma Area did not make use of the natural topography in a way that provided an adequate amount of additional terrain for lower-level skiers. The current terrain proposal also provides some variety (narrower, more natural terrain) when compared to existing lower-ability level terrain.

2.5.2 Construct a Skier Tunnel Under the Mt. Rose Highway

Instead of constructing a skier bridge over the Mt. Rose Highway, the concept of constructing a skier tunnel underneath the highway was explored. This concept would have addressed potential visual and safety considerations to the Mt. Rose Highway. However, due to the naturally flat grades in the Analysis Area, the amount of excavation necessary to accommodate a minimum 8 percent grade to allow skiers to descend through the tunnel would have resulted in much larger amount of ground disturbance and a substantial amount of excess excavated material that would need to be removed from the site. In addition, constructing a skier tunnel would be prohibitively complex and expensive.

[14] 40 CFR § 1502.14
[15] USDA Forest Service, 2012a

2.5.3 No Lift/Trail Connection Between the Atoma Area and Private Land at Mt. Rose Ski Tahoe

Instead of providing a lift and trail connection between the Atoma Area and the main ski area, the concept of a "self-contained" Atoma Area was explored. This concept would have eliminated the skier bridge over the Mt. Rose Highway, and the Atoma Chairlift would have terminated north of the highway and would not have crossed over the highway. Absent a trail connection into the Atoma Area and a chairlift that returns skiers back to the main ski area, shuttles would have been necessary to transport guests back and forth.

Reliance on shuttles to transport skiers back-and-forth between the main base area and the Atoma Area was not considered a viable, long-term solution. While this concept would have addressed some concerns including an open carrier over the highway and visual impacts to travelers on Mt. Rose Highway, these were outweighed by logistical, operational and guest experience impacts. Operating a bus from the main base area across Mt. Rose Highway to the Atoma Parking area would have created a perpendicular crossing of the Mt. Rose Highway that currently does not exist at this location. The existing Mt. Rose Highway/Mt. Rose Ski Tahoe access intersection is an unsignalized three-leg intersection with stop sign control at the south approach. The bus crossing would have represented additional traffic and complexity at this location, creating a four-way intersection. Regarding guest experience, skier surveys have shown that buses provide an undesirable option for connecting to additional ski terrain. Loading a bus with ski equipment can be a challenge and viewed as negatively time consuming in a way that chairlift rides are generally not perceived. When considering the bus/shuttle, staff at Mt. Rose Ski Tahoe determined that the bus connection would not be an acceptable mode of transportation for lower-ability level skiers, lesson groups and families for which the Atoma Area is designed.

2.5.4 Alternate Alignments for the Trail on Private Land

Ski area planners considered several options for the proposed trail on private land leading to the proposed skier bridge over the Mt. Rose Highway. Due to relatively flat natural terrain gradients throughout private land and in the Atoma Area, all construction options include substantial grading and import of material. Ultimately, the elevated trail configuration included in the action alternatives provides the best option for maintaining a skiable connection from the private land, while maximizing skiable terrain in the Atoma Area.

2.5.5 Co-Location of the Alternative 2 Atoma Chairlift and the Skier Bridge Over the Mt. Rose Highway in the Location Proposed under Alternative 2

A single corridor in the Alternative 2 alignment for both the proposed Atoma Chairlift and skier bridge to cross the Mt. Rose Highway was considered. Upon further investigation, it became apparent that the parking lots, natural grades and topography of both the private land and the Atoma Area precluded co-location of the two components.

2.5.6 Alternate Locations for the Proposed Water Tank

Several sites across the ski area were reviewed for their potential to accommodate a water tank. Sites located below the existing high-pressure pump station (located approximately 400 feet west of the top terminal of the Galena Chairlift) are not feasible from a functionality and cost perspective. The distance from a site located below the high-pressure pump station would require up to 1 mile of additional trenching and piping, and a separate pump station to pump water back

up hill to the high-pressure station, as well as additional high voltage electrical infrastructure, including transformers and switch gear equipment to power a new pump station. Finally, new road to access would be required. Ultimately, three tank locations received further consideration—all in close proximity to each other. Two of these locations would have been entirely on private land, while the majority of the third would have been located on NFS land within Mt. Rose Ski Tahoe's SUP boundary.

In considering suitable locations for the water tank, five criteria were applied; each of these was considered critical to integrating water storage into the ski area's existing snowmaking infrastructure. These criteria include: gravity feeding stored water to Mt. Rose Ski Tahoe's existing high-pressure pump station; a relatively flat site (minimizing the need for excavation); proximity to Mt. Rose Ski Tahoe's existing well pump station; construction/maintenance access (making use of existing ski area roads); and minimizing impacts to adjacent ski trails and viewshed from the Mt. Rose Highway. These criteria were applied and the proposed site partially on NFS land was selected because it minimizes the amount of excavation and disturbance required for associated tank infrastructure, not only minimizing ground disturbance (9,030 cubic yards total disturbance), but also avoiding additional construction traffic to bring construction material into or out of the site. Approximately 120 trees, 33 percent of which are whitebark pine would be removed from the site. This location had the heaviest whitebark pine rust infection, including what appeared to be lethal or girdling cankers on several larger trees. Over 90 percent of the trees were infected with whitebark pine rust and would, therefore, have minimal impact on long-term whitebark pine persistence in the area. Further, the location is mostly obscured by vegetation when viewed from the Mt. Rose Highway.

2.6 Agency Preferred Alternative

Following review of public and agency comments on the DEIS, Alternative 3 has been identified as the Agency Preferred Alternative. Alternative 3 best meets the need of improving the quality of the ski area's recreation offerings on NFS land and enhancing the recreation experience for skiers while minimizing environmental and human impacts. A two-lift system; where one lift services the expanded ski terrain and the second lift aligns with the skier bridge to connect the Mt. Rose Ski base area to the Atoma Area reduces potential safety risks to motorists on the highway and skiers. This alternative reduces impacts to whitebark pine, a candidate species for listing under the ESA by reducing the footprint of the water storage tank. This alternative avoids impacts to wetlands and perennial streams by utilizing existing road alignments and natural openings as much as possible. This alternative would restrict commercial development on 3,446 acres of National Forest System land acquired in the 1994 Galena Land Exchange to maintain dispersed recreation opportunities.

2.7 Environmentally Preferable Alternative

The environmentally preferred alternative is the No Action Alternative because it would not result in disturbance to vegetation or soils and no trees or wildlife habitat would be removed. There would be no need for restoration efforts following grading activities and no risk to noxious weed establishment. There would be no increase in noise. The Deciding Official did not select this alternative because it would not meet the Purpose and Need of the project to improve the quality of the ski area's recreation offerings on NFS land and to enhance the recreation experience for skiers by providing additional terrain appropriate for lower-ability level skiers and provide consistent quality snow surface throughout the season.

2.8 Comparison of Alternatives

This section provides a summary of the effects of implementing each alternative. Table 2 provides a summary of project components carried forward with the alternatives. Information in Table 3 is structured around the issues and indicators that were identified in Section 1.10 and are fully analyzed in Chapter 3.

Table 2. Summary of Project Components Carried Forward with each Action Alternative

Project Components	Alternative 1	Alternative 2	Alternative 3
Additional acres to SUP boundary	0 acre	Approximately 112 acres	Approximately 112 acres
New SUP boundary area	544 acres	656 acres	656 acres
New ski terrain	0 acre	Approximately 26 acres	Approximately 26 acres
New chairlifts	0	1	2
New skier bridge	No	Yes	Yes
New water storage tank	No	Yes	Yes
New snowmaking coverage	0 acre	Approximately 20 acres	Approximately 20 acres
Total acres of disturbance (clearing and grading) Note: difference in disturbance is for the one- or two-lift configuration	0 acre	31 acres on NFS land, 8 acres on private land	32 acres on NFS land, 8 acres on private land
Total acres of vegetation removal (including trees, shrubs and grassland)	0 acre	36 acres (healthy, diseased, and dead forested areas) 31 acres on NFS land, 5 acres on private land	37 acres (healthy, diseased, and dead forested areas) 32 acres on NFS land 5 acres on private land
Re-grading the Atoma Area and the snowmaking line to the water tank previously disturbed, un-vegetated areas	0 acre	3 acres	3 acres
Whitebark pine (candidate to be federally listed)	0 acre	Approximately 44 trees (stems)	Approximately 44 trees (stems)
Permanent ground disturbance (due to infrastructure: lift terminals and towers, bridge, restroom/guest services facilities, water tank)	0 acre	<2 acres	<3 acres
Forest Plan Amendment (acres proposed to be restricted from commercial development)	No	Yes, 3,446 acres	Yes, 3,446 acres

Table 3. Summary Comparison of Direct and Indirect Environmental Consequences		
Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3
RECREATION		
Issue: Expanding lower-ability level terrain at Mt. Rose Ski Tahoe would provide a quality learning progression and better accommodate a positive learning experience by separating ability levels and enhancing terrain variety. These issues impact individual learners as well as the Rose Buds Program at Mt. Rose Ski Tahoe.		
Indicator: Quantification of ski terrain distribution by ability level (existing versus proposed)		
Beginner: 2.4 acres (2%) Novice: 52.3 acres (26%) Intermediate: 95.2 acres (38%) Advanced/Expert: 295.1 acres (35%) Total Trail Area: 444.9 acres	Beginner: 2.4 acres (2%) Novice: 78.1 acres (34%) Intermediate: 97.2 acres (34%) Advanced/Expert: 295.1 acres (30%) Total Trail Area: 472.8 acres	Same as Alternative 2.
Indicator: Discussion of lower-ability "learning progression" terrain		
Currently, lower-ability level terrain at Mt. Rose Ski Tahoe is concentrated on the frontside of the existing ski area served by the Galena Chairlift and the new Wizard Chairlift. Skiers progress directly from the conveyor lift near the base area to skiing on the top of the mountain, which requires a considerable jump in ability. Additionally, the recreational experience provided for lower-ability level skiers at Mt. Rose Ski Tahoe is limited to wide open traditional trails. The extent and variety of terrain (an important factor in visitor satisfaction) is insufficient for this user group.	With the expansion of the SUP area, Mt. Rose Ski Tahoe would add approximately 26 acres of lower-ability level terrain (novice and low-intermediate) to the developed terrain network, for a total of approximately 176 acres of trails at the ski area. The trails in the Atoma Area would also provide a unique skiing experience at the ski area. Although the trails in the Wizard area have been highly popular, the Atoma Area is designed to provide the next step in the learning progression. These trails are designed to be narrower (although still skill level appropriate) than the lower-ability level trails located within the existing ski area, with a more forested and natural feel. The number of trails is designed to provide a lower density skier experience, rather than fewer wide trails. When combined with the open forests across the western portion of the Atoma Area, these trails would enhance the terrain variety and improve the lower-ability level experience at Mt. Rose Ski Tahoe. This spectrum of terrain in one location within the ski area offers a valuable terrain learning progression to visitors.	Same as Alternative 2.

Table 3. Summary Comparison of Direct and Indirect Environmental Consequences		
Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3
Issue: Increasing snowmaking water storage would improve the ski area's ability to produce snow during optimal snowmaking conditions and temperatures, enhancing the ski area's ability to provide consistent snow coverage during periods of low snow. Improved snow coverage would affect the quality and reliability of the recreational experience for visitors.		
Indicator: Discussion of snow coverage provided by Mt. Rose Ski Tahoe's snowmaking system		
Without the additional water tank, snowmaking operations would continue to be insufficient during some periods of low natural snow, particularly when preparing for key early season visitation times such as Christmas and New Year's. These snowmaking water issues are most noticeable on *Bruce's, Big Bonanza, High Traverse, Lakeside* trail, the area from the bottom of *Bonanza* to Zephyr Chairlift, *Sunrise Bowl* and *Sunrise Traverse*, all of which have been approved for snowmaking, but no infrastructure has been installed in these areas because adequate water capacity does not exist to provide snowmaking on these trails.	Development of additional snowmaking water storage in the form of a 5-million gallon tank would serve two purposes. First, it would enable Mt. Rose Ski Tahoe to provide snowmaking coverage on existing terrain in order to meet the needs of visitors during the early season and periods of limited snow. Second, it would accommodate snowmaking coverage on approximately 20 acres of new terrain in the Atoma Area (this accounts for terrain providing access to, and throughout, the Atoma Area).	Same as Alternative 2.
Issue: Expanded developed recreation in the Atoma Area has potential to impact dispersed summer and winter recreation in the Analysis Area by combining both ticketed, developed recreation and dispersed recreation activities, and potentially displacing dispersed recreationists.		
Indicator: Overview of dispersed (summer and winter) recreation activities that are currently available within Mt. Rose Ski Tahoe's SUP area, the proposed Atoma Area, and the surrounding National Forest		
Most of the recreation that occurs within the SUP boundary is developed recreation typical at a ski area. In its current state the Atoma Area offers opportunities for dispersed recreation for a low number of users, accessing backcountry skiing terrain to the west (as well as Nordic skiing and snowshoeing). Camping, hiking, and mountain biking occur throughout the Atoma Area in the summer (although no official system trails exist in the immediate area). On nearby NFS land, trails provide numerous hiking and camping opportunities, via the trailhead at Tahoe Meadows, and the Mt. Rose Trail with a trailhead at the summit of the Mt. Rose Highway. There would be no change to dispersed recreation at Mt. Rose Ski Tahoe or on adjacent lands as a result of Alternative 1.	Under Alternative 2, the Atoma Area would become part of the Mt. Rose Ski Tahoe SUP area and recreational activities there would change. Winter activities would be limited to alpine skiing, although backcountry users would be permitted to use the Atoma Area as an access point to adjacent terrain, including the frequently used connection to Sky Tavern. A corridor would be designated along the western boundary of the Atoma Area to provide a connection from Sky Tavern to the upper Galena drainage for cross-country skiing and snowshoeing. During the summer, dispersed hiking and mountain biking would continue, but camping and tree cutting would not be permitted. No changes to other uses on adjacent NFS land are proposed or would occur as a result of implementation of Alternative 2.	Same as Alternative 2.

Table 3. Summary Comparison of Direct and Indirect Environmental Consequences		
Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3
INVENTORIED ROADLESS AREAS		
Issue: The Analysis Area is overlapped by the Rose-Galena Inventoried Roadless Area (IRA), which is adjacent to the Mt. Rose Wilderness. Therefore, incorporation of the Atoma Area into Mt. Rose Ski Tahoe's SUP needs to be analyzed for consistency with the Forest Service Roadless Area Conservation Rule of 2001, to determine if further action is necessary.		
Indicator: Quantification of overlapping acreage between the Roadless Area and the Analysis Area		
No changes would occur within the Rose-Galena IRA.	Of the 3,710-acre IRA, approximately 37.5 acres (1.0 percent) are overlapped by the proposed SUP expansion in the Atoma Area (refer to Figure 4).	Same as Alternative 2.
Indicator: Discussion of "Assessment of Wilderness Potential" analysis for the Atoma Area		
The Rose-Galena IRA (totaling 3,710 acres) is bisected by an overhead power line, which effectively creates a smaller unit to the south, which is well-under 5,000 acres (the qualification for being considered a wilderness area). Wilderness attributes have been affected by previously-implemented projects and, in the 2006 Assessment of Wilderness Potential, the Atoma Area of the IRA was not recommended as suitable for wilderness designation. Additionally, it is directly adjacent the Mt. Rose Highway. Human influence and development is present throughout the Atoma Area affecting potential wilderness attributes in the area (refer to Section 3.3).	The Proposed Action would affect certain wilderness attributes of the Atoma Area of the Rose-Galena IRA, including its untrammeled, natural, and undeveloped characteristics. However, these attributes have been affected by previously-implemented projects and, in the 2006 Assessment of Wilderness Potential; the Atoma Area of the IRA was not recommended as suitable for wilderness designation. The development of ski lifts, trails, and snowmaking infrastructure would incrementally add to the ongoing trends that already reduced the Atoma Area of the IRAs potential to be managed as wilderness. The wilderness suitability of the remainder of the IRA would not be affected by the proposed project. The wilderness suitability of the remainder of the IRA would not be affected by the proposed project.	Same as Alternative 2.

Table 3. Summary Comparison of Direct and Indirect Environmental Consequences		
Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3
Indicator: Impacts to roadless characteristics of the Analysis Area		
The HTNF's 2006 assessment of wilderness provided a recommendation to redraw the IRA boundary to only include the portion north of the power line (and road), thus removing a majority of the Atoma Area from the IRA. This action has not yet occurred. Incremental changes as mentioned under wilderness attributes would continue to occur. Trends in incremental development of the surrounding lands (Mt. Rose Ski Tahoe, Sky Tavern, recreation along the Mt. Rose Highway) are anticipated to continue to affect the roadless characteristics (particularly reducing the effectiveness of habitat, opportunities for primitive and semi-primitive recreation, and landscape character and integrity) and wilderness attributes of the Atoma Area of the Rose-Galena IRA. Under the No Action Alternative, commercial development would continue to be an allowable use of lands acquired throughout the Galena Resort Land Exchange under Management Area 2 (Carson Front). Any future proposal for commercial development on NFS land would require a NEPA analysis, and projects within the IRA would likely be required to be consistent with IRA direction. Commercial development could occur without building roads. If additional commercial development was to occur beyond what is currently developed, this could change the character of the IRA as well as potential wilderness qualities, potentially resulting in a reduction in acres that are currently considered eligible.	The proposal to construct a chairlift and associated trails, along with associated vegetation clearing, is permissible under the 2001 Roadless Rule because no road construction is proposed within the IRA and timber cutting and removal is incidental to the implementation of management activity (i.e., constructing ski trails within the SUP area). Construction and operation of the ski area in the Atoma Area would affect roadless area characteristics such as soils and plant and animal habitat through increased development and use of the area. The result of this Forest Plan Amendment would be to limit potential development opportunities. This would preserve characteristics on those lands that make up the IRA and that could be considered for wilderness designation in the future.	Same as Alternative 2.

Table 3. Summary Comparison of Direct and Indirect Environmental Consequences		
Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3
PUBLIC HEALTH AND SAFETY		
Issue: A chairlift crossing over the Mt. Rose Highway and parking lots in the Mt. Rose Ski Tahoe ski area has potential to affect the feeling of security for skiers on the chairlift and may pose a risk to motorists from objects (e.g., ski equipment, articles of clothing) falling onto the Mt. Rose Highway or parking lots.		
Indicator: Identification of consistency with ANSI B77.1 Standard for Ski Chairlift Safety.		
Specifically, this standard requires that under the most adverse loading conditions in which the lift is being operated, a minimum space of 5 feet is required from the lowest point of the carrier to obstacles below, including terrain or vehicles. This standard is regularly used at Mt. Rose Ski Tahoe where snowcats or other vehicles may travel below chairlifts. Facilities at Mt. Rose Ski Tahoe are consistent with this standard.	The chairlift would be designed to meeting ANSI B77.1 Clearance Standards with a minimum space of 5 feet from the lowest point of the carrier to obstacles below (including terrain or vehicles).	Both chairlifts would be designed to meeting ANSI B77.1 Clearance Standards with a minimum space of 5 feet from the lowest point of the carrier to obstacles below (including terrain or vehicles).
Indicator: Discussion of potential impacts to recreation experience of crossing the highway and parking lots.		
Under the No Action Alternative, Mt. Rose Ski Tahoe would not operate any chairlifts or bridges over a highway or a lift over any parking lot. Although some people may continue to feel uncomfortable riding in open chairlifts at the ski area, the experience of chairlifts traveling over open trails and treed areas is consistent with what visitors expect at a ski area.	The chairlift would be designed to meeting ANSI B77.1 Clearance Standards with a minimum space of 5 feet from the lowest point of the carrier to obstacles below (including terrain or vehicles). Despite this standard being met, riding a chairlift over the highway and parking lots would be a different experience than a typical chairlift ride. The chairlift may feel higher and more exposed when crossing over the highway and parking lots. Therefore, Mt. Rose Ski Tahoe is planning to install a high-speed detachable chairlift that includes technology for automatic restraint devices and a net under the chairlift at the Mt. Rose Highway crossing to improve the feeling of safety while riding this chair.	Aligning the chairlift over the bridge is anticipated to minimize feeling of exposure to chairlift riders over the highway. This alignment does not cross over the parking lots.

Table 3. Summary Comparison of Direct and Indirect Environmental Consequences		
Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3
Indicator: Discussion of potential for objects to fall onto the Mt. Rose Highway or parking lots.		
Under the No Action Alternative, Mt. Rose Ski Tahoe would not operate any chairlifts or bridges over a highway or a lift over any parking lot; therefore, there is not potential for objects to fall onto motorists traveling below a chairlift or bridge at Mt. Rose Ski Tahoe.	To prevent objects from skiers (e.g., skis, poles, shoes, hats, bags, etc.) from falling onto the Mt. Rose Highway, a net would be installed under the chairlift. The net would be designed to allow retrieval of dropped objects, maintenance, and for emergency egress to either end of the net. The net would also be designed to support the weight of a chair.	Aligning the chairlift over the bridge is anticipated to minimize feeling of exposure to chairlift riders over the highway as well as preventing objects from skiers from falling onto the Mt. Rose Highway. The bridge would make it easier to retrieve dropped objects, perform chairlift maintenance, and for emergency egress. The bridge would also support the weight of a chair. Under this alternative the chairlift would not cross over the parking lots; the alignment crosses the forested area west of the parking lots.
VISUAL QUALITY		
Issue: The proposed chairlift and skier bridge over the Mt. Rose Highway, as well as the tank adjacent the highway may affect the scenic integrity along the Mt. Rose Highway (a state designated scenic byway) by adding to the developed nature of the landscape.		
Indicator: Quantification of the extent and duration of the visibility of the proposed chairlift, skier bridge and tank to motorists on the Mt. Rose Highway.		
Under Alternative 1, there would be no chairlift, skier bridge, or water tank visible to motorists on the Mt. Rose Highway; therefore, there would be no effect to visual resources near Mt. Rose. Under the No Action Alternative, the Forest Plan Amendment would not be approved; therefore, commercial development would continue to be a potential use of the 3,446 acres of NFS land acquired in the Galena Resort Land Exchange. Commercial development can result in tree removal, grading, development of infrastructure and increased human use, all of which could impact the scenic integrity of NFS land that currently appear natural.	Due to the location of the chairlift, skier bridge, and water tank, the orientation (i.e., bends) of Mt. Rose Highway and the speeds at which motorists travel, the duration for these project components would be visible would be short—generally lasting a few seconds in either direction. It would not be possible to view both the proposed chairlift and skier bridge from the same perspective due to bends in the highway corridor. Additionally, the elevated trail on private land (approximately 25 feet above natural grades), would be visible along short segments of the Mt. Rose Highway in the *foreground* distance zone. This slope of the elevated trail would be revegetated to minimize its visibility, and it would be partially screened by maintaining existing vegetative buffers, where possible. However, the elevated trail would increase the developed appearance of private land adjacent to the Mt. Rose Highway.	The proposed Chairlift B, elevated trail and skier bridge would be clearly visible in one location to drivers on the Mt. Rose Highway in the *foreground* view. Any portion of the new chairlift, elevated trail and skier bridge that is visible from the Mt. Rose Highway would represent incremental changes consistent with the developed theme of the ski area; however, the chairlift, elevated trail and skier bridge would be visible for a very short period (and consolidated to one location) to motorists traveling on the highway. The water tank would also be visible to drivers on Mt. Rose Highway. Due to the orientation (i.e., bends) of Mt. Rose Highway and the speeds at which motorists travel, the duration for these project components would be visible would be short—generally lasting a few seconds in either direction. This slope of the elevated trail would be revegetated to minimize its visibility, and it would be partially screened by maintaining existing vegetative buffers, where possible. However, the elevated trail would increase the developed appearance of private land adjacent to the Mt. Rose Highway.

Table 3. Summary Comparison of Direct and Indirect Environmental Consequences		
Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3
Indicator: Visual simulations of the proposed chairlift and skier bridge across the Mt. Rose Highway demonstrate the increase in development.		
Under the No Action Alternative, ski area development within the SUP would be limited to previously approved projects such as grading and some limited trail development. Rehabilitation of disturbance associated with these projects would ensure the area would continue to meet *Partial Retention* objectives.	The proposed chairlift and skier bridge are depicted in the map of key viewpoints in Figure 9 and the visual simulations provided in Figures 10 and 11. Figure 10 shows the proposed Atoma Chairlift as well as a net or similar safety structure looking due west (i.e., up) Mt. Rose Highway. From this vantage point, the proposed Atoma Chairlift would be visible in the immediate *foreground* distance zone to drivers on the Mt. Rose Highway or visiting the ski area. The chairlift infrastructure would represent an increase in development visible at this location. Figure 11 depicts the proposed skier bridge from a vantage point looking northeast (i.e., down) along Mt. Rose Highway. The simulation shows that it would be visible in the immediate *foreground* distance zone to drivers on the Mt. Rose Highway or visiting the ski area. The bridge infrastructure would represent an increase in development visible at this location.	The proposed chairlift and skier bridge are depicted in the map of key viewpoints in Figure 9 and the visual simulations provided in Figure 12. Figure 12: View of the proposed chairlift and bridge crossing looking northeast (i.e., downhill) along Mt. Rose Highway. When looking at the visual simulation, private land at the Mt. Rose Ski Tahoe base area is on the right of the Mt. Rose Highway, and NFS land in the Atoma Area is on the left. The visual simulation depicts the proposed Atoma Chairlift B, as well as proposed skier bridge. From this vantage point, the proposed Atoma Chairlift and bridge would be visible in the immediate *foreground* distance zone.

Table 3. Summary Comparison of Direct and Indirect Environmental Consequences		
Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3
Issue: Proposed trail grading and tree removal may affect the Visual Quality Objective (VQO) of Partial Retention in the Analysis Area as developments become increasingly dominant across the landscape.		
Indicator: Analysis of the action alternatives on the VQOs for the Mt. Rose Ski Tahoe SUP, as defined by the 1986 Forest Plan, and consistency of proposed projects with the VQO of Partial Retention.		
NFS land within the Mt. Rose Ski Tahoe SUP area and the adjacent Atoma Area fall into the VQO of *Partial Retention*. Under Alternative 1, no new projects would be approved; therefore, the ski area would continue to be consistent with the areas VQO of *Partial Retention*. The VQO of the Mt. Rose Highway is Retention. Because no new projects would be approved adjacent the Mt. Rose Highway under Alternative 1, the area would continue to meet that VQO.	VQOs of the project area are identified in Figure 15. All projects associated with the Proposed Action would remain consistent with the existing VQO of *Partial Retention*. The existing, natural vegetation screen that exists between the Mt. Rose Highway and the Atoma Area would screen new infrastructure to a level that meets *Partial Retention* and new infrastructure in the Atoma Area would only be visible to skiers or dispersed (summer) recreationists who are in it. The Atoma Area is generally less visible to observers outside of the immediate Analysis Area because of the low angles of the slopes and existing screening vegetation. Tree removal and grading in this area would be consistent with the VQO of *Partial Retention*. The proposed tank would be located in a relatively flat area near existing snowmaking infrastructure, and not visible in the *foreground* of the Mt. Rose Highway. The water tank would represent an incremental addition to the built environment with a natural screen from existing vegetation. As a result, the tank would remain consistent with a VQO of *Partial Retention* (Figure 14).	Same as Alternative 2.

Table 3. Summary Comparison of Direct and Indirect Environmental Consequences		
Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3
Indicator: Identification of key viewpoints in the Analysis Area and discussion of visibility of proposed projects from all distance zones (foreground, middleground, background).		
Maps that highlight key viewpoints can be found in Figures 7 and 10.	Key viewpoints are identified in Figures 9 and 13. The proposed chairlift (with the associated safety structure underneath) and skier bridge would be clearly visible to drivers on the Mt. Rose Highway in the *foreground* view. Any portion of the new chairlift and skier bridge that is visible from the Mt. Rose Highway would represent incremental changes consistent with the developed theme of the ski area. To minimize impacts to summer motorists, the net (or similar safety structure) and chairs would be removed when the ski area is closed (refer to Management Requirement *VI 6*). The proposed 5-million gallon water tank would also represent an incremental addition to the built environment in an area of the SUP only be visible to skiers unloading the Galena Chairlift or descending adjacent trails. Effects to views from Mt. Rose Highway would be mitigated by the screen created by natural vegetation and topography. However, because the roadway is at a higher elevation than the tank, motorists travelling in the northbound (downhill) lane on the Mt. Rose Highway may be able to see it in the *foreground* to the north and east. The proposed water tank is not anticipated to impact the visual resources of the Mt. Rose Highway. The proposed Atoma Chairlift and trail network in the Atoma Area would be visible in the *foreground* and *middle ground* from portions of the surrounding NFS land, including Mount Rose proper and trails in the Mt. Rose Wilderness Area.	The proposed Chairlift B, elevated trail and skier bridge would be clearly visible in one location to drivers on the Mt. Rose Highway in the *foreground* view. Any portion of the new chairlift, elevated trail and skier bridge that is visible from the Mt. Rose Highway would represent incremental changes consistent with the developed theme of the ski area; however, the chairlift, elevated trail and skier bridge would be visible for a very short period (and consolidated to one location) to motorists traveling on the highway. Visibility of the water tank is the same as described for Alternative 2.

Table 3. Summary Comparison of Direct and Indirect Environmental Consequences		
Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3
Indicator: Analysis of visibility of proposed projects from nearby high elevation areas, including the Mt. Rose Wilderness and the Mt. Rose Trail and dispersed recreation outside but adjacent to designated wilderness.		
Under Alternative 1, none of the proposed projects would be implemented, and there would be no change to views of Mt. Rose Ski Tahoe from nearby high elevation areas, including the Mt. Rose Wilderness and the Mt. Rose Trail as a result of this alternative. Without implementation of the Forest Plan Amendment, commercial development could potentially occur with 3,446 acres on the HTNF. These developments may be visible from nearby high elevation areas and could impact the scenic integrity of those areas. Project specific NEPA analysis would be required prior to approval of any developments on NFS land and specific impacts of the proposal would be considered at that time.	The chairlift and trails in the Atoma Area would be visible from some high elevation locations in the adjacent Mt. Rose Wilderness and the Mt. Rose Trail where natural vegetation screens less of the Analysis Area. Where visible from higher-elevation areas such as Mount Rose proper and the Mt. Rose Wilderness Area, proposed projects on NFS and private land, including the Atoma Chairlift, skier bridge, water tank, elevated trail/surface lift and guest services building would all contribute incrementally to the developed nature of Mt. Rose Ski Tahoe on NFS and adjacent private land.	Same as Alternative 2.
CULTURAL RESOURCES		
Issue: The Atoma Area includes potentially eligible cultural resources. Ground-disturbing activities associated with the proposed projects in the Atoma Area could affect these resources directly, through direct removal or indirectly through degradation.		
Indicator: Identification of cultural resources in the Analysis Area		
Archival research and the initial field reconnaissance in 2011 disclosed a number of potentially significant cultural resources within the Atoma Area project's area of potential effect (APE). In the 2014 follow-up survey and formal recording effort for the Atoma Area, the cultural resources noted during the 2011 reconnaissance were relocated and appropriately regrouped into individual sites or site complexes, features and/or artifacts. The entire APE was intensively examined. The Forest Service is recommending all cultural resources ineligible for listing in the National Register of Historic Places; pending SHPO concurrence.	Investigation revealed that there are potentially significant cultural resources in the projects APE. The cultural resources were located and appropriately grouped into individual sites or site complexes, features and/or artifacts for formal recordation. All of the sites were evaluated and are being recommended as ineligible to the National Register; pending SHPO concurrence.	Same as Alternative 2.

Table 3. Summary Comparison of Direct and Indirect Environmental Consequences		
Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3
Indicator: Discussion of the potential impacts to cultural resources in the Analysis Area		
All resources inventoried within the project APE are being recommended as ineligible for listing in the National Register to the other consulting parties. A determination of NRHP eligibility of cultural resources and potential impact to those resources by the Proposed Action are being consulted on with the NV SHPO.	Direct impacts to all or portions of these cultural resources may result from construction, use and maintenance of the proposed chairlift, ski runs, and snowmaking infrastructure. Indirect impacts could also occur due to alteration of the existing environmental setting and due to increased public access into the general area and the greater risk of vandalism. However, all of the sites were evaluated and are being recommended as ineligible to the National Register. Therefore, there would be no impacts to significant cultural resources (those eligible for listing in the National Register).	Same as Alternative 2.
BOTANY AND OVERSTORY VEGETATION		
Issue: Concerns for botanical resources include: habitat for rare plants; restoration of native plant communities; trails within wetland; management of noxious weeds. All of which have potential to be impacted by tree removal and grading associated with the proposed projects.		
Indicator: Identification of TES plant habitat/individuals in the Analysis Area		
The only Forest Service sensitive species identified within the Analysis Area during field surveys was whitebark pine (a candidate for federal listing). A high percentage of whitebark pine in the project area show signs of being infected with blister rust or by mountain pine beetle (MPB). These infestations would be expected to persist under the No Action Alternative and when considered in combination with climate change and fire exclusion, mortality of whitebark pine in the area is expected to continue. Although potential habitat exists for Galena Creek rockcress, Washoe tall rockcress, Shevock's bristle-moss, and three species of sensitive moonwort, locating plants in the Analysis Area has been rare. Because they are uncommon, under the No Action Alternative effects to these species are not anticipated. Construction and operation of commercial developments could result in impacts to threatened, endangered or sensitive plant species.	Seven species, including: whitebark pine (candidate T or E), Galena Creek rockcress (S), Washoe tall rockcress (S), upswept moonwort (S), dainty moonwort (S), slender moonwort (S), Shevock's bristle-moss (S), were carried forward into the analysis. Of these seven species, botanical surveys found only whitebark pine to have occupied habitat in the Analysis Area. In both action alternatives, some whitebark pine would be removed as part of the proposed projects through the construction of the ski trails, chairlift, and installation of the snowmaking water tank. A determination of ***will impact individuals, but is not likely to result in a trend toward federal listing or loss of viability for the species*** was made for whitebark pine. Because the Forest Plan Amendment would preclude commercial development on 3,446 acres of NFS land, this component of the action alternatives would likely minimize impacts to botany and overstory vegetation and would also limit the spread of noxious weeds to these areas that are currently primarily natural.	Same as Alternative 2.

Table 3. Summary Comparison of Direct and Indirect Environmental Consequences		
Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3
Indicator: Impacts to rare plants (known and potential) habitat are evaluated for both short- and long-term effects.		
▪ Potential habitat for Galena Creek rockcress, a rare plant, may be improved through the opening of closed forest canopy conditions in the long term.		
No operational or infrastructural changes/additions are proposed on NFS land within the Analysis Area; therefore, no direct or indirect impacts to rare plants (known and potential) habitat have been identified. However, without the Forest Plan Amendment commercial development could occur on 3,446 acres of NFS land potentially affecting Galena Creek rockcress by creating openings, or loss of plants during construction and operation of commercial developments. Site specific NEPA analysis would be required for future proposed projects on those lands.	A total of 38.25 acres of Galena Creek rockcress suitable habitat (currently unoccupied) would be modified as a result of ski trail construction, chairlift installation, and snowmaking water tank. The proposed ski trails, some of which would be graded to reshape contours, have the potential to eliminate suitable habitat for Galena Creek rockcress due to the modification of existing native soil cover and conditions. However, creating additional forest openings in the Analysis Area through the creation of ski trails, especially where no grading occurs, may increase the suitability of habitat for Galena Creek rockcress in those areas. The Forest Plan Amendment would limit commercial development across 3,446 acres of NFS land, minimizing potential impacts form commercial development on Galena Creek rockcress, but also potentially eliminating creation of forest openings that may have benefitted the plant.	Same as Alternative 2.

Table 3. Summary Comparison of Direct and Indirect Environmental Consequences		
Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3
Indicator: Identification, mapping and treatment of noxious weeds in the Analysis Area		
The Analysis Area has been surveyed for noxious and invasive weed species. There are no known populations of noxious weeds within the water tank Analysis Area and a minor amount confined to the area directly adjacent the Mt. Rose Highway in the Atoma Area. Thus, the existing habitat conditions within the Analysis Area indicate a low risk in terms of vulnerability to noxious weed invasion. Therefore, under the No Action Alternative the risk of spread of noxious weeds, due to the relatively low existing issue and relatively high elevation of the area, is anticipated to remain low. Without the Forest Plan Amendment potential commercial developments could increase the spread of noxious weeds across 3,446 acres of the forest.	The anticipated noxious weed response to the project is low due to the limited existing infestation and relatively high elevation of the Analysis Area. However, there is a potentially risk of introduction from disturbances related to the construction of facilities and infrastructure. As a result, Management Requirements (refer to Management Requirements *NW 1–NW 7* in Appendix A) have been created to address the potential for introduction and alterations to habitat from construction activities. Limiting commercial development would limit disturbance that could result in the spread of noxious weeds to these areas that are currently primarily natural.	Same as Alternative 2.
Indicator: Discussion of mountain pine beetle, pine engraver beetle and white pine blister rust effects throughout the Analysis Area		
Over the past two to three decades, outbreaks of MPB and pine engraver beetle have resulted in high levels of mortality in conifer stands within the Carson Ranger District. Recent monitoring suggests a high percentage of whitebark pine in the project area show signs of being infected with blister rust or by MPB. Based on other studies, it appears that MPB infestations in California are increasing and this trend is likely to continue.	Within the Atoma Area, approximately four whitebark pine trees are proposed for removal. Construction of the water tank would result in the removal of approximately forty whitebark pine trees. Approximately 90 percent of whitebark pine trees proposed to be removed were noted to have been infected with blister rust or previously attacked by MPBs. Removal of infected trees could result in the overall increase in health of the five needle pines in the area. However, regional trends show infestations in California may be on the rise.	Same as Alternative 2.
Indicator: Impacts to western white pine "plus trees" that are potentially resistant to white pine blister rust		
Some trees in the vicinity of the Analysis Area were noted to be healthy and not showing any signs of disease and could be identified as "plus trees" that contain genetic resistance to infection from blister rust. Under the No Action Alternative none of the plus trees would be removed—potentially improving the resistance of stands in the Analysis Area to infestation.	Approximately four healthy whitebark pine trees would be removed as a result of Alternative 2. This effect would be immeasurable on the population These trees would be identified and avoided where possible (generally between trails). Pruning infected branches and planting of whitebark pine seedlings would assist with maintaining this species in the area.	Same as Alternative 2.

Table 3. Summary Comparison of Direct and Indirect Environmental Consequences		
Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3
Indicator: Construction of ski trails may result in removal of whitebark pine trees, which are candidate species for listing under the ESA.		
No construction would occur within the Analysis Area, leaving the population of whitebark pine trees unaltered. Both healthy and infested whitebark pine trees would remain within the Analysis Area. Although stand mortality in California is relatively low, some studies show the whitebark pine population near Mt. Rose Ski Tahoe may be in decline. Without further management in stands in the Analysis Area, this trend would be expected to continue.	Removal of infected trees could result in the overall increase in health of the whitebark pine trees in the area. Due to the high presence of blister rust infection and attacks by MPB (approximately 90 percent), removal of whitebark pine would result in a determination of ***will impact individuals, but is not likely to result in a trend toward federal listing or loss of viability for the species*** was made for whitebark pine.	Same as Alternative 2.
FOREST HEALTH		
Issue: Tree removal for construction and development of the Atoma Area may result in a loss of both healthy and infested conifer trees. Removal healthy trees that have not been affected by, or have a potential resistance to, infestations, may result in a reduction in forest health. Removal of dead and infested trees may result in improving forest health.		
Indicator: Identification/maintenance of whitebark pine and western white pine "plus trees"		
Some trees in the vicinity of the Analysis Area were noted to be healthy and not showing any signs of disease and could be identified as "plus trees" that contain genetic resistance to infection from white pine blister rust. Without the Forest Plan Amendment, potential commercial developments could result in removing plus trees as a result of other projects. This could reduce the resistance of a stand. Alternatively, a project that removes infested trees may improve forest health. Those future proposed projects would require site specific NEPA analysis.	In order to preserve the genetic diversity of the whitebark pine and western white pine in the area, "plus trees" would be identified and left in place, where possible, during construction of the trail and lift network in the Atoma Area. Identification of "plus trees" and the planting of seedlings in accordance with the regeneration plan would result in an overall improved in the health of the whitebark pine in the Atoma Area.	Same as Alternative 2.
Indicator: Identification and removal of insect infested trees including timing and treatment plan		
Both healthy and infested whitebark pine trees would remain within the Analysis Area. Under the No Action Alternative, no removal or treatment plan for infested pine has been identified. Because some parts of the Analysis Area have shown high levels of infestation, this may result in a decline in forest health in the Analysis Area. However, no plus trees would be removed under this alternative which could benefit the resistance of the stand.	Approximately 90 percent of whitebark pine trees proposed to be removed were noted to have been infected with blister rust or previously attacked by MPBs. Implementation of a treatment plan and regeneration plan under Alternative 2 to reduce the spread of insect infestations and blister rust infections and the presence of pathogens would continue to improve forest health in the Atoma Area. Trees attacked by bark beetles will be burned and/or chipped. If chipping occurs, chipped material will be spread on site to dry or removed off site after felling to prevent the buildup of bark beetle.	Same as Alternative 2.

Table 3. Summary Comparison of Direct and Indirect Environmental Consequences		
Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3
Indicator: Vegetation prescriptions for management of remaining tree islands		
No vegetation management prescriptions would be implemented in the Atoma Area to remove dead and diseased trees under Alternative 1. Current infestations would persist.	Under Alternative 2, Mt. Rose Ski Tahoe, in conjunction with the HTNF and based on the vegetation prescription plan, would remove select standing dead and/or diseased trees within these islands for a mix of forest health, safety, and operational reasons.	Same as Alternative 2.
WILDLIFE		
Issue Statement: Implementation of proposed projects (including construction and operation) may affect TES and MIS wildlife and migratory birds in the Analysis Area by removing identified habitat.		
Indicator: Identification, quantification and analysis of TES and MIS animal and migratory bird habitat in the Analysis Area		
Species and habitat would remain the same as existing conditions under Alternative 1.	Table 15 identifies the federally listed species considered in this analysis: Lahontan cutthroat trout, Cui-ui, Sierra Nevada yellow-legged frog, and Yosemite toad. Although there is potential for these species to occur in the general area, no federally listed species' habitat is present in the Analysis Area, there would be no impact to federally listed wildlife species. Table 16 identifies Region 4 sensitive species or habitat present and according to the BE, the Proposed Action will or may impact individuals but in either case will not result in a trend toward federal listing or loss of viability for the following species: northern goshawk, flammulated owl, mountain quail, white-headed woodpecker, and the California spotted owl. Table 17 identified MIS associated with habitats that may be affected by the Proposed Action including northern goshawk, yellow warbler, yellow-rumped warbler, hairy woodpecker, Williamson's sapsucker, mule deer, American marten, and macroinvertebrates. A total of 36.6 acres of suitable Neotropical migratory birds habitat would be lost as a result of construction activities associated with the proposed project. Management Requirements such as retaining at least three of the largest snags per acre and preventing project activities from April 15–August 1 in riparian and aspen areas would minimize the disturbance to migratory birds during the breeding season.	Identification, quantification and analysis is the same as Alternative 2, which the exception of a total of 37.2 acres of suitable Neotropical migratory birds (NTMB) habitat would be lost as a result of construction activities associated with the Alternative 3.

Table 3. Summary Comparison of Direct and Indirect Environmental Consequences		
Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3
Issue: The proposal includes the removal of numerous live aspen and conifer trees, as well as dead trees/limbs called snags that provide wildlife habitat, which may have long-term impacts to species that require denser canopy cover and structure for habitat (e.g., flammulated owl and white-headed woodpecker).		
Indicator: Quantification of the number of trees proposed to be removed, including the size classes, what the resulting overall upper and lower canopy cover would look like under proposed conditions, and if it would be sufficient to maintain wildlife populations		
The Atoma Area was divided into three distinct stands that provide wildlife habitat within the Analysis Area. Trees would not be removed under Alternative 1; therefore, this habitat is anticipated to remain unchanged and would continue to provide adequate cover and forage for local wildlife populations.	Alternative 2 would result in the direct loss of 26 acres of forested habitat and 39 acres of disturbance across the Analysis Area. Impacts of this tree removal and grading include modification of canopy cover, and reduced forest stand density which results in impacts to foraging, limiting habitat availability for nesting and protection and may cause displacement. The removal of hazard trees would be required to comply, where possible, with the retention of all large diameter snags, as described in Appendix A. Removal of dead and diseased trees from the forested areas that remain in the Atoma Area would have the potential to increase lower canopy cover due to an increase in the amount of sunlight available. With implementation of the identified Management Requirements, impacts to habitat would be minimized and the area would remain sufficient to maintain wildlife populations. The Forest Plan Amendment would limit development and the associated impacts, reducing impacts to wildlife and loss of quality/quantity of habitat.	Alternative 3 would result in the direct loss 27 acres of forested habitat, and 40 acres of disturbance across the Analysis Area. Impacts are the same as Alternative 2.

Table 3. Summary Comparison of Direct and Indirect Environmental Consequences		
Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3
WATERSHED AND SOILS		
Issue: Placement of the lift towers and terminals, grading, and installation of the snowmaking lines has potential to affect water and soil quality by disturbing soil and increasing erosion/sedimentation.		
Indicator: Discussion of soil conditions in the Analysis Area		
Although soils are recorded as having low to moderate risk for erosion, soils at Mt. Rose Ski Tahoe have been shown to be difficult to stabilize and maintain productivity after disturbance. In 2011 a restoration plan was developed to include specific design features and restoration techniques to improve soil stabilization and drainage management, and to maintain soil organic matter to obtain successful revegetation of native plant species. Some of these techniques have proven success in reducing erosion and sedimentation issues minimizing impacts to water and soil quality.	Soil disturbance would occur on approximately 39 acres of NFS land and private land from tree removal and grading. Implementation of the Management Requirements listed in Appendix A would minimize impacts to soils where tree removal and grading occur to ensure soil organic matter and productivity are maintained. Aside from 4.5 acres of soil that would be lost to the installment of permanent structures, soil conditions and functionality post project implementation would be similar to their existing state.	Soil disturbance would occur on approximately 40 acres of NFS land and private land from tree removal and grading. Implementation of the Management Requirements listed in Appendix A would minimize impacts to soils where tree removal and grading occur to ensure soil organic matter and productivity are maintained. Aside from 4.5 acres of soil that would be lost to the installment of permanent structures, soil conditions and functionality post project implementation would be similar to their existing state.
Indicator: Quantification (acres) of temporary and permanent ground disturbance in the Analysis Area		
There would be no ground disturbance under Alternative 1	In total, approximately 21.5 acres would be graded under Alternative 2—13.3 acres on NFS land and 8.2 acres on private land. Grading required for construction of ski trails and installation of snowmaking infrastructure would be rehabilitated to establish soil productivity and successful revegetation. However, grading required for lift towers and terminals, the guest service facility, and the snowmaking water tank, would result in a permanent loss of soils resources. Approximately 4.5 acres of soil would be lost by the proposal to install permanent structures such as the water tank, lift infrastructure, the bridge and elevated trail and the guest services facility under the Proposed Action. It is anticipated that if other commercial developments were allowed within the 3,446 acres of NFS land acquired through the Galena Resort Land Exchange, those projects would have similar impacts as those listed for ski area development. The Forest Plan Amendment included in both action alternatives would limit development and the associated impacts, reducing impacts to wetland function and value, stream and riparian quality, and soil productivity.	Approximately 22.7 acres would be graded under Alternative 3—14.5 acres on NFS land and 8.2 acres on private land. Grading required for construction of ski trails and installation of snowmaking infrastructure would be rehabilitated to establish soil productivity and successful revegetation. However, grading required for lift towers and terminals, the guest service facility, and the snowmaking water tank, would result in a permanent loss of soils resources. Approximately 4.5 acres of soil would be lost by the proposal to install permanent structures such as the water tank, lift infrastructure, the bridge and elevated trail and the guest services facility under the Proposed Action.

Table 3. Summary Comparison of Direct and Indirect Environmental Consequences		
Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3
Indicator: Analysis of increased erosion hazard due to temporary and permanent ground disturbance		
There is no anticipated change in erosion hazard under Alternative 1. Ongoing improvements and maintenance is anticipated to improve soil stabilization and drainage management, and to maintain soil organic matter.	Soils within the disturbance areas are mapped as having low to moderate surface and subsurface soil erodibility potential. Regardless, grading results in vegetation removal and soil compaction, reducing infiltration and increasing erosion. Because soils at Mt. Rose Ski Tahoe have been shown to be difficult to stabilize and maintain productivity after disturbance, the erosion potential in disturbed areas would be anticipated to increase immediately following disturbance, and then decrease as stabilizing soils and vegetation are re-established. Erosion potential in the Atoma Area is expected to be less than across the existing Mt. Rose Ski Tahoe SUP area, due to shallower slopes where disturbance is proposed to occur.	Same as Alternative 2.
Issue Statement: Ground disturbance and proposed overstory vegetation removal associated with construction and operation of proposed projects has potential to affect wetland function and value.		
Indicator: Identification of perennial and intermittent stream channels across the Analysis Area in relation to proposed projects		
Approximately 1,900 feet of intermittent streams and 220 feet of perennial streams were delineated within the Analysis Area. The No Action Alternative would have no effect to these resources in the Analysis Area. Past ski area projects have impacted streams by removing riparian vegetation, culverting stream segments, and increasing sedimentation from connected graded areas. Although ski area personnel are more aware today of sensitive resources and environmental regulations are more stringent than in the past, some impacts to these resources would be expected to continue either because they were implemented in the past, or due to ongoing maintenance and operational activities. Further, without implementation of the Forest Plan Amendment, commercial development and the similar impacts to those impacts discussed above may occur within the 3,446 acres of NFS land acquired through the Galena Resort Land Exchange. However, these projects would require site specific NEPA analysis prior to approval and implementation.	Approximately 521 feet of intermittent stream channels occur within the disturbance area of the Proposed Action, including 40 feet of tree clearing for the lift alignment, and 481 feet of tree clearing for trail development. No perennial streams would be directly affected by the proposed projects. The Proposed Action was designed to minimize impacts by crossing streams perpendicularly, and by taking advantage of previous disturbance and natural clearings in riparian vegetation. Stream channels within Trails 4 and 5 (refer to Figure 8 for trail location) would be minimal as riparian vegetation along this intermittent stream is primarily herbaceous; therefore, overstory vegetation removal direction adjacent the stream would be limited.	Same as Alternative 2.

Table 3. Summary Comparison of Direct and Indirect Environmental Consequences		
Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3
Indicator: Identification of waters of the U.S., including wetlands, across the Analysis Area in relation to Proposed Action		
Approximately 12.4 acres of Palustrine Emergent (PEM) wetlands and 8.6 acres of Palustrine Scrub/Shrub (PSS) wetlands were identified within the Analysis Area. The No Action Alternative would not affect these resources. Streams are discussed in the indicator above. Developing ski area infrastructure has resulted in a loss of wetland acreage within the Analysis Area; however, due to current environmental regulations, future loss of wetland functions or value would be mitigated. Future commercial development on the 3,446 acres of NFS land would also be subject to these same regulations. Despite this, proximate development can impact wetland hydrology and soils, impacting their function and value.	No ground disturbance would occur within delineated streams or wetland boundaries as the result of implementation of the Proposed Action; therefore, no direct impacts to wetlands are anticipated. Indirect impacts to wetland vegetation are anticipated to occur due to mowing (approximately 1.6 acres) and tree removal and due to snow compaction; however, wetland function and values are anticipated to be maintained.	Same as Alternative 2.
Issue: Ski trail construction (spot and full grading) may increase soil sedimentation and result in poor reclamation due to soil compaction and reduced infiltration.		
Indicator: A risk evaluation of the slopes, soils and amount of area to be graded (including reviewing NRCS soil data for recommended practices within soil types present).		
Soils within the disturbance areas are mapped as having low to moderate surface and subsurface soil erodibility potential. Under Alternative 1 no ski trails would be constructed within the Analysis Area; therefore, there would be no impact on soil sedimentation. Vegetation removal (overstory and herbaceous cover) and grading has removed top soils impacting soil productivity and increased erosion throughout the Analysis Area. Soil rehabilitation is difficult at Mt. Rose Ski Tahoe and some impacts to this resource would be expected to continue either because past of past projects, or due to ongoing maintenance and operational activities. Similar impacts to those discussed above may occur within the 3,446 acres of NFS land acquired through the Galena Resort Land Exchange should commercial development occur.	In total, approximately 21.5 acres would be graded under the Alternative 2—13.3 acres on NFS land and 8.2 acres on private land. The erosion potential in disturbed areas would be anticipated to increase immediately following disturbance and decrease as stabilizing soils and vegetation are re-established.	Approximately 22.7 acres would be graded under the Alternative 3—14.5 acres on NFS land and 8.2 acres on private land. The erosion potential in disturbed areas would be anticipated to increase immediately following disturbance and decrease as stabilizing soils and vegetation are re-established.

Table 4. Statement of Conformance with Pertinent Law, Regulation, Policy or Executive Order	
LAW, REGULATION, POLICY, OR EXECUTIVE ORDER	STATEMENT OF CONFORMANCE
American Antiquities Act of 1906 (as amended)	Design features have been developed to prohibit the collection or disturbance of archeological sites encountered during construction (see CU 1 in Appendix A). All prior cultural resource surveys and any potential future cultural resource surveys for the proposed project would be conducted by qualified archaeologists under a permit issued by the Forest Service.
American Indian Religious Freedom Act of 1978	Native American Tribes were consulted to determine the presence of American Indian religious sites. See tribal consultation summary in Section 1.9.
Archeological Resource Protection Act of 1979	Design features have been developed to prohibit the unauthorized collection or disturbance of previously unidentified archeological sites encountered during construction or maintenance of the project (see CU 1 in Appendix A).
Bald and Golden Eagle Protection Act of 1940 (as amended)	The proposed project would not result in the "take" of bald eagles or golden eagles (see Section 3.9.3.2). The project would be in conformance with the Bald and Golden Eagle Protection Act of 1940, as amended.
Clean Air Act of 1979 (as amended)	The proposed project would be compliant with the Clean Air Act of 1979, as amended, because emissions of criteria pollutants would be below the National Ambient Air Quality Standards (NAAQS) (see Section 3.1.2.2). Other air pollution problems addressed in the Clean Air Act, such as acid rain or depletion of the ozone layer are not relevant to the proposed project.
Clean Water Act of 1977 (as amended)	The discharge of pollutants from a point source would not occur under the proposed project. No impacts to waters of the United States would occur as a result of the proposed project (see Section 3.10.3).
Endangered Species Act of 1973 (as amended)	The proposed project would not jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. The proposed project would not result in the "take" of any listed species or species proposed for listing. See agency consultation summary (see Section 3.9.3.2).
Executive Order 11988, *Floodplain Management*	The proposed project would not require occupancy within the 100-year floodplain. The proposed project would not modify the flood flow retention capability of the 100-year floodplain.
Executive Order 11990, *Protection of Wetlands*	Compliant with Executive Order 11990, design features have been developed to minimize potential for impacts to wetlands on NFS land (see WA 9 and WA 10 in Appendix A).
Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*	Compliant with Executive Order 12898, the Forest Service has completed an environmental justice analysis (see Section 3.1.2.3).
Executive Order 13007, *Indian Sacred Sites*	Native American Tribes were consulted to determine the presence of American Indian sacred sites. See tribal consultation summary in Section 4.2.2.
Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*	Consultation with Native American Tribes was conducted in accordance with Executive Order 13175. See tribal consultation summary in Section 1.9.

Table 4. Statement of Conformance with Pertinent Law, Regulation, Policy or Executive Order	
LAW, REGULATION, POLICY, OR EXECUTIVE ORDER	STATEMENT OF CONFORMANCE
Executive Order 13186, *Responsibilities of Federal Agencies To Protect Migratory Birds*	Pursuant to Executive Order 13186, the potential effects of the proposed project on migratory birds are evaluated in Section 3.9.3.2. Design features have been developed to avoid impacting nesting migratory birds during construction (see WL 4 and WL 8 in Appendix A).
Federal Land Policy Management Act of 1976	In accordance with the Federal Land Policy Management Act of 1976, this EIS evaluates the proposed project in terms of its conformity with the 1986 Forest Plan and its potential effects on the various resources contributing to the multiple uses for which the Forest Service administered public land in the project area is managed.
Historic Sites Act of 1935	The potential effects of the proposed project on historic properties listed on the NRHP or eligible for such listing have been evaluated. A finding of "no historic properties affected" is recommended to the required consultation partners (see Section 3.6.3). Consultation with SHPO is ongoing.
Memorandum of Understanding to Promote the Conservation of Migratory Birds	Pursuant to the Memorandum of Understanding to Promote the Conservation of Migratory Birds, the potential effects of the proposed project on migratory birds are evaluated in Section 3.9.3.2. Design features have been developed to avoid impacting nesting migratory birds during construction (see WL 4 and WL 8 in Appendix A).
Migratory Bird Treaty Act of 1918 (as amended)	Design features have been incorporated into the proposed project to require pre-construction surveys for flammulated owls and protect habitat during migratory bird nesting season (see WL 4, 5, 6, 7, 8 and 9 in Appendix A).To compensate for the 12-acre loss of nesting and foraging habitat in the Atoma Area, 24 acres of potential habitat improvement areas will be identified for improvement projects as mitigation of this impact.
National Bald Eagle Management Guidelines	The proposed project would not result in the "take" of bald eagles or golden eagles (see Section 3.9.3.2). The project would be in conformance with the National Bald Eagle Management Guidelines.
National Forest Management Act of 1976	In accordance with the National Forest Management Act of 1976, this EIS evaluates the proposed project in terms of its conformity with the 1986 Forest Plan and its potential effects on the various resources contributing to the multiple uses for which the NFS land in the project area is managed (see Section 3.6.3).
National Historic Preservation Act of 1966 (as amended)	In accordance with Section 106 of the NHPA, the potential effects of the proposed project on historic properties listed on the NRHP or eligible for such listing were evaluated. A finding of "no historic properties affected" is recommended to the required consultation partners (see Section 3.6.3). Consultation with SHPO is ongoing.
Native American Graves Protection and Repatriation Act of 1990	Design features require that if previously unidentified cultural resources are found, work will be halted immediately within a minimum of 300 feet from the discovery and Forest Service archaeologists will be notified to determine protective measures (see CU 1 in Appendix A).

3. Affected Environment and Environmental Consequences

3.1 Introduction

3.1.1 Analysis Process

CEQ regulations direct agencies to succinctly describe the environment that may be affected by the alternatives under consideration. As such, Chapter 3 describes the existing human, physical, and biological components of the Analysis Area that have potential to be affected by implementing any of the alternatives (i.e., the affected environment). Each affected environment description is followed by an environmental consequences discussion that provides an analysis of the potential effects of implementing each alternative.

An environmental effect, impact, or consequence is defined as a modification of, or change in, the existing environment brought about by the action taken. Effects can vary in degree and may be categorized as direct, indirect, or cumulative, and temporary (short term) or permanent (long term). Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and occur later in time or are farther removed in distance but are still likely to occur within the duration of the project, depending on the affected resource.

3.1.2 Resources Eliminated from Detailed Analysis

This section summarizes the human, physical, and biological environment of the proposed Analysis Area and the effects of implementing each alternative on that environment. In the development of the environmental analyses that follow, the best available science was considered and documented in the Project Record.

The CEQ NEPA regulations explains in Sec. 1501.7, "…identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)." The following human, physical, and biological resources are *not* addressed in detail in Chapter 3 because they are either not affected by the alternatives or localized effects are disclosed in other resource sections:

- Traffic
- Climate Change and Air Quality
- Environmental Justice

3.1.2.1 Traffic

During the scoping process, NDOT requested a traffic study to analyze potential impacts, including traffic circulation and turning movements, on the Mt. Rose Highway. The traffic study was prepared early in the planning/analysis process and was submitted to NDOT for review.[16]

NDOT reviewed the traffic study and determined that it had adequately addressed the existing and proposed traffic scenarios in relation to the proposed projects in January 2015. The traffic study identified the existing Mt. Rose Ski Tahoe base area intersection along Mt. Rose Highway as the Analysis Area and considered the following Saturday and Sunday traffic volume scenarios:

[16] Solaegui Engineers, Ltd., 2014

2015 existing conditions; 2015 existing conditions in addition to the proposed project; projected year 2035 base conditions; and projected year 2035 base conditions in addition to the proposed projects. Although the traffic study was completed in 2015 based on concepts presented in Alternative 2, the modeling, analysis, and findings would also apply to Alternative 3 because the difference in lift alignments between the two projects would not have an impact on traffic and vehicle use patterns between the highway and the ski area parking lots.

Traffic generated by the action alternatives is expected to have some impact on the adjacent street network. The need for an exclusive westbound to southbound left turn lane on the Mt. Rose Highway at the ski area parking lots was reviewed based on NDOT's Access Management System and Standards. It was determined that an exclusive left turn lane is not required on Mt. Rose Highway at the base area intersection based on the 45 miles per hour posted speed limit. It is recommended that any required signing, striping or traffic control improvements comply with NDOT and Washoe County requirements.

At such time that Mt. Rose Ski Tahoe seeks a NDOT right-of-way occupancy permit (following approval of proposed projects from the HTNF), it is anticipated that the traffic study may need to be reviewed and updated, as appropriate. As part of that review the following Management Requirement was identified:

- *PHS 1: An operational plan and memorandum of understanding will be developed between Mt. Rose Ski Tahoe and NDOT to define communication and operational protocols for highway maintenance and use of Atoma Area throughout the year. The operational plan will address snow removal protocols that need to be in place during and after storm events to ensure that NDOT is able to perform highway maintenance activities without compromising skier safety. These protocols may include capping and stacking/removing snow and use of trucks, dump trucks and plows rather than blowers, to minimize potential interaction with ski area operations. In addition, a discussion of coordinating with Mt. Rose Ski Tahoe snowcat drivers in emergency situations would likely be included in the plan.*

3.1.2.2 Climate Change and Air Quality

There would be an increase in greenhouse gas (GHG) emissions associated with additional vehicular trip generation, project construction, and grooming. Therefore, GHG emissions were considered in proportion to the nature and scope of the action alternatives, including the potential to either affect, or be affected by, climate change. Current guidance for addressing climate change in NEPA documents is provided below.

Council on Environmental Quality Guidance on Addressing Climate Change in National Environmental Policy Act

On August 1, 2016, the Council on Environmental Quality (CEQ) issued Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews.[17] The guidance directs agencies to consider: (1) the potential effects of a proposed action on climate change as indicated by assessing GHG emissions; and (2) the effects of climate change on a proposed action and its environmental impacts. GHG emissions were considered in proportion to the nature and scope of the action alternatives including the potential to either affect, or be affected by, climate change.

[17] CEQ, 2016

A carbon dioxide equivalent ("CO2e") emissions screening model was used to estimate the amount of possible annual emissions from the action alternatives.[18] The model analyzes annual CO2e emissions from new facilities, energy use for snowmaking, energy use for lifts, passenger vehicles related to increased visitation, the loss of carbon sequestration resulting from tree removal in the forest, and mountain operations such as grooming and snowmobile use. Short-term (non-annual) CO2e emissions resulting from project construction were also analyzed.

The model indicates that up to 700 metric tons of annual CO2e emissions would be generated in relation to operation of the proposed projects. Specifically related to construction of proposed projects, the model estimates up to 600 metric tons of short-term (non-annual) CO2e emissions. Therefore, due to the limited amount of possible emissions from the action alternatives, a detailed analysis and consideration of GHG emissions is not included in this FEIS.

In addition to an evaluation of the potential contribution of the action alternatives to climate change, the proposed projects were considered in the context of adaption of ski area operations to ongoing climate change. In Nevada, climate change is expected to affect temperatures as well as weather patterns such as type, frequency and intensity of moisture regimes.[19] Average surface air temperatures are projected to rise between 5.5°F and 9.5°F by 2070 to 2099 under current growth rates of global GHG emissions. Precipitation models for the region are less certain than temperature models, but most consistently indicate that reduced winter and spring precipitation may occur, and that the timing may change.[20] The ski area receives most of its precipitation in the winter months, and a warming environment could raise the elevation of snow pack, and result in reduced spring snowmelt and changes in the amount and timing of winter runoff. This will likely have effects on industries that are dependent on precipitation (both rain and snow) for their viability, such as ski areas.

With warmer, drier conditions, ski resorts that are located at higher elevations, like Mt. Rose Ski Tahoe, are at an advantage. Snowmaking capacity is no longer an amenity in the ski industry, but is a necessity to provide resilience in the face of future variability in precipitation and rising temperatures. Mt. Rose Ski Tahoe currently holds adequate water rights to supply both the existing and proposed snowmaking coverage areas. The proposed water tank would be filled during peak conditions of precipitation, allowing for maximum flexibility in operations to take advantage of future fluctuations in temperature and precipitation. Therefore, because the action alternatives are not anticipated to be substantially impacted by climate change, a detailed analysis of the impact of climate change on the action alternatives is not included in this FEIS.

In addition to GHG pollutant emissions, particulate matter in the air from ground disturbance can also affect air quality. The following Management Requirements would minimize potential short impacts to air quality during and immediately after construction:

- *AQ 1: Site improvements will be installed promptly in order to reduce dust emissions. The area disturbed by clearing, earth moving, or excavation activities will be kept to a minimum at all times, allowing improvements to be implemented in sections.*

- *AQ 2: All areas subject to ground disturbance will be watered as needed to control dust.*

[18] The model draws upon established information, tools and methodologies from the Environmental Protection Agency and other sources to assess the potential impact of proposed actions. A full description of the model methodologies and assumptions is contained in the Project Record.

[19] EPA, 2015

[20] Melillo et al., 2014

- *AQ 3: A dust abatement plan will be prepared to reduce fugitive dust emissions.*
- *AQ 4: In order to avoid health and safety issues during construction, excavation and grading activities will be suspended when instantaneous gusts of wind in excess of 50 miles per hour are reported, and visible dust persist.*

Since short-term impacts are expected to be small and can be mitigated with the above Management Requirements, and because no substantial air quality impacts are expected in the long term from the action alternatives, air quality has been dismissed from detailed analysis in this FEIS.

3.1.2.3 Environmental Justice

In 1994 President Clinton issued Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* to ensure such populations are not subject to disproportionately high levels of environmental risk.[21] Executive Order 12898 provides that "each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." Executive Order 12898 makes it clear that its provisions apply fully to programs involving Native Americans.

The 2017 census data was reviewed for Washoe County. Racial diversity in the community is approximately 63 percent white, 25 percent Hispanic or Latino, 6 percent Asian. Other races contribute approximately 4 percent or less to the population, and include American Indian and Alaska Native, Black or African American, Native Hawaiian and Other Pacific Islander.

The median household income (in 2016 dollars) in Washoe County from 2012 to 2016 was 54,955 with approximately 12.5 percent of people in the county living in poverty as defined by the Census Bureau and Office of Management and Budget's.

There are no minority populations or low-income populations identified within any of the U.S. Census Bureau census block areas that would be affected by the proposed action alternatives. Minority populations and low income populations were evaluated in accordance with the criteria and direction provided by the U.S. Environmental Protection Agency (USEPA) in *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses* (1998).

3.1.3 Cumulative Effects

Cumulative effects are the result of the incremental direct and indirect effects of any action when added to other past, present, and reasonably foreseeable future actions, and can result from individually minor but collectively major actions taking place over a period of time.

The existing conditions of the project area, as described in the Affected Environment section of each resource reflect past and present management actions of Mt. Rose Ski Tahoe's current SUP area and the within the Atoma Area. Additional past, present and reasonably foreseeable future actions considered for their potential to affect the conditions of project area include:

- The 2008 Atoma Insect Salvage and Fuels Reduction project

[21] 59 Federal Register 7629; *Disproportionately* is a generic term used to define the adverse effects of environmental actions that burden minority and/or low income populations at a higher rate than the general public.

- Mt. Rose Ski Tahoe 2010 MDP Addendum
- Private Land Development within and adjacent to the project area

The potential of these past, present, and reasonably foreseeable actions to cumulatively impact the resources analyzed in this FEIS was considered for each resource. However, the spatial and temporal scope defined for each resource's cumulative effects analysis limits the projects that were considered on resource-by-resource basis.

3.2 Recreation

3.2.1 Scope of the Analysis

The spatial scope of this recreation analysis focuses on recreational opportunities available within, and adjacent to, NFS and private land that comprise Mt. Rose Ski Tahoe, the Atoma Area and the 3,446 acres of NFS land acquired through the Galena Resort Land Exchange.

This analysis extends through the future of the Mt. Rose Ski Tahoe SUP and the Forest Plan. NFS land in the Atoma Area and throughout the Galena Resort Land Exchange parcel offer a variety of dispersed recreation opportunities.

3.2.2 Affected Environment

The ski area is accessed via the Mt. Rose Highway as it traverses the mountains between Washoe Valley and Incline Village, Nevada. The Mt. Rose Highway serves as a popular route for sightseers and recreational users alike. Along the Mt. Rose Highway, numerous trailheads, recreation areas, and public lands serve as destinations for hiking, mountain biking, camping, skiing, snowshoeing, and other dispersed recreational activities. Mt. Rose Ski Tahoe serves as a local Alpine skiing destination offering a developed recreation opportunity in the winter.

Slide Mountain (the location of Mt. Rose Ski Tahoe) first began to attract local skiers and recreationalists in the 1930s, well before the developed ski area was established. Originally called the Reno Ski Bowl, Mt. Rose Ski Tahoe opened in 1964 and has provided local skiers with lift-served ski terrain ever since. Other ski areas, including a Nordic center directly across the Mt. Rose Highway from Mt. Rose Ski Tahoe in the Atoma Area, have come and gone. Sky Tavern, a member-run organization owned by the City of Reno, remains the only other developed ski area in the immediate vicinity.

Land acquired through the Galena Resort Land Exchange is located on the north and south side of the Mt. Rose Highway surrounding Mt. Rose Ski Tahoe. Because of the proximity of this land to Reno and the Mt. Rose Highway, dispersed recreation such as backcountry skiing and hiking is popular throughout the 3,446 acres incorporated into the NFS. Prior to 1994, public use had been precluded throughout the private parcel. The opportunity for solitude and primitive recreation is impacted by the presence of Mt. Rose Highway, but the integrity of the area north of the power line (shown in Figure 6) is currently largely intact and use is similar to wilderness (refer to the Section 3.3).[22]

Section 3.2.2.1 presents recreation within the SUP area. Section 3.2.2.2 addresses recreation on surrounding NFS land.

[22] USDA Forest Service, 2006a

3.2.2.1 Recreation in the Mt. Rose Ski Tahoe Special Use Permit Area

The Mt. Rose Ski Tahoe visitors are predominantly day skiers from the Reno and Carson City area, and also from the Lake Tahoe area. Because there is no overnight lodging at the ski area, destination visitors make up a small portion of Mt. Rose Ski Tahoe's skier market. As a resort that primarily attracts day skiers, Mt. Rose Ski Tahoe does a major portion of its business during weekends and holiday periods.

Snowfall and weather conditions have a significant impact on the visitation at any ski area, and Mt. Rose Ski Tahoe is no exception. The Lake Tahoe region has experienced inconsistent weather in the past few seasons. Thus, snowmaking becomes a critical factor that makes the difference between an average year and a poor year in terms of annual visitation and revenues. However, the number of days that Mt. Rose Ski Tahoe operates in a season does not always reflect annual snowfall, as wind can often close the ski area for a day.

As is evidenced in Table 5, annual visitation fluctuates. This fluctuation is due to variable weather and snow conditions. Annual skier visitation at Mt. Rose Ski Tahoe averaged approximately 208,356 visits between the 2003/04 and 2014/15 seasons, with the 2004/05 season reaching a high point of 260,080 skiers.

Table 5. Annual Visitation at Mt. Rose Ski Tahoe

Season	Annual Visitation
2014/15	199,461
2013/14	160,541
2012/13	224,705
2011/12	147,423
2010/11	218,906
2009/10	226,263
2008/09	216,496
2007/08	202,302
2006/07	179,785
2005/06	257,012
2004/05	260,080
2003/04	206,769
Average	*208,356*

Lift and Trail Network

To determine the optimum level of daily utilization for a resort—one that facilitates a pleasant recreational experience without overburdening the resort's infrastructure—mountain planners have developed a calculation based on a comparison of uphill capacity (i.e., chairlifts) to downhill vertical skiing demand (i.e., trails) called Comfortable Carrying Capacity (CCC). *This is a planning figure only and does not represent a regulatory cap on visitation*. Based on its existing lift and trail network, the CCC for Mt. Rose Ski Tahoe is currently 4,690 guests per day; however,

peak days throughout the season can exceed the CCC by as much as 25 percent.[23] Exceeding the CCC on some peak days is generally an acceptable situation.

Mt. Rose Ski Tahoe's lift network currently consists of eight lifts: two high-speed, detachable six-person chairlifts; two fixed-grip quad chairlifts; two fixed-grip triple chairlifts; and two surface lifts. These lifts provide access to approximately 445 acres of developed trails, and 230 acres of natural openings and tree skiing areas between the developed runs. In addition, open bowls and chutes may also be accessed from the existing lift network, when snow conditions are favorable.

Due to the rugged topography throughout the ski area, Mt. Rose Ski Tahoe is well known for its abundance of advanced and expert terrain—approximately 300 acres of traditional cleared terrain and 230 acres of natural openings and tree skiing. Conversely, due to the natural, steep terrain gradients across NFS land and private land that comprise Mt. Rose Ski Tahoe, it struggles to provide a full range of high-quality terrain for lower-ability level (beginner, novice, and low-intermediate) guests—approximately 150 acres are available.

Currently, lower-ability level terrain at Mt. Rose Ski Tahoe is concentrated on the frontside of the existing ski area served by the Galena Chairlift and the new Wizard Chairlift. Skiers progress directly from the conveyor lift near the base area to skiing on the top of the mountain, which requires a considerable jump in ability. Additionally, the recreational experience provided for lower-ability level skiers at Mt. Rose Ski Tahoe is limited to wide open traditional trails. The extent and variety of terrain (an important factor in visitor satisfaction) is insufficient for this user group. Further, because all of the lower-ability level terrain is serviced by these two chairlifts (use of the surface lifts is generally for teaching first time skiers) terrain density can be higher than ideal and longer lift lines occur at peak times and on peak days.

Additionally, because of the location of the lower-ability level terrain, several advanced trails that are served by the Northwest Magnum 6 and Lakeview Chairlifts merge with lower-ability level terrain. This results in advanced-intermediate and expert skiers descending through lower-ability level terrain on their way to the base area. Mixing of beginner and advanced skiers impacts the experience for all user groups and is inconsistent with the type of recreational offering that the ski area strives to provide. Although the new Wizard terrain provided an additional 2.5 acres of separate beginner trails, there is still need for lower-ability level terrain that is separate from the main thoroughfare on and around *Easy Street* and *Galena*. Intermediate, advanced, and expert terrain is more widely distributed throughout the ski area.

Due to the limited lower-ability level terrain, the ski area is unable to provide the appropriate environment for a learning progression—beginner, novice, and low-intermediate, which would improve its ability to meet the needs and expectations of guests. Existing terrain distribution is detailed in Table 6.

[23] Mt. Rose Ski Tahoe, 2010. CCC is also known as "skiers-at-one-time" (SAOT).

Table 6. Existing Terrain Distribution		
Skier Ability Level	Trail Area (acres)	Existing Skier Distribution (%)
Beginner	2.4	2
Novice	52.3	26
Intermediate	95.2	38
Advanced/Expert	295.1	35
Total	444.9	100

Guest Services

Mt. Rose Ski Tahoe offers all guest services out of two base areas on private land: the Winters Creek Lodge at Slide Mountain, and the Main Lodge on the Mt. Rose Ski Tahoe side. Both lodges provide parking, ticketing, restrooms, ski patrol space, and dining options. The Main Lodge base area additionally offers public lockers, rentals and repairs, retail sales, a bar and lounge, ski school space, administration space, and employee lockers. No on-mountain guest service facilities currently exist at Mt. Rose Ski Tahoe.

Snowmaking

Mt. Rose Ski Tahoe covers approximately 86 acres of terrain with snowmaking. The majority of the trails accessed by the Ponderosa, Galena, and Lakeview Chairlifts have snowmaking capability, in addition to *Kit Carson Traverse* and *Upper Ramsey's* off of the Northwest Magnum 6 Chairlift (refer to Figure 1).

Over the last six years, Mt. Rose Ski Tahoe has used an average of 55 acre feet of water annually for snowmaking. During low snow years, annual snowmaking water use rises to compensate for below-average natural snow.[24] Water use remains far below the annual limit of over 386 acre feet per year, for which Mt. Rose Ski Tahoe has water rights. Annual water use for snowmaking depends on natural snow levels and seasonal weather patterns.

An in-depth assessment of snowmaking infrastructure and capacities uncovered inefficiencies in the ski area's snowmaking system. Specifically, the current snowmaking infrastructure has a "throughput capacity" (i.e., the total volume of water that can be handled by the system at any one time) of approximately 1,800 gpm, whereas the ski area's primary water supply, which is drawn from wells located on private land and pumped through the existing snowmaking system, only produces water at a rate of 550 gpm. Water is stored in a 500,000-gallon tank located above the *Galena* trail. When snowmaking operations are maximized, the tank becomes depleted quickly and does not fill fast enough to meet demands of the system. This lack of water storage (referred to as "buffering capacity") constrains the ski area's ability to maximize the amount of snow produced during optimal snowmaking conditions and temperatures. Currently Mt. Rose Ski Tahoe has approval to make snow on *Bruce's, Big Bonanza, High Traverse, Lakeside* trail, the area from the bottom of *Bonanza* to Zephyr Chairlift, *Sunrise Bowl* and *Sunrise Traverse*, but due to the limited capacity of the snowmaking storage, the ski area does not have adequate water

[24] Peak levels of water use for snowmaking were reached during the 2013/14 season when 92 acre feet of water was used; however, that amount is still only 24 percent of the allowable water use based on Mt. Rose Ski Tahoe water rights.

storage to make snow on these trails. In addition, the ski area plans to make snow on the Wizard trails to improve snow consistency for beginners in that area; however, making snow in this area may have to be balanced with reduced snow on other areas with Mt. Rose Ski Tahoe's existing snow storage capacity.

3.2.2.2 Recreation in Surrounding National Forest System Land

The area surrounding Mt. Rose Ski Tahoe is popular for recreational use. Recreational activities throughout much of the year include hiking, mountain biking, camping, and viewing scenery and wildlife. Located just over 2 miles northwest of Mt. Rose Ski Tahoe is the Sky Tavern ski area, a non-profit ski area that caters in learn-to-ski and kid's programs during the winter. Nordic skiing, snowshoeing, and backcountry skiing are popular in the area.

On nearby NFS land, including the 3,446 acres acquired through the 1994 Galena Resort Land Exchange, trails provide numerous hiking opportunities, including the Tahoe Rim Trail and Tahoe Meadows Interpretive Trail, which share a trailhead at Tahoe Meadows, and the Mt. Rose Trail with a trailhead at the summit of the Mt. Rose Highway. Also near the summit area is the Mount Rose Campground, which provides the only designated camping in the area. Mount Rose Campground is open seasonally, offering tent and trailer camping.

Recreation in the Atoma Area

The Atoma Area, located on NFS land to the north of Mt. Rose Ski Tahoe, is used to access dispersed recreation opportunities on the HTNF during all seasons. Prior to 1994, the Atoma Area was private land, but it was acquired by the Forest Service in a land exchange. During the summer, people park in the Atoma Area parking lot, but the lot is typically covered in snow during the winter. Therefore, people often park in Mt. Rose Ski Tahoe's skier lots and cross the Mt. Rose Highway or park along road shoulders closer to the Mt. Rose Summit for dispersed recreation such as backcountry skiing.

A Nordic skiing facility occupied the Atoma Area in the early 1980s, when the Atoma Area was situated on private land. This included a small lodge, a parking area, and groomed trails. The Atoma building and parking area remain today; however, there are no managed Nordic trails associated with it.

Although use data for the Atoma Area is not available, anecdotal evidence suggests that it receives relatively low levels of dispersed recreational use throughout the year. The Atoma Area offers convenient access to backcountry skiing terrain to the west (as well as Nordic skiing and snowshoeing) for those with equipment and skills. An uphill access plan has been created to ensure that recreation opportunities for both ticketed and non-ticketed visitors to Mt. Rose Ski Tahoe can coexist, particularly in the Atoma Area.

Hiking, mountain biking, and dispersed camping occur throughout the Atoma Area in the summer although no official system trails exist in the immediate area. Camping in the summer and fall occurs along old roadways that are not maintained by the Forest Service, and there are no designated campsites. Because of easy access, impacts from camping and day use are evident. Furthermore, authorized tree cutting for fuelwood, Christmas trees, insect salvage, and fuels reduction has occurred, primarily on the western side of the Atoma Area, resulting in exposed stumps and slash.

3.2.3 Direct and Indirect Environmental Consequences

3.2.3.1 Alternative 1 – No Action

Recreation in the Mt. Rose Ski Tahoe Special Use Permit Area

Under the No Action Alternative, Mt. Rose Ski Tahoe would maintain its current recreational offerings within the existing SUP boundary (the current extent of the SUP boundary would be maintained) which are limited to winter use. The Atoma Area and land acquired in the Galena Resort Land Exchange would continue to see dispersed recreation primarily in the form of backcountry skiing in the winter and hiking use in the summer.

Under the No Action Alternative, the Atoma Area would not be developed to address the need for increased terrain variety and an improved learning from beginner to low intermediate ability level terrain. Additionally, mixing of beginner and advanced skiers would continue to impact skiers of all ability levels.

Without the additional water tank, which would be constructed within the existing SUP boundary, snowmaking operations would continue to be insufficient during some periods of low natural snow, particularly when preparing for key early season visitation times such as Christmas and New Year's. Mt. Rose Ski Tahoe would continue to have excess water rights, that they could not capitalize on due to inadequate water storage. These snowmaking water issues are most noticeable on *Bruce's, Big Bonanza, High Traverse, Lakeside* trail, the area from the bottom of *Bonanza* to Zephyr Chairlift, *Sunrise Bowl* and *Sunrise Traverse*, all of which have been approved for snowmaking, but no infrastructure has been installed in these areas because adequate water capacity does not exist to provide snowmaking on these trails. Because snowmaking does not occur on this terrain, it does not open until after New Year's in most seasons. No additional snowmaking would be applied in the Atoma Area under the No Action Alternative.

Recreation in Surrounding National Forest System Land

Dispersed summer and winter recreation in the Atoma Area would likely remain the same as described in the Affected Environment; the area is popular with Reno residents and largely consists of backcountry skiing and hiking use. As the population of Reno increases, so might the use of NFS land in this area for dispersed recreation, due to the proximity to Reno and the Mt. Rose Highway.

Without the Forest Plan Amendment, the opportunity for dispersed recreation in the area may change, as commercial development would continue to be an allowable use of the 3,446 acres acquired through the Galena Resort Land Exchange. However, proposed commercial uses on NFS land would require a NEPA analysis, which would include public involvement and an analysis of resource impacts resulting from any future proposed actions.

3.2.3.2 Alternative 2

Under Alternative 2, development of the Atoma Area would have the potential to improve the recreation experience at Mt. Rose Ski Tahoe by adding a lift and trails on NFS land in the Atoma Area.

Recreation in the Mt. Rose Ski Tahoe SUP Area

This section presents impacts to recreation within the proposed Mt. Rose Ski Tahoe SUP area. The analysis of recreation on surrounding NFS land, including dispersed recreation in the Atoma Area, follows under a separate heading.

Lift and Trail Network

Access To and Return From the Atoma Area

Under the Proposed Action, the SUP boundary would be extended to include the Atoma Area and the terrain would be connected to Mt. Rose Ski Tahoe by a new ski trail, bridge, and chairlift. With addition of the new chairlift accommodating 2,000 people per hour, the comfortable carrying capacity would increase to 5,440 guests per day.

To access the Atoma Area from the existing base area, a skier would ride the Wizard Chairlift to *Merlin* trail, descend *Merlin* to a new connector trail heading north, ski over Mt. Rose Highway on a skier bridge, and then enter the Atoma Area terrain. Under Alternative 2, skiers would ski over the proposed connector trail and bridge across the Mt. Rose Highway on every lap. For some skiers, the connector trail and bridge would add a unique and enjoyable experience to the skiing the Atoma Area terrain. For other visitors, because of flat terrain typical of connector trails and skier bridges, skiing this connection to the Atoma Area terrain repeatedly (approximately 3 to 8 times daily) would detract from the overall recreation experience in this area.

At the bottom of the Atoma Area terrain, skiers would load a high-speed quad chairlift which would take them over the Atoma Area, across the Mt. Rose Highway and Mt. Rose Ski Tahoe parking lots and back near the top terminal of the Wizard Chairlift. As described in the Proposed Action, the Atoma Chairlift would have certain safety features to improve the feeling of security while crossing the Mt. Rose Highway and parking lots including an automatically closing restraint bar and a net under the chairlift at the Mt. Rose Highway crossing. Despite these safety features, some people riding the chairlift may be intimidated by crossing over the highway and parking lots in an open chairlift (therefore reducing their trips to the Atoma Area to fewer times, approximately 1 to 3 times), which could detract from their overall experience. Further, if an object is dropped from the chairlift onto the net or into the parking lot, retrieval would be inconvenient, entailing either having a ski area employee retrieve the object from the net, or having to walk through the parking lots to retrieve the fallen object. Although the net would be designed to catch objects that could fall from the chairlift, if an object was too small to be caught, or if something was dropped over the parking lots, the object could cause damage to vehicles or persons traveling below the chairlift.

Atoma Area Terrain

With the expansion of the SUP area, Mt. Rose Ski Tahoe would add approximately 26 acres of lower-ability level terrain (novice and low-intermediate) to the developed terrain network, for a total of approximately 176 acres of trails at the ski area. In addition, the treed areas between the cleared trails in the Atoma Area would likely be popular with intermediate skiers, because these treed portions of the Atoma Area would provide unimproved tree skiing opportunities. This is a terrain type that is currently unavailable to lower-ability level skiers at Mt. Rose Ski Tahoe.

The terrain provided in the Atoma Area would be a new experience for lower-ability level skiers at Mt. Rose Ski Tahoe. The low angle terrain found across this area would provide an appropriate setting for novice skiers to learn to regulate speed and control (refer to Table 7), on low density

trails. Additionally, this terrain is less intimidating than riding the chairlift to the top of the mountain, where trails are shared with upper ability level skiers.

Table 7. Alternative 2 Terrain Distribution

Skier Ability Level	Trail Area (acres)	Skier Distribution (%)
Beginner	2.4	2
Novice	78.1	34
Intermediate	97.2	34
Expert	295.1	30
Total	472.8	100

The trails in the Atoma Area would also provide a unique skiing experience at the ski area. Although the trails in the Wizard area have been highly popular, the Atoma Area is designed to provide the next step in the learning progression. These trails are designed to be narrower (although still skill level appropriate) than the lower-ability level trails located within the existing ski area, with a more forested and natural feel. The number of trails is designed to provide a lower density skier experience, rather than fewer wide trails. When combined with the open forests across the western portion of the Atoma Area, these trails would enhance the terrain variety and improve the lower-ability level experience at Mt. Rose Ski Tahoe. This spectrum of terrain in one location within the ski area offers a valuable terrain learning progression to visitors. Accommodating the need for learning terrain is a high priority for Mt. Rose Ski Tahoe, whose nationally-recognized teaching program, including the Rosebuds program, is a major contributor to the success of Mt. Rose Ski Tahoe and is valued by the surrounding community.

A new lift and dedicated lower-ability level terrain would better separate users by ability level and improve distribution of users across the ski area, both of which would increase skier safety. In the Atoma Area, novice and intermediate ability level skiers would learn while surrounded by other skiers that are closer to their own pace. Additionally, by offering an option for lower-ability skiers outside of the main trails that connect to the base area, density on terrain served by the Galena Chairlift would decrease. This would improve the distribution of skiers, the recreation experience, and safety for all ability levels on those trails. Improving skier distribution would reduce lift line wait times on the Galena Chairlift at peak times. Mt. Rose Ski Tahoe strives to provide adequate terrain quantity and variety, and separate areas for different ability levels to meet the needs of the popular Rose Buds program and all of their beginner ability level guests.

Beyond the quantifiable aspects of this recreation analysis (i.e., terrain quantity, quality and ability level) incorporating the proposed portion of the Atoma Area into the ski area's lift and trail network would capitalize on this area's unique, secluded setting. Giving novice through low-intermediates and families "a place of their own," away from advanced skiers at the main ski area, would contribute to a positive experience and improved learning progression.

Guest Services

Under Alternative 2, once the Atoma Area opens, a small guest services facility would be constructed adjacent to the top terminal of the Atoma Chairlift. This facility would be on private land but is intended to complement the guest experience in the Atoma Area by providing

restrooms, limited food service, and seating. The location of this building would allow visitors to stay within the Atoma terrain for services. Additional services (e.g., ski school and retail) would continue to be provided at the base area.

Snowmaking

Development of additional snowmaking water storage in the form of a 5-million gallon tank would serve two purposes. First, it would enable Mt. Rose Ski Tahoe to provide snowmaking coverage on existing terrain in order to meet the needs of visitors during the early season and periods of limited snow. Second, it would accommodate snowmaking coverage on approximately 20 acres of new terrain in the Atoma Area (this accounts for terrain providing access to, and throughout, the Atoma Area). Both of these purposes would benefit skiers of all ability levels at Mt. Rose Ski Tahoe by improving the overall quality of terrain, particularly in the early season and during periods of low natural snowfall. The Point of Use (identifying the use area in the permit) would have to be modified with the State of Nevada to include the Atoma Area.

Recreation on Surrounding National Forest System Land

Under Alternative 2, the Forest Plan would be amended to preclude commercial development on the 3,446 acres acquired through the 1994 Galena Resort Land Exchange. Commercial developments could include (but are not limited to) resorts, stores, buildings, structures, facilities, and organizational camps. Currently, these lands primarily include trails and hiking opportunities, as well as some designated camping. The Forest Plan Amendment would likely maintain the current dispersed recreational use throughout the area.

Recreation in the Atoma Area

As part of the Proposed Action, dispersed users of the Atoma Area and adjacent NFS land would be allowed to use existing parking facilities at Mt. Rose Ski Tahoe (Parking Lot 7).

The following Management Requirement would ensure the adequate use of the existing parking facilities:

- *RT 1: Designate Mt. Rose Ski Tahoe's parking lot #7 as a trailhead for winter and summer access for dispersed recreation activities. The Forest Service will require that six parking spaces will be reserved for dispersed recreation users. This will be included in the annual operating plan. No parking fees will be charged.*

Dispersed recreational users would be encouraged to cross over the Mt. Rose Highway on the proposed skier bridge throughout the year, which would provide access to NFS land and the Atoma Area for backcountry users without crossing the Mt. Rose Highway.

Those who currently use the Atoma Area for dispersed winter recreation would lose some opportunities under the Proposed Action. Mixing dispersed recreational activities (e.g., Nordic skiing and snowshoeing) with developed skiing would require effort from all parties and would result in the need for a clear access corridor, as identified in Figure 8. Mt. Rose Ski Tahoe has committed to keeping the Atoma Area open to dispersed recreationists to access adjacent NFS backcountry areas. After crossing the proposed skier bridge over the Mt. Rose Highway, designated routes and signage would direct dispersed recreationists to access adjacent backcountry terrain. A corridor has been designated along the western boundary of the Atoma Area to provide a connection from Sky Tavern to the upper Galena drainage for cross-country skiing and snowshoeing (refer to Figure 3). The area would remain closed to motorized winter travel.

The following Management Requirements were designed to minimize impacts to dispersed recreation opportunities:

- *RT 2: The proposed skier bridge will be open year-round, as operations allow, to provide access across the Mt. Rose Highway into the Atoma Area for dispersed recreationists. The Atoma Area will continue to be accessible to summer dispersed recreation users.*

- *RT 3: Mt. Rose Ski Tahoe will identify an access corridor for the Atoma Area. A designated winter route and signage will direct dispersed recreationists to adjacent backcountry terrain. The access corridor will provide connection from Sky Tavern to the upper Galena drainage for cross-country skiing and snowshoeing. The uphill access plan will be available on the Mt. Rose Ski Tahoe website.*

Although construction, restoration, and routine maintenance activities by Mt. Rose Ski Tahoe would occur within the Atoma Area during the summer months, there would be no restrictions on dispersed hiking and mountain biking. Camping and tree cutting would not be permitted. No changes to other uses on adjacent NFS land are proposed or would occur as a result of implementation of Alternative 2.

- *RT 4: The Atoma Area will continue to remain closed to motorized winter travel per Forest Order 04-17-02-11*.

The Atoma Area would continue to be accessible to summer dispersed recreation users.

3.2.3.3 Alternative 3

All elements of Alternative 3 would be the same as described for Alternative 2, except the terrain would be serviced by two lifts instead of one (resulting in a changed comfortable carrying capacity), and there would be a restroom facility built within the Atoma Area. The SUP boundary adjustment and associated Atoma Area developments including the bridge and snowmaking, the water tank and the Forest Plan Amendment would all be identical to those described for Alternative 2.

Differences in project elements and the associated analysis are discussed below.

Recreation in the Mt. Rose Ski Tahoe Special Use Permit Area

Lift and Trail Network

Under Alternative 3, the Atoma Area would be serviced by two lifts—one providing access within the terrain north of the Mt. Rose Highway, and the other providing the return trip from the Atoma Area when a visitor wants to leave that terrain.

For this alternative, the Atoma Area would have the same access from the base area as described in Alternative 2, riding the Wizard Chairlift to *Merlin* trail, descending *Merlin* to a connector trail heading north, skiing over Mt. Rose Highway on a skier bridge and then entering the Atoma Area terrain. However, under Alternative 3, visitors would remain north of the Mt. Rose Highway for the duration of their use of the Atoma terrain by riding Chairlift A, which is entirely on the north side of the highway. Therefore, skiers would only ski the connector trail and bridge when entering the Atoma Area from the main ski area. When a visitor is finished in the Atoma Area, they would ride Chairlift B over the skier bridge and Mt. Rose Highway to near the top of the Wizard Chairlift. If visitors wanted to ski the connector trail and bridge more often, they could choose to ride Chairlift B out of the area and ski back in. Alternatively, those visitors that do not enjoy

navigating the low grades of the connector trail and bridge would only have to do it once, upon entering the terrain from the main ski area.

Though the number of chairlifts and configuration is different in Alternative 3 compared to Alternative 2, the two chairlifts would provide access to the same terrain as is described for Alternative 2.

Guest Services

Under Alternative 3, a restroom facility would be developed on the north side of the Mt. Rose Highway within the Atoma Area. The location of this building would be accessible to visitors riding both Atoma Chairlifts, near the top terminal of Chairlift A and the bottom terminal of Chairlift B. and would allow visitors to stay on the north side of the Mt. Rose Highway for restroom facilities. For additional services (e.g., food, ski school and retail) visitors would ride Chairlift B out of the Atoma Area and ski down to the base area. Having a restroom facility that is only one lift ride away will meet the most common need for visitors, particularly younger learners.

3.2.4 Cumulative Effects

3.2.4.1 Temporal and Spatial Extent of Analysis

The spatial extent for this cumulative effect analysis includes NFS land surrounding Mt. Rose Ski Tahoe's current and proposed SUP area and extends to lands surrounding the 3,446 acres included in the Forest Plan Amendment. The temporal bounds for this cumulative effect analysis of recreational resources extends from Mt. Rose Ski Tahoe's inception as a ski area in 1964, through the foreseeable future in which Mt. Rose Ski Tahoe can be expected to operate and for the duration of the Forest Plan.

3.2.4.2 Past, Present, and Reasonably Foreseeable Future Actions

The following projects could have cumulative impacts on recreation resources and are analyzed below:

- Mt. Rose Ski Tahoe 2010 MDP Addendum

Mt. Rose Ski Tahoe Master Development Plan

Cumulatively, projects from Mt. Rose Ski Tahoe's 2010 MDP Addendum have potential to affect the recreation experience on NFS land within, and adjacent to, Mt. Rose Ski Tahoe's current and proposed SUP area. Although the Proposed Action includes a multitude of projects that were accepted in the 2010 MDP Addendum, there are additional actions, some which have been unanalyzed and others that have been approved but unimplemented, which are capable of cumulatively affecting the recreation experience on NFS land within and adjacent to Mt. Rose Ski Tahoe.

Historic development at Mt. Rose Ski Tahoe has created the Alpine skiing experience for which the ski area is known for today. Proposed projects are directed toward Mt. Rose Ski Tahoe's lower-level guests, leading to a more well-rounded recreational experience. When the Proposed Action is considered cumulatively with what Mt. Rose Ski Tahoe has already achieved, the recreational experience would be improved. Future projects identified in Mt. Rose Ski Tahoe's 2010 MDP Addendum will likely align with the trends of historical development on NFS land, increasing opportunities for developed recreation.

The currently Proposed Action is not anticipated to impact the ability of recreationists to access nearby hiking opportunities, such as the Tahoe Rim Trail, Tahoe Meadows Interpretive Trail, and the Mt. Rose Trail. The Mount Rose Campground, at the summit of the Mt. Rose Highway, would continue to provide seasonal tent and trailer camping.

Analysis and incorporation of the Chutes into Mt. Rose Ski Tahoe's SUP area in 2003 was the last major change that affected (improved) the recreational character at the ski area. In particular, this improved the recreational experience for the ski area's advanced and expert-level guests. However, Mt. Rose Ski Tahoe's 2010 MDP Addendum identifies several projects that were previously approved in the April 2003 Decision Notice that have not been completed yet. Should Mt. Rose Ski Tahoe wish to pursue implementation of these previously-approved projects, the ski area would need to coordinate with the HTNF to ensure that no changes in the regulatory or physical environment have occurred that warrant additional consideration.

3.2.5 Irreversible and Irretrievable Commitments of Resources

Although NFS land in the Atoma Area that are currently used for summer and winter dispersed recreation would be converted to lift-served skiing under the Proposed Action, dispersed recreation activities like Nordic skiing, snow shoeing, backcountry skiing, and hiking would still be permitted in the surrounding NFS land. This would not represent an irretrievable commitment of the dispersed recreation resource. Additionally, the vegetation and ground disturbance that would result from chairlift installation and trail construction and other developments included in the Proposed Action could be revegetated and reclaimed; therefore, the Proposed Action would not result in an irreversible commitment of resources.

3.3 Inventoried Roadless Areas

3.3.1 Scope of the Analysis

The spatial scope of this roadless analysis focuses on:

- The 37.5 acres of the proposed Atoma Area SUP boundary expansion overlapped by the Rose-Galena IRA, and
- The 2,253 acres of the Rose-Galena IRA that were acquired through the Galena Resort Land Exchange and are, therefore, included in the Forest Plan Amendment.

Approximately one-half of the proposed Atoma Area trails would be within the IRA. None of the *existing* Mt. Rose Ski Tahoe SUP boundary is within the IRA.

The temporal scope of this analysis begins with the 2001 Roadless Rule, carries through the changes made under the 2005 Roadless Rule, and extends into the future for the duration of approximately twenty years as the foreseeable future.

This section evaluates the consequences of the proposed activities on roadless area characteristics consistent with the 2001 Roadless Rule, wilderness attributes, and other planning documents. This analysis extends from the projected implementation of the proposed projects and Forest Plan Amendment through the foreseeable future in which Mt. Rose Ski Tahoe continues to operate and Forest Service continues to manage land acquired through the Galena Resort Land Exchange. Figures 6 and 7 depict the extent of the Rose-Galena IRA in relation to the Mt. Rose Ski Tahoe

SUP area and the proposed Atoma Area expansion. Figure 16 depicts the extent of the Rose-Galena IRA in relation to the 1994 Galena Resort Land Exchange.

3.3.2 Affected Environment

3.3.2.1 Forest Service Roadless Regulation Framework

The term *roadless* is not a management designation—it is an inventory of a condition of NFS land. The direction for providing roadless area inventories is found in several places, including the Code of Federal Regulations (36 CFR § 219.17(a)), Forest Service Handbook (FSH 1909.12.7.1), and the Wilderness Act (78 Stat. 890; 16 United States Code [U.S.C.] §§ 1131–1136).

The 2001 Roadless Rule

In October 1999 President Clinton directed the Forest Service to develop, and propose for public comment, regulations that would provide appropriate, and consistent, long-term protection for IRAs. This was analyzed in the *2000 Forest Service Roadless Area Conservation Final EIS* and ultimately resulted in the 2001 Roadless Rule, which prohibited road construction, reconstruction, and timber harvest in roadless areas on approximately 58.5 million acres of public lands. The intent of the 2001 Roadless Rule was to provide lasting protection for IRAs across the NFS in the context of multiple use management.

In the preamble to the final rule, the 2001 Roadless Rule "allows timber cutting… in inventoried roadless areas… [for] trail construction or maintenance… [and] ski runs" and "construction or maintenance of ski trails and ski runs, the use of over the snow vehicles or off-highway vehicles necessary for ski area operations" under SUPs issued prior to the adoption of the 2001 Roadless Rule.[25]

Another critical element of the 2001 Roadless Rule is a prohibition, *with certain exceptions*, on two activities in all IRAs: (i) the construction and reconstruction of roads, and (ii) timber harvesting, regardless of the management direction contained in forest plans.[26] Section 294.13(a) of the 2001 Roadless Rule states, "*Timber may not be cut, sold or removed in inventoried roadless areas of the National Forest System, except as provided in paragraph (b) of this section.*" Section 294.13(b) (2) states the following exception: "*The cutting, sale, or removal of timber is incidental to the implementation of management activity not otherwise prohibited by this subpart.*"

Effects to Wilderness Qualities or Attributes

Dating back to Roadless Area Review and Evaluation (RARE) I (1972) the concept of identifying roadless areas across the NFS was to assist the Agency in determining which lands are suitable for consideration for inclusion in the National Wilderness Preservation System. To be capable of wilderness designation, the area must generally: appear to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; have outstanding opportunities for solitude or a primitive and unconfined type of recreation; have at least 5,000 acres of land *or be of sufficient size as to make practicable its preservation and use in an*

[25] 36 CFR Part 294. However, new ski areas or other activities outside of existing special use permit boundaries that do not require road construction, but require timber harvest, may be allowed in inventoried roadless areas, if approved by the local Responsible Official. This is discussed in greater detail in Direct and Indirect Environmental Consequences.

[26] 36 CFR §§ 294.12 and 13

unimpaired condition; and may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.[27] The Rose-Galena IRA is 3,710 acres—well below 5,000 acres. However, because it is contiguous to the 28,000-acre Mt. Rose Wilderness Area (to the north and west), it is "of sufficient size" and is suitable for consideration for inclusion in the National Wilderness Preservation System.

As previously mentioned, the Rose-Galena IRA is bisected by an overhead power line, which effectively creates a smaller unit to the south which is well under 5,000 acres (Figure 6). South of the power line the Atoma Area has been impacted by authorized fuelwood and Christmas tree cutting, but the HTNF's 2006 assessment of wilderness potential determined that north of the power line corridor the IRA has a high capability to be managed as Wilderness. The assessment made a recommendation to redraw the IRA boundary to only include the portion north of the power line, thus removing a majority of the Atoma Area from the IRA; however, there has not been a process yet to allow for redrawing IRA boundaries.

3.3.2.2 Rose-Galena Inventoried Roadless Area

The 2001 Roadless Rule officially inventoried approximately 3,384,000 acres of IRAs within the HTNF, including the 3,710-acre Rose-Galena IRA.[28] The 3,710-acre Rose-Galena IRA is bound by the Mt. Rose Wilderness Area to the north and west, Galena Creek Regional Park to the east, and the Mt. Rose Highway to the south. It is located to the north and west of Mt. Rose Ski Tahoe across the Mt. Rose Highway (refer to Figures 7 and 16). The Rose-Galena IRA ranges in elevation from approximately 6,400 to 10,776 feet. It contains the southern and eastern faces of Mount Rose and Mount Houghton above Galena Creek and stretches to lower elevations on the eastern side of the Carson Range. The Galena Creek drainage is the most prominent geologic feature in the IRA, flowing eastward from the mountains toward the Washoe Valley.

The Rose-Galena IRA is described as steep, rough country. Opportunities for solitude and primitive recreation exist in certain portions of the IRA but are affected by its proximity to the Mt. Rose Highway. There is a moderate level of remoteness with sound from the Mt. Rose Highway being a primary consideration in the evaluation of remote qualities. Under the Recreation Opportunity Spectrum (ROS), the class of recreation setting and experience that meet wilderness standards is Primitive. A Geographic Information System (GIS) evaluation of the IRA found only 1 percent of the IRA to be Primitive and 76 percent to be Semi-Primitive Non-Motorized, with the remaining portion a mix of motorized classes. Because of adjacent development, roads and existing use levels, human encounters and evidence of human use within this IRA do not meet the ROS of Primitive (refer to the Recreation section for additional discussion of the ROS).

Effects to Wilderness Qualities or Attributes

The Forest Service uses six wilderness qualities or attributes to assess wilderness potential. In conjunction with this FEIS, a Wilderness Attribute Impact Evaluation was prepared specific to the Rose-Galena IRA. The results are summarized in the following discussion, and the worksheet is contained in the Project Record.

[27] 16 U.S.C. § 1131
[28] USDA Forest Service, 2000

Untrammeled

This quality/attribute monitors modern human activities that directly control or manipulate the components or processes of ecological systems inside wilderness. In summary, wilderness is essentially unhindered and free from modern human control or manipulation.

The 37.5-acre Atoma Area of the Rose-Galena IRA contains unofficial trails as well as remnants of roads and structures (the Forest Service Atoma building and parking area). This portion of the IRA is bisected by an overhead power line, which crosses Mt. Rose Highway between the Mt. Rose Ski Tahoe parking lots and the Atoma Area. The overhead power line follows an old road corridor on the northeastern edge of the Atoma Area. Per the HTNF's 2006 assessment of wilderness potential this effectively creates a smaller unit to the south which is well-under 5,000 acres (encompassing the Atoma Area). Fuel reductions projects that have been ongoing since their approval in 2008 have also affected the untrammeled characteristics of the area. Thus, natural conditions and processes in the Atoma Area have been altered by human forces.

The wilderness assessment made a recommendation to redraw the IRA boundary to only include the portion north of the power line, thus removing a majority of the Atoma Area from the IRA. The HTNF's 2006 assessment of wilderness potential determined that the Atoma Area south of the power line does not have capacity to be managed as wilderness. Changes to the IRA boundary are not being considered at this time.

Approximately 2,253 acres of the land acquired through the Galena Resort Land Exchange is included in the Rose-Galena IRA. The Mt. Rose IRA and the Mt. Rose Wilderness also include lands acquired through that land exchange. Portions of these lands maintain largely natural ecological systems.

Natural

This quality/attribute monitors both intended and unintended effects of modern people on ecological systems inside wilderness since the time the area was designated. In summary, wilderness ecological systems are substantially free from the effects of modern civilization.

Human presence in the Atoma Area, including old roads, trails, the power line have reduced the level of naturalness in the portion of the IRA south of the power line. In 2008 the HTNF implemented the Atoma Insect Salvage and Fuels Reduction project, which allowed the public to purchase fuelwood permits and remove dead and mountain pine beetle-infested trees for personal use across 70 acres of the Atoma Area.[29] Authorized fuelwood cutting has affected the NFS land within, and outside of, the Atoma Area, including portions of the IRA that overlap it. The purpose of the project was to improve forest health within the 70-acre project area by reducing bark beetle related tree mortality and promoting diversity. The project complied with several key circumstances to allow timber cutting: no new roads were constructed, the project aimed to reduce the risk of an uncharacteristic wildland fire, the timber is needed and appropriate for personal use, and roadless characteristics have been substantially altered in this portion of the roadless area due to construction of roads and subsequent timber harvest prior to 2001.[30] Evidence of timber harvest is evident throughout the portion of the IRA that overlaps the Atoma Area; therefore, the ecological system reflects human alteration.

[29] The Atoma Insect Salvage and Fuels Reduction project was for the fuelwood cutting, but the decision authorizes thinning of trees less than 30 inches dbh. Christmas tree cutting throughout the Atoma Area has occurred as a result.

[30] USDA Forest Service, 2008

Areas of the Galena Resort Land Exchange particularly those located within the Mt. Rose IRA and the Mt. Rose Wilderness are largely natural.

Undeveloped

This quality/attribute monitors the presence of structures, construction, habitations, and other evidence of modern human presence or occupation. In summary, wilderness is essentially without permanent improvements or modern human occupation.

The Atoma Area of the IRA exhibits evidence of human use and structures (e.g., fuelwood cutting, Christmas tree harvesting, social trails, remnants of old roads, the power line and the Atoma building). The area north of the power line, which has wilderness potential, is largely unaffected.

Areas of the Galena Resort Land Exchange particularly those located within the Mt. Rose IRA and the Mt. Rose Wilderness are undeveloped and largely natural.

Outstanding Opportunities for Solitude or a Primitive and Unconfined Type of Recreation

This quality/attribute monitors conditions that affect the opportunity for people to experience solitude or primitive, unconfined recreation in a wilderness setting, rather than monitoring visitor experiences.

As previously discussed, opportunities for solitude and primitive recreation within the IRA exist, but are impacted by the proximity to, and noise from, the Mt. Rose Highway—particularly in the Atoma Area. A GIS evaluation of the IRA for ROS classification determined that 1 percent of the IRA is *Primitive* and 76 percent is *Semi-Primitive Non-Motorized*. The definition of *Primitive* in the ROS is, *"The area is 3 miles or more from all roads and trails with motorized use and generally 5,000 acres or greater in size. The setting is essentially an unmodified natural environment with some evidence of trails. Motorized use is prohibited. The social setting provides for less than 6 parties encountered on trails and less than 3 parties visible from campsites. Capacities range from 0.5 to 1.0 RVD/acre/year. Onsite controls are extremely limited with most regulation accomplished off-site. Typical activities include hiking, horse packing, fishing, hunting and camping. The compatible VQO is preservation."* As discussed, the Rose-Galena IRA is 3,710 acres in size and is bordered on the southeast edge by the Mt. Rose Highway. The Atoma portion in particular is in close proximity to both the Mt. Rose Highway and Sky Tavern Road and currently has a small building and parking area located within the project area. In addition, a number of trails exist throughout the area adding to the modified setting. These trails are used by both hikers and mountain bikers, and portions are included as part of the Galena fest mountain bike race. The Forest Plan has assigned the VQO of *Partial Retention* within the Atoma portion of the IRA. Refer to Section 3.5 for additional discussion of appropriate sites within this VQO, but for clarity, *Partial Retention* allows for more change from natural than a VQO of retention as is stated in the ROS for primitive. The ROS would not be impacted by ski area development in the Atoma Area because adjacent development in that area already contains roads and existing use levels.

Recreational opportunities exist within the Rose-Galena IRA. Trailheads along the highway and from the nearby Galena Creek Park allow access to NFS land, including those within the IRA. Hiking trails exist throughout the area and provide numerous routes to the summit of Mount Rose and nearby peaks. Two official NFS trails (the Mt. Rose Trail and a portion of the Tahoe Rim Trail) exist within the far western portion of the IRA; however, many non-system trails exist, particularly in the Atoma Area. These trails are used by both hikers and mountain bikers, and

portions are included as part of the Galena fest mountain bike race.[31] A Nordic skiing facility operated in the Atoma Area in the early 1980s, when the Atoma Area was private land. This included a small building, a parking area, and groomed trails. As a result of the 1994 Galena Resort Land Exchange, approximately 3,446 acres of private land in the Galena drainage were acquired by the U.S. Government to be managed by the Forest Service. Developed Nordic skiing has not occurred in the Atoma Area since the 1980s; however, the Atoma building and parking area remain today.

The Atoma Area is also used to access dispersed recreation opportunities during all seasons. Camping, hiking, and mountain biking take place throughout the area in the summer and dispersed Nordic skiing and snowshoeing occur in the winter. Although the exact number of users the Atoma Area attracts is not known, it is estimated that it receives relatively low levels of use for dispersed recreation as evidenced by cars parked in the Atoma Area parking lot.

Due to historic and current use of the Atoma Area, as well as its proximity to the Mt. Rose Highway, opportunities for solitude and primitive recreation are limited.

The land is located within the Galena drainage near Mt. Rose Ski Tahoe and were acquired by the HTNF in 1994. Prior to the land exchange, the Atoma Area, in addition to the Chutes portion of Mt. Rose Ski Tahoe's SUP area, and thousands of acres northwest of Mt. Rose Ski Tahoe was private land and, therefore, precluded from use by the public and subject to development. The land exchange made this relatively accessible terrain northwest of Mt. Rose Ski Tahoe open to the public for dispersed recreation.

Special Features (Ecological, Geologic, Scientific, Educational, Scenic, or Historical Values)

This quality/attribute recognizes that wilderness may contain other values of ecological, geologic, scientific, educational, scenic or historical or cultural significance. Unique fish and wildlife species, unique plants or plant communities, potential or existing research natural areas, outstanding landscape features, and significant cultural resource sites should all be considered as types of values that might exist. Identify any of these values that exist within the Analysis Area. Address this attribute by describing the effect proposed activities would have on these values.

Archival research and the initial field reconnaissance in 2011 disclosed a number of potentially significant cultural resources within the Atoma Area of the IRA. Consultation is ongoing with the necessary federally recognized tribes and interested parties as part of the NEPA and Section 106 process. Per Section 106, the agency is consulting with the Nevada State Historic Preservation Officer (SHPO) on area of potential effect (APE) definitions, site eligibility determinations and effects determinations.

The IRA also contains habitat for a variety of plant and animal species (refer to Section 3.7 and Section 3.9).

Manageability as Wilderness

This quality/attribute measures the ability to manage an area to meet the size criteria (5,000+ acres), the resulting configuration of the potential wilderness, and the interaction of the other elements above. Address this attribute by discussing how the proposed activities may affect the boundary location, the size, the shape, and the access to the area.

[31] Morris, 2014

Wilderness attributes of the Atoma Area have been affected by previously-implemented projects and, in the 2006 Assessment of Wilderness Potential, the Atoma Area of the IRA was not recommended as suitable for wilderness designation. The wilderness suitability of the remainder of the 3,710-acre IRA and thus portions of the area included in the Forest Plan Amendment has been recognized.

Roadless Area Characteristics Analysis

As mentioned above, the HTNF's 2006 Assessment of Wilderness Potential for the Rose-Galena IRA concluded that the IRA as a whole retained a high level of natural integrity, offered moderate opportunities for solitude, and featured unique habitat and cultural resources. The assessment noted that the area north of the power line had a high capability to be managed as wilderness. As such, the roadless area characteristics of a majority of the Rose-Galena IRA has been unaffected.

Soil, Air, and Water Resources

The Atoma Area of the IRA is situated at the western border of the Great Basin Physiographic province and the eastern edge of the Sierra Nevada Physiographic province. The topography within and adjacent proposed projects is gentle, generally ranging from 10 to 35 percent slopes. Surface and subsurface soil erodibility is low to moderate within the Analysis Area. However, soils at Mt. Rose Ski Tahoe have been shown to be difficult to stabilize and maintain productivity after disturbance due to slope, large stones, and sandy/loamy textures.

No air quality issues have been identified in the Analysis Area. The IRA is adjacent Mt. Rose Wilderness and the minimal level of human development within and adjacent the IRA indicates air quality issues would be rare.

The proposed projects would occur on the frontside of Mt. Rose Ski Tahoe and within the Atoma Area which is within the Truckee subwatershed (Hydrologic Unit Code 8) which encompasses approximately 77,000 acres. The Truckee watershed includes all of Reno and other nearby cities generally resulting in storm water pollutants and sediment from urban development entering the water system.[32] However, other areas of the watershed are in good condition with minimum erosion and good water quality.

Sources of Public Drinking Water

There are no sources of public drinking water within the Atoma Area of the Rose-Galena IRA.[33] Sources of public drinking water have not been identified within lands acquired in the Galena Resort Land Exchange.

Diversity of Plant and Animal Communities

Due to the extent of the Rose-Galena IRA, as well as the range in elevation, plant and animal communities are diverse (refer to Sections 3.7 and 3.9 for additional details). Further, the IRA overlaps Mt. Rose Wilderness which provides a variety of plant and animal habitat.

[32] City of Reno, 2010

[33] Although one of the Pine Ridge Water Company surface water collection points is located within the expanded SUP area, it is outside the Rose-Galena IRA and approximately 500 feet from the nearest trail; therefore, it would not be included in the anlaysis of the roadless area. Further, due to the proximity of this collection point and the scale of the proposed project, no anticipated affects to the collection point have been documented.

Habitat for Threatened, Endangered, and Sensitive and Species Dependent on Large Undisturbed Areas of Land

A review of TES wildlife species with potential to occur in the Analysis Area was conducted for this FEIS. Based on a review of the USFWS online consultation program Information, Planning and Consultation (IPaC) System, as well as professional knowledge, habitat analysis and reviews of known species distribution, there are no Threatened, Endangered, or Proposed species that occur in the Analysis Area.

Note: The Analysis Area contains occupied and potential habitat for whitebark pine, which is a candidate for listing under the ESA.

The land acquired through the Galena Resort Land Exchange likely also provides habitat for TES and other species as the exchange was generally comprised of large undisturbed areas of land with relatively little development.

Primitive and Semi-Primitive Classes of Recreation

While no official Forest Service system trails are located within the Atoma Area, the area does receive dispersed recreational use year-round, including camping, hiking, mountain biking, cross-country skiing, and backcountry skiing (used mainly to access steeper terrain on NFS land to the north of the Atoma Area).

Reference Landscapes for Research Study or Interpretation

Existing structures, roads, dispersed recreation and approved fuelwood cutting within the Atoma Area of the IRA have affected the integrity of the Atoma Area. Combined with its proximity to the Mt. Rose Highway, development of the Atoma Area would not affect the Rose-Galena IRAs potential to be used as a reference landscape.[34]

Landscape Character and Integrity

The landscape character and integrity of the area has been altered by the presence of existing roads, including the old Mt. Rose Highway, a parking area, the Forest Service Atoma building, formerly used as a Nordic ski lodge, a power line that bisects a portion of the IRA, and the 2008 Atoma Insect Salvage and Fuels Reduction project. The area has a VQO of *Partial Retention*, which suggests that management activities be visually subordinate.

Traditional Cultural Properties and Sacred Sites

A Traditional Cultural Property (TCP) is defined in the Guidelines for Evaluating and Documenting Traditional Cultural Properties as "one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community."[35] Types of TCP include spiritual places associated with traditional history or beliefs, spiritual-use areas, travel corridors, traditional resource-gathering areas, historical locations and more. A 2010 ethnographic and ethnohistorical study of Northern Paiute and Washoe use of the Truckee Meadows was conducted for the U.S. Army Corps of Engineers to provide information regarding potential effects of the Truckee Meadows Flood Control Project. The results of the study indicate that there are potential TCPs in the *vicinity* of

[34] Reference landscapes can provide comparison areas for evaluation and monitoring. These areas provide a natural setting that may be useful as a comparison to study the effects of more intensely managed areas.
[35] National Register Bulletin; Parker and King, 1998

Slide Mountain (Mt. Rose Ski Tahoe is located on Slide Mountain). However, the ski area is several miles outside of the 2010 ethnographic and ethnohistorical study area and was not extensively detailed in the report.

The definition of an Indian Sacred Site is governed by Executive Order 13007 of May 24, 1996. The order defines an Indian Sacred Site as:

> *Any specific, discrete, narrowly delineated location on federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site.*

Other Locally Unique Characteristics

In the early to mid-20th century, Basque sheepmen grazed flocks along the flanks of Mount Rose. Herders went up Thomas Canyon and over the flanks of Mount Rose into the high meadows, and Basque sheepmen earned a reputation for excelling at sheepherding. This combined with the fact that sheepherding was often unappealing to non-Basques (due to the risks involving physical safety, mental stability and sexual frustration within the context of social isolation), rendered Basque herders indispensable to the sheep industry of the American West. Aspen art (known as arborglyphs) proliferated throughout the Atoma Area (and beyond) given the availability of aspen trees (the materials), ample leisure time, the inherent loneliness of the job (the inspiration), and the privacy afforded by the remote locations (freedom of expression). Aspen carvings were made by fine knife incisions into the bark of the trees that barely reach into the cambium layer. Over time, the incision scars over, turning a rich black or whitish-gray and producing a clear impression. Arborglyphs dating from the 19th century are rare, and grazing activities in the vicinity of the Atoma Area were probably most intense between the 1910s and 1930s.

3.3.3 Direct and Indirect Environmental Consequences

3.3.3.1 Alternative 1

Under Alternative 1, none of the proposed projects would be approved or completed. The existing Mt. Rose Ski Tahoe SUP boundary would be maintained; therefore, no new ski area development within the Atoma Area would occur. The water tank would not be installed near the top of the Galena Chairlift and there would be no Forest Plan Amendment to address commercial development in 3,446 acres acquired in the Galena Resort Land Exchange which overlaps the Rose-Galena IRA as a result of approving this alternative.

Roadless characteristics and wilderness attributes and capability would likely remain the same as described under the Affected Environment. Trends in incremental development of the surrounding lands (Mt. Rose Ski Tahoe, Sky Tavern, recreation along the Mt. Rose Highway) are anticipated to continue to affect the roadless characteristics (particularly reducing the effectiveness of habitat, opportunities for primitive and semi-primitive recreation, and landscape character and integrity) and wilderness attributes of the Atoma Area of the Rose-Galena IRA. Due to previous development in the Atoma Area, from the overhead power line, the old Mt. Rose Highway, and the Nordic center, as well as the proximity to the Mt. Rose Highway and Mt. Rose Ski Tahoe, the 2006 Assessment of Wilderness Potential did not recommend the Atoma Area as suitable for wilderness designation. The HTNF's 2006 assessment of wilderness provided a recommendation to redraw the IRA boundary to only include the portion north of the power line (and road), thus

removing a majority of the Atoma Area from the IRA. Existing use of the Atoma Area within the IRA for dispersed recreation and as an informal access point for recreation on NFS land north of the Atoma Area would continue under this alternative.

Under the No Action Alternative, commercial development would continue to be an allowable use of lands acquired throughout the Galena Resort Land Exchange under Management Area 2 (Carson Front). Any future proposal for commercial development on NFS land would require a NEPA analysis, and projects within the IRA would likely be required to be consistent with IRA direction. Commercial development could occur without building roads. If additional commercial development was to occur beyond what is currently developed, this could change the character of the IRA as well as potential wilderness qualities, potentially resulting in a reduction in acres that are currently considered eligible.

3.3.3.2 Alternative 2 and Alternative 3

For IRAs, the difference between Alternative 2 and Alternative 3 is indistinguishable; therefore, they are discussed together.

With implementation of the either action alternative, approximately 37.5 acres of the SUP expansion into the Atoma Area would overlap the 3,710-acre Rose-Galena IRA. Developed recreational use of the Atoma Area would be limited to the ski season (i.e., the ski area's operational period), while lift, trail, and snowmaking infrastructure maintenance would be anticipated to occur during the summer. No impacts to roadless characteristics or wilderness qualities are anticipated to the IRA outside the expanded Mt. Rose Ski Tahoe SUP boundary.

Consistency with the 2001 Roadless Rule

As mentioned previously, a critical element of the 2001 Roadless Rule was a prohibition, *with certain exceptions*, on two activities in all IRAs: (i) the construction and reconstruction of roads, and (ii) timber harvesting, regardless of the management direction contained in forest plans.[36] Section 294.13(a) of the 2001 Roadless Rule states, "*Timber may not be cut, sold or removed in inventoried roadless areas of the National Forest System, except as provided in paragraph (b) of this section.*" Section 294.13(b) (2) states the following exception: "*The cutting, sale, or removal of timber is incidental to the implementation of management activity not otherwise prohibited by this subpart.*"

Under either Alternative 2 or Alternative 3, no new roads would be constructed or reconstructed within the Rose-Galena IRA.[37] Approximately 14 acres of vegetation removal, including approximately 4 acres of grading, would occur within the IRA to accommodate portions of the proposed chairlift corridor and Trails 1 through 5 and the connector trail (refer to Figure 3). The proposal to construct either configuration of the Atoma Chairlift and associated trails, along with associated vegetation clearing, is permissible under the 2001 Roadless Rule because no road construction or reconstruction is proposed within the IRA and timber cutting and removal is incidental to the implementation of management activity (i.e., constructing ski trails within the proposed expanded SUP area).[38]

[36] 36 CFR §§ 294.12 and 13
[37] Existing roads would be used for construction and on-going maintenance activities.
[38] 36 CFR §§ 294.12 and 13

The Forest Service explained in 36 CFR Part 294 – *Special Areas; Roadless Area Conservation Final Rule* that "management actions that do not require the construction of new roads will still be allowed, including activities such as timber harvesting for clearly defined, limited purposes…"[39] Examples of timber cutting and removal allowed under this exception "include, but are not limited to trail construction or maintenance… (and) *other authorized activities such as ski runs and utility corridors*…" (emphasis added).[40]

Ski area expansion and timber removal for ski area projects in an IRA are permissible under the 2001 Roadless Rule. This is supported by a 2001 Forest Service document titled Roadless Area Conservation Final Rule Questions and Answers. Regarding the question "How will the Final Rule affect the development or expansion of existing ski areas? New ski areas?" the following response was provided by the agency:[41]

The Final Rule would not suspend or modify any existing permit, contract, or other legal instrument authorizing the occupancy and use of National Forest System lands. The Final Rule would allow for expansion of ski areas, resorts, and other recreational developments in inventoried roadless areas, under existing Forest Service policy, if special use permits are in existence prior to the publication date of the Final Rule, and proposed activities take place within boundaries established by the special use authorization. New ski areas or other activities outside of existing special use permit boundaries that do not require road construction, but require timber harvest, may be allowed in inventoried roadless areas, if approved by the local Responsible Official. (emphasis added)

Effects to Wilderness Qualities or Attributes

The Forest Service uses six wilderness qualities or attributes to measure the impacts of a proposed action on an IRA. In conjunction with this FEIS, a Wilderness Attribute Impact Evaluation was prepared specific to the Rose-Galena IRA. The results are summarized in this section and the worksheet is contained in the Project Record.

Untrammeled

This quality/attribute monitors modern human activities that directly control or manipulate the components or processes of ecological systems inside wilderness. In summary, wilderness is essentially unhindered and free from modern human control or manipulation.

Although Alternative 2 and Alternative 3 would both result in additional vegetation removal from ski trail construction and chairlift installation, which would have a negative effect on untrammeled quality, the Atoma Area has already been altered by human processes, and the area has already lost much of its quality. Particularly because the 2006 assessment of wilderness potential already determined that the Atoma Area south of the power line does not have capacity to be managed as wilderness, these impacts would be considered minor.

Natural

This quality/attribute monitors both intended and unintended effects of modern people on ecological systems inside wilderness since the time the area was designated. In summary, wilderness ecological systems are substantially free from the effects of modern civilization.

[39] 66 Federal Register 9
[40] Ibid.
[41] USDA Forest Service, 2001a

Although developing Alpine skiing terrain in the Atoma Area would further reduce naturalness, the remainder of the IRA would be unaffected. Thus, the action alternatives are not anticipated to measurably affect naturalness of the IRA.

Undeveloped

This quality/attribute monitors the presence of structures, construction, habitations, and other evidence of modern human presence or occupation. In summary, wilderness is essentially without permanent improvements or modern human occupation.

The Atoma Area of the IRA exhibits evidence of human use and structures (e.g., fuelwood cutting, Christmas tree harvesting, social trails, remnants of old roads and the Atoma building). Although developing Alpine skiing terrain in the Atoma Area would lead to further development of this portion of the IRA, the remainder of the IRA, which has wilderness potential, would be unaffected.

Outstanding Opportunities for Solitude or a Primitive and Unconfined Type of Recreation

This quality/attribute monitors conditions that affect the opportunity for people to experience solitude or primitive, unconfined recreation in a wilderness setting, rather than monitoring visitor experiences.

As previously discussed, opportunities for solitude and primitive recreation within the IRA exist, but are impacted by the proximity to, and noise from, the Mt. Rose Highway—particularly in the Atoma Area. Opportunities for primitive recreation, such as hiking and backcountry/Nordic skiing, would still be available within the Rose-Galena IRA upon project completion. However, the recreational experience within the Atoma Area would be affected by lift and trail development, increased human use, and vegetation removal. As a result, opportunities for solitude and primitive recreation would not be available in the Atoma Area.

Although opportunities for solitude and primitive recreation would be affected by the proposed projects, these effects are localized and minor considering the proximity to the highway. This quality in the Atoma Area of the IRA has already been impacted in the past. The remainder of the IRA, which has wilderness potential, would be unaffected.

Special Features (Ecological, Geologic, Scientific, Educational, Scenic, or Historical Values)

This quality/attribute recognizes that wilderness may contain other values of ecological, geologic, scientific, educational, scenic or historical or cultural significance. Unique fish and wildlife species, unique plants or plant communities, potential or existing research natural areas, outstanding landscape features, and significant cultural resource sites should all be considered as types of values that might exist. Identify any of these values that exist within the Analysis Area. Address this attribute by describing the effect proposed activities would have on these values.

Impacts to plant and wildlife habitat, as well as cultural resources, in the Atoma Area have been well documented in this FEIS, and in the plant, wildlife and cultural resource technical reports contained in the Project Record. Neither Alternative 2 nor Alternative 3 would affect the special features of the Rose-Galena IRA.

Manageability as Wilderness

This quality/attribute measures the ability to manage an area to meet the size criteria (5,000+ acres), the resulting configuration of the potential wilderness, and the interaction of the other

elements above. Address this attribute by discussing how the proposed activities may affect the boundary location, the size, the shape, and the access to the area.

The action alternatives would affect certain wilderness attributes of the Atoma Area of the Rose-Galena IRA, including its untrammeled, natural, and undeveloped characteristics. However, these attributes have been affected by previously-implemented projects and, in the 2006 Assessment of Wilderness Potential, the Atoma Area of the IRA was not recommended as suitable for wilderness designation. The development of ski lifts, trails, and snowmaking infrastructure would incrementally add to the ongoing trends that already negatively affect manageability as a potential wilderness area of the Atoma Area of the IRA. The wilderness suitability of the remainder of the 3,710-acre IRA would not be affected by the proposed projects in the Atoma Area.

The proposed Forest Plan Amendment has potential to maintain existing wilderness suitability of the remainder of the IRA by precluding commercial development on 2,253 acres of the Rose-Galena IRA and by reducing potential for human activities and development on a large portion of the IRA.

Roadless Area Characteristics Analysis

The impacts from the proposed SUP Boundary expansion and subsequent development of ski area infrastructure within the Atoma Area are limited to the approximately 37.5 acres, of the 3,710-acre Rose-Galena IRA (or 1.0 percent of the IRA). Although there would be impacts associated with the proposed lift and trail network, snowmaking and developed skiing in the Atoma Area of the IRA, the roadless area characteristics of the remainder of the Rose-Galena IRA would be unaffected by those projects.

A majority of the proposed Atoma SUP expansion area is located south of the power line and was recommended to be removed from the IRA because it had low potential for wilderness designation.

The impacts from the Forest Plan Amendment would extend to a much greater portion of the IRA, approximately 2,253 acres of that IRA that were acquired through the Galena Resort Land Exchange. Under Alternative 2 and Alternative 3, the Forest Plan Amendment would restrict commercial development on 3,446 acres of NFS land (2,253 of which are within the IRA).

The result of this Forest Plan Amendment would be to limit potential development opportunities. This would preserve characteristics on those lands that make up the IRA and that could be considered for wilderness designation in the future.

The 2001 Roadless Rule identifies nine resources or features that are often present in, and characterize, IRAs.[42] These nine characteristics are summarized below in relation to impacts from the proposed projects on the Atoma Area. A more detailed description is included in the *Effects of Project Activities on Roadless Characteristics* Worksheet, in the Project Record.

Soil, Air, and Water Resources

With the implementation of Management Requirements designed to control potential erosion associated with proposed ski trail and chairlift construction, impacts to soil or water resources within the Atoma Area would be minimized. Disturbed areas would be reseeded and there would be no impacts to these resources within the IRA beyond the Atoma Area. The Forest Plan Amendment would preclude commercial development from 2,253 acres the portion of the IRA

[42] 66 Federal Register 9

that overlaps the lands acquired in the Galena Resort Land Exchange (excluding the Atoma Area and the Chutes), further reducing the potential for commercial development, and the associated impacts to soil, air and water resources on 2,253 lands included in the Forest Plan Amendment.

Sources of Public Drinking Water

There are no sources of public drinking water within the Atoma Area of the Rose-Galena IRA.[43] The Forest Plan Amendment could benefit sources of public drinking water within the lands acquired in the Galena Resort Land Exchange by precluding commercial development on those lands.

Diversity of Plant and Animal Communities

Due to the extent of the Rose-Galena IRA, as well as the range in elevation, plant and animal communities are diverse. Biological analyses performed for this FEIS included a review of potential for federally listed, Region 4 (R4) sensitive, and MIS habitat within the Atoma Area. The results are documented in the Biological Evaluation (BE) and other technical reports, which are contained in the Project Record.

Further, the Forest Plan Amendment would preclude commercial development on lands acquired in the Galena Resort Land Exchange. Eliminating the commercial development opportunity on these lands would maintain plant and animal communities currently using this area by limiting disturbance and the spread of noxious weeds which can be associated with commercial development.

Habitat for Threatened, Endangered, and Sensitive and Species Dependent on Large Undisturbed Areas of Land

Forest Service sensitive plant and animal species with potential to occur in the Atoma Area are documented in the BE.

The Forest Plan Amendment could benefit TES and species dependent on large undisturbed areas of land by reducing the development potential within lands acquired in the Galena Resort Land Exchange by precluding commercial development on those lands.

Primitive and Semi-Primitive Classes of Recreation

Under the action alternatives, winter use of the area would increase due to the addition of lift-served downhill skiing. This would affect the current dispersed recreational uses of the Atoma Area primarily during the winter, but would not preclude the area from dispersed recreational use throughout the year. The proposed projects in the Atoma Area would not affect opportunities for primitive and semi-primitive classes of recreation in the remainder of the IRA.

Higher quality primitive and semi-primitive recreational experiences are available in surrounding areas of the IRA, particularly to the north and west. Use in the area could spread to surrounding areas of the IRA as users seek out primitive and semi-primitive classes of recreation. The proposed Forest Plan Amendment could maintain primitive and semi-primitive experiences by

[43] Although one of the Pine Ridge Water Company surface water collection points is located within the expanded SUP area, it is outside the Rose-Galena IRA and approximately 500 feet from the nearest trail; therefore, it would not be included in the anlaysis of the roadless area. Further, due to the proximity of this collection point and the scale of the proposed project, no anticipated affects to the collection point have been documented.

precluding commercial development that may have resulted in more developed recreational opportunities within 2,253 acres of the IRA.

Reference Landscapes for Research Study or Interpretation

The proposed Forest Plan Amendment could maintain reference landscapes by precluding commercial development that may have resulted in more developed recreational opportunities within 2,253 acres of the IRA.

Landscape Character and Integrity

Installation of a chairlift and vegetation removal associated with ski trail construction would incrementally alter the scenic character of the area, but it would still meet the VQO of *Partial Retention*. The Proposed Action would have minor localized effects to this characteristic by incrementally increasing the developed infrastructure visible for a short segment of the highway.

The proposed Forest Plan Amendment could maintain landscape character and integrity by precluding commercial development that may have resulted in more developed recreational opportunities within 2,253 acres of the IRA.

Traditional Cultural Properties and Sacred Sites

There are no known Traditional Cultural Properties or Sacred Sites that will be impacted by the action alternatives. Part of the Forest Service consultation process is to work with federally recognized tribes and other relevant parties to ensure that Forest Service proposed undertakings do not adversely impacts these significant areas important to those groups. The Forest Service has ongoing consultation with all of the appropriate tribes and other interested parties and there is no evidence that the Proposed Action will affect a TCP or Sacred Site.

Other Locally Unique Characteristics

Cultural resources identified within the project APE are being recommended as ineligible for listing in the National Register and if the SHPO does not object to the determination this will result in a determination of No Historic Properties Affected.

The proposed Forest Plan Amendment could maintain unique characteristics that may be unknown or undocumented by precluding commercial development that may have impacted these characteristics within 2,253 acres of the IRA.

3.3.4 Cumulative Effects

3.3.4.1 Temporal and Spatial Extent of Analysis

The spatial extent of the cumulative effects analysis includes the portion the Rose-Galena IRA overlapped by Mt. Rose Ski Tahoe's proposed SUP expansion into the Atoma Area. The temporal bounds for this cumulative effects analysis of IRAs extends from 2001 when the Roadless Rule officially inventoried IRAs in the HTNF through the duration of the Forest Plan.

3.3.4.2 Past, Present, and Reasonably Foreseeable Future Actions

The following projects could have cumulative impacts on IRAs overlapped by the project area and are analyzed below:

- The 2008 Atoma Insect Salvage and Fuels Reduction Project

Atoma Insect Salvage and Fuels Reduction Project

In 2008 the Atoma Insect Salvage and Fuels Reduction project was approved, which allowed the public to remove fuelwood for personal use from a 70-acre area of the HTNF. The Analysis Area for the insect salvage and fuels reduction project overlapped both the Atoma Area and additional portions of the Rose-Galena IRA. Implementation of the Atoma Insect Salvage project has been suspended since 2014 while this current project is being analyzed. Following this analysis, the previous decision will be reviewed to see if implementation can continue as decided or if a supplement would be required.

In approving the Atoma Insect Salvage and Fuels Reduction project, the Carson District Ranger noted that no new roads would be constructed or reconstructed. In compliance with the 2001 Roadless Rule, timber cutting, sale or removal in an inventoried roadless area is appropriate because the following circumstances exist:[44]

- This project will reduce the risk of an uncharacteristic wildland fire (36 CFR § 294.13(b)(1)(ii))
- The cutting sale and removal of timber is needed and appropriate for personal use (36 CFR § 294.13(b)(3))
- Roadless area characteristics have been substantially altered in this portion of the roadless area due to construction of roads and subsequent timber harvest prior to 2001 (36 CFR § 294.13(b)(4))

When considered cumulatively with past timber removal in the area, reasonably foreseeable timber cutting will have cumulative impact on the amount of cleared forest vegetation in the area that may continue to effect wilderness attributes in the area and some roadless characteristics in the area. However, this portion of the Atoma Area has already experienced human impact and development and the additional development would not extend to the more natural areas of the IRA.

3.3.5 Irreversible and Irretrievable Commitments of Resources

Installation of a chairlift to service 37.5 acres of the Rose-Galena IRA, which overlaps the Atoma Area portion of Mt. Rose Ski Tahoe's proposed SUP area, would represent irretrievable effects to some roadless characteristics that were defined previously. This represents 1 percent of the total acreage within the IRA. Human activity in the Atoma Area would increase, and thus associated winter opportunities for solitude and/or primitive recreation in the Atoma Area would be irretrievably lost. However, this commitment of public lands within the IRA to lift-served skiing is not considered irreversible because the chairlift could be removed and cleared areas could be revegetated, restoring many of the characteristics that allow portions of the Atoma Area to be considered as part of the Rose-Galena IRA.

[44] USDA Forest Service, 2008

3.4 Public Health and Safety

3.4.1 Scope of the Analysis

The spatial scope of this public health and safety analysis focuses on the proposal to add a chairlift and bridge crossing over the Mt. Rose Highway and Mt. Rose Ski Tahoe parking lots. Therefore, the bounds of this analysis include NFS and private land that comprise Mt. Rose Ski Tahoe, the Mt. Rose Highway right-of-way (NDOT) and the Atoma Area.

The temporal extent of this analysis would include the time at which Mt. Rose Ski Tahoe could implement construction of the chairlift, or lifts, and bridge over the highway and parking lots, through the duration of maintaining that lift and bridge connection.

3.4.2 Affected Environment

The action alternatives include installing a chairlift and bridge across the Mt. Rose Highway within NDOT's right-of-way. The chairlift under Alternative 2 would also cross the parking lots. This section addresses the existing standards that are in place for these types of crossings.

ANSI B77.1 – Ski and Chairlift Safety

Design, construction, and operation of a chairlift is managed through a variety of standards including but not limited to regular inspection, maintenance and testing, signage and manufacturer information. A chairlift is required to reflect current passenger ropeway design including cables, clearances, speed to minimize exposure to risk for its passengers, operators and maintenance personnel.[45] As it pertains to the scope of this analysis, there are no specific standards for a chairlift traveling over vehicles or a highway; however, Section 3.1.1.5.1 – *Vertical Clearances of the ANSI Standard* is pertinent to the Public Health and Safety issue.

Specifically, this standard requires that under the most adverse loading conditions in which the lift is being operated, a minimum space of 5 feet is required from the lowest point of the carrier to obstacles below, including terrain or vehicles. This standard is regularly used at Mt. Rose Ski Tahoe where snowcats or other vehicles may travel below chairlifts. Facilities at Mt. Rose Ski Tahoe are consistent with this standard. Despite the regulations placed on the design and operation of the chairlift, some ski area visitors riding the chairlift may still feel uncomfortable riding in an open carrier high above the ground. For other ski area guests, the chairlift ride is an acceptable, or even exciting, part of the experience.

Ski area visitors underneath any open chairlift can be affected by falling objects such as ski equipment, personal items, or very rarely, a skier. This is an inherent risk of traveling under a chairlift and generally the potential for interactions between falling objects the skiers below them is rare. Appropriate ski area signage warning of potential fines for throwing items from the lift are posted when necessary.

Nevada Department of Transportation Bridge Crossing

Bridge design elements of NDOT projects are provided oversight by the Structures Division. A minimum vertical clearance of 18 feet is required over NDOT highway facilities. NDOT requires

[45] American National Standards Institute, 2017

design specifications such as geometry, structure type, and final designs be reviewed by appropriate engineering personnel.[46]

3.4.3 Direct and Indirect Environmental Consequences

3.4.3.1 Alternative 1 – No Action

Under the No Action Alternative, Mt. Rose Ski Tahoe would not operate any chairlifts or bridges over a highway or a lift over any parking lot; therefore, there is not potential for objects to fall onto motorists traveling below a chairlift or bridge at Mt. Rose Ski Tahoe. Objects are expected to continue to fall onto the ski trails below chairlifts; the interactions of falling objects and skier below would continue to be rare. Further, although some people may continue to feel uncomfortable riding in open chairlifts at the ski area, the experience of chairlifts traveling over open trails and treed areas is consistent with what visitors expect at a ski area.

3.4.3.2 Alternative 2

The chairlift would be designed to meeting ANSI B77.1 Clearance Standards with a minimum space of 5 feet from the lowest point of the carrier to obstacles below (including terrain or vehicles). Despite this standard being met, riding a chairlift over the highway and parking lots would be a different experience than a typical chairlift ride. The chairlift may feel higher and more exposed when crossing over the highway and parking lots. Therefore, Mt. Rose Ski Tahoe is planning to install a high-speed detachable chairlift that includes technology for automatic restraint devices and a net under the chairlift for the Mt. Rose Highway crossing to improve the feeling of safety while riding this chair.

To prevent objects from skiers (e.g., skis, poles, shoes, hats, bags, etc.) from falling onto the Mt. Rose Highway, a net will be installed under the chairlift. The net will be designed to allow retrieval of dropped objects, maintenance, and for emergency egress to either end of the net. However, it is likely that small things would still be able to fit through the openings of the net and may fall on and possibly damage cars below. The net would also be designed to support the weight of a chair.

The bottom of the skier bridge would be situated at least 18 feet off the ground and is not anticipated to represent any change in safety to drivers on the highway. With the additional snow coverage, skiers may be closer to approximately 25 feet off the ground. Appropriate railings would be incorporated into the bridge design to ensure skiers cross safely.

Mt. Rose Ski Tahoe will post signs and enforce a policy of no tolerance for purposefully dropping/throwing anything from the lift or bridge (e.g., snowballs).

To ensure safety standards are met, the following Management Requirements have been incorporated into this FEIS:

- *PHS 3: The proposed chairlift and skier bridge shall have vertical clearance from the highway of at least 18 feet to conform to snow removal requirements by NDOT. Included in these design features are accommodation of snowcats, moving loads, snow and ice, and geotechnical investigation and design. In addition to NDOT Structures Manual for height and load capacity design of the proposed skier bridge over the Mt. Rose Highway will conform to American Association of State Highway and Transportation Officials structural design*

[46] Nevada Department of Transportation, 2010

standards. The proposed chairlift will be constructed to be consistent with specifications outlined by the American National Standards Institute.

- *PHS 4: Consideration shall be given to impact protection for the skier bridge abutments. Guardrails or barriers shall be required depending on lateral clearance from the travel way.*

People falling off a chairlift at Mt. Rose Ski Tahoe are rare; however, if it did occur with the Alternative 2 alignment, the person would fall onto a ski run, onto the net, or into the parking lot.

3.4.3.3 Alternative 3

Under Alternative 3, the chairlift and skier bridge would cross Mt. Rose Highway at the same location, connecting skiers at the main ski area with the Atoma Area. The chairlift would align directly over the skier bridge and would be designed to meeting ANSI B77.1 Clearance Standards with a minimum space of 5 feet from the lowest point of the carrier to people and snowcats (or other ski area maintenance vehicles) using the bridge. Under this alternative the chairlift would not cross over the parking lots; the alignment crosses the forested area west of the parking lots. A safety net is not anticipated to be installed under either chairlift in Alternative 3. Chairlift A is a traditional chairlift that travels over trees and ski trails and operations and maintenance would be similar to any other chairlift at the resort. Chairlift B would run directly over the bridge which would allow retrieval of dropped objects, maintenance and for emergency egress.

Aligning the chairlift over the bridge is anticipated to minimize the feeling of exposure to chairlift riders over the highway as well as preventing objects from skiers from falling onto the Mt. Rose Highway. The bridge would make it easier to retrieve dropped objects, perform chairlift maintenance, and for emergency egress. The bridge would also support the weight of a chair.

Mt. Rose Ski Tahoe will post signs and enforce a policy of no tolerance for purposefully dropping/throwing anything from the lift or bridge (e.g., snowballs). A plan would be developed to ensure this does not become an issue. The following Management Requirement has been incorporated into this FEIS:

- *PHS 2: Mt. Rose Ski Tahoe will post signs and enforce a policy of no tolerance for purposefully dropping/throwing anything from the lift or bridge (e.g., snowballs). A plan will be developed for response to purposeful throwing of items off the lift or bridge.*

The design specifications of the bridge and chairlift would result in the chairlift likely being approximately 40 feet in the air at the location of the bridge. This estimation is based off of the following requirements: the bridge would need to be designed to be at least 18 feet off the road and will include at least 2 feet of structure/beams, there would likely be between 2 and 4 feet of snow covering the bridge, a snowcat is approximately 12 feet tall, and the chairlift would have to be located 5 feet above any obstacles on the bridge. A chairlift at this height is not uncommon in the ski industry. People falling off a chairlift at Mt. Rose Ski Tahoe are rare; however, if it did occur with the Alternative 3 alignment, the person would fall onto a ski run or the skier bridge.

3.4.4 Cumulative Effects

3.4.4.1 Temporal and Spatial Extent of Analysis

The spatial scope of this public health and safety cumulative effects analysis focuses on the chairlifts and bridges crossing over the Mt. Rose Highway and Mt. Rose Ski Tahoe parking lots. Therefore, the bounds of this analysis include NFS and private land that comprise Mt. Rose Ski Tahoe, the Mt. Rose Highway right-of-way and the Atoma Area.

The temporal extent of this analysis would begin when Mt. Rose Ski Tahoe could implement the lift and bridge over the highway and parking lots, through the duration of maintaining that lift and bridge connection.

3.4.4.2 Past, Present, and Reasonably Foreseeable Future Actions

There have been no other chairlifts or bridges over the highway or parking lots in this location (or anywhere nearby). Further, no foreseeable future actions include any similar proposal. Therefore, there are no anticipated cumulative effects to public health and safety.

3.4.5 Irreversible and Irretrievable Commitments of Resources

With implementation of necessary Management Requirements no irreversible or irretrievable commitment of public health and safety resources has been identified under either Action Alternative.

3.5 Visual Resources

3.5.1 Scope of the Analysis

Mt. Rose Ski Tahoe currently operates under a 544-acre SUP from the HTNF (encompassing the Slide side of the mountain) and a lease and Concession Agreement from Washoe County, Nevada (on the Mt. Rose Ski Tahoe side and main base area) (refer to the Project Vicinity Map). Additionally, a substantial portion of the resort is located on private land owned by Mt. Rose Ski Tahoe. This visual resource analysis evaluates effects of the SUP addition of the Atoma Area on the existing Mt. Rose Ski Tahoe SUP area, adjacent NFS and private land, and users of the Mt. Rose Highway.

In addition, the Proposed Action includes a Forest Plan Amendment that precludes commercial development on 3,446 acres of NFS land that was acquired through the Galena Resort Land Exchange. Therefore, the Analysis Area is defined as the Mt. Rose Highway corridor in the vicinity of the Mt. Rose Ski Tahoe base area and the land acquired through the Galena Resort Land Exchange. A general overview of the aesthetic characteristics of the ski area (including private, NFS, and county lands) and the surrounding NFS land is provided.

3.5.2 Management of the Scenic Environment on National Forest System Land

Actions can cause changes to visual resources that can be objectively measured. By assessing the existing scenic character of an area in terms of pattern elements (form, line, color, and texture) and pattern character (dominance, scale diversity, and continuity), it is possible to identify the extent to which the scenic character would exhibit contrast or compatibility with the landscape.

3.5.2.1 Visual Management System and the 1986 Forest Plan

The Visual Management System (VMS) was adopted in 1974 as the primary scenery management direction for inventory and management of NFS land and was incorporated into the 1986 Forest Plan.[47] The inventory consists of three parameters: landscape character type, variety class, and

[47] USDA Forest Service, 1974. In 1995 the Forest Service introduced the Scenery Management System (SMS), and as forest plans are updated, this is replacing the VMS. The HTNF has not yet adopted the SMS.

sensitivity levels which are considered with the distance from the viewer. These parameters are combined and interpreted to develop Visual Quality Objectives (VQOs), which define the acceptable limits of change of a particular area. Consistent with the VMS, the 1986 Forest Plan identifies five VQOs by which the Forest's landscape is managed. These include:[48]

- **Preservation** – where only ecological changes have occurred
- **Retention** – management practices are not evident to the casual observer
- **Partial Retention** – management practices are visually subordinate to the characteristic landscape
- **Modification** – management practices may have dominated the landscape but activities should appear as natural occurrences in the *foreground* and *middleground*
- **Maxim Modification** – management practices may have dominated the landscape but activities should appear as natural occurrences in the *background*

In the 1986 Forest Plan, Management Requirements necessary for achieving Forest goals and objectives are referred to as "Standards and Guidelines" (*note*: the 1986 Forest Plan uses these terms interchangeably). For Recreation, the standards/guidelines include:

- Protect the scenic quality of the Forest by achieving the designated [VQO], unless modified by a site-specific environmental assessment.[49]

Furthermore, Management Area 2 (Carson Front) includes additional, more specific management direction for multiple resources. For Recreation, the following "Proposed and Probable Management Practice" is identified:

- Maintain a [VQO] of *Retention* along the Mt. Rose, US Route 50, and Kingsbury Highways, and Highway 206 (Foothill Road).[50]

NFS land within the Mt. Rose Ski Tahoe SUP area and the adjacent Atoma Area fall into the VQO of *Partial Retention*.[51]

Under the VQO of *Partial Retention*, activities "may repeat form, line, color, or texture common to the characteristic landscape but changes in their qualities of size, amount, intensity, direction, pattern, etc. remain visually subordinate to the characteristic landscape." Also, activities may "introduce form, line, color, or texture, which are found infrequently or not at all in the characteristic landscape, but they should remain subordinate to the visual strength of the characteristic landscape."[52]

Currently NFS land within the Mt. Rose Ski Tahoe SUP area are consistent with the *Partial Retention* VQO for the area.

[48] USDA Forest Service, 1986 p. IV-3
[49] Ibid. p. IV-14
[50] Ibid. p. IV-81
[51] A small (roughly 1.6 acres), undeveloped portion in the extreme southeast corner of the SUP area at the Slide side falls into the Retention VQO.
[52] USDA Forest Service, 1974 p. 32

Viewing distance is important in determining how change is perceived across a landscape. Distance zones are divisions of a particular landscape being viewed and are used to describe the part of a characteristic landscape that is being inventoried or evaluated.[53]

- *Foreground*: This zone is usually limited to areas within 0.25 mile or 0.5 mile (not to exceed 0.5 mile) of the observer, but it must be determined on a case-by-case basis, as should any distance zoning. Generally, detail of landforms is more pronounced when viewed from within the *foreground* zone.
- *Middleground*: Alterations in the *middleground* (extending from the *foreground* zone to 3 to 5 miles from the observer) are less distinctive. Texture is normally characterized by the masses of trees in stands or uniform tree cover.
- *Background*: This zone extends from the *middleground* to infinity. Shape may remain evident beyond 10 miles, especially if it is inconsistent with other landscape forms. Beyond 10 miles, alteration in landscape character becomes obscure.

Built Environment Image Guide

The Built Environment Image Guide (BEIG) was prepared by the Forest Service for the "thoughtful design and management" for the built environment contained within the National Forest.[54] The "built environment" is defined as "the administrative and recreation buildings, landscape structures, site furnishings, structures on roads and trails, and signs installed or operated by the Forest Service, its cooperators, and permittees."[55] The BEIG divides the United States into eight provinces, which combine common elements from the ecological, and cultural contexts over large geographical areas. Mt. Rose Ski Tahoe and adjacent NFS land are within the North Pacific Province.

The North Pacific Province includes the coastal region of Alaska and coastal and mountainous areas from Washington to Central California, including the Tahoe area. Site development, sustainability, and architectural character should conform to BEIG guidelines described for this Province. Design guidelines for this province generally highlight the ecological and cultural influences of the region, and buildings are designed and sighted so that the landscape is preserved. Guidelines for the built environment in this zone emphasize muted earth tones, structures that appear solid and substantial, and the use of battered stone, wood, or even colored and textured concrete.[56]

3.5.3 Affected Environment

The aesthetic landscape across NFS and private land in the vicinity of the ski area has been defined by recreation since nearby Sky Tavern opened for skiing in the 1930s. Reno Snow Bowl opened in 1953 and operated on the east side of Slide Mountain, and Mt. Rose Ski Tahoe opened on the north facing slopes of Slide Mountain in 1964. With the merging of the two ski areas, Mt. Rose Ski Tahoe took on its existing layout, with the two base areas, both of which are on private land—the Main Lodge (Mt. Rose Ski Tahoe side) and Winters Creek Lodge (Slide side). Both base areas are located at approximately 8,260 feet, with the summit elevation of Slide Mountain reaching approximately 9,700 feet. Additional trails, lifts, and infrastructure have been developed on both NFS land and private land along the slopes of Slide Mountain since that time.

[53] Ibid. p. 7
[54] USDA Forest Service, 2001b
[55] Ibid.
[56] Ibid.

Access to Mt. Rose Ski Tahoe is provided by the Mt. Rose Highway, a 24.5-mile, two-lane road connecting Reno (from its intersection with US Route 395) with Incline Village on the shore of Lake Tahoe. Mt. Rose Highway creates the northern boundary of the ski area, and officially became a Nevada Scenic Byway in 1995. The Mt. Rose Highway includes portions of federal lands managed by the HTNF and the Lake Tahoe Basin Management Unit, Washoe County's Galena Creek Regional Park, the City of Reno's Sky Tavern Ski Area, Diamond Peak Ski Area, and private land owned by Mt. Rose Ski Tahoe.

The Mt. Rose Highway corridor is popular among motorists and recreational users from the nearby Reno area and is well known for its scenic and natural qualities. In general, views from the Mt. Rose Highway show a diverse array of the local landscape, including the Carson Range, Lake Tahoe, forest, valleys, meadows, wildlife, and unique geology. Washoe County is currently working on the Washoe Valley Scenic Byway Corridor Management Plan. As the Plan is intended to provide a "roadmap for action" but has not yet been finalized, the Forest Service will work with the County to ensure that they are aware of any projects on NFS land that surround the Scenic Byway.[57] In the vicinity of the ski area, the higher elevations are defined by an Alpine environment with dense stands of lodgepole pine and scattered stands of red fir, western white pine, and mountain hemlock. Open meadows and small, mountain lakes and streams also contribute to the aesthetic of the region.[58] Shrubland and mixed forest with aspen and other hardwood trees are prevalent on the eastern side of the area.

The mountain pine beetle (MPB) is native to the forests of western North America from Mexico to central British Columbia. The MPB attacks all western species of pines, native and introduced, though the principle hosts are lodgepole, ponderosa, western white, sugar, and whitebark pine. A MPB infestation that is affecting the western United States has led to disease and mortality throughout many stands of lodgepole and western white pines on NFS land and private land in the Analysis Area. First identified in the Analysis Area in 2004, the infestations are composed of large areas of infested, dead lodgepole pine and scattered single tree mortality occurring in western white pine, which has affected the aesthetic environment of the Analysis Area. The HTNF is working with the Nevada Division of Forestry and the ski resort in an effort to achieve more integrated and effective treatments that extend throughout the area.[59]

Recreational amenities and attractions also contribute to the aesthetics in the Analysis Area, including numerous trailheads and the Sky Tavern winter sports area. A power line crosses Mt. Rose Highway immediately west of the entrance to the main base area. Maintaining the visual resources and scenic legacy of the Mt. Rose Highway are important to the experience of the roadway for motorists, while balancing surrounding development that contribute to the recreation opportunities in the area.[60]

3.5.3.1 Visual Characteristics of the Mt. Rose Ski Tahoe Special Use Permit Area

Developed and undeveloped winter recreation dominates the sense of place at Mt. Rose Ski Tahoe—both on NFS land and on private land. As mentioned previously, the majority of the Mt. Rose Ski Tahoe side of the ski area is composed of private land, while the majority of the Slide side is NFS land; however, the viewer cannot distinguish between the two.

[57] Washoe County, 2015
[58] USDA Forest Service, 2008
[59] Ibid.
[60] Natural Light, 2007

With roughly 445 acres of trails spread across 1,065 acres, the ski area includes traditional ski trails, lifts, and buildings, as well as open bowls, un-vegetated chutes, steeps, and rock outcroppings. In addition to the developed trail network, Mt. Rose Ski Tahoe has approximately 228 acres of natural opening and tree skiing areas between the developed runs.

The Chutes area is composed of natural avalanche paths that were incorporated into Mt. Rose Ski Tahoe's SUP boundary in 2004. Through strategic vegetation removal, this 131-acre area was improved to support expert skiing. The natural, individual slide paths (some of which were widened following approval from the HTNF) that define the Chutes are clearly visible in the *foreground* and *middleground* views along the Mt. Rose Highway. From the *background* view (points as far north/northeast as downtown Reno), the individual slide paths of the Chutes area can still be perceived; however, they are difficult to identify individually and blend well into the natural landscape.

Trails cut through forested areas on the east and northwest sides of Slide Mountain are more noticeably modified and lend to the developed recreational aesthetic of the area.[61] Limited portions of the existing lift and trail network are visible at any one point because of the ridgelines and various aspects of Slide Mountain. *Foreground* views of the Mt. Rose Ski Tahoe SUP area from the Mt. Rose Highway include the parking area and Main Lodge, as well as cleared ski trails and chairlifts—almost all of which are on private land.

Additionally, much of Mt. Rose Ski Tahoe is visible in the *background* from high elevation areas of the surrounding HTNF and limited portions of the Mt. Rose Wilderness, but because of the topography, only limited portions of the SUP area visible from any one point (refer to Figure 17). From points far away, such as Reno, the cleared ski trails are very evident, particularly in the winter.

3.5.3.2 Visual Characteristics of the Atoma Area

The Atoma Area features gradual slopes, generally north-facing, with largely gentle topography. Due to natural vegetation screening, the Atoma Area is generally not visible from the Mt. Rose Highway, except for the Atoma Building and parking lot immediately adjacent the Mt. Rose Highway. Topography of the Atoma Area slopes down and away from the roadway and the coniferous forest provides a partial, natural vegetative screen for motorists on the Mt. Rose Highway. The Atoma Area is visible from the peak of Mount Rose to the northwest and other areas of higher elevation nearby including hiking trails, specifically the Mt. Rose Trail. Some recreational users in the Mt. Rose Wilderness Area may also have views of the Atoma Area, although the vast majority of the Wilderness Area is not overlooking Mt. Rose Ski Tahoe and the Atoma Area.

The Old Mt. Rose Highway—an abandoned and dilapidated roadway—bisects the Atoma Area. Additionally, as previously mentioned, a power line crosses Mt. Rose Highway from the existing ski area into the Atoma Area and is routed along the western and northern edge of the area. This overhead distribution line consists of several approximately 35-foot-tall, wooden power poles with cross beams.

Finally, the mountain pine beetle (MPB) infestation has affected the Atoma Area, with both natural and management-related consequences on the aesthetic environment. In 2008 a Forest Service Decision Memo was signed that approved the Atoma Insect Salvage and Fuels Reduction Project located on approximately 70 acres in the Atoma Area. Specifically, the Decision Memo

[61] Mt. Rose Ski Tahoe, 2010

authorized removal of dead and infested MPB trees. These trees are either dead (fading or no foliage) or have signs indicating successful MPB attack. All live trees will be identified for removal by Forest Service personnel prior to felling. Dead trees that are not identified as "retention snags" were designated in the fuelwood removal permit.

3.5.3.3 Visual Characteristics of Parcels within the Galena Resort Land Exchange

Currently, according to the assessment of wilderness potential, these lands are primarily natural. Development includes trails and hiking opportunities, as well as some designated camping. Trailheads, parking, and camping are apparent in the immediate *foreground*; however, the majority of these uses are screened by vegetation and topography. The area meets the VQOs of *Partial Retention* and *Retention* (a very small portion also overlaps modification).

Much of land within the Forest Plan Amendment is visible in the *background* from high elevation areas of the surrounding HTNF and limited portions of the Mt. Rose Wilderness, much of the land appears natural and forested, limited portions of the SUP area visible from any one point (refer to Figure 17).

3.5.4 Direct and Indirect Environmental Consequences

3.5.4.1 Alternative 1 – No Action

Under Alternative 1, no projects would be approved on NFS land within, or adjacent to, Mt. Rose Ski Tahoe's SUP boundary that would affect the aesthetic environment. Currently, ski area development within the Mt. Rose Ski Tahoe SUP (primarily lifts and trails) is consistent with *Partial Retention* and *Retention*. Base area development on both the Mt. Rose side and the Chutes side is contained on private land. Under the No Action Alternative, ski area development within the SUP would be limited to previously approved projects such as grading and some limited trail development. Rehabilitation of disturbance associated with these projects would ensure the area would continue to meet *Partial Retention* objectives.

Under the No Action Alternative, the Forest Plan Amendment would not be approved; therefore, commercial development would continue to be a potential use of the 3,446 acres of NFS land acquired in the Galena Resort Land Exchange. Commercial development can result in tree removal, grading, development of infrastructure and increased human use, all of which could impact the scenic integrity of NFS land that currently appear natural. Project specific NEPA analysis would be required prior to approval of any developments on NFS land and specific impacts of the proposal would be considered at that time.

3.5.4.2 Alternative 2

Under Alternative 2, new ski area infrastructure projects would be visible in varying degrees from within the ski area, as well as from the Mt. Rose Highway, and from nearby, higher elevation areas on the HTNF. The SUP boundary expansion would be approved and the 112 acres in the Atoma Area would be developed to support ski operations. Trails, a skier bridge, restroom facility and lift service would be developed to accommodate skier use within the Atoma Area. In addition, a Forest Plan Amendment would be approved to limit commercial development within 3,446 acres of NFS land.

Impacts to the visual resource from ski area development is discussed in more detail below. Impacts to the visual resource of the Forest Plan Amendment include potential benefits to the

scenic integrity of the Forest as commercial development, and the associated impacts, would be precluded from 3,446 acres of NFS land. Commercial development could include (but are not limited to) resorts, stores, buildings, structures, facilities, and organizational camps. Any of this infrastructure would increase development in areas that currently appear mostly natural.

Management Requirements included throughout this section and in Appendix A identify ways to avoid, minimize, and/or mitigate impacts of proposed projects on the scenic environment.

The Mt. Rose Highway

The proposed Atoma Chairlift and skier bridge would cross the Mt. Rose Highway in the vicinity of the Mt. Rose Ski Tahoe base area, and would, therefore, be visible in the *foreground* distance zone to motorists. In addition, some portions of the snowmaking water tank may be visible from some portions of the Mt. Rose Highway in the middle ground. Due to the location of these project components, the orientation (i.e., bends) of Mt. Rose Highway and the speeds at which motorists travel, the duration for which the chairlift, skier bridge, and water tank would be visible would be short—generally lasting a few seconds in either direction.

To assist reviewers of this FEIS with understanding the potential impacts to the Mt. Rose Highway, four visual simulations and three maps depicting the visual resources of the project area were prepared (refer to Figures 9 through 15).

- Figure 9: Identifies the key viewpoints that could potentially be affected by the proposed chairlift and skier bridge.
- Figure 10: View of the proposed lift crossing looking due west (i.e., uphill) along Mt. Rose Highway. When looking at the visual simulation, private land at the Mt. Rose Ski Tahoe base area is on the left of the Mt. Rose Highway, and NFS land in the Atoma Area is on the right. The visual simulation depicts the proposed Atoma Chairlift, as well as a net or similar safety structure designed to catch loose items (e.g., articles of clothing, skier equipment, etc.) that could become hazards if they were to fall on the Mt. Rose Highway. From this vantage point, the proposed Atoma Chairlift would be visible in the immediate *foreground* distance zone.
- Figure 11: View of the proposed skier bridge looking northeast (i.e., down) along Mt. Rose Highway. Private land at the Mt. Rose Ski Tahoe base area are on the right of the Mt. Rose Highway, and NFS land in the Atoma Area are on the left. The visual simulation depicts the proposed skier bridge, which would be visible in the immediate *foreground* distance zone.
- Figure 13: Identifies the key viewpoints that could potentially be affected by the water tank portion of the project.
- Figure 14: Viewpoint #1 is looking east toward Mt. Rose Ski Tahoe from the Mt. Rose Highway. This portion of the highway is surrounded on both sides by NFS land, but looks across private land owned by Mt. Rose Ski Tahoe. From this vantage point, some ski trails are visible; however, due to topography and forest vegetation, the water tank is mostly screened from the viewer. In this simulation, it is not easily noticeable.
- Figure 14: Viewpoint #2 is looking north toward the top of the Mt. Rose Ski Tahoe SUP boundary from the Mt. Rose Highway. This viewpoint is surrounded by NFS land and forested vegetation. The simulation depicts a mostly screened water tank, with a limited view of the water tank through the trees.

- Figure 15: Identifies the different VQO regions that have potential to be affected by the proposed project.

A chairlift extending over a roadway is not new, or necessarily unique, in the ski industry. Examples of chairlifts and gondolas include (but are not limited to): Breckenridge (CO), Loveland Basin (CO), Deer Valley (UT), Park City (UT), Stowe (VT).

Proposed trails and infrastructure (including the portion of the Atoma Chairlift alignment not directly over the highway and snowmaking guns) in the Atoma Area are not anticipated to be markedly visible to motorists along the Mt. Rose Highway due to natural vegetation screening between the Atoma Area and the highway.

Under Alternative 2, it would not be possible to view both the proposed chairlift and skier bridge from the same perspective due to bends in the highway corridor. *Note*: the simulations noted below are merely tools to assist the Forest Service, public, and reviewing agencies with understanding the *massing*, *scale,* and *location* of the proposed chairlift and skier bridge sufficient for the NEPA process. *They are not intended to be precise depictions of either project element*. While the massing and locations of both elements are accurately depicted, should the Forest Service approve these projects, Mt. Rose Ski Tahoe would need to have both the chairlift and skier bridge engineered and designed. The ski area would also need to coordinate with Forest Service and NDOT landscape architects on final architectural details for the bridge, including, but not limited to, the Forest Service's BEIG and NDOT's policies and procedures. These simulations are accurate representations of the project based what is known at this time, and are designed to meet the requirements of NEPA.

Management of the Scenic Environment on National Forest System Land at and adjacent to Mt. Rose Ski Tahoe

As indicated previously, NFS land within the existing Mt. Rose Ski Tahoe SUP area and the Atoma Area have a VQO of *Partial Retention*. This is a fairly common VQO for ski areas operating on NFS land that are still bound by the Forest Service's VMS.

Expansion of the SUP area, and incorporation of the Atoma Area into the ski area's lift and trail network (including supporting infrastructure and snowmaking system), would be designed, to the extent practical, to borrow from natural colors and textures to minimize their aesthetic impacts. Proper project planning, combined with the implementation of Management Requirements for construction materials and colors, as well as borrowing from natural forms, lines, colors and textures, would minimize impacts to the aesthetic environment throughout the existing and expanded SUP area.

The following Management Requirements will minimize impacts associated with the proposed projects and ensure proper management of the scenic environment on NFS land:

- *VI 1: Adhere to Washoe County Scenic Byway Guidelines when constructing approved trails and infrastructure.*

- *VI 2: Facilities or structures including the bridge, lift terminals and chairs, and the water tank will meet Forest Service solar reflectivity standards. This includes any reflective surfaces (metal, glass, plastics, or other materials with smooth surfaces), that do not blend with the natural environment. Surfaces shall be covered, painted, stained, chemically treated, etched, sandblasted, corrugated, or otherwise treated. The specific requirements for reflectivity are as follows: Facilities and structures with exteriors consisting of galvanized metal or other*

reflective surfaces will be treated or painted dark non-reflective colors that blend with the forest background to meet an average neutral value of 4.5 or less as measured on the Munsell neutral scale. All facilities or structures will be subject approval by a Forest Service Landscape Architect prior to installation or construction.

- *VI 3: Facilities or structures including the bridge, lift terminals and chairs, and water tank will meet color guidelines. Bright colors are inappropriate for the forest setting. The colors should be muted, subdued colors that blend well with the natural color scheme. FSH No. 617, "National Forest Landscape Management for Ski Areas, Volume 2, Chapter 7," provides recommended colors for ski areas. Final designs would be reviewed and approved by a Forest Service landscape architect.*

- *VI 4: Mt. Rose Ski Tahoe will coordinate with NDOT and the HTNF regarding the design and construction of the skier bridge over the Mt. Rose Highway. This includes, but is not limited, to following NDOT's policies and procedures:*
  - *Provide a minimum of 3% of the costs of construction towards aesthetics. Costs may be higher to ensure aesthetics of the bridge fit into the forested setting, consistent with HTNF guidelines).*
  - *Provide three concepts prepared by a Nevada-licensed landscape architect for NDOT LA section to review and choose a preferred alternative, which would then be incorporated into the permit for further review by all NDOT reviewers and then construction.*
  - *Provide additional mitigation above and beyond the 3% for the removal of every tree over a 4 inches diameter. This would be a 2:1 caliper inch replacement either in trees, if there is sufficient room for their 80% mature size, and their establishment or the value of those replacement trees added back into the 3% for aesthetic treatment.*
  - *Paint or stain of all structural components, including a desert varnish stain of poles, etc. would be required and is not a part of the 3%.*
  - *Revegetation per NDOT requirements for all disturbed areas, including staging, etc. is not a part of the 3%.*

- *VI 5: Use the Forest Service's BEIG to guide the design of the skier bridge over the Mt. Rose Highway. Final designs of bridge will be developed with, and approved by, a Forest Service landscape architect.*

The existing, natural vegetation screen that exists between the Mt. Rose Highway and the Atoma Area would screen most of the new infrastructure from view. Finally, the new infrastructure in the Atoma Area would only be visible to skiers or dispersed (summer) recreationists who are in it. Therefore, the Atoma Area would be consistent with *Partial Retention*.

The proposed chairlift (with the associated net underneath) and skier bridge would be clearly visible to drivers on the Mt. Rose Highway in the *foreground* view. Any portion of the new chairlift and skier bridge that is visible from the Mt. Rose Highway would represent incremental changes consistent with the developed theme of the ski area; however, the chairlift and skier bridge would be visible for a very short period to motorists traveling on the highway.

The following Management Requirement will minimize the impacts to summer motorists:

- *VI 6: To reduce visual impacts associated with the Atoma Chairlift outside of the ski season, Mt. Rose Ski Tahoe will be required to:*
  - *Remove individual chairs that would otherwise hang over the Mt. Rose Highway*

Furthermore, construction of the proposed 5-million gallon water tank on NFS land within the existing ski area would be consistent with the VQO of *Partial Retention*. The proposed tank would be located in a relatively flat area near existing snowmaking infrastructure. The tank would represent an incremental addition to the built environment in this portion of the SUP area, and modeling shows (refer to Figure 11) that generally the area would only be visible to skiers unloading the Galena Chairlift or descending adjacent trails. Vegetation and natural topography would provide a partial screen of the tank from the Mt. Rose Highway. However, because the roadway is at a higher elevation than the tank, motorists travelling in the northbound (downhill) lane on the Mt. Rose Highway may be able to see it in the *foreground* to the north and east. Therefore, the proposed snowmaking water tank is not likely impact the visual resources of the Mt. Rose Highway.

The Atoma Area is generally less visible to observers outside of the immediate Analysis Area because of the low angles of the slopes; however, the proposed Atoma Chairlift and trail network in the Atoma Area would be visible in the *foreground* and *middleground* from portions of the surrounding NFS land, including Mount Rose proper and trails in the Mt. Rose Wilderness Area. Users of the Mt. Rose Trail would be able to observe the chairlift and trails in the Atoma Area from higher elevations, where natural vegetation screens less of the Analysis Area. Trails would be revegetated to minimize deviations from the natural landscape, and would follow natural openings where possible, to improve the natural appearance. A revegetation plan will be developed and approved by Forest Service specialists and would include at a minimum, appropriate revegetation options, seed mixes, and goals for establishing success of revegetation or desirable species. From lower elevations of surrounding NFS land, including the Mt. Rose Wilderness, visibility of scenic changes in the Atoma Area would be limited.

Where visible from higher-elevation areas such as Mount Rose and the Mt. Rose Wilderness Area, proposed projects on NFS land and private land, including the Atoma Chairlift, skier bridge, water tank, elevated trail/surface lift and guest services building would all contribute to the developed nature of the Mt. Rose Ski Tahoe area on NFS land and adjacent private land. Due to topography and vegetation in the area, none of the project components are anticipated to be visible from the *background* (beyond 10 miles) from surrounding NFS land, including Mount Rose and the Wilderness Area.

Private Land Impacts to the Scenic Environment at Mt. Rose Ski Tahoe

Development and use of the Atoma Area cannot occur without construction of an elevated trail and skier bridge on private land owned by Mt. Rose Ski Tahoe. The trail would connect existing terrain at Mt. Rose Ski Tahoe (on private land) with the proposed terrain in the Atoma Area (NFS land). The elevated trail (approximately 25 feet above natural grades), along with the upper third of the Atoma Chairlift, would be visible along short segments of the Mt. Rose Highway in the *foreground* distance zone. This slope of the elevated trail would be revegetated to minimize its visibility, and it would be partially screened by maintaining existing vegetative buffers, where possible. However, the chairlift and elevated trail would increase the developed appearance of private land adjacent to the Mt. Rose Highway.

The guest service facility would be located across the ski trail from the top terminal of the existing Wizard Chairlift. This facility is expected to be visible in the *foreground* from the adjacent ski trails and chairlift only. Trees and topography would screen the facility from viewers on the Mt. Rose Highway or surrounding private and NFS land.

Management of the Scenic Environment on NFS Land within Land Acquired through the Galena Resort Land Exchange

Under Alternative 2, the Forest Plan would be amended to preclude commercial development on the 3,446 acres acquired through the 1994 Galena Resort Land Exchange. Commercial developments including (but not limited to) resorts, stores, buildings, structures, or facilities would add to the developed nature of the area and may not be consistent with surrounding VQOs of retention or *Partial Retention* (most could be designed to meet the VQO of *Modification*).

Currently, these lands primarily include trails and hiking opportunities, designated camping which are apparent in the immediate *foreground*; however, the majority of these uses are screened by vegetation and topography and are consistent with VQOs. The Forest Plan Amendment would likely maintain the current dispersed recreational use throughout the area better meeting the area VQOs that other commercial development.

3.5.4.3 Alternative 3

All elements of Alternative 3 would be the same as described for Alternative 2, except:

- The Atoma Area SUP expansion would be serviced by two lifts. One lift would be contained within the Atoma Area (Chairlift A) and a second lift would provide the return trip over the highway, aligned directly over the bridge (Chairlift B); and,
- There would be a restroom facility built within the Atoma Area.

The SUP boundary adjustment and associated Atoma Area developments including the bridge and snowmaking, the water tank and the Forest Plan Amendment would all be identical to those described for Alternative 2.

Differences in project elements and the associated analysis are discussed below.

The Mt. Rose Highway

The proposed Atoma Chairlift B and skier bridge would cross over the Mt. Rose Highway *at a single point* in the vicinity of the Mt. Rose Ski Tahoe base area. The crossing would be visible in the *foreground* distance zone to motorists.

To assist reviewers of this FEIS with understanding the potential impacts to the Mt. Rose Highway, four visual simulations and three maps depicting the visual resources of the project area were prepared (refer to Figures 9 through 15).

Under Alternative 3, the proposed chairlift would be aligned directly over the skier bridge and would, therefore, cross the highway at a single location. *Note*: these simulations are merely tools to assist the Forest Service, public and reviewing agencies with understanding the *massing*, *scale*, and *location* of the proposed chairlift and skier bridge sufficient for the NEPA process. *They are not intended to be precise depictions of either project element*. While the massing and locations of both elements are accurately depicted, should the Forest Service approve these projects, Mt. Rose Ski Tahoe would need to have both the chairlift and skier bridge engineered and designed. The ski area would also need to coordinate with Forest Service and NDOT landscape architects on final

architectural details for the bridge, including, but not limited to, the Forest Service's BEIG and NDOT's policies and procedures. These simulations are accurate representations of the project based what is known at this time and are designed to meet the requirements of NEPA.

- Figure 9: Identifies the key viewpoints that could potentially be affected by the proposed chairlift and skier bridge.
- Figure 12: View of the proposed chairlift and bridge crossing looking northeast (i.e., downhill) along Mt. Rose Highway. When looking at the visual simulation, private land at the Mt. Rose Ski Tahoe base area are on the right of the Mt. Rose Highway, and NFS land in the Atoma Area are on the left. The visual simulation depicts the proposed Atoma Chairlift B, as well as proposed skier bridge. From this vantage point, the proposed Atoma Chairlift and bridge would be visible in the immediate *foreground* distance zone.

The proposed Chairlift B, elevated trail and skier bridge would be clearly visible in one location to drivers on the Mt. Rose Highway in the *foreground* view. Any portion of the new chairlift, elevated trail and skier bridge that is visible from the Mt. Rose Highway would represent incremental changes consistent with the developed theme of the ski area; however, the chairlift, elevated trail and skier bridge would be visible for a very short period (and consolidated to one location) to motorists traveling on the highway.

The following Management Requirement will minimize the impacts to summer motorists:

❖ *VI 6: To reduce visual impacts associated with the Atoma Chairlift outside of the ski season, Mt. Rose Ski Tahoe will be required to:*

- *Remove individual chairs that would otherwise hang over the Mt. Rose Highway*

Management of the Scenic Environment on National Forest System Land at and adjacent to Mt. Rose Ski Tahoe

The proposed chairlift and skier bridge would be clearly visible to drivers on the Mt. Rose Highway in the *foreground* view. Co-locating this infrastructure may slightly reduce the feeling of new development in the area of the Mt. Rose Ski Tahoe. The visible portion of the development the Mt. Rose Highway would represent incremental changes consistent with the developed theme of the ski area and would be visible for a very short time to motorists traveling on the highway.

As discussed under Alternative 2, the following Management Requirement will minimize the impacts to summer motorists:

❖ *VI 6: To reduce visual impacts associated with the Atoma Chairlift outside of the ski season, Mt. Rose Ski Tahoe will be required to:*

- *Remove individual chairs that would otherwise hang over the Mt. Rose Highway*

Guest Services

Under Alternative 3, a restroom facility would be developed on the north side of the Mt. Rose Highway within the Atoma Area. The location of this building would need to be accessible to visitors riding both Atoma Chairlifts (near the top terminal of Chairlift A and the bottom terminal of Chairlift B). This location is not anticipated to be visible from the Mt. Rose Highway. Despite that this location is expected to be visible from the summit of Mount Rose (refer to Figure 17), the scale of these facilities is expected to remain subordinate to surrounding ski trails and road developments. Guidelines for the built environment in this zone emphasize muted earth tones, structures that appear solid and substantial, and the use of battered stone, wood, or even colored

and textured concrete. The restroom would be consistent with these guidelines and be compatible with the forest landscape.

3.5.5 Cumulative Effects

3.5.5.1 Temporal and Spatial Extent of Analysis

The spatial extent for the cumulative effects analysis of visual resources are the public and private land in the vicinity of Mt. Rose Ski Tahoe's SUP area, including viewpoints along the Mt. Rose Highway. The temporal bounds for this cumulative effects analysis of visual resources extends from Mt. Rose Ski Tahoe's inception as a ski area in 1964, through the foreseeable future in which Mt. Rose Ski Tahoe can be expected to operate.

3.5.5.2 Past, Present, and Reasonably Foreseeable Future Actions

The following projects could have cumulative impacts on visual resources and are analyzed below:

- Mt. Rose Ski Tahoe 2010 MDP Addendum
- Private Land Development within and adjacent to the project area

Mt. Rose Ski Tahoe Master Development Plan

Historic development on NFS land at Mt. Rose Ski Tahoe has involved clearing of trails, grading, and construction of lifts, roads, and buildings. Changes in vegetative patterns and developed facilities are visible from NFS land within the permit area, and numerous locations on both private and NFS land in the surrounding area. Previously accepted but unimplemented projects from the 2010 MDP Addendum are anticipated to have a similar effect through the foreseeable future that Mt. Rose Ski Tahoe can be expected to operate.

The 2010 MDP Addendum includes a terrain park lift on Lower Zephyr, extension of the top terminal of the Lakeview Chairlift onto NFS land, and replacement of the Ponderosa and Galena Chairlifts with a new chairlift that would include a top terminal on NFS land.

As outlined in the 2010 MDP Addendum, future construction of a mountain-top restaurant (between the top terminals of the Northwest Magnum 6 and Lakeview Chairlifts on private land) and construction of two viewing/picnic decks are planned.[62] The future developments on both NFS land and private land would require site specific NEPA analysis.

Grading and expansion of the snowmaking network are discussed in the 2010 MDP Addendum, as approved but unimplemented projects. These projects could impact visual resources; however, proper rehabilitation and revegetation of the graded or disturbed areas would minimize any impacts.

These projects would likely contribute to the developed nature of lands in the area of Mt. Rose Ski Tahoe.

Private Land Development

North of Mt. Rose Ski Tahoe, along the Mt. Rose Highway, private land development has occurred at the Sunridge subdivision (approximately 3 miles north on Mt. Rose Highway) and nearby the Sky Tavern ski area (over 1 mile from Mt. Rose Ski Tahoe). These developments have

[62] Ibid.

added roads and homes over time, in what was previously a primarily natural setting. Structures and roads on private land have contributed to the developed landscape that is visible in the area. Although future residential development is allowed by Washoe County zoning regulations in the vicinity of Mt. Rose Ski Tahoe, currently there are no known proposals to develop these lands.

3.5.6 Irreversible and Irretrievable Commitments of Resources

Additional developed terrain and infrastructure in previously undisturbed portions of the SUP area would represent small, irretrievable effects to visual resources, particularly from the summit of Mount Rose and nearby peaks. The proposed water tank, skier bridge, and elevated trail to access the Atoma Area would also represent minor, irretrievable effects to the visual resources of the Mt. Rose Highway. Users of the area would likely expect to see ski area infrastructure when looking towards Mt. Rose Ski Tahoe. This commitment of the visual resource is not considered irreversible because facilities and lifts could be removed and, in time, the area could be reclaimed and revegetated, restoring its natural appearance.

3.6 Cultural Resources

3.6.1 Scope of the Analysis

This cultural resources assessment is mandated by the National Historic Preservation Act of 1966 (NHPA). Section 106 of the NHPA requires that federal agencies take into account the effects of a federal undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places (NRHP).

The regulations for implementing Section 106 are detailed in 36 CFR Part 800, which requires the determination of the project's APE and identification of historic properties within that APE. The APE is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking. The APE is determined in consultation with the appropriate SHPO(s), Native American Tribes and other interested parties. The APE for this project is considered to be the 122.9-acre SUP addition into the Atoma Area as well as the existing ski lift, trail network (specifically *The Galena*, *North Rim*, *Merlin* trails and the proposed connector trail to the bridge) and the Proposed Water Tank location (refer to the action alternatives figures).

An evaluation of any historic properties found during the identification phase is done in consultation with the SHPO(s), any Indian tribe that might attach religious and cultural significance to properties within the area of potential effects and any other interested parties. If the investigation reveals that historic properties might be affected by the undertaking the Forest Service works with all of the necessary consulting parties like the SHPO and tribes to mitigate the effects of the undertaking on those historic properties.

In this document references are made toward significant cultural resources, which include those resources eligible or potentially eligible to the National Register or might be significant and require consideration for other reasons (such as a sacred site or similarly important site to a native tribe). Forest Service Manual 2360 (Heritage Program Management) defines cultural resources as "An object or definite location of human activity, occupation, or use identifiable through field survey, historical documentation, or oral evidence. Cultural resources are prehistoric, historic, archaeological, or architectural sites, structures, places, or objects and traditional cultural

properties." Cultural resources include the entire spectrum of resources for which the Heritage Program is responsible, from artifacts to cultural landscapes without regard to eligibility for listing on the National Register of Historic Places.

On December 5, 2012, five federal agencies (the Departments of Defense, the Interior, Agriculture, Energy, and the Advisory Council on Historic Preservation entered into a memorandum of understanding (MOU) to improve the protection of and Indian access to sacred sites through interagency coordination and collaboration. Decisions made about this undertaking's potential effect on sacred sites will be made based on Forest Service policy and the results of this MOU.

Consultation is ongoing with the necessary federally recognized tribes and interested parties as part of the NEPA and Section 106 process. Per Section 106, the agency is consulting with the Nevada SHPO on APE definitions, site eligibility determinations and effects determinations.

3.6.2 Affected Environment

While the APE is located on Slide Mountain, Mount Rose forms the backdrop for the Analysis Area. At an elevation of 10,800 feet, it is the third highest peak in the Tahoe region. Washoe Valley, which is situated east of the Analysis Area, is also notable as it attracted early settlers and communities such as Washoe City, Franktown and Galena, which were established during the 1850s. These settlements became supply points in support of Comstock-era logging during the 1860s.

Historic logging is marked by the occasional occurrence of high-cut stumps and the presence of two Comstock-era wood camps. Modern logging is evidenced by numerous low-cut stumps, skid trails and slash. The project APE is bounded on the south by Mt. Rose Highway (NV Route 431), constructed in 1960. The Old Mt. Rose Highway, constructed during the 1930s, bisects the Atoma Area on a north-south trend. The old highway incorporates portions of the 1891 "Road to Incline," segments of early emigrant era trails, Comstock-era log haul roads and modern recreational roads embedded into the old highway and its various branching roads.

Recent recreational development within the APE is associated with Mt. Rose Ski Tahoe and the Atoma cross-country ski area concession. The latter was established during the early 1980s in the southwestern portion of the project. A sewer line currently runs within the alignment of the Old Mt. Rose Highway and the Nevada Bell Fiber Optic underground cable and Nevada Energy overhead distribution power line follows ridgeline that bounds the project's northwestern APE.

3.6.2.1 Cultural Resource Site Inventory

Lift and Trails Area of Potential Effect

Archival research and the initial field reconnaissance in 2011 disclosed a number of potentially significant cultural resources within the Atoma Area project APE. In the 2014 follow-up survey and formal recording effort for the Atoma Area, the cultural resources noted during the 2011 reconnaissance were relocated and appropriately regrouped into individual sites or site complexes, features and/or artifacts. In 2017 additional field inventory of the APE was intensively examined. All cultural resources were evaluated and recommended ineligible for listing in the National Register; pending concurrence for Nevada SHPO.

Snowmaking Water Tank

The 2011 initial survey of the water tank project APE revealed no cultural resources potentially eligible to the National Register or significant in any other way.

Determination of Eligibility

All resources inventoried within the project APE are being recommended as ineligible for listing in the National Register. A determination of NRHP eligibility of cultural resources, potential impact to those resources by the Proposed Action and possible mitigation solutions are currently being finalized through consultation between the Forest Service and the Nevada SHPO.

3.6.3 Direct and Indirect Environmental Consequences

3.6.3.1 Alternative 1 – No Action

New development projects would not occur as a result of the No Action Alternative. The ski area would continue to operate under its current configuration and capacity under this alternative. Because no ground disturbance is proposed under the No Action Alternative, no impacts to historic properties within the APE would occur as a result of approval of this alternative.

3.6.3.2 Alternative 2 and Alternative 3

The Forest has determined that archaeological resources inventoried within the APE are ineligible for listing in the National Register of Historic Places; however, consultation with the Nevada State Historic Preservation Office (NV SHPO) on the cultural resource identification efforts, cultural resource evaluations and project effects determination for the Mt. Rose Ski Tahoe – Atoma Area Environmental Impact Statement Heritage Resource Inventory and Evaluation Reports is ongoing.

The following Management Requirements is included in the event previously unidentified resources are found during implementation:

- *CU 1: If previously unidentified cultural resources are found, work will be halted immediately within a minimum of 300 feet from the discovery and Forest Service archaeologists will be notified to determine protective measures. Site-specific surveys have been conducted. If undocumented historic and/or prehistoric properties are located during ground disturbing activities or planning activities associated with approved construction activities, they will be treated as specified in 36 CFR § 800.11 concerning Properties Discovered During Implementation of an Undertaking.*

3.6.4 Cumulative Effects

3.6.4.1 Temporal and Spatial Extent of Analysis

The spatial extent for this cumulative effects analysis of cultural resources is limited to public and private land in the vicinity of the Mt. Rose Ski Tahoe SUP area. The temporal bounds for this cumulative effects analysis of cultural resources extends through the foreseeable future in which Mt. Rose Ski Tahoe can be expected to operate. Past effects considered include those from Mt. Rose Ski Tahoe's inception as a ski area in 1964.

3.6.4.2 Past, Present, and Reasonably Foreseeable Future Actions

It is unknown if the development of the ski area impacted any significant cultural resources and the analysis for the Atoma Insect Salvage and Fuels Reduction Project resulted in a determination

of no adverse effect to historic sites. The current Mt. Rose Ski Tahoe MDP includes development in the Wizard Chairlift area, the Atoma Area and snowmaking retention. No impacts to cultural resources were identified from development of the Wizard area in 2016. When considered with the current proposal, there are no foreseeable future actions that might affect significant cultural resources. In the future, a new MDP would be developed to outline development and operations at Mt. Rose. Those projects would be analyzed for impacts to cultural resources in separate analyses.

3.6.5 Irreversible and Irretrievable Commitments of Resources

No irreversible and/or irretrievable commitments of cultural resources have been identified in association with any of the alternatives analyzed in this document.

3.7 Botany and Overstory Vegetation

3.7.1 Scope of the Analysis

The scope of the analysis for botanical resources includes trail and lift construction within the 112-acre Atoma Area and the 3.5-acre snowmaking water tank site (refer to Figure 2). These areas include a variety of habitat types, which are described under Section 3.7.2. The analysis evaluates the potential effects of the project on botanical resources and overstory vegetation, including federally threatened and endangered species, as well as Forest Service R4 sensitive species. In addition, the action alternatives include a Forest Plan Amendment that precludes commercial development on 3,446 acres of NFS land acquired through the Galena Resort Land Exchange. Therefore, the Analysis Area includes the additional 3,446 acres of NFS land.

This analysis summarizes the more detailed Botanical Biological Report (Biological Assessment/ Biological Evaluation [BA/BE] and Specialist Report) contained in the Project Record. The Botanical Biological Report and this analysis describe the existing conditions and disclose anticipated impacts to federally threatened and endangered, and R4 sensitive plant species.

3.7.2 Affected Environment

The Analysis Area is located approximately 6 miles northeast of Incline Village, Nevada and 25 miles southwest of Reno, Nevada. The Analysis Area includes approximately 112 acres of undeveloped NFS land located south of Galena Creek, directly across Mt. Rose Highway from the Mt. Rose Ski Tahoe base area in the Atoma Area. The site is bound by Mt. Rose Highway to the south, Atoma Road to the west, and is bisected by Sky Tavern Road. The proposed water tank is located within the existing SUP boundary of the resort and would encompass approximately 3.5 acres. The location of the proposed water tank is immediately adjacent to the existing water tank located at the western edge of the ski area.

3.7.2.1 Vegetation Communities

Upper Montane Mixed Coniferous Forest

The Atoma Area and the water tank are both situated within the lower subalpine zone, characterized by a mix of conifers including lodgepole pine (*Pinus contorta* var. *murrayana*), white fir (*Abies concolor*), red fir (*Abies magnifica*), Jeffrey pine (*Pinus jeffreyi*), occasional mountain hemlock (*Tsuga mertensiana*), western white pine (*Pinus monticola*), and whitebark

pine (*Pinus albicaulis*). Whitebark pine is currently considered to be a candidate for listing as threatened or endangered under the ESA.

To reduce the continuing threat of Mountain Pine Beetle (MPB) infestations, approximately 30 acres of green trees were thinned, and insect infected and dead trees removed within the Atoma Area between 2007 and 2010. The resulting canopy cover in treated stands is relatively open, ranging between 20 and 30 percent. Within the remaining untreated acres of the Atoma Area, canopy cover ranges between 20 percent in the more open areas on the north side of the proposed area to over 60 percent in some denser patches located in the central and southern portions of the Atoma Area. As noted in the Common Stand Exam data (refer to the BA/BE in the Project Record), trees vary in size and density throughout the Atoma Area. Some of the denser pockets of trees occur along a drainage where multiple canopy layers of conifer are mixed with varying age classes of aspen. Snags are scattered throughout the Atoma Area but are most prevalent in the untreated sections of the Analysis Area.

Blister rust (*Cronartium ribicola*), an exotic invasive disease, has been noted in the western white pine and some of the whitebark pine in the area. Trees exhibiting some natural resistance to this disease may also occur within the area.

Montane chaparral occurs infrequently in canopy openings on shallow, rocky, well-drained soils predominantly on west- and south-facing slopes. On east and north facing slopes, patches of tobacco brush (*Ceanothus velutinus*), dwarf sagebrush (*Artemisia arbuscula* var. *arbuscula*), and occasional mountain mahogany (*Cercocarpus ledifolius*) dominate. This shift in plant dominance is driven by variations in local topographic, slope aspect, and edaphic factors. Understory composition varies with slope aspect and substrate type; west- and south-facing slopes tend to be characterized by shallow gravelly soils and support species such as mountain pennyroyal (*Monardella odoratissima*), pussy paws (*Calyptridium umbellatum*), and sulphur buckwheat (*Eriogonum umbellatum*). The shaded, mesic understory on northeastern-facing slopes supports conifer saplings, cinquefoil (*Potentilla* spp.), Brewer's angelica (*Angelica breweri*), Alice Eastwood's fleabane (*Erigeron aliceae*), Sierra currant (*Ribes montigenum*), and diffuse gayophytum (*Gayophytum diffusum*).

The entirety of the proposed water tank area is within the upper montane mixed coniferous forest, as described above. Overall, the water tank area is considered a fairly open conifer stand with little understory vegetation or variation in stand structure. Within the footprint of the proposed water tank there are a total of 120 live trees, approximately 33 percent of which are whitebark pine (others are lodgepole pine, mountain hemlock, and western white pine). The site lies immediately adjacent to the existing water tank and road system owned and operated by Mt. Rose Ski Tahoe.

Montane Riparian Scrub

The Atoma Area includes areas mapped as montane riparian scrub, which consist of a relatively dense overstory of riparian trees with herbaceous understory species in canopy openings, and a dense layer of fallen trees and woody debris in unvegetated areas. This plant community is traversed by a main intermittent stream channel and associated networks of smaller rills. Montane riparian scrub supports a 3- to 5-meter-high overstory of mountain alder (*Alnus incana* ssp. *tenuifolia*), quaking aspen (*Populus tremuloides)*, occasional willows (*Salix lemmonii* and *S. orestera*), and a dense herbaceous understory comprised of a high diversity of wet meadow herbaceous species, including sedges (*Carex* spp.), rushes (*Juncus* spp.), seep monkey flower (*Mimulus guttatus*), Brewer's monkeyflower (*Mimulus breweri*), cinquefoil (*Potentilla*

glandulosa and *P. gracilis*), cow parsnip (*Heracleum maximum*), corn lily (*Veratrum californicum*), and glaucus willowherb (*Epilobium glaberrimum)*. Sub-shrubs including twinberry (*Lonicera involucrata*) and meadow rue (*Thalictrum fendleri*) form an intermediate canopy below the riparian trees and shrubs. The ephemeral drainage/creek that runs through the Analysis Area is surrounded by this habitat type.

Montane Mesic Meadow

The Atoma Area includes small pockets of montane mesic meadow that are interspersed throughout riparian and montane coniferous forest canopy openings. This community supports a high diversity of plant species adapted to saturated to inundated hydrologic conditions and anaerobic soils, across approximately 9 acres of wetlands. Wetland-adapted species are supported by a combination of groundwater seepage resulting from vertical fluctuations in the groundwater table in the southwestern portion of the Analysis Area, and by overflow from the lower terraces of an active braided stream channel in downstream portions where flows are confined. The herbaceous layer is characterized by multiple height classes of sedges, rushes, graminoids, and forbs, ranging from 0.5 to 8 inches in height. Species present in this community are similar to those listed above in the montane riparian scrub understory.

3.7.2.2 Federally Threatened or Endangered Species

Initial analysis identified one federally listed (or candidate) plant species that has potential to occur in the Analysis Area. This species and its habitat are described in Table 8. Field surveys determined that whitebark pine occurs within the Analysis Area and thus has been carried forward in the analysis.

Table 8. Federally Listed and Proposed Plant Considered in Analysis

Species (Common Name, *Scientific Name*)	Habitat Description	Habitat Present	Species Present	Comments
Whitebark pine (Candidate) *Pinus albicaulis*	Poor soils, steep slopes, in subalpine and alpine communities	Yes	Yes	Whitebark pine occurs in the upper elevations of the Atoma Area and within the water tank area.

3.7.2.3 Forest Service R4 Sensitive Species

FSM 2670 defines a sensitive plant species as one that is not presently listed as threatened or endangered by the United States Fish and Wildlife Service (USFWS), but concerns about the population viability have been identified as evidenced by:

- Significant current or predicted downward trends in population numbers or density.
- Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.

In addition to the species described above, the following R4 sensitive species are known to occur, or have potential to occur within the Carson Ranger District. A total of seven species (indicated in bold in Table 9) have been carried forward into the analysis because they are known to have habitat present in the Analysis Area.

Table 9. Forest Service R4 Sensitive Plant Species Known to Occur within the Carson Ranger District				
Species (Common Name, *Scientific Name*)	General Habitat	Habitat Present	Species Present	Comments
Galena Creek rockcress *Boechera rigidissima* var. *demota*	The habitat includes sandy to rocky soils or outcrops derived from granitic or volcanic materials, mostly on moderate to steep northernly aspects. Often found in drainage ways, near meadow edges or in other moisture accumulating microsites. Associated forest communities include fir, pine and aspen; elevation above 7,500'.	Yes	No	Habitat is present within the Analysis Area based on granitic soils, elevation, and associated forest communities. Surveys resulted in no detections of Galena Creek rockcress.
Washoe tall rockcress *Boechera rectissima* var. *simulans*	Found on dry, deep, sandy, granitic or andesitic soils on mostly gentle slopes of all aspects, in full or filtered sunlight of thinly littered openings in mid to late Jeffrey Pine/Sierra Nevada White fir forests; 6,035–7,335'.	Yes	No	Habitat is present in the Analysis Area and the plant is known from the vicinity of Spooner Summit approximately 15 miles to the south. Surveys resulted in no detections of Washoe Tall rockcress.
Tiehm's rockcress *Boechera tiehmii*	Associated with steep outcrops of weathering andesitic volcanic and metavolcanic deposits, sometimes on adjacent decomposed granite or carbonates, on ridgetops or on steep, mostly west to north aspects; 9,820–10,560'. Tiehm's rockcress is associated with high elevations and is known from the Mt. Rose Wilderness, Hoover Wilderness, and Tioga Pass summit area.	No	No	The Tiehm's rockcress is known from rocky, steep, high elevation summits. The upper elevation of the Atoma Area includes red fir and mixed conifer forest. Alpine summits which would provide suitable habitat for Tiehm's rockcress are not included in the Analysis Area.
Upswept moonwort *Botrychium ascendens*	All *botrychium* ferns share similar preferences in habitat (i.e., wet or moist soils such as marshes, meadows, and along the edges of lakes and streams) at elevations between 4,700'–9,000'. They generally occur with mosses, grasses, sedges, rushes, and other riparian vegetation. *B. ascendens* has been documented from the Cooney Lake shoreline, Hoover Wilderness.	Yes	No	Suitable habitat is present within the Analysis Area along the banks of the ephemeral drainage in the Atoma Area. About 1.07 acres of upland aspen habitat are included for treatment within the Analysis Area. Moist riparian sites (i.e., stream side settings supporting aspen, willow, marshy areas, and moist meadow habitats) are not included in ground disturbance activities; however, some overstory vegetation removal will occur in these areas. Targeted floristic surveys for moonworts did not reveal any detections of any *Botrychium* species in the Atoma Area.

Table 9. Forest Service R4 Sensitive Plant Species Known to Occur within the Carson Ranger District				
Species (Common Name, *Scientific Name*)	General Habitat	Habitat Present	Species Present	Comments
Dainty moonwort *Botrychium crenulatum*	*B. crenulatum* is known from the west slope of the Carson Range, LTBMU, and Green Creek, Sweetwater Range on Bridgeport Ranger District.	Yes	No	See *B. ascendens.*
Slender moonwort *Botrychium lineare*	*B. lineare* is known from a riparian site in the Bodie Hills adjacent to the Bridgeport Ranger District and fen habitat located on the LTBMU.	Yes	No	See *B. ascendens.*
Moosewort *Botrychium tunex*	Alpine riparian seeps and springs. Associated with metavolcanic soils of well drained rocky meadows in California; Documented from Hoover Wilderness Virginia Pass area. 9,200'–11,800'.	No	No	Metavolcanic soils or rocky meadows are not present in the Atoma Area.
Tahoe star draba *Draba asterophora* var. *asterophora*	This plant is found in rock crevices and exposed talus and boulder slopes with minimal ground cover, and a sparse understory. The Tahoe star draba occurs at high elevations between 8,000'–10,200' on northeast facing slopes. Soils are typically of granitic parent material but the plant may also be found in areas of mixed granitic and volcanic origin.	No	No	The Atoma Area does not include exposed talus and boulder slopes that would support the Tahoe star draba.
Slide Mountain buckwheat *Eriogonum ovalifolium* var. *eximium*	Playas, salt flats. One recorded occurrence on siliceous hot springs deposits in an area that has been intermittently geothermally active for the past 2.5 million years; 4,600'; Blooms May–June.	No	No	Suitable habitat in the form of siliceous hot spring deposits is not present and the site is well above typical elevation range.
Altered andesite buckwheat *Eriogonum robustum*	Endemic to andesitic soils and occurs on barren ridges, knolls and steep slopes. Sites are characterized by dry, shallow, highly acidic (pH 3.3–5.5) gravelly clay soils mainly of the Smallcone Series, formed in andesite, or sometimes in rhyolitic or granitic rocks.	No	No	Andesitic soils are not present within the Atoma Area. Soils of this portion of the Carson Range are predominantly granitic in origin.

Table 9. Forest Service R4 Sensitive Plant Species Known to Occur within the Carson Ranger District				
Species (Common Name, *Scientific Name*)	General Habitat	Habitat Present	Species Present	Comments
Sierra Valley mouse-tail *Ivesia aperta* var. *aperta*	Habitat occurs on sites which are vernally saturated such as meadow flats and borders and ephemeral channels; in Nevada, the populations are restricted to shallow, slow draining soils which are volcanic in origin. In Nevada, the known populations tend to occur at a higher elevation in more remote locations.	No	No	Suitable habitat is not available for Sierra Valley mouse-tail. The Atoma Area contains rapidly draining, sandy granitic soils. Soils within the Analysis Area are Graylock-Temo-Rock outcrop complex, which are derived from granitic origin.
Dog Valley ivesia *Ivesia aperta* var. *canina*	Endemic to Dog Valley, the ivesia occurs on vernally saturated sites. It is associated with meadow flats, borders of gently sloping openings, and ephemeral channels including abandoned irrigation ditches. The plant is a narrowly distributed and is only known to occur in Dog Valley.	No	No	Suitable habitats are not available for Dog Valley ivesia within the Analysis Area. The Atoma Area contains rapidly draining, sandy granitic soils. Soils within the Analysis Area are Graylock-Temo-Rock outcrop complex which are derived from granitic origin. Historically the plant has only been documented in Dog Valley.
Plumas ivesia *Ivesia sericoleuca*	Associated with seasonally wet meadows, meadow ecotones, terraces and toe slopes on soils which are primarily volcanic in origin. The plant has not been located on granitic soils. Plumas ivesia is known from Plumas, Sierra, Nevada, and Placer Counties in California. To date, the Plumas ivesia has not been documented as occurring on the Carson Ranger District.	No	No	Suitable habitat is not available for the Plumas ivesia within the Analysis Area. This plant is not known to occur on the Carson Ranger District.
Three-ranked humpmoss *Meesia triquetra*	Three-ranked humpmoss is associated with fens within the upper montane coniferous forest within the Sierra Nevada Bioregion, (4,250'–9,700'). Three-ranked humpmoss is known from a fen site on the Carson Ranger District in the vicinity of Tahoe Meadows, Washoe County, Nevada and from Hope Valley and Luther Pass, Alpine County, California.	No	No	Suitable habitat for three-ranked humpmoss is not present within the Analysis Area. Fen features have not been recorded from the Atoma Area.

Table 9. Forest Service R4 Sensitive Plant Species Known to Occur within the Carson Ranger District

Species (Common Name, *Scientific Name*)	General Habitat	Habitat Present	Species Present	Comments
Shevock's bristle-moss *Orthotrichum shevockii*	The moss is a rare endemic known from Eastern to Central Sierra Nevada and the Western edge of Nevada in the Carson Range. It is found on under-hangs or crevices of granitic rock within pinyon-juniper to Jeffrey Pine forests. It grows in filtered light. The moss has been documented on the Bridgeport Ranger District in the Slinkard Valley area and from the Carson Range, Carson Ranger District.	Yes	No	Mixed conifer forest within the Atoma Area, specifically, large rocks (estimated 5' diameter), provide potential habitat for the Shevock's bristle-moss. Specific surveys to detect the moss were not completed. No incidental observations of this species were recorded during July or August surveys.
Whitebark pine *Pinus albicaulis*	Whitebark pine is a hardy conifer that tolerates poor soils, steep slopes, and windy exposures and is found at alpine tree line and subalpine elevations throughout its range. The distribution of whitebark pine includes coastal and Rocky Mountain ranges and the Sierra Nevada to northeast Nevada.	Yes	Yes	Whitebark pine occurs in in the upper elevations of the Atoma Area and within the water tank area.
Altered andesite popcorn flower *Plagiobothrys glomeratus*	Endemic to Western Nevada, the rare popcorn flower is restricted to areas of altered andesite between 4,860'–6,650'. The distribution closely matches that of *Eriogonum robustum* an altered andesite associated plant. Known form the Virginia Range in Storey and Washoe Counties and the Carson Range of the Sierra Nevada foothills and from Peavine Mountain, both areas in Washoe County, Nevada.	No	No	Andesitic soils are not present within the Atoma Area. Soils of this portion of the Carson Range are predominantly granitic in origin.

Sources: Dillingham 2005; Halford 2007; Hickman 1993; Lewinsky-Haapasaari and Norris 1998; Morefield 2000, 2001, 2003; Tiehm 2000; USFWS 2011; Van Zuuk 1992; Witham 2000

The only Forest Service sensitive species identified within the Analysis Area during field surveys was whitebark pine. In addition, all species with potential habitat present in the Analysis Area were carried forward into the analysis, which includes Galena Creek rockcress, Washoe tall rockcress, Shevock's bristle-moss, and three species of moonwort. R4 sensitive species that are known to occur, or have potential to occur within the Carson Ranger District are discussed in further detail.

Whitebark Pine

Whitebark pine has the largest distribution of all five needle pines and is found in the upper subalpine and treeline forests of the Western U.S. and Canada.[63] It is currently a candidate species for listing under the ESA.[64] Mortality data collected in multiple studies throughout its range strongly suggest that whitebark pine is in range-wide decline.[65] The primary threat to whitebark pine across its range is a synergistic combination of climate change, blister rust, periodic MPB outbreaks, and fire exclusion.[66]

Isolated individual whitebark pines are present throughout the upper elevations of the Atoma Area. Greater densities of species exist in the vicinity of the proposed water tank.

When compared to other parts of the U.S., such as the Rocky Mountains, California has experienced relatively low mortality of whitebark pine, potentially due to the lower incidence of blister rust; however, recent monitoring and research results suggest that this may be changing.[67] There are isolated stands in California that have experienced stand-replacing mortality events, including areas in the Warner Mountains and on the Inyo National Forest. On the adjacent Lake Tahoe Basin Management Unit (LTBMU), one-time demographic data from eight stands indicates relative stability of the whitebark pine population, except near Mt. Rose Ski Tahoe where stands may be in decline.[68] While native bark beetles are present, the primary threat to whitebark pine is non-native blister rust. Since its detection in the 1920s, the pathogen has caused unprecedented decline and mortality in white pines, including whitebark, across the West.[69] On the LTBMU, whitebark pine stands on the north shore of Lake Tahoe exhibit the highest blister rust incidence (greater than 60 percent), while the south shore has the lowest blister rust incidence (between 1 and 20 percent).[70]

Over the past two to three decades, outbreaks of pine beetle and fir engraver have resulted in high levels of mortality in conifer stands in the Carson Range. Some of the dead and downed timber has been removed through public fuelwood and prescribed burning activities. Ongoing mortality of conifer trees continues to occur.

Currently, healthy whitebark pine trees on the Carson Range may have the potential to contain some resistance to white pine blister rust; these trees are referred to as “plus trees” and to preserve the genetic diversity of the whitebark pine and western white pine. These trees are currently being tested for resistance.

Galena Creek Rockcress

The Analysis Area is within an appropriate elevation range and contains suitable habitat for Galena Creek rockcress. Galena Creek rockcress has been documented in the vicinity of the Mount Rose summit, Galena Creek, and upper elevations of Whites Creek within the Mt. Rose Wilderness in the northern portion of the Carson Range. These known element occurrences are approximately 2 miles from the Atoma Area boundary.[71] Historical accounts of Galena Creek

[63] Keane et al., 2012
[64] USFWS, 2011
[65] Keane et al., 2012; USFWS, 2011
[66] Keane et al., 2012; USFWS 2011; Millar et al., 2004
[67] Millar et al., 2012; Dunlap, 2007; Gibson et al., 2008; Meyer et al., 2012
[68] Maloney et al., 2012
[69] Aubrey et al., 2008
[70] Maloney et al., 2012
[71] Bergstrom, 2013

rockcress have occurred in the Atoma Area but were later identified as the more common Pioneer rockcress (*Boechera platysperma*).[72] Follow-up surveys conducted by the Forest Service in the Atoma Area in 2007 were also confirmed to be the more common *B. platysperma*. Galena Creek rockcress and the more common Pioneer rockcress frequently occur together.[73]

Surveys of the area during 2011 field season did not detect the rare plant, but one was collected in 2013 by Forest Service staff. Seed emergence and blooming periods may fluctuate for plants depending on the yearly variation in climatic conditions. Plants may also be present in a rosette stage without a flowering stalk, which is difficult to consistently detect and identify during the year of surveys. Either factor could have contributed to the lack of detection of Galena Creek rockcress during the 2011 survey.

Washoe Tall Rockcress

Portions of the Atoma Area occur within an appropriate elevation and forest community type to provide potential habitat for Washoe tall rockcress. Botanical surveys in 2011 did not detect presence of Washoe tall rockcress. The nearest known occurrence record for this plant is approximately 2.5 miles from the project to the east in Galena Creek Park and near Brown's Creek Road off Mt. Rose Highway. Non-flowering plants are represented by a basal rosette of leaves that are difficult to discern from other species of rockcress.

Upswept, Dainty, and Slender Moonwort Ferns

Potentially suitable habitat is present within the montane riparian wetland area located in the northeast portion of the Atoma Area located just to the south of the Alternative 2 and Alternative 3 Chairlift A bottom terminal. Targeted floristic surveys for moonworts did not reveal detections of any *Botrychium* species in the Atoma Area. While no *Botrychium* species were observed, these species often do not produce leaves on an annual basis and may be capable of surviving underground for up to ten years. This is due to the mycorrhizal relationship between *Botrychium* species and fungi.

Shevock's Bristle-Moss

Shevock's bristle-moss has not been documented as occurring in the Analysis Area based on surveys performed in 2011. However, small areas of low-potential habitat exist within the Analysis Area, as there are granitic boulders within the Atoma Area. The Atoma Area is dominated by lodgepole pine and white fir, whereas Shevock's bristle-moss is often found in open Jeffrey pine stands.

3.7.2.4 Noxious Weeds

FSM 2081.02 and the Sierra Nevada Forest Plan Amendment (SNFPA) requires an invasive plant risk assessment when any ground disturbing action or activity is proposed to determine the risk of introducing or spreading invasive botanical associated with the action alternatives. For projects having moderate to high risk of introducing or spreading invasive species, the project decision document must identify invasive plant control measures that must be undertaken during project implementation.

Although the terms are often used interchangeably, "invasive" and "noxious" have unique legal definitions. Invasive plants are defined in Executive Order 13112, *Invasive Species* as "non-native

[72] Tiehm, 1989
[73] Morefield, 2002

plants whose introduction does or is likely to cause economic or environmental harm or harm to human health." Invasive plants compromise the ability to manage public lands for a healthy native ecosystem. "Noxious" is a legal term, used by regulatory agencies, such as the California Department of Food and Agriculture and the U.S. Department of Agriculture Animal Plant Health Inspection Service to describe plants considered to be a threat to agriculture and/or non-crop areas.

The SNFPA establishes goals, standards, and guidelines for invasive plant (noxious weed) management for the Sierra Nevada forests. It emphasizes prevention and integrated weed management. It establishes the following invasive plant management prioritization: 1) prevent the introduction of new invaders; 2) conduct early treatment of new infestations; and 3) contain and control established infestations. It also requires a forest to conduct an invasive plant risk assessment to determine risks for weed spread (high, moderate, or low) associated with different types of proposed management activities and develop mitigation measures for high and moderate risk activities with reference to the weed prevention practices in the Regional Noxious Weed Management Strategy.[74]

The Analysis Area has been surveyed for noxious and invasive plant species. There is a single population of noxious and/or invasive weeds within the Analysis Area: cheatgrass (*Bromus tectorum*). Cheatgrass occurs infrequently in lower elevations with small patches occurring in the understory of brush stands. Cheatgrass is widespread on other parts of the Carson Ranger District where it has established itself as a sometimes major component in native plant communities.

3.7.3 Direct and Indirect Environmental Consequences

Table 10 summarizes the impact to federally listed and Forest Service sensitive species resulting from the project and action alternatives.

Table 10. Summary of Determinations for Federally Listed and Forest Service R4 Sensitive Plant Species

Species (Common Name, *Scientific Name*)	Alternative 1	Alternative 2	Alternative 3
Galena Creek rockcress *Boechera rigidissima* var. *demota*	NI	MII	MII
Washoe tall rockcress *Boechera rectissima* var. *simulans*	NI	MII	MII
Upswept moonwort *Botrychium ascendens*	NI	MII	MII
Dainty moonwort *Botrychium crenulatum*	NI	MII	MII
Slender moonwort *Botrychium lineare*	NI	MII	MII
Shevock's bristle-moss *Orthotrichum shevockii*	NI	MII	MII
Whitebark pine *Pinus albicaulis*	NI	WII	WII

NI= No impact
MII= May impact individual plants, but is not likely to result in a trend toward federal listing or loss of viability for the species
WII= Will impact individuals, but is not likely to result in a trend toward federal listing or loss of viability for the species

[74] USDA Forest Service, 2004

3.7.3.1 Alternative 1

No operational or infrastructural changes/additions would occur on NFS land within the Analysis Area as a result of the No Action Alternative. The only Forest Service sensitive species identified within the Analysis Area during field surveys was whitebark pine (a candidate for federal listing). A high percentage of whitebark pine in the project area show signs of being infected with blister rust or by MPB and studies show that infestations in California are growing and the whitebark pine population near Mt. Rose Ski Tahoe may be in a decline. These trends would be expected to persist under the No Action Alternative.

Although potential habitat exists for Galena Creek rockcress, Washoe tall rockcress, Shevock's bristle-moss, and three species of sensitive moonwort, locating plants in the Analysis Area has been rare. Because they are uncommon, under the No Action Alternative effects to these species are not anticipated

The existing habitat conditions within the Analysis Area indicate a low risk in terms of vulnerability to noxious weed invasion. Therefore, under the No Action Alternative the risk of spread of noxious weeds, due to the relatively low existing issue and relatively high elevation of the area, is anticipated to remain low.

The primary concern for the species carried forward in this analysis will continue to be impacts of climate change. As the moisture regimes change, and fire and infestations become increasingly frequent, forest health and plant success will likely see more variation. Additionally, nearby growing human population centers could become a source of noxious weeds.

Under the No Action Alternative, the Forest Plan Amendment would not be approved. Therefore, commercial development would still be a potential use of the 3,446 acres of NFS land acquired through the Galena Resort Land Exchange. Construction and operation of commercial developments could result in impacts to threatened, endangered or sensitive plan species as a result of tree removal, grading, developed infrastructure and increased human use. Construction and human use can also increase the spread of noxious weeds. Project specific NEPA analysis would be required prior to approval of any developments on NFS land and specific impacts of the proposal would be considered at that time.

3.7.3.2 Alternative 2 and Alternative 3

Specific effects of ski area development on botany and overstory vegetation is detailed below. Because the Forest Plan Amendment would preclude commercial development on 3,446 acres of NFS land, this component of the action alternatives would likely to minimize impacts to botany and overstory vegetation from tree cutting, grading, infrastructure and human use associated with those types of development on specific land across the forest. Further, limiting disturbance would also limited the spread of noxious weeds to these areas that are currently primarily natural.

In order to minimize potential resource impacts, Management Requirements have been developed and incorporated into the action alternatives. Management Requirements are included in this section, and listed by resource in Appendix A. The potential effects of implementing the action alternatives were analyzed with Management Requirements applied.

Threatened, Endangered, and Sensitive Species

Of the twenty TES plant species identified in Section 3.7.2 as occurring or having potential to occur in the Analysis Area, seven species were found to have habitat present in the Analysis Area: Galena Creek rockcress, Washoe tall rockcress, upswept moonwort, dainty moonwort, slender

moonwort, Shevock's bristle-moss, and whitebark pine. A determination of ***will impact individuals, but is not likely to result in a trend toward federal listing or loss of viability for the species*** was made for whitebark pine. The project would have ***no effect*** on the remaining thirteen species.

In both action alternatives, some whitebark pine would be removed as part of the proposed projects through the construction of the ski trails, chairlift, and installation of the snowmaking water tank. Within the Atoma Area, approximately four whitebark pine trees are proposed for removal. Construction of the water tank would result in the removal of approximately forty whitebark pine trees. All areas where whitebark pine are located within the Atoma Area and around the water tank are in mixed stands with lodgepole pine, red fir, and western white pine. Some trees in the vicinity were noted to be healthy and not showing any signs of disease, and could be identified as "plus trees" that contain genetic resistance to infection from blister rust. Approximately 90 percent of whitebark pine trees that would be removed were noted to have been infected with blister rust or previously attacked by MPBs. Removal of infected trees could result in the overall increase in health of the five needle pines in the area.

To preserve the genetic diversity of the whitebark pine and western white pine in the area, "plus trees" would be avoided throughout of the Atoma Area where possible. Infected individuals would be identified and removed from the Atoma Area during trail construction and as hazard trees are identified by ski area personnel. Remaining five needle pines in the area (whitebark pine and western white pine) would be retained wherever possible.

The following Management Requirements would minimize the impacts to whitebark pines:

- *BO 6: Prune whitebark pine to remove blister rust, where appropriate.*
- *BO 7: Plant whitebark pine seedlings to restore and/or regenerate whitebark pine (with locally adapted seed from rust resistant collection areas) where they have been reduced by direct removal, natural and anthropogenic agents, as identified by the Forest Service. Trees infected by pine beetle (or other notable infection) shall be identified concurrently with marking of the trees slated for removal associated with the proposed ski trails and lift line in coordination with the Regional Entomologists. The infected trees shall be removed at the same time as the removal of the trees for the project. Mt. Rose Ski Tahoe will be responsible for this mitigation.*
- *BO 10: In order to preserve the genetic diversity of the whitebark pine and western white pine in the area, "plus trees" will be left in place where possible (generally between trails) during construction in the Atoma Area. Five needle pines in the area (whitebark pine and western white pine) will be retained wherever possible.*

For the remaining six Forest Service sensitive species, Galena Creek rockcress, Washoe tall rockcress, upswept moonwort, dainty moonwort, slender moonwort and Shevock's bristle-moss, a determination of ***may impact individuals, but is not likely to result in a trend toward federal listing or loss of viability for the species*** was made. No occurrences of the remaining six sensitive species were found during surveys. However, due to the small size, biennial nature, and/or development of these species, there is a possibility of direct and/or indirect impacts.

Botrychium (moonwort) habitat occurs in the Analysis Area in the northeast portion below the Alternative 2 or Alternative 3 Chairlift A bottom terminal. Any activities that would result in direct impacts to potential habitat for *Botrychiums* where Trails A, B, and C converge and cross the creek could affect *Botrychium*. Indirectly, removal of vegetation for ski trail implementation

could impact *Botrychiums* by causing changes to the microhabitat for this species in the vicinity of the proposed stream crossing. While no individuals were observed during the floristic surveys performed in 2011, the species could be present due to their ability to survive long periods underground without producing above ground leaves. Because of the ski trail crossing proposed and the potential for *Botrychium* to be present, unobserved during the floristic survey, the project may result in indirect impacts to this species through modifications of microhabitat.

The following Management Requirement would provide protection for the *Botrychium* species:

- *BO 5: To minimize impacts to Botrychium, surveys will be conducted annually during the appropriate blooming period until project implementation. If Botrychium is detected, plants shall be flagged and avoided where possible during project activities.*

Direct impacts to Galena Creek rockcress and Washoe tall rockcress could result from project implementation through removal or disturbance of individuals that could occupy the Analysis Area, and the loss of suitable habitat.

A total of 38.25 acres of suitable habitat would be modified as a result of ski trail construction, chairlift installation, and snowmaking water tank installation under Alternative 2. Alternative 3 would result in the modification of 44.32 acres. The proposed ski trails, some of which would be graded to reshape contours, have the potential to eliminate suitable habitat for Galena Creek rockcress and Washoe tall rockcress due to the modification of existing native soil cover and conditions. However, creating additional forest openings in the Analysis Area through the creation of ski trails, especially where no grading occurs, may increase the suitability of habitat for Galena Creek rockcress and Washoe tall rockcress in those areas.

Following construction disturbance, potential habitat for Galena Creek rockcress and/or Washoe tall rockcress could also be indirectly impacted from establishment of early seral native plants or invasive plants, which could slow or prevent establishment of the Galena Creek rockcress and/or Washoe tall rockcress. Management Requirements shall be implemented to decrease the erosion potential and to ensure the successful re-establishment of native plants. A revegetation plan shall be approved by the Forest Service prior to project implementation to prevent the loss of soil and subsequent loss of suitable habitat for Galena Creek rockcress and Washoe tall rockcress.

The following Management Requirements would provide protection to Galena Creek rockcress and Washoe tall rockcress:

- *BO 1: A revegetation plan will be prepared to address soils, plants, to restore project related ground disturbance. The revegetation plan will be developed in coordination with the HTNF, and will include, at a minimum, appropriate revegetation options, seed mixes and goals for establishing success of revegetation or desirable species.*

- *BO 4: Based on potential habitat present within the project area, an additional plant survey for Galena Creek rockcress (Boechera rigidissima* var. *demota) and/or Washoe tall rockcress (Boechera rectissima* var. *simulans) shall be performed prior to commencement of construction for the Atoma Area and the water tank area. If either species is detected, individual plants will be flagged and where possible excluded from project activities. For a large group of plants, the perimeter of the population will be determined and flagged to exclude project activities. For both individual and groups of plants, a 50-foot buffer will be applied to maintain rare plant habitat by excluding project activities. The buffer width will be adjusted to fit the configuration of rare plant habitat with respect to topography and the vegetation present at the specific site, as determined by the district botanist.*

Under the action alternatives, potential impacts to Shevock's bristle-moss could occur during ski trail and/or chairlift construction.

The following Management Requirement would minimize impacts to Shevock's bristle-moss:

- *BO 3: To protect Shevock's bristle-moss, granitic rocks 5 feet and taller will be avoided during implementation. A qualified botanist (experience with identification of mosses) will survey the site to determine presence or absence of this species.*

If Shevock's bristle-moss is determined to be present, the boulder/rock would be avoided during construction activities. Indirect impacts to Shevock's bristle-moss could occur as a result of cutting ski trails through the existing forested area. Increased direct sunlight could result in decreased suitability of habitat due to the species preference of diffused sunlight.

The following Management Requirements would minimize the impact of ground disturbance:

- *BO 1: A revegetation plan will be prepared to address soils, plants, to restore project related ground disturbance. The revegetation plan will be developed in coordination with the HTNF, and will include, at a minimum, appropriate revegetation options, seed mixes and goals for establishing success of revegetation or desirable species.*

- *BO 2: Revegetation activities such as seeding, mulching, wood chips, organic matter, will be completed immediately upon trail construction and grading to minimize impacts to soils and water resources.*

- *BO 8: Vehicle Wash Station – ground disturbing vehicles and equipment shall be washed prior to entering the project area to remove any invasive species that may be attached to the vehicle or equipment.*

Noxious Weeds

The action alternatives include removing trees and other vegetation to construct ski trails and a lift line within the Atoma Area. Additional ground disturbance and tree removal would occur as a result of the snowmaking lines and water tank installation. Ground disturbing activities as those just described can frequently encourage noxious weed invasions. However, the relatively high elevation, granitic soils, and lack of existing noxious weeds of the Atoma Area (and associated project area on private land) reduce the potential for noxious weed invasions to occur. Noxious weeds in the Analysis Area are confined to a relatively small population of cheatgrass directly adjacent the Mt. Rose Highway. Thus, the existing habitat conditions within the Analysis Area indicate a low risk in terms of vulnerability to noxious weed invasion.

Temporary disturbance from Alternative 2 (20.8 acres) or Alternative 3 (26.07 acres) would result from tree removal and grading for the lift and trails. Permanent alteration of soils and vegetation would be less than 2 acres for Alternative 2 and less than 3 acres for Alternative 3, since the temporarily disturbed area would be revegetated and restored.

Removing trees and other vegetation for the construction of skier service facilities could also result in noxious weed invasion, removal of native vegetation and heavy soil disturbance. Heavy equipment used during construction of new facilities also presents an opportunity for noxious weed introduction. If equipment was previously used in infested areas and then transported and used on the project site, there could be a potentially high risk of noxious weed introduction due to equipment contamination.

Implementation of the following Management Requirement would minimize potential noxious weed introductions from equipment contamination:

- *NW 2: Before entering the project area, all equipment will be cleaned with a high-pressure power washer of all mud, dirt, and plant parts. Following cleaning, equipment will be inspected for plant parts (e.g., leaves, stems, seeds). Equipment will be cleaned and inspected again prior to re-entry if it leaves the project site. Equipment will be inspected and cleaned again before moving from an area within the project area with known noxious weed species (currently cheatgrass). Inspections will be completed and documented by qualified personnel.*

Additionally, as mentioned in the previous paragraph, the existing habitat has low suitability for noxious weed introduction, thereby minimizing the potential for spread once equipment is being operated in the area.

Despite the habitat having low susceptibility to noxious weed invasion, implementation of Management Requirements should be implemented to minimize the potential for invasive species to spread to the area. Considering that the Analysis Area is within and adjacent to heavily developed recreation centers with several ski trails, access roads, and existing recreation facilities, including numerous chairlifts, and a state highway, there is a heightened potential for the spread of noxious weeds. Roads and trails provide a means of dispersal for invasive species via three mechanisms: providing habitat by altering conditions, making invasion more likely by stressing or removing native species, and allowing easier movement by wild or human vectors.

The following Management Requirements would prevent the spread of noxious weeds for both Alternative 2 and Alternative 3:

- *NW 1: The project area will be surveyed and treated annually post-implementation to initiate early and rapid response to any new noxious or invasive weed infestations that occur following project activities.*
- *NW 3: All gravel and/or fill material will be certified as weed-free.*
- *NW 4: All seed mixes will be certified as weed-free.*
- *NW 5: For chairlift and trail construction in the Atoma Area, the Atoma Building has been identified as the main staging area for equipment. This area will be re-inspected by qualified personnel prior to commencement of construction for pre-approved use to reduce the risk of introducing noxious weeds into the project area.*
- *NW 6: When invasive plants are grubbed or manually removed, methods that prevent seed spread or re-sprouting will be used. If flowers or seeds are present, the weed will be pulled carefully to prevent seeds from falling and will be placed in an appropriate container for disposal. If flowers and seed heads are not present or are removed and disposed of as described above, the invasive plant may be pulled and placed on the ground to dry out.*
- *NW 7: Fill from re-contouring the Atoma building parking area could be a potential source of weeds if they are determined to be present re-inspection. This area will need to be monitored during and after project implementation.*

The anticipated noxious weed response to the project is low. Because there are no known infestations in the Analysis Area, there is a low risk of spread. However, there is a potentially high risk of introduction from disturbances related to the construction of facilities and infrastructure. As a result, Management Requirements as described above have been created to

address the potential for introduction and alterations to habitat from construction activities. Overall, the risk of noxious weed invasion is low, as Management Requirements will decrease the risk of species introduction and spread.

3.7.4 Cumulative Effects

3.7.4.1 Temporal and Spatial Extent of Analysis

The spatial extent for the cumulative effects analysis of botanical and overstory vegetation is limited to areas within the project area that would be altered by vegetation removal and ground disturbance. The temporal bounds for this cumulative effects analysis of botanical and overstory vegetation resources extends from Mt. Rose Ski Tahoe's inception as a ski area in 1964, through the foreseeable future in which Mt. Rose Ski Tahoe can be expected to operate.

3.7.4.2 Past, Present, and Reasonably Foreseeable Future Actions

The following projects could have cumulative impacts on botanical and overstory vegetation resources and are analyzed below:

- Mt. Rose Ski Tahoe 2010 MDP Addendum
- The 2008 Atoma Insect Salvage and Fuels Reduction Project

Mt. Rose Ski Tahoe Master Development Plan

Botanical resources, which include all of the species in this analysis, have the potential to be cumulatively affected by construction in the Atoma Area when considering other past, present, and reasonably foreseeable future projects. Historical logging operations, grazing, wildfires, fuels reduction projects, human recreational use, and urban development all have the potential to result in cumulative effects to botanical resources.

Historical logging operations and grazing throughout the Carson Range have likely had impacts on Galena Creek rockcress, Washoe tall rockcress, and moonwort species over time. Some of the activities associated with logging, such as opening the canopy and creating edge habitat may have beneficial impacts on Galena Creek rockcress. However, road construction and heavy equipment use through occupied habitat has likely negatively impacted populations.

The increasing popularity of recreation in the area also has the potential to result in cumulative impacts to botanical resources. Hiking trails (such as the Mt. Rose Trail which bisects a population of Galena Creek rockcress), off-highway vehicle use on the Old Mt. Rose Highway, illegal off-road motorized use, picnic grounds, campsites, and other developed recreation areas, in particular those associated with the continued development of Mt. Rose Ski Tahoe, overlap with populations of these species. While certain species appear to coexist well with this disturbance, others may be adversely impacted.

When considered cumulatively with the history and increasing popularity of recreation in the area, projects in the Mt. Rose Ski Tahoe 2010 MDP Addendum can be anticipated to result in the continuation of the trends described in the previous paragraphs. Human presence related to recreation opportunities at Mt. Rose Ski Tahoe and the Atoma Area is expected to continue into the foreseeable future. Unimplemented but approved projects from the Mt. Rose Ski Tahoe 2010 MDP Addendum will impact certain species as has been disclosed in formal review of these projects. While this project has potential to result in some cumulative impacts to individuals of certain botanic and overstory species, the viability of the populations as whole will not be negatively altered.

Past projects at Mt. Rose Ski Tahoe did not specifically analyze effects to whitebark pine. However, the past construction of facilities and ski runs has undoubtedly resulted in removal of some whitebark pine trees, as evidenced by the existence of numerous runs through whitebark pine and mixed conifer stands. Although under the action alternatives more whitebark pine trees will be removed, design features including planting rust resistant trees, and retaining "plus trees" where possible, will minimize impacts to the overall population within the Analysis Area.

In addition to monitoring sensitive species within the forest, problems such as the mountain pine beetle, blister rust, and increased forest openings pose an ongoing challenge to native vegetation communities on the forest. Surveying, revegetation, and soil treatments (as part of the Mt. Rose Ski Tahoe Rehabilitation Plan) would improve revegetation potential and native species success into the future.

Atoma Insect Salvage and Fuels Reduction Project

The Analysis Area is overlapped by the 70-acre Atoma Insect Salvage and Fuels Reduction project. Certain live trees were also approved for removal by this project. When considered cumulatively with the effects of past projects on botanical and overstory vegetation, the Atoma Insect Salvage and Fuels Reduction project has benefitted these resources by reducing the presence of fuels that could result increased wildfire danger and reducing the opportunity for the mountain pine beetle to spread by removing attacked trees. Improving the vigor of the stands in this area through the Atoma Insect Salvage and Fuels Reduction project and identification of infested trees during trail construction, will reduce the risk of successful mountain pine beetle attacks on "plus trees" and ultimately work to enhance the condition of whitebark pine stands in the area.

In summary, these two past projects reduced habitat for these species, and the Atoma project will reduce habitat by another 38 acres under Alternative 2 or 44 acres under Alternative 3. When combined, this project will further reduce habitat, but not to a degree that will lead toward federal listing of any species.

3.7.5 Irreversible and Irretrievable Commitments of Resources

Irreversible commitments of resources are those that cannot be regained, such as the extinction of a species or the removal of mined ore. Irretrievable commitments are those that are lost for a period of time such as the temporary loss of timber productivity in forested areas that are kept clear for use as a power line right-of-way or road.

Under Alternative 2 and Alternative 3, ground disturbance related to ski trails, chairlift, and water tank development would represent an irretrievable effect to botanical resources within the SUP area and adjacent private land. However, this is not considered an irreversible commitment because vegetation is a renewable resource. Should ground disturbance occur to the point where potential habitat is removed entirely, an irreversible commitment of this resource could occur. As stated in the analysis, federally listed threatened and endangered species were not identified in the areas of disturbance. However, whitebark pine would be impacted. Other R4 sensitive species could be avoided and impacts minimized if any were encountered.

3.8 Forest Health

3.8.1 Scope of the Analysis

The scope of this analysis includes the effects to forest health from implementation of the action alternatives including the 112-acre SUP boundary expansion of the Atoma Area, ski lifts, trail network, and a water holding tank for snowmaking. The scope of this analysis is focused on the SUP boundary expansion into the Atoma Area, and the proposed water tank within the existing SUP area. In addition, the action alternatives include a Forest Plan Amendment that precludes commercial development on 3,446 acres of NFS land acquired through the Galena Resort Land Exchange. Therefore, the Analysis Area includes this 3,446 acres of NFS land.

3.8.2 Affected Environment

The Atoma Area is an Upper Montane Mixed Coniferous Forest and due to the site's proximity and shared characteristics with California plant communities it can be classified in accordance with The Preliminary Descriptions of the Terrestrial Natural Communities of California.[75] The Analysis Area is situated within the lower subalpine zone, characterized by a mix of conifers including lodgepole pine (*Pinus contorta* var. *murrayana*), white fir (*Abies concolor*), red fir (*Abies magnifica*), Jeffrey pine (*Pinus jeffreyi*), and occasional mountain hemlock (*Tsuga mertensiana*),western white pine (*Pinus monticola*) and whitebark pine (*Pinus albicaulis*). Montane chaparral occurs infrequently in canopy openings on shallow, rocky, well-drained soils predominantly on west and south-facing slopes. Patches of tobacco brush (*Ceanothus veltinus*), dwarf sagebrush (*Artemesia arbuscula* var. *arbuscula*), and occasional mountain mohagany (*Cercocarpus ledifolius*) dominate different areas depending on local topographic, slope aspect, and edaphic factors. Understory composition varies with slope aspect and substrate type; west and south facing slopes tend to be characterized by shallow gravelly soils and support species such as mountain pennyroyal (*Monardella odoratissima*), pussy paws (*Calyptridium umbellatum*), and sulphur buckwheat (*Eriogonum umbellatum*). The shaded, mesic understory on northeastern facing slopes supports conifer saplings, cinquefoil (*Potentilla* spp.), Brewer's angelica (*Angelica breweri*), Alice Eastwood's fleabane (*Erigeron alicea*), Sierra currant (*Ribes montigenum*), and diffuse gayophytum (*Gayophytum diffusum*).

The Analysis Area was overlaid using existing vegetation mapping coverages to determine smaller patch size classification as shown on Figure 6 (USDA EVeg). A total of ten California Wildlife Habitat Relationships System (WHR) vegetation types exist within the proposed expansion of the SUP boundary in the Atoma Area: Aspen, Lodgepole Pine, Montane Chaparral, Montane Hardwood-Conifer, Perennial Grassland, Red Fir, Subalpine Conifer, Sagebrush, Sierran Mixed Conifer, and White Fir. WHR vegetation types have been found to be accurate for this area. The Atoma Area is a mixed conifer forest as noted above, but it also varies in canopy closure and tree size. Tree canopy closure classes vary from S (sparse cover, 10 to 24 percent) to D (dense cover, 60 to 100 percent), with the majority of the stands classified as P (open cover, 25 to 39 percent) and M (moderate cover, 40 to 59 percent). Size classifications are dominated by size class 4 (small tree) with trees 11 to 24 inches diameter at breast height (dbh). The remainder of the site is mostly class 3 (pole) with trees from 6 to 11 inches dbh. Less than 5 acres of the site is classified as class 5 (medium/large) trees larger than 24 inches dbh.

[75] Holland, 1986

Common Stand Exam data was collected in the Atoma Area in October 2014. The collected data was then used with the Forest Vegetation Simulator and the Forest Service Vegetation database (known as FSVEG) to generate a Comprehensive Stand Report, Live Tree Stocking Report, and Tree Data form. The Atoma Area was divided into three stands for the survey: Stand 1 – 57 acres (eight survey plots); Stand 2 – 26 acres (five survey plots); Stand 3 – 10 acres (three survey plots). Stand 1 is the upper montane mixed conifer forest that lies to the west of the Old Mt. Rose Highway. Stand 2 is the upper montane mixed conifer forest to the east of the Old Mt. Rose Highway. Stand 3 is the aspen stand east of the Old Mt. Rose Highway.

The following tables outline the existing conditions of the Atoma Area. Table 11 shows the trees per acre, basal area and stand density index (SDI) for each of the three stands. Please refer to the subtext below Table 11 for an explanation of the SDI and how it is a function of quadratic mean diameter (QMD) and trees per acre (TPA). Table 12 shows the quadratic mean diameter, total carbon, canopy closure and dominant height for each stand. Table 13 outlines the species composition of each stand along with the risk associated with the infection of bark beetle attack for each stand.

Table 11. Atoma Area Trees Per Acre, Basal Area, and Standard Density Index

Loc/Site	Acres	# Plots	Total TPA	TPA Greater than 4.5' Tall[a]	BA	SDI[b]	SDI Max	SDI Max Species	% Max SDI
193.1	57	8	4,837	174	158	506	622	LP	81%
193.2	26	5	909	89	112	276	622	LP	44%
193.3	10	3	6,908	2,142	150	519	n/a1	n/a	n/a

Notes:
[a] 0.5-foot-tall was smallest tree measured
[b] SDI is a function of QMD and TPA. SDI is a relative measure of stand density. As SDI increases so does potential impacts to the stand from insect damage, disease and increased fire hazard. At 25% SDI, the crown becomes closed and competition between trees begins. At 35% SDI, the stand is at the lower limit of full site occupancy. At 60% SDI, the stand begins to self-thin through increased mortality of less robust individuals.
BA = Basal Area (the cross-sectional area of a single stem, including bark, measured at breast height)

Table 12. Atoma Area Height, Quadratic Mean Diameter, Total Carbon and Canopy Closure

Loc/Site	QMD	Total Stand Carbon (tons/acre)	Canopy Closure (%)/Dom Height
1	2.5	51.1	47%/71
2	4.8	40.5	38%/74
3	2.0	74.8	92%/69

Table 13. Atoma Area Species Composition and Bark Beetle Rating				
Stand	Species Composition TPA (all trees)	Species Composition TPA (trees greater than 4.5' tall)	Species Composition BA	Mountain Pine Beetle Outbreak Potential Risk
1	60% RF 40% LP Less than 1% JP and WWP	4% RF 93% LP 3% WWP Less than 1% JP	2% RF 8% JP 6% WWP 84% LP	Moderate
2	84% RF 14% LP 2% JP Less than 1% WWP	75% LP 2% WWP 23% JP	96% LP 4% WWP	Low. Increases to Moderate next cycle (ten years)
3	51% RF 49% Aspen Less than 1% WWP and LP	97% RF 3% Aspen Less than 1% WWP and LP	35% RF 39% Aspen 22% LP 4% WWP	Low

Notes: RP = red pine; LP = lodgepole pine; JP = Jeffrey pine; WWP = western white pine

The Atoma Area exhibits relative dense forested areas in all three stands. The riparian stand that bisects Stand 2 on the eastern portion of the Atoma Area contains the highest number of trees per acre, due to its riparian nature and composition. The overstory is dominated by red fir and the understory dominated by quaking aspen. Stand 2 on the east side of the Atoma Area is dominated by large lodgepole pine but contains a high number of young red fir. Stand 2 has a more open canopy cover (38 percent) relative to Stand 3 (92 percent) and Stand 1 (47 percent), as a result of existing open areas and patches of dead trees.

3.8.3 Direct and Indirect Environmental Consequences

3.8.3.1 Alternative 1

Under the No Action Alternative, the Atoma Area would remain outside of Mt. Rose Ski Tahoe's SUP boundary. As previously approved, the Atoma Insect Salvage and Fuels Reduction Project improved forest health by removing dead and infested trees and thinning trees on 70 acres of the Atoma Area. The Atoma Insect Salvage and Fuels Reduction project benefitted the forest stands by reducing the fuel loading, while also reducing the opportunity for the mountain pine beetle to spread by removing attacked trees that could attract more beetles to the area. Improving the vigor of the stands in this area will reduce the risk of successful mountain pine beetle attacks on "plus trees" and ultimately work to enhance the condition of whitebark pine stands in the area. Currently all of the stands in the Analysis Area have a low to moderate potential for infestation; however, a high percentage of whitebark pine in the project area show signs of being infected with blister rust or by MPB and studies show that infestations in California are growing and the whitebark pine population near Mt. Rose Ski Tahoe may be in a decline. This information indicates that Forest Health in the area may be in a decline. These trends would be expected to persist under the No Action Alternative.

Under the No Action Alternative, the Forest Plan Amendment would not be implemented. Therefore, commercial development would still be a potential use of the 3,446 acres of NFS land acquired through the Galena Resort Land Exchange. Construction and operation of commercial developments have potential to result in tree removal, grading, developed infrastructure and increased human use, impacting or resulting in a loss of forested areas. Although commercial development could require removal of healthy trees reducing the health of the forest, if a project removed infested trees, it could result in positive effects to forest health. Project specific NEPA analysis would be required prior to approval of any developments on NFS land and specific impacts of the proposal would be considered at that time.

Overall, the primary threat to forest health will continue to be impacts of climate change. As moisture regimes change and fire and infestations become increasingly frequent, forest health will continue to be increasingly threatened.

3.8.3.2 Alternative 2 and Alternative 3

Implementation of the proposed projects would result in a direct loss of forested area (approximately 26.76 acres (Alternative 2) and 27.59 acres (Alternative 3) of healthy, diseased, and dead forested areas) from the construction of ski trails, lift line clearing, and clearing of the area for the water tank.

However, the Forest Plan Amendment would be approved to limit commercial development within 3,446 acres of NFS land. Impacts to forest health from typical ski area construction and maintenance actions such as tree cutting and dead tree removal include: modification and reduced canopy cover and reduced forest stand density in addition to reduction of fuels. It is anticipated that if other commercial developments were allowed within the 3,446 acres of NFS land acquired through the Galena Resort Land Exchange, those projects would have similar impacts as those listed above. The Forest Plan Amendment included in both action alternatives would limit development and the associated impacts, reducing impacts to forest health and a loss of forested area across the HTNF.

Direct Affects

Forested Areas

In between trails throughout the Atoma Area, dead, insect infested and diseased trees that pose a threat to safety of skiers and/or forest health would be removed. Total losses for each forested WHR type are outlined in Table 14 for both Alternative 2 and Alternative 3.

Table 14. Forested Habitat Type Loss in Atoma Area (SUP Expansion Area) by Alternatives			
WHR Type	Existing Atoma Analysis Area (acres)	Alternative 2 Removal (acres – % loss in Analysis Area)	Alternative 3 Removal (acres – % loss in Analysis Area)
Aspen	6.13	1.34(22%)	1.34(22%)
Lodgepole Pine	13.24	5.36(40%)	6.05(46%)
Montane Hardwood Conifer	5.72	1.99(35%)	1.99(35%)
Red Fir	48.52	16.87(35%)	17.01(35%)
Sierran Mixed Conifer	6.93	0.12(2%)	0.12(2%)
White Fir	1.12	0.37(33%)	0.32(29%)
Total Atoma Area	*85.66*	*26.06(30%)*	*26.88(31%)*
Sierran Mixed Conifer (in the area of the water tank)	NA	0.7	0.7
Grand Total	NA	26.76	27.59

Notes:
Unlisted vegetation types (non-forested) for Alternative 2 include (acres): Barren (1.28), Montane Chaparral (6.61), Urban (1.79), Sagebrush (0.32), and revegetated ski trail (3.0)
Unlisted vegetation types (non-forested) for Alternative 3 include (acres): Barren (1.89), Montane Chaparral (6.32), Urban (1.65), Sagebrush (0.32), revegetated ski trail (3.0)

A total of 26.06 acres of forested habitat would be removed from clearing trees within the ski trails and chairlift alignment in the Atoma Area and up to 0.7 acre of sierra mixed conifer forest would be removed for the water tank (26.76 acres total) for Alternative 2. Alternative 3 would result in the loss of 26.88 acres of forested habitat within the Atoma Area and 0.7 acre of Sierran mixed conifer forest for the water tank site, totaling 27.59 acres. Lodgepole pine, whitebark pine, mountain hemlock, and western white pine would be removed with implementation of both action alternatives.

Canopy cover for the three stands in the Atoma Area would be modified as a result of the project. Existing upper canopy cover for the three stands is as follows: Stand 1 (47 percent), Stand 2 (38 percent), and Stand 3 (92 percent). Tree removal for the proposed ski trails would effectively reduce the canopy cover within the proposed ski trail. The remaining tree islands would have a minor reduction in canopy cover because only individual scattered hazard trees would be removed. Although hazard trees would be removed, where possible, large diameter snags would be retained, as described in Appendix A. In addition, hazard tree removal would lower canopy cover.

Basal area for the three stands would also be reduced as a result of the project. Existing basal area (square feet/acre) for the three stands is as follows: Stand 1 (158), Stand 2 (112), and Stand 3 (150). Cutting in the ski trails and the lift line would result in a direct removal of trees which would effectively reduce the basal area within the three stands. Forest health would be impacted as a result of the cutting of ski trials through increased edge effects. The degree of impacts that result from edge effects and fragmentation are directly proportional to the structural contrast

between habitat islands and the edge environment.[76] The existing habitat within Mt. Rose Ski Tahoe's operational footprint is a natural matrix of patches and is heavily influenced and impacted by fragmentation as a result of existing runs and facilities and past corridors cut through the forested environment for old chairlifts, utility corridors, existing roadways, and power lines; therefore, its quality is compromised. A loss of basal area reduces the biomass within the stands which may result in decreased competition between trees; thereby resulting in an overall healthier stand. However, the loss of forested areas within the ski trails is not evenly distributed throughout the stand and is effectively creation of open patches within the forest. See the discussion below regarding impacts to the forest from increased fragmentation.

Whitebark Pine

Within the Analysis Area, whitebark pine is present in both Sierran mixed conifer and red fir forest types. The USFWS has identified whitebark pine as a candidate species under the ESA. Whitebark pine occurs in the eastern portion of the Atoma Area as well as in the location of the water tank. No pure stands of whitebark pine exist within these areas.

Under the action alternatives, approximately forty-four whitebark pine trees would be removed as part of the Proposed Action through construction of the ski trails, the installation of chairlifts, and the water tank. Construction of the proposed projects in the Atoma Area would remove four whitebark pine trees. Installation of the water tank would remove an additional forty whitebark pine trees. Approximately 90 percent of the whitebark pine trees identified for removal are infected with blister rust or previously attacked by mountain pine beetles. Additionally, a few trees in the vicinity were noted to be healthy and not showing any signs of disease and may contain some genetic resistance and have slower white pine blister rust infection rates and be candidates as "plus trees." Removal of healthy whitebark pine trees from the area may result in the overall loss of the number of trees that may be more genetically resistant to blister rust infection. The loss of these trees could result in a loss of genetic diversity that contains resistance to disease; however, under the action alternatives only approximately four healthy trees would be removed. There is even greater uncertainty regarding the health of the Carson Range whitebark pine stands. Both healthy and infested whitebark pine trees would remain within the Analysis Area. Although stand mortality from infestation in California is relatively low, some studies show the whitebark pine population near Mt. Rose Ski Tahoe may be in decline. It is unclear how the removal of healthy trees may hinder or enhance stands exhibiting low blister rust incidence. The removal of forty whitebark stems (under either Action Alternative) that are diseased or the four that are currently healthy will not have an adverse effect on the whitebark pine population in the Carson Range.

In order protect whitebark pine and western white pine in the Atoma Area and the area surrounding the proposed water tank the following Management Requirements have been included for both Alternative 2 and Alternative 3:

- *FH 1: Mt. Rose Ski Tahoe will work with the Forest Service to create and implement vegetation prescriptions for removal of trees and slash to minimize the spread of insects and disease in the Atoma Area.*

- *FH 2: All trees measuring 8 inches dbh or greater that need to be removed shall be identified and marked by the Forest Service prior to felling.*

[76] Noss and Cooperrider, 1994; Meffe and Carrol, 1994

- *FH 3: In order to allow for tree management for the Atoma Area, under special circumstances fuelwood permits may be issued in the Atoma Area.*
- *FH 4: All whitebark pine trees, regardless of size, shall be identified and marked by the Forest Service prior to felling.*
- *FH 5: "Plus trees" will be identified and left in place where possible (generally between trails) during construction in the Atoma Area.*

Identification and management of diseased trees during lift and trail construction is anticipated to improve the health of the remaining stands and reduce the risk of successful mountain pine beetle attacks, enhancing the health of forested stands in the area. In order to manage the pine beetle and potential for an outbreak, the following Management Requirement has been included:

- *FH 6: To reduce the build-up or residual tree mortality by pine engraver beetles (*Ips pini*), and reduce fuel loading the following measures shall occur: Live trees identified for removal will only be cut and removed between August 1 and December 31, to minimize spread of insects. Whole trees shall be removed (after proper permitting) to established log landings and slash and logs will be hauled off of NFS land for disposal within six weeks of cutting. Any incidental breakage from whole tree yarding that is 3 inches diameter or greater shall be lopped and scattered within 18 inches of the ground in open areas.*

Indirect Effects

Forested Areas

Indirect effects of tree removal for ski trail and chairlift construction include forest fragmentation which can affect vegetation composition. The resulting patches of habitat will be smaller in size and isolated to varying degrees from surrounding habitat areas. As the habitat patch size decreases, the ratio of edge to habitat area increases along with the impacts associated with habitat edge, known as edge effects.

The outer edge of a habitat patch is not a linear feature, but a zone of influence that can negatively impact the interior core habitat. Abiotic factors such as increased sun exposure, wind, and temperature variations change the microclimate of the edge area. These abiotic changes can affect vegetation composition, which has a biological effect of increased edge. Disturbed edge areas and associated changes in microclimate may provide opportunities for colonization and establishment of invasive, non-native plant species. An indirect biological impact to habitat as a result of edge effects is increased predation on native fauna within the habitat patch. Edge effect impacts vary in their degree of influence on the core habitat. Vegetation changes resulting from edge effects have been shown to extend into habitats from 33 to 100 feet based on edge aspect, while predation impacts may extend from 1,000 to 2,000 feet into the forest.[77] In addition to these changes in microclimates, increased forest edge creates an environment with higher susceptibility to wind damage to the stand (e.g., tree blowdown), thus potentially further eroding the edge. As fragmentation progresses, the ratio of edge versus interior habitat increases and the edge effect eventually influences the entirety of the stand.[78]

[77] Wilcove et al., 1986
[78] Dobson, 1996; Bierregaard and Lovejoy, 1992

Whitebark Pine

The USFWS has determined that threats to the whitebark pine include habitat loss and mortality from white pine blister rust, mountain pine beetle, catastrophic fire and fire suppression, environmental effects resulting from climate change, and the inadequacy of existing regulatory mechanisms. Whitebark pine is experiencing an overall long-term pattern of decline, even in areas originally thought to be mostly immune from the above threats. Maloney (2012) sampled a total of eight populations within the Lake Tahoe Basin and noted the presence of white pine blister rust in all eight populations. The two closest populations, Mount Rose and Rifle Peak, had 41 to 60 percent and >61 percent white pine blister rust incidence, respectively. Of the eight total populations, only the Mount Rose population is considered to be potentially in decline.[79] On a nationwide scale, the species appears to be in danger of extinction, potentially within as few as two to three generations (the generation time of whitebark pine is approximately sixty years).[80] White pine blister rust has reduced some populations of whitebark pine, no indirect impacts to whitebark pine from this project were identified.

3.8.4 Cumulative Effects

3.8.4.1 Temporal and Spatial Extent of Analysis

The spatial extent for the cumulative effects analysis of forest health is limited to areas of forest within the project area that would be altered by vegetation removal. The temporal bounds for this cumulative effect analysis for forest health extends from Mt. Rose Ski Tahoe's inception as a ski area in 1964, through the foreseeable future in which Mt. Rose Ski Tahoe can be expected to operate.

3.8.4.2 Past, Present, and Reasonably Foreseeable Future Actions

The following projects could have cumulative impacts on forest health and are analyzed below:

- Mt. Rose Ski Tahoe 2010 MDP Addendum
- The 2008 Atoma Insect Salvage and Fuels Reduction Project

Mt. Rose Ski Tahoe Master Development Plan

The existing habitat within Mt. Rose Ski Tahoe's operational footprint is a natural matrix of patches as a result of existing lifts, runs, and facilities developed in the forested environment; therefore, the quality of the forest is compromised.

Past projects in the Mt. Rose Ski Tahoe area did not specifically analyze effects to whitebark pine. However, the past construction of facilities and ski trails has undoubtedly resulted in removal of individual whitebark pine trees, as evidenced by the existence of numerous runs through whitebark pine stands.

The Mt. Rose Ski Tahoe 2010 MDP Addendum includes projects that have been approved but unimplemented as well as projects that have yet to be analyzed but could be implemented in the future. Any projects that are proposed in the future on NFS land would undergo site-specific NEPA analysis. If either of the action alternatives is approved and implemented, the effects of this project on Forest Health would be considered as part of the baseline condition. Future projects would consider resource protection measures necessary to continue to maintain forest health. If

[79] Maloney, 2012
[80] USFWS, 2011

whitebark pine is designated as sensitive by R4, it would be managed to maintain its viability in future projects. When considered cumulatively with past removal of whitebark pine for ski area projects, this project (either alternative) would further contribute to removal of whitebark pine which has resulted in a decrease of forested areas across the SUP. However, the removal of approximately 44 whitebark stems does not threaten the viability of the whitebark pine population on the Carson Range and since many of these pine are infested with white pine blister rust, removal of these trees may actually contribute to an improvement of Forest Health.

Atoma Insect Salvage and Fuels Reduction Project

As discussed in the cumulative effects to botany and overstory vegetation, the Analysis Area is overlapped by the 70-acre Atoma Insect Salvage and Fuels Reduction project. Certain live trees were also approved for removal by that project. The Atoma Insect Salvage and Fuels Reduction project benefitted Forest Health by reducing the presence of fuels that could have resulted in increased wildfire danger and reducing the opportunity for the mountain pine beetle to spread. Identification of "plus trees" and the planting of seedlings in accordance with the regeneration plan included with the action alternative, would also result in a decrease in white pine blister rust in the Atoma Area further benefitting forest health.

Overall, the forested area in the vicinity of the Atoma Area have been removed and fragmented due to past development (Sky Tavern, Mt. Rose Ski Tahoe, and existing residences), existing and historical roadways, and power line corridors, development of the Atoma Area would contribute to this trend. Removal and fragmentation has impacted the health and function forest within the Analysis Area, and when considered cumulatively with the current ski area development projects, additional forest would be removed resulting in less forested area across the SUP. However, when infested trees are removed and fuels are thinned to improve skier safety, this can result in some improvements to overall forest health. Since these projects are intended to provide access for skiers, not to encourage understory or mixed age/species growth, the extent of the forest health improvement is limited and cumulatively, the alternatives contribution or impacts to Forest Health are limited.

3.8.5 Irreversible and Irretrievable Commitments of Resources

There would be an irretrievable commitment of resources that would result from the action alternatives with the removal of approximately 26.76 acres of healthy, diseased, and dead forested areas under Alternative 2 and 27.59 acres under Alternative 3 for the construction of ski trails, lift line clearing, and clearing of the area for the water tank. This loss of forested area would remain for the duration of the operation of the Atoma Area as a component of Mt. Rose Ski Tahoe's lift and trail network and as long as the water tank was in place. There would not be an irreversible commitment of forested community because trees could be replanted in the lift alignment and ski runs if they were no longer being operated and if the tank were removed.

3.9 Wildlife

3.9.1 Scope of the Analysis

The scope of analysis for wildlife includes the 112-acre Atoma Area and the 1.2-acre water tank site. These areas include a variety of habitat for wildlife species, which are described under Section 3.9.2. The analysis evaluates the potential effects of the project on wildlife, including federally threatened and endangered species, R4 sensitive species, MIS, migratory birds, and

aquatic species. In addition, the action alternatives include a Forest Plan Amendment that precludes commercial development on 3,446 acres of NFS land acquired through the Galena Resort Land Exchange. Therefore, the Analysis Area includes the land acquired through the Galena Resort Land Exchange.

A BA/BE and Wildlife and Rare Plant Specialist Report were prepared for this project. The BA/BE analyzes the potential effects on federally listed and R4 sensitive species in the area. The Wildlife and Rare Plant Specialist Report addresses MIS, which the Forest Service uses as a means to monitor issues on the Forest as required by regulation.[81] In addition, migratory birds were addressed per the 2008 Forest Service Memorandum of Understanding (MOU) with the USFWS to promote the conservation of migratory birds.

The following analysis is a summary of the BA/BE and Specialist Report that are contained in the Project Record.

3.9.2 Affected Environment

The Analysis Area is located approximately 6 miles northeast of Incline Village, Nevada and 25 miles southwest of Reno, Nevada. The Analysis Area includes approximately 112 acres of undeveloped NFS land located south of Galena Creek, directly across the Mt. Rose Highway in the Atoma Area. The site is bound by Mt. Rose Highway to the south, Atoma Road to the west, and is bisected by Sky Tavern Road. The proposed water tank is located within the existing boundary of the resort and encompasses approximately 1.2 acres. The location of the proposed water tank is immediately adjacent the existing water tank located at the western edge of the resort. For a detailed description of the habitats present in the area, please refer to Section 3.7.2 and Section 3.10.2.

Common Stand Exam data were collected in the Atoma Area in October 2014. The Atoma Area was divided into three distinct stands for the survey: Stand 1 included 57 acres across eight survey plots; Stand 2 included 26 acres across five survey plots; Stand 3 included 10 acres across three survey plots. Stand 1 consists of upper montane mixed conifer forest west of the Old Mt. Rose Highway. Stand 2 consists of upper montane mixed conifer forest east of the Old Mt. Rose Highway. Stand 3 consists of aspen habitat east of the Old Mt. Rose Highway. For a detailed description of stands in the Atoma Area, please refer to Tables 10, 11 and 12 in Section 3.8.2.

3.9.2.1 Federally Threatened or Endangered Species

A review of the Analysis Area conducted through the USFWS IPaC online analytic tool suggests the following federally listed or proposed species have potential to occur in the Analysis Area (refer to Table 15).[82] Based on the analysis conducted for the BE and BA, none of the below listed or proposed species occur or have potential to occur in the project area.

[81] 36 CFR § 219.19
[82] USFWS, 2015

Table 15. Federally Listed and Proposed Wildlife Considered in Analysis				
Species (Common Name, *Scientific Name*)	Habitat Description	Habitat Present	Species Present	Comments
Lahontan cutthroat trout (Threatened) *Oncorynchus clarki henshawi*	All accessible cold waters of the Lahontan Basin in a wide variety of water temperatures. Gravel riffles in streams required for breeding.	No	No	The Analysis Area does not contain suitable habitat due to the lack of a perennial water source; furthermore, the project is area is outside the known distribution for this species area.
Cui-ui (Endangered) *Chasmistes cujus*	Endemic to Pyramid Lake and the lower Truckee River during the spawning season.	No	No	The Analysis Area does not contain suitable habitat, as Pyramid Lake and the lower Truckee River are not located within its boundaries.
California wolverine *Gulo gulo*	Wolverines were once thought to use a wide range of elevations and habitat types. However, new findings indicate that wolverines are restricted to alpine and sub-alpine communities for most of the year due to their need for persistent snow cover throughout the reproductive period. Den sites are characterized by a large snag or down log component.	No	No	Portions of the project area contain habitat components associated with wolverines. However, the high level of human disturbance and activity associated with the site reduces habitat quality for the shy and elusive wolverine. Furthermore, wolverines are no longer known to occur in Nevada or California. A recently detected wolverine on the Tahoe National Forest was determined to be a single animal that originated from the Rocky Mountains and is not thought to be indicative of a larger, local population. The nearest known resident population of wolverines occurs about 600 miles northeast of the Tahoe and Humboldt-Toiyabe National Forest in Idaho's Sawtooth Range.

Sources: Aubry et al. 2007; USDA 2008

3.9.2.2 Region 4 Sensitive Species

The R4 sensitive species shown in Table 16 are known to occur, or have the potential to occur, within the Carson Ranger District. Of these species, those indicated in bold have habitat within the Analysis Area and are discussed in further detail.

Table 16. R4 Sensitive Wildlife Species that Occur within the Carson Ranger District and their Potential Occurrence in the Analysis Area

Species (Common Name, *Scientific Name*)	Potential Occurrence in Analysis Area	Habitat Description
BIRDS		
Northern goshawk, *Accipiter gentilis*	Limited potential habitat; not observed during field surveys	Typically associated with late seral or old growth forests, characterized by contiguous stands of large trees and large snags with closed canopies (53–100% covered) and relatively open understory. On the Carson Ranger District, known goshawk nest sites are found in large aspens and conifers with an approximate average canopy cover of 55–78%.
Sage grouse, *Centrocercus urophasianus*	No suitable habitat	Largely dependent upon large, intact sagebrush ecosystems for both foraging and breeding. Breeding sites, or "leks" are usually situated on ridge tops or grassy areas surrounded by a substantial brush and herbaceous component.
Peregrine falcon, *Falco peregrinus anatum*	No suitable habitat	Peregrines are known to occur at elevations ranging from sea level to 11,000' in areas containing cliffs or rocky outcroppings with large spans of open space in which to hunt. Nest sites are almost exclusively situated on cliffs or rocky outcroppings.
Bald eagle, *Haliaeetus leucocephalus*	No suitable nesting or foraging habitat	Habitat for bald eagles usually consists of trees with heights over 100' tall with an average diameter of 43" and in stands where the canopy cover is less than 40%. The majority of bald eagle nests are within 1 mile of water and almost always have an unobstructed view of a waterbody.
Flammulated owl, *Otus flammeoulus*	Suitable habitat, observed during field surveys	Flammulated owls nest in a variety of conifer forest types between 6,000' and 10,000' elevation. Flammulated owls prefer older forests and are often found in association with old growth yellow pine forests mixed with red fir, aspen, white fir, and incense cedar. Older forests tend to have a higher abundance of snags and live trees with suitable nesting cavities.

Table 16. R4 Sensitive Wildlife Species that Occur within the Carson Ranger District and their Potential Occurrence in the Analysis Area		
Species (Common Name, *Scientific Name*)	Potential Occurrence in Analysis Area	Habitat Description
Mountain quail, *Oerortyx pictus*	Suitable habitat; observed during field surveys	Mountain quail often nest in high elevations up to 10,000', occasionally migrating to lower elevation in the fall. In the Sierra Nevada, mountain quail are found nesting and foraging in mixed conifer stands that contain montane chaparral brush communities composed of chinquapin, snowbrush, and Greenleaf manzanita.
White-headed woodpecker, *Picoides alborlarvatus*	Suitable habitat; observed during field surveys	Habitat is between 4,000' and 9,000' elevation in conifer forests. Preferred habitat appears to be stands with large diameter trees, soft snags averaging 23" dbh, and 40–70% canopy cover. White-headed woodpeckers occur more often in old growth conifer stands and are often absent in second growth stands.
California spotted owl, *Strix occidentalis occidentalis*	Marginal suitable habitat; not observed during field surveys	Utilize mixed conifer, ponderosa pine, red fir and montane hardwood vegetation types. Nesting habitat is characterized by canopy closure (>70%) with medium to large trees and multi-storied structure stands. Foraging habitat can include all medium to large tree stands (>50% canopy closure). California spotted owls tend to avoid stands with less than 40% canopy cover. In the Sierra Nevada, spotted owls appear to nest in roost areas where the slope is less than 30%.
Great gray owl, *Strix nebulosa*	No suitable habitat	In the Sierra Nevada, great gray owls are found in mixed coniferous forest from 2,400' to 9,000' elevation where such forests occur in combination with meadows or other vegetated openings. Nesting usually occurs within 600' of the forest edge and adjacent open foraging habitat. Virtually all of great gray owl records in California were from in or near meadow 25 acres or greater.

Table 16. R4 Sensitive Wildlife Species that Occur within the Carson Ranger District and their Potential Occurrence in the Analysis Area		
Species (Common Name, *Scientific Name*)	Potential Occurrence in Analysis Area	Habitat Description
MAMMALS		
Pygmy rabbit, *Brachylagus idahoensis*	No suitable habitat	Dependent upon dense stands of big sagebrush for foraging and breeding habitat. Pygmy rabbits are found in shrub densities ranging from 30–46% shrub cover and in alluvial fans, swales in rolling landscapes. Generally, pygmy rabbits burrow in loamy soils deeper than 20". Soil composition needs to be able to support a burrow system with numerous entrances, but also must be soft enough for digging.
Townsend's big-eared bat, *Corynorhinus townsendii townsendii*	No suitable habitat	Western big-eared bats are found in a variety of habitat types including desert, native prairies, coniferous forests, mid-elevation mixed conifer, and riparian communities. However, this species is strongly correlated with the availability of caves and cave-like roosting habitat. They roost within caves, abandoned mines, and buildings.
Spotted bat, *Euderma maculatum*	No suitable habitat	The spotted bat utilizes a variety of habitat types including ponderosa pine, pinyon-juniper forests, desert scrub, and open pasture and hay fields. Spotted bats depend on rock cliff faces for roosting, typically picking cracks and crevices from 0.8 to 2.2" in width. In mountainous habitats, bats forage over meadows, forest edges, and in open woodlands.
Bighorn sheep, *Ovis Canadensis* spp.	No suitable habitat	Visually open, above timberline or sagebrush/brush habitats with steep, rocky escape terrain.
Sierra Nevada red fox, *Vulpes vulpes necator*	Some suitable habitat components, but Analysis Area is not within known distribution area of this species	High elevation areas (above 10,000') in the Sierra Nevada including subalpine conifer, barren and shrub habitats.

Sources: McCallum 1994

Note: Other R4 species are not listed because they have not been found within the Carson Ranger District, they have no affinities to Analysis Area habitats, or the Analysis Area is outside of the species' range or elevational distribution.

Northern Goshawk

Northern goshawks have a Holarctic distribution, breeding from boreal Alaska and Canada south in to the East as far as Pennsylvania and New York and in the West to the mountains of southern Arizona and New Mexico.[83] Nesting distribution on the Carson Ranger District ranges from north of Reno in the Dog Valley area, south to Spooner Summit and Genoa Peak, and southwest throughout Alpine County including the Carson-Iceberg Wilderness. Northern goshawks are year-round residents in neighboring Lake Tahoe Basin and are believed to be in the Carson Ranger District, as well.[84]

No occurrences of northern goshawks are known within or immediately adjacent to the Atoma Area. Surveys were performed in the Atoma Area in 2011 and 2012 with no detections. Although portions of the Analysis Area contain late seral habitat components, overall the area may lack sufficient contiguous forest to support nesting goshawks. Areas treated under the Atoma Insect Salvage project are also considered too open to support nesting goshawks. However, goshawks could potentially utilize portions of the Analysis Area for foraging, particularly within the eastern part of the Atoma Area where denser stands of mixed conifer and aspen occur.

Flammulated Owl

Breeding populations of flammulated owls are found from central-southern British Columbia along the western United States to the Sierra Madre and mountain ranges of northern and central Mexico.[85] In Nevada, flammulated owls have been documented during the breeding season in eleven mountain ranges, including the Carson Range, and could potentially occur in an additional eighteen ranges.[86]

Flammulated owls are neotropical migrants, wintering in Mexico and returning to the U.S. in late April to early May. Within the Sierra Nevada, flammulated owls begin to migrate to Mexico by October and usually return in April with the establishment of territories in May. Peak breeding months are June and July. While other North American owls breed in solitary pairs, flammulated owls typically breed in semi-colonial clusters.[87]

Flammulated owls feed almost entirely on insects such as moths, grasshoppers, and beetles etc., which they obtain from gleaning along vegetation and from the ground.[88]

Flammulated owls nest in a variety of conifer forest types between 6,000 and 10,000 feet elevation. Flammulated owls prefer older forests and are often found in association with old growth yellow pine forests mixed with red fir, aspen, white fir, and incense cedar. Older forests tend to have a higher abundance of snags and live trees with suitable nesting cavities. Preferred roosting and nesting habitat appears to be stands with dense understory vegetation with multi-layered stands. Foraging habitat, however, is generally more open understory and includes forest/grassland edge habitats.[89]

[83] Squires and Reynolds, 1997
[84] Keane, 1999
[85] Mika and Riddle, 2005
[86] Dunham et al., 1996
[87] McCallum, 1994
[88] Ibid.
[89] Ibid.

The majority of the 112-acre Atoma Area contains nesting, roosting, and/or foraging habitat for flammulated owls. The eastern half of the area contains the highest quality nesting habitat for flammulated owls due to the denser stands of mixed conifer and aspen interspersed with numerous snags and understory vegetation. The western portion of the Atoma Area, where salvage treatments have occurred, has more limited habitat potential for nesting flammulated owls due to the reduced cover and lack of available snags. However, flammulated owls likely use the entire project area for foraging, roosting, and late summer dispersal of juveniles.

Flammulated owl surveys conducted in the Atoma Area resulted in one detection in July 2014 and another single detection in 2015. Surveys were repeated in July of 2016 and resulted in the detection of a nesting pair of flammulated owls. The nesting pair was located in the western portion of the Atoma Area in the immediate vicinity of the proposed location for the chairlift bottom terminal and a portion of a proposed ski trail.

Mountain Quail

The mountain quail is the largest North American quail and can be found in southwestern British Columbia, western and southern Washington, central Idaho, south through the mountains of California and western Nevada.[90] Nevada is considered to be on the periphery of the mountain quail's range.[91] Mountain quail are known to occur throughout the Carson Ranger District, usually at elevations above 5,000 feet. Mountain quail seasonally occupy open, brushy stands of conifer and deciduous forest, and chaparral. Nests are often located on the ground at the base of a tree, in rock under herbage and near shrubs. Mountain quail breeds from late March to late August; most nests are active May through July.

Suitable habitat for mountain quail occurs in the Atoma Area, primarily in the eastern portion of the Analysis Area where more understory brush is present. Mountain quail were observed during field surveys in the Atoma Area.

White-Headed Woodpecker

The white-headed woodpecker occupies a restricted range from British Columbia, north central Washington, northern Idaho, south through Oregon, east of the Cascades, to southern California and west-central Nevada.[92] White-headed woodpeckers are year-round residents on the Carson Ranger District.

Suitable habitat for white-headed woodpeckers overlaps with other late seral species in that they require relatively dense canopy cover with an abundance of large diameter trees—both live and dead. Therefore, it is assumed that the highest quality habitat for white-headed woodpeckers within the Analysis Area occurs within the northeast portion of the Atoma Area where the trees are the largest and exhibit late seral characteristics. White-headed woodpeckers would likely utilize other forested portions of the Analysis Area for foraging or traversing between habitats. White-headed woodpeckers were detected foraging during 2011 field surveys in the Atoma Area.

[90] Johnsgard, 1973
[91] Nevada Department of Wildlife, 2012
[92] Johnsgard, 1973

California Spotted Owl

On the Carson Ranger District, spotted owls are known to nest in three locations, including two breeding pairs in Alpine County, California and one breeding pair in Carson City, Nevada. This pair is the only known breeding occurrence of spotted owls in the State of Nevada.

Portions of the Analysis Area contain marginally suitable nesting habitat for California spotted owls. In the Sierra Nevada, the major forest types comprising known and potential habitat include mixed conifer, red fir, ponderosa pine/hardwood, eastside pine, and foothill riparian/hardwood forests.[93] Mixed conifer forest is the most abundant forest type and contains most of the known owl sites. Habitats used for nesting typically have greater than 70 percent total canopy cover. Home range sizes of California spotted owl tend to be smallest in lower elevation hardwood forests, intermediate in size in conifer forests of central Sierra Nevada, and largest in true fir forests of northern Sierra Nevada.[94] Neal et al. (1990) reported that California spotted owl home ranges in Sierra Nevada mixed conifer forests average 3,400 acres, including about 460 acres in stands with 70 percent or greater canopy cover, and about 1,990 acres in stands with 40 to 69 percent canopy cover. Verner et al. (1992) generally concur with this data, indicating that Sierra National Forest owls were found to have a median home range for pairs of approximately 3,000 to 5,000 acres. However, Verner et al. (1992) cite an overall mean home range size of owl pairs during the breeding period in Sierran conifer forests of about 4,200 acres.

Existing upper canopy cover for the three stands is as follows: Stand 1 (47 percent), Stand 2 (38 percent), and Stand 3 (92 percent). Stand 1 and Stand 2 total 83 acres and are well below the canopy cover requirements for California spotted owl. Stand 3, which is only 10 acres, is well below the minimum home range size to support nesting owls.

Some potential foraging/roosting habitat is present in the Atoma Area. However, the Atoma Area was surveyed in 2011 and 2012 with no detections. Additional surveys were performed in 2013 in the Atoma Area with negative results. In the Lake Tahoe Basin, a pair of owls are known to occur in the Griff Creek area, approximately 9 miles to the southwest of the Analysis Area.

3.9.2.3 Management Indicator Species

MIS are identified in the 1986 Forest Plan as representing a group of species having similar habitat requirements. MIS are not federally listed as TES but have the potential to be affected by project activities. MIS are those whose response to management activities can be used to predict the likely response of a larger group of species with similar habitat requirements. MIS and relative changes in their population and habitat trends are generally analyzed at the forest-wide scale. MIS to be analyzed for a specific project should be those whose change in population could potentially be directly attributable to the management action.

A review was conducted to determine: 1) if the project is within the range of any MIS; 2) if habitat is present within the Analysis Area; and 3) if there are potential direct, indirect or cumulative effects on habitat components. MIS associated with habitats that may be affected by the project are analyzed below.

[93] Verner et al., 1992
[94] Ibid.

The following MIS were identified for analysis for this project:

Table 17. MIS and Their Potential to Occur in Habitats Affected by the Action Alternatives

Species (Common Name, *Scientific Name*)	Potential Occurrence in Analysis Area	Habitat Description
Northern goshawk *Accipter gentilis*	Yes, Habitat Present	Typically associated with late seral or old growth forests, characterized by contiguous stands of large trees and large snags
Yellow warbler *Setophaga petechia*	Yes, Habitat Present	Riparian habitats; can be found in mixed conifer habitat
Yellow-rumped warbler *Setophaga coronata*	Yes, Habitat Present	Variety of habitats including coniferous forest, mixed woodlands, deciduous forest, pine plantations, bogs, forest edges, and openings
Hairy woodpecker *Leuconotopicus villosus*	Yes, Habitat Present	Deciduous and coniferous woodlands
Williamson's sapsucker *Sphyrapicus thyroideus*	Yes, Habitat Present	Deciduous and coniferous woodlands
Mule deer *Odocoileus hemionus*	Yes, Habitat Present	Bitterbrush, sagebrush, mountain mahogany, and aspen. Critical winter range in lower elevations; critical summer range in higher elevations.
American marten *Martes americana*	Yes, Habitat Present	Dense, multi storied, multi-species late seral coniferous forests with a high number of large snags and downed logs
Macroinvertebrates	Yes, Habitat Present	Rocks, logs, sediment, debris, and aquatic plants

Palmer's chipmunk, Paiute cutthroat trout, Lahontan cutthroat trout, and sage grouse were also considered but were not identified for further analysis due to the absence of habitat or because the project would not affect their habitat.

Northern Goshawk

Northern goshawk range, distribution, status, and potential for occurrence are discussed above, under R4 sensitive species.

Yellow Warbler

Yellow warblers breed in the Sierra Nevada and often summer residents on the HTNF.[95] According to USGS Breeding Bird Survey information, population trends of yellow warblers in the Sierra Nevada have decreased significantly between 1966 and 2013.[96] Although yellow warblers can be found in mixed conifer habitat, they are usually migrants (not breeders) associated with riparian areas found at the edge of conifer stands and/or conifer stands that contain substantial amounts of brush.[97]

[95] Finch, 1991
[96] Sauer et al., 2011
[97] Zeiner et al., 1988

The Analysis Area contains suitable habitat for yellow warblers, particularly along riparian corridors and meadow or meadow-like habitat that are adjacent to conifer stands. Yellow warblers were not observed during 2011 and 2012 surveys.

Yellow-rumped Warbler

According to USGS Breeding Bird Survey information, population trends of yellow-rumped warblers in the Sierra Nevada have been stable to increasing between 1966 and 2009.[98]

The yellow-rumped warbler is considered highly adaptable and can be found in a variety of habitats including coniferous forest, mixed woodlands, deciduous forest, pine plantations, bogs, forest edges, and openings.[99]

Within the Atoma Area, yellow-rumped warblers would likely be found in the mixed conifers stands present throughout the area. Yellow-rumped warblers were recorded during site visits.

Hairy Woodpecker and Williamson's Sapsucker

Hairy woodpeckers occur throughout most of the continental U.S. and are considered widespread and common.[100] Williamson's sapsuckers are found along the entire length of the Sierra Nevada and are considered a year-round resident on the HTNF.[101] The USGS Breeding Bird survey reports population trends of hairy woodpeckers and Williamson's sapsuckers in the Sierra Nevada have been stable from 1966 to 2013.[102]

Hairy woodpeckers and Williamsons sapsuckers are associated with deciduous and coniferous woodlands found throughout North America.[103] However, Williamson's sapsuckers are unique in that they utilize mixed deciduous-coniferous forest for foraging but require aspen as an important nesting substrate.

Suitable habitat for both species occurs throughout the Analysis Area. Both species were observed during site visits.

Mule Deer

The Atoma Area is located within the boundaries of the Verdi sub-unit of the Loyalton-Truckee deer herd. Currently, the Loyalton-Truckee deer herd is considered to be stable to declining with an average size of approximately 3,200 individuals.[104] Mule deer habitat and migration corridors have been impacted by fires, development and construction of roads and highways. In addition to habitat loss and habitat degradation, loss of mule deer to vehicular accidents continues to be a major impact on the viability of the herd.[105]

Aspen and conifer stands within the Atoma Area provide summer habitat for mule deer. Mule deer sign has been noted in the vicinity of the Atoma Area.

[98] Ibid.
[99] Sibley, 2000
[100] Cornell, 2012
[101] Finch, 1991
[102] Sauer et al., 2011
[103] Ryser, 1985; Erlich et al., 1988
[104] California Department of Fish and Wildlife, 2013
[105] Ibid.

American Marten

In California, American marten occur in the northern Sierra Nevada at elevations of 3,400 to 10,400 feet, averaging 6,600 feet.[106] Preferred habitat for denning and resting is characterized by dense (60 to 100 percent canopy), multi storied, multi species late seral coniferous forests with a high number of large (>24 inches dbh) snags and downed logs.[107] These areas are generally in close proximity to both dense riparian corridors (used as travelways), and include an interspersion of small (<1 acre) openings with good ground cover.[108] On the Carson Ranger District, American marten have been detected on Slide Mountain near Mt. Rose Ski Tahoe and in Hope Valley, Alpine County, California.

Marten could potentially occur throughout the Atoma Area. Surveys were performed in the winter and summer of 2011 with no detections.

Macroinvertebrates

Freshwater benthic macroinvertebrates ("benthos") are invertebrates that are larger than 0.5 millimeter (the size of a pencil dot). These animals live on rocks, logs, sediment, debris, and aquatic plants during some period in their life. Benthos include crustaceans such as crayfish, clams and snails, aquatic worms, and the immature forms of aquatic insects such as stonefly and mayfly nymphs. Smaller macroinvertebrates are likely present in the ephemeral stream that flows through the Atoma Area. No surveys for macroinvertebrates were performed.

3.9.2.4 Migratory Birds

In 2008 the Chief of the Forest Service signed a MOU (#08-MU-1113-2400-264) with the USFWS to promote the conservation of migratory birds. This MOU was pursuant to Executive Order 131866, *Responsibilities of Federal Agencies to Protect Migratory Birds*. The order directs agencies to take certain actions to further comply with the migratory bird conventions, the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, and other pertinent statutes. The purpose of the MOU is to strengthen migratory bird conservation by identifying strategies that promote conservation and avoid or minimize negative impacts on migratory birds. The MOU outlines that the Forest Service shall evaluate the effects of agency actions on migratory birds within the NEPA process, with a focus on species of management concern along with their priority habitats and key risk factors.

A wide variety of habitat types occur within the Analysis Area hosting a similarly wide array of migratory and resident birds. Of these habitat types, aspen-riparian is considered the "highest priority" habitat for Neotropical migratory birds (NTMB), as noted in the *1999 Draft Avian Conservation Plan for the Sierra Nevada Bioregion*.[109] Aspen-riparian habitats support an extremely rich and abundant avian community that includes several species of conservation concern, such as warbling vireo and red-breasted sapsucker.[110] Other habitats in the Analysis Area, including late successional forest, are also ranked as high priority and support species such as brown creeper and golden-crowned kinglet.

[106] USDA Forest Service, 2001c
[107] Freel, 1991
[108] Ibid.
[109] Siegel and DeSante, 1999
[110] Gardali et al., 2000

Table 18 presents the species associated with major habitat types in the Analysis Area.

Table 18. Migratory Bird Species Associated with Major Habitat Types in the Analysis Area

Habitat Type	Species
Riparian/Aspen	belted kingfisher, mountain quail, red-breasted sapsucker, tree swallow, northern rough-winged swallow, house wren, Swainson's thrush, American robin, yellow warbler, orange-crowned warbler, Wilson's warbler, song sparrow, Lincoln's sparrow, lazuli bunting, bank swallow, black-headed grosbeak, common yellowthroat, Swainson's hawk, tricolored blackbird, warbling vireo, yellow-breasted chat, hairy woodpecker, Williamson's sapsucker, winter wren
Mixed Conifer/Late Successional Forest	red-breasted sapsucker, Swainson's thrush, American robin, Nashville warbler, yellow-rumped warbler, chipping sparrow, white-headed woodpecker, pileated woodpecker, hairy woodpecker, Williamson's sapsucker, red-breasted nuthatch, pygmy nuthatch, brown creeper, winter wren, hermit warbler, purple finch, Cassin's finch, evening grosbeak, flammulated owl
Montane Chaparral	mountain quail, common poorwill, calliope hummingbird, gray flycatcher, green-tailed towhee, Brewer's sparrow, black-chinned sparrow, Virginia warbler, Lincoln's sparrow

3.9.3 Direct and Indirect Environmental Consequences

3.9.3.1 Alternative 1

No operational or infrastructural changes/additions would occur on NFS land within the Analysis Area as a result of the No Action Alternative.

An increase in human activity is anticipated to continue occurring as nearby population centers such as Reno continue to grow. Effects on wildlife from human recreation use of the area would likely continue with winter snowshoeing, cross-country skiing and summer hiking and mountain biking use on the existing minor trails and roadways. Further, expansion of these population centers results in more wildlife moving into the forested areas surrounding Mt. Rose Ski Tahoe. Finally, wildlife and habitat will continue to be impacted by changes in moisture and weather regimes as a result of climate change.

The existing flammulated owl nesting territory that is located in the Atoma Area would not be impacted under the No Action Alternative and would potentially be successful into the future but may be impacted as a result of increased human presence and activity in the area.

Under the No Action Alternative, the Forest Plan Amendment would not be implemented. Therefore, commercial development would still be a potential use of the 3,446 acres of NFS land acquired through the Galena Resort Land Exchange. Construction and operation of commercial developments have potential to impact wildlife and habitat from tree removal, grading, developed infrastructure and increased human use. Project specific NEPA analysis would be required prior to approval of any developments on NFS land and specific impacts of the proposal would be considered at that time.

3.9.3.2 Alternative 2 and Alternative 3

Under the action alternatives, the SUP boundary would be expanded by 112 acres to include the Atoma Area; trails, a skier bridge, restroom facility and lift service would be developed to accommodate skier use within the Atoma Area; and a Forest Plan Amendment would be approved to limit commercial development within 3,446 acres of NFS land.

Impacts to wildlife and habitat from typical ski area construction and maintenance actions such as tree cutting and mowing within ski trails (including maintenance every two to three years), grading, dead tree removal (within and surrounding trails as needed), lift maintenance, and infrastructure maintenance (sign installation or maintenance, trash pickup) would include: modification to canopy cover and reduced forest stand density.

It is anticipated that if other commercial developments were allowed within the 3,446 acres of NFS land acquired through the Galena Resort Land Exchange, those projects would have similar impacts as those listed above. The Forest Plan Amendment included in both action alternatives would limit development and the associated impacts, reducing impacts to wildlife and loss of quality/quantity of habitat.

Canopy cover for the three stands in the Atoma Area would be modified as a result of the project. Existing upper canopy cover for the three stands is as follows: Stand 1 (47 percent), Stand 2 (38 percent), and Stand 3 (92 percent). Tree removal for the proposed ski trails would effectively reduce the canopy cover within the proposed ski trail. The remaining tree islands would have a minor reduction in canopy cover because only individual scattered hazard trees would be removed. Although hazard trees would be removed, where possible, large diameter snags would be retained, as described in Appendix A. In addition, hazard tree removal would lower canopy cover.

Impacts to forest stand density would be minimized by the following Management Requirements for both Alternative 2 and Alternative 3:

- *WL 1: To maintain prey habitat, where available and when applicable in light of hazard tree removal, snags greater than 20 inches dbh and snags of any size that have cavities or other evidence of wildlife use will be retained throughout the project area.*
- *WL 2: Large woody debris will be retained, at least three pieces per acre, greater than 12 inches dbh or the largest available, where possible.*
- *WL 3: No trees greater than 24 inches dbh will be removed outside the proposed ski trails, chairlift and water tank areas.*

An increase of human activity and disturbance will result from implementation of either Alternative 2 or Alternative 3. Human activity and presence has the potential to disturb existing wildlife in the area. To reduce potential conflicts between human/wildlife interactions the following requirement will be followed for both Alternative 2 and Alternative 3:

- *G 4: During construction, contractors are required to provide a wildlife proof container on site for all edible and food related trash in order to minimize wildlife conflicts with wildlife. No food products or food containers can be thrown in the larger roll-off type dumpsters.*

Federally Threatened or Endangered, Regional Forester Sensitive Species, and Management Indicator Species

As mentioned above, review of the Analysis Area conducted through the USFWS IPaC online analytic tool, which suggested that three federally listed species had potential to occur in the Analysis Area (refer to Table 19).[111] Further analysis revealed that these species did not have

[111] USFWS, 2015

habitat present in the Analysis Area. Because no federally listed species' habitat is present in the Analysis Area, there would be no effect to federally listed wildlife species.

Table 19. Federally Listed Species Potentially Impacted by the Action Alternatives	
Species	Determination
Lahontan cutthroat trout	No effect
Cui-ui	No effect
North American wolverine	No effect

Region 4 Sensitive Species

Table 20 identifies R4 sensitive species that would be potentially impacted by the project, including impacts to habitat, and the determination of effects. Following the table is more detailed description and analysis of these impacts.

Table 20. Summary of Determinations for R4 Sensitive Wildlife Species			
Species	Alternative 1	Alternative 2	Alternative 3
BIRDS			
Northern goshawk	NI	MII	MII
Sage grouse	NI	NI	NI
Peregrine falcon	NI	NI	NI
Bald eagle	NI	NI	NI
Flammulated owl	NI	WII	WII
Mountain quail	NI	MII	MII
White-headed woodpecker	NI	WII	WII
California spotted owl	NI	MII	MII
Great gray owl	NI	NI	NI
MAMMALS			
Pygmy rabbit	NI	NI	NI
Townsend's big-eared bat	NI	NI	NI
Spotted bat	NI	NI	NI
Bighorn sheep	NI	NI	NI
Sierra Nevada red fox	NI	NI	NI

NI= No impact
MII= May impact individuals, but is not likely to result in a trend toward federal listing or loss of viability for the species
MIH= May impact habitat potential for species, but will not lead to a trend toward federal listing or a loss of viability for the species
WII = Will impact individual, but is not likely to result in a trend toward federal listing or loss if viability for the species

Northern Goshawk

Under the action alternatives, direct impacts to breeding goshawks would not be expected, as no project activities would occur within the boundaries of an existing Protected Activity Center (nesting territory), or within proximity to any known goshawk occurrence. Suitable nesting habitat in the Analysis Area is considered marginal. However, the Analysis Area is considered suitable for foraging and/or roosting.

The following design features would maintain foraging areas and/or a potential nest site for both Alternative 2 and Alternative 3:

- *WL 1: To maintain prey habitat, where available and when applicable in light of hazard tree removal, snags greater than 20 inches dbh and all snags of any size that have cavities or other evidence of wildlife use will be retained throughout the project area.*
- *WL 2: To maintain prey habitat, large woody debris will be retained, at least three pieces per acre, greater than 12 inches dbh or the largest available, where possible.*
- *WL 3: No trees greater than 24 inches dbh will be removed outside the proposed ski trails, chairlift and water tank area.*

Alternative 2 or Alternative 3 would result in the direct loss (26 or 27 acres, respectively) of suitable foraging goshawk habitat through the clearing of vegetation for the construction of the proposed ski trails, clearing of the proposed lift line, and construction of the snowmaking water tank (refer to Table 14 for Forested Habitat Loss in Atoma Area). Direct impacts to foraging goshawks could include disruptions to foraging activities due to human disturbance both during project construction and implementation. Construction activities would occur during the summer months when goshawks have the most probability of foraging in the Analysis Area. Direct impacts would be minimized by removing trees during the fall or winter; however, installation of infrastructure during the summer is expected. Goshawks would likely avoid these sites for foraging during the busiest construction periods and forage in adjacent conifer stands. It is expected that habitat conditions following trail construction would still provide adequate foraging capability, which will, therefore, allow goshawks to resume foraging in the area following construction. The increase in human disturbance in the winter months could also impact goshawk foraging capability. However, goshawks would typically migrate to lower elevations in the winter and would not be expected to occur with much frequency in the Atoma Area during the winter months; therefore, impacts to foraging are expected to be minimal.

Indirect effects could result from adjacent habitat removal, increased human presence and noise generated by new facilities, ski runs, and operations. Alterations to habitat from ski trail construction could indirectly impact goshawks by reducing habitat quality for goshawk prey such as woodpeckers, songbirds, and small mammals. Increased habitat fragmentation resulting from ski trail construction and other activities may provide more conducive habitat for nest predators and brood parasites such as brown-headed cowbirds. Additionally, removal of standing snags may limit habitat availability for woodpeckers, songbirds, and small mammals that rely on snag cavities for nesting and protection. Although goshawks currently are not known to occur in the area, loss of habitat for goshawks and their prey further diminishes the potential of future occupancy of this area.

Based on the above assessment, the action alternatives ***may impact individual goshawks and will not lead to a trend toward federal listing or a loss of viability of goshawk populations***.

Flammulated Owl

It is currently not known how many flammulated owls occur within the Atoma Area. Three years of surveys in the area resulted in several single detections as well as one nesting pair. Because the individual detections occurred in the same area the nesting pair was found, it is likely all of the detections represented the same single pair of owls. However, because flammulated owls maintain relatively small nesting territories, it is possible other breeding pairs or individuals are in the area and were not detected during surveys. Implementation of the action alternatives will result in the loss of at least one flammulated owl nest tree and nesting territory and will potentially decrease the suitability of the habitat for future nesting through the direct loss of habitat and indirect effects of habitat fragmentation and increased human presence.

Under Alternative 2, the construction of ski trails and the Atoma Chairlift will include complete vegetation removal on approximately 26 acres, including the known nest tree and all vegetation associated with the nesting territory. Alternative 3 will result in the removal of 27 acres of habitat. Male flammulated owls exhibit high return rates to occupied territories and spend much of their reproductive lives in one territory.[112] Approximately 75 percent of flammulated owl pairs retain the same mate in consecutive years of nesting attempts.[113] Based on the high site fidelity of the species, it is likely the pair will return to the Atoma Area in an attempt to nest in subsequent years including a year when construction activity of ski runs and lifts may be planned.

Direct Impacts

Vegetation removal activities could directly impact nesting flammulated owls by repeated disturbance, causing owls to flush from nest sites, potentially causing nest abandonment. Flammulated owls could also be killed or injured if construction activities remove the nest tree while active nesting is occurring. This may be particularly true with young hatchlings who would not be flight capable during the time of tree removal. Construction activities could also directly impact the foraging ability of adulted flammulated owls as they attempt to feed their young. To minimize direct impacts to nesting flammulated owls, a 2-acre Protected Activity Center (PAC) was delineated around the nest tree. Within the 2-acre PAC, there would be no project construction activities or vegetation removal between April 1 and October 30 to correspond with the migration period for flammulated owls (refer to the listed Management Requirements). This Management Requirement will reduce the potential for direct mortality and/or measurable disturbance to flammulated owls within the nesting territory as the owls will have migrated out of the area before construction begins. The only exception to these dates would include areas where the chairlift alignment overlaps with the 2-acre PAC. In these areas, chairlift tower construction may occur after July 30th. This exception allows lift tower construction to occur when soils are not frozen while still avoiding the critical nesting period for flammulated owls. Disturbance from chairlift tower placement would likely cause some disturbance to flammulated owls within the nesting territory; however, it would occur after the critical nesting period when most juvenile owls are fully flight capable and able to move out of the area while activities are occurring.

Outside of the nesting territory, ski trail construction and construction activities associated with the remainder of the chairlift line would likely result in disruptions to other flammulated owl activities such as foraging and roosting. Direct impacts to foraging are expected to be minimal as flammulated owls typically forage only in the evening; therefore, overlap between foraging events and construction activities would be rare. However, ongoing disturbance associated with construction may result in roosting flammulated owls abandoning the area of construction at least

[112] Linkhart and Reynolds, 2007
[113] Ibid.

while construction activities are taking place (which is anticipated to occur at least over two summer/fall seasons). In one study, flammulated owls abandoned their territory during a timber sale, and then returned the following year and eventually had higher nest success than control sites.[114] Flammulated owls roosting in cavities could be injured or killed during tree removal operations associated with trail and lift construction. To reduce the potential of flammulated owls being harmed, surveys would be conducted by a wildlife biologist no more than a month prior to each construction season to identify trees that contain important wildlife characteristics such as, cavities, broken tops and large diameter. Follow up surveys would be conducted near trees that are identified as having these characteristics. If flammulated owls are detected, tree felling would not occur until after October 30 and before April 1st, again to coincide with the migration period for this species. During the 2016 survey for flammulated owls, several trees in the area were identified and mapped as having potential for nesting and or roosting habitat for flammulated owls. These trees would have priority for inspection prior to removal.

Under both action alternatives, Management Requirement *WL 4*, which was developed to minimize impacts to nesting migratory birds, would also provide additional protection for the flammulated owl. This Management Requirement prohibits vegetation removal in aspen and riparian areas between April 15th and August 1st. Aspen stands are often used by flammulated owls for foraging due to their abundance of vegetation and relatively high moisture conditions which tend to produce high densities of insects, including moths, which are the primary diet of flammulated owls. Avoiding vegetation removal activities in aspen stands until after August 1st would minimize impacts to flammulated owls who would likely be using aspens stands during the breeding period to feed nestlings and or dispersing juveniles.

In order to protect flammulated owls from direct impacts related to project construction, the following Management Requirements will be followed for flammulated owls:

- *WL 4: To protect the breeding period for wildlife species, project activities will not occur from April 15th through August 1st in riparian and aspen areas to minimize the disturbance to migratory birds, mountain quail, and other wildlife species.*

- *WL 6 (flammulated owl): Surveys for flammulated owls will be conducted prior to implementation to identify the specific nest trees. Once identified, a 2-acre Protective Activity Center (PAC) will be delineated around each flammulated owl nest site.*[115]

- *WL 7 (flammulated owl): Within the 2-acre PAC there will be no construction activities between April 1 and October 30 to correspond with the migration period for flammulated owls. The only exception will include areas where the chairlift alignment overlaps with the 2-acre protected area. In this area, chairlift tower construction may occur after July 30th. This exception allows lift tower placement to occur when soils are not frozen while still avoiding the critical nesting period for flammulated owls.*

[114] PRBO, 2001

[115] According to the literature, the flammulated owl's home range territory size ranges from approximately 7 to 100 acres (Great Basin Bird Observatory 2010; Zeiner et al. 1990; Cannings 2004; McCallum 1994). However, during the nesting period, defended territories are often much smaller and can be less than 5 acres (Great Basin Bird Observatory 2010; Zeiner et al. 1990; Cannings 2004; McCallum 1994). For the purposes of this project and this particular nesting site (which is situated in a relatively small patch of habitat) 2 acres was used as a territory size as it was determined to be an adequate compromise of protecting the most important habitat for the flammulated owls and still allowing for some development.

- *WL 8 (flammulated owl): To protect flammulated owls post-implementation, future hazardous trees identified for removal that have cavities or other wildlife habitat characteristics, will be inspected by a biologist no more than a month prior to removal. If flammulated owls are detected, felling will not occur between April 1 and October 30, to coincide with the migratory period for this species.*

- *WL 9 (flammulated owl): To monitor future nesting activity, Mt. Rose Ski Tahoe will fund annual monitoring for flammulated owls by the Forest Service in the Atoma Area as well as within suitable habitat areas within 1 mile of the Atoma Area for a minimum of five years following construction.*

- *WL 10 (flammulated owl): To compensate for the removal of 12 acres of nesting and foraging habitat within the Atoma Area, the Forest Service will identify habitat improvement for flammulated owls would occur at a ratio of 2:1, or approximately 24 acres, of potential habitat improvement areas within 10 miles of the project area. Habitat improvements may include such activities as thinning overly dense vegetation, installing nest boxes, or snag creation. Mt. Rose Ski Tahoe will be responsible for this mitigation.*

Indirect Impacts

Habitat quality for flammulated owls varies throughout the 112-acre Atoma Area; however, the entire area is considered suitable for some level of activity by flammulated owls (foraging, roosting, nesting). Tree and other vegetation removal associated with construction of eleven ski trails and lift(s) would result in a reduction of approximately 17.3 acres (15 percent) of the available habitat for flammulated owls in the area under Alternative 2, and 22.6 acres (18 percent) for Alternative 3. Once constructed, each ski run would be approximately 1,500 to 2,500 feet in length and approximately 50 to 80 feet wide. The main Atoma Chairlift would be approximately 3,500 feet in length and 50 to 80 feet wide; similarly, Chairlift A would be approximately 3,000 feet long and Chairlift B 1,700 feet long each requiring a 50- to 80-foot-wide cleared alignment. Vegetation clearing for these linear features would result in a fragmented pattern of habitat throughout the Atoma Area. Habitat fragmentation can be viewed as a reduction and an isolation of resources that ultimately can lead to negative effects on the viability of a population. In a study on the effects of habitat fragmentation on tawny owls, it was observed that owls in fragmented forests flew 40 percent farther for foraging than those that occurred in non-fragmented stands.[116] Increased foraging distance requires more energy expenditure which could have potentially negative effects on reproduction, foraging, and survival over time.[117] Flammulated owls typically maintain relatively small nesting territories of 4 to 10 acres. Foraging, roosting, and dispersal habitat is generally much larger and ranges between 40 to 70 acres. Following ski run construction, it is likely that foraging distances for flammulated owls in some areas would increase, causing flammulated owls to expend increased energy while foraging to feed themselves and their young. Over time, if energy expenditures outweigh forage potential, overall productivity of the nesting pair would likely be reduced.

Vegetation removal would also result in a loss of canopy cover and stand densities within the project area which may impact flammulated owls by reducing thermal and protective cover. However, under the action alternatives, conifer and aspen stands located between the skier trails would not be altered with the exception of the removal of individual hazard trees located adjacent to skier trails or lift lines. In total, these interstitial stands of conifer and aspen would still account

[116] Redpath, 1995
[117] Ibid.

for approximately 100 acres of the available habitat in the area. Although the individual patch size of these stands would be disrupted, it is assumed some would be large enough to still provide habitat for flammulated owls. To further protect habitat for flammulated owls, all non-hazardous snags greater than 20 inches diameter at breast height (dbh) and snags of any size that have cavities or other evidence of wildlife use would be retained throughout the project area. The retention of conifer and large diameter snags may allow flammulated owls to relocate to these areas following the removal of their current nesting territory. Although flammulated owls tend to exhibit high nest site fidelity, they also have shown a willingness to occupy neighboring available habitat for nesting. To mitigate the loss of habitat in the Atoma Area, habitat improvement for flammulated owls would occur at a ratio of 2:1. Under the Proposed Action (Alternative 2) this would result in approximately 34 acres of habitat restored to account for the 17.3 acres of habitat lost. Under the Preferred Action (Alternative 3), this would result in approximately 45 acres of habitat restored to account for the 22.6 acres of habitat lost. The Forest Service would identify habitat improvement areas within 10 miles of the project area and would include such activities as thinning overly dense vegetation, installing nest boxes, or creating snags for future nesting.

Flammulated owl nesting and foraging behavior in the Atoma Area may be indirectly impacted by the increase of human presence in the area during construction activities as well as ongoing summer maintenance activities etc. As mentioned above, flammulated owls appear to tolerate some level of human disturbance and have been documented returning to breeding areas post disturbance. However, vegetation removal and construction activities would likely take place over several years resulting in continuous noise and disturbance from equipment and crew workers in the area. In addition, annual maintenance of ski trails, lift lines and other infrastructure would result in an increase of human disturbance occurring within the Area. While design features associated with the action alternatives would minimize the direct impacts from these activities, the long-term, repeated disturbance could result in flammulated owls abandoning the area permanently. Under the action alternatives, monitoring would be conducted for a minimum of five years post construction in the Atoma Area and within 1 mile of the area to determine if flammulated owls continue to nest in the area. Documenting this information would provide additional insight on response of flammulated owls to habitat disturbance and provide managers with improved guidance on future project planning efforts related to habitat alteration.

Cumulatively, events such as wildfire, insect-related tree mortality and vegetation management projects have likely had an impact on flammulated owl habitat along the Sierra front. According to the most recent literature, flammulated owl populations are considered stable or increasing throughout most of their range. Globally, flammulated owl populations are ranked as secure (G4) and are also ranked as secure in Nevada.[118] While this project will result in negative impacts to the flammulated owls nesting in the Atoma Area, it will not result in a loss of viability to a larger, metapopulation of flammulated owls. Therefore, the action alternatives ***will impact individual flammulated owls, but will not lead to a trend toward federal listing or a loss of viability***.

Mountain Quail

Under the action alternatives, only minimal direct and indirect impacts to mountain quail would result from project activities. Although mountain quail could potentially utilize habitat throughout the Analysis Area, they generally favor areas that contain a brushy understory, which occurs primarily near the riparian area located near the southeast portion of the Atoma Area. Outside of the riparian area, stands of small diameter fir, whitebark pine, and lodgepole pine lack substantial understory vegetation and riparian features to support mountain quail. Indirect impacts to

[118] NatureServe, 2015

mountain quail may occur as a result of vegetation removal associated with ski trail installation. Construction activities associated with the proposed chairlift installation would have a direct effect on mountain quail through vegetation removal, noise, and human activity in the area.

To reduce potential disturbance to mountain quail that may occur within or adjacent to proposed ski trails the following Management Requirement would be implemented:

- *WL 4: To protect the breeding period for wildlife species, project activities will not occur from April 15th through August 1st in riparian and aspen areas to minimize disturbance to migratory birds, mountain quail, and other wildlife species*

Mountain quail are more likely to nest near riparian areas and have typically completed their breeding cycle by mid-July. Construction disturbance occurring outside of the breeding season would have minimal impacts on mountain quail, as both adults and juvenile mountain quail are flight-capable during this time period and would be able to disperse to adjacent suitable habitat during project activities.

Indirectly, mountain quail may be impacted from a loss of approximately 18.0 acres of habitat under Alternative 2 or 23.36 acres under Alternative 3, as a result of trail construction. Trail corridors would mostly be maintained as open, vegetation-free areas that would no longer provide suitable cover or foraging habitat for mountain quail. However, habitat loss totals only 7 percent of available habitat within the Atoma Area. Furthermore, the Atoma Area is bordered by suitable habitat that lies downslope of the Atoma Area that would be available to mountain quail for foraging and cover habitat. Based on this analysis, habitat alterations are not expected to cause any long-term impacts to mountain quail.

Based on the above assessment, the action alternatives ***may impact individual mountain quail but will not lead to a trend toward federal listing or a loss of viability***.

White-headed Woodpecker

Impacts to white-headed woodpeckers could occur as a result of implementation of either action alternative due to the loss of suitable habitat and disturbance.

Direct impacts to white-headed woodpeckers could result from ski trail and chairlift construction, installation of the water tank, and operation of the Atoma Area which would constitute a loss of habitat. Noise from equipment and other activities may flush white-headed woodpeckers from foraging areas. Adjacent undisturbed habitat would provide sufficient foraging habitat for adults to temporarily disperse to during project operations. Under Alternative 2, approximately 18.0 acres (21 percent) of suitable nesting and foraging habitat would be lost, while under Alternative 3, 23.36 acres (27 percent) of suitable nesting and foraging habitat would be lost.

The following Management Requirements would also reduce the potential for disturbing important foraging areas and/or a potential nest site:

- *WL 1: To maintain prey habitat, where available and when applicable in light of hazard tree removal, snags greater than 20 inches dbh and snags of any size that have cavities or other evidence of wildlife use will be retained throughout the project area.*

- *WL 5: To minimize disturbance to nesting birds in non-riparian areas from construction operations associated with the Atoma Area (between April 15 and August 1), surveys will be conducted no more than one week prior to construction activities to identify active nest sites. If an active nest is located, it will be flagged and avoided.*

Removal of dead and diseased trees would result in more open stands with less understory vegetation. The reductions would likely result in an impact causing white-headed woodpeckers to utilize adjacent areas where higher canopy cover exists. Design features, including retention of large snags and large down woody debris, where possible, would continue to provide structural integrity of habitat for white-headed woodpeckers.

Based on the above assessment, the action alternatives ***may impact individual white-headed woodpeckers, but is not likely to result in a trend toward federal listing or loss of viability for the species***.

California Spotted Owl

Limited direct and indirect impacts to spotted owls would result from project activities due to the lack of presence of spotted owls and marginal foraging habitat present within the Analysis Area.

Alternative 2 would result in the direct loss of 17.3 acres of suitable foraging spotted owl habitat, while Alternative 3 would result in a direct loss of 22.6 acres through the clearing of vegetation for the construction of the proposed ski trails, clearing of the proposed lift line and also construction of the snowmaking water tank. Additionally, hazard trees (primarily snags) and small pockets of beetle or disease-infested trees located along cleared ski trails would be thinned. The decrease of overstory vegetation removal as a result of ski trail and lift installation would decrease the suitability of foraging habitat for spotted owls. Potential foraging habitat occurs outside the Analysis Area in adjacent surrounding areas.

The following design feature would also reduce the potential for disturbing important foraging areas and/or a potential nest site:

- *WL 1: To maintain prey habitat, where available and when applicable in light of hazard tree removal, snags greater than 20 inches dbh and snags of any size that have cavities or other evidence of wildlife use will be retained throughout the project area.*
- *WL 2: To maintain prey habitat, large woody debris will be retained, at least three pieces per acre, greater than 12 inches dbh or the largest available, where possible.*
- *WL 3: No trees greater than 24 inches dbh will be removed outside the proposed ski trails, chairlift and water tank areas.*

Based on the above assessment, the action alternatives ***may impact individual spotted owls, but would not lead to a trend toward federal listing or a loss of viability***.

Management Indicator Species

Northern Goshawk

Potential impacts to northern goshawks are described above, under R4 sensitive species. Based on the above assessment, the proposed project may impact goshawk and their habitat.

Yellow Warbler

Under the action alternatives, direct effects to yellow warblers would include flushing birds from nest and foraging sites during project activities, particularly those that involve tree removal in and near the riparian habitat within the Atoma Area. Disruptions to breeding could lead to mortality of eggs and/or juveniles, and result in an increased risk of nest parasitism. However, under both Alternative 2 and Alternative 3, the removal of riparian vegetation and trees in aspen stands

would not occur until after the breeding cycle for yellow warblers. Eliminating activity during the critical breeding period would reduce potential impacts from disturbance.

The following Management Requirement would ensure that removal of riparian vegetation and trees in aspen stands would not occur until after the breeding cycle:

- *WL 4: To protect the breeding period for wildlife species, project activities will not occur from April 15th through August 1st in riparian and aspen areas to minimize the disturbance to migratory birds, mountain quail, and other wildlife species.*

Approximately 1.1 acres of suitable riparian habitat (aspen) would be lost as a result of project implementation from the action alternatives. Construction of the ski trails and proposed chairlift would divide the existing mosaic of habitats into smaller islands of habitat. Creation of new ski trails, chairlift installation, and new facilities would result in increased fragmentation of the habitat and could result in increased nest parasitism and predation on yellow warbler.

Habitat for yellow warblers may be indirectly impacted as a result of edge effects caused by the clearing of vegetation to create ski runs. Nest predators such as *Corvidae* species and brood parasites (brown-headed cowbird, *Molothrus ater*) often are found at increased densities in edge habitats.[119]

Indirectly, habitat for yellow warblers may also be impacted by the alterations to available cover in the area. Yellow warblers require shrubs and small trees of adequate height to provide perching and foraging habitat. Reduction in shrubs could cause yellow warblers to avoid the area during migration and result in loss of habitat through ongoing ski trail maintenance and use. In riparian areas, vegetation removal for ski trail installation would impact yellow warblers by reducing suitable foraging and nesting habitat. Due to the relatively small area to be impacted compared with the large area of riparian habitats that contain willow, alder, and elderberry components available in surrounding the Atoma Area, these impacts are considered minor.

Based on the above assessment, the action alternatives ***may impact*** individual yellow warblers and their habitat; however, the impacts are considered minor.

Yellow-rumped Warbler

Under the action alternatives, direct effects to yellow-rumped warblers could include flushing birds from nesting and or foraging areas during project activities. Disruptions to breeding could lead to mortality of eggs and/or juveniles and result in an increased risk of nest parasitism. A total of 18.0 acres (21 percent) of forested habitat would be lost under Alternative 2, and 22.6 acres (26.6 percent) of forested habitat would be lost under Alternative 3.

The following Management Requirements will offset impacts by requiring project activities not occur during critical times of the year for this species and that additional surveys occur prior to construction:

- *WL 4: To protect the breeding period for wildlife species, project activities will not occur from April 15th through August 1st in riparian and aspen areas to minimize the disturbance to migratory birds, mountain quail, and other wildlife species*

[119] Whitcomb et al., 1981; Brittingham and Temple, 1983

- *WL 5: To minimize disturbance to nesting birds in non-riparian areas from construction operations associated with the Atoma Area (between April 15 and August 1), surveys will be conducted no more than one week prior to construction activities to identify active nest sites. If an active nest is located, it will be flagged and avoided.*

Construction of new ski trails and proposed chairlift would divide the existing mosaic of habitats into smaller islands of habitat. As with the yellow warbler, fragmentation of habitats could result in an increase in nest parasitism due to the creation of newly formed "edges" within the forested stands.

Indirectly, removal of vegetation could temporarily cause yellow-rumped warblers to avoid the area for nesting and or foraging. However, yellow-rumped warblers are known to occur in a variety of mixed conifer types and densities and are, therefore, expected to utilize the remaining tree islands. Furthermore, large sections of adjacent conifer stands would be untreated and would continue to provide adequate nesting habitat for yellow-rumped warblers. In conifer stands, tree removal would impact yellow-rumped warblers by reducing suitable foraging and nesting habitat. Due to the relatively small size (18.0 acres for Alternative 2 and 22.6 acres for Alternative 3) of the impacted area (when compared with the large area of suitable habitat available surrounding the Atoma Area), any impacts would be considered small.

Hairy Woodpecker and Williamson's Sapsucker

Under the action alternatives, direct effects to hairy woodpeckers and Williamson's sapsuckers could include flushing birds from nesting and or foraging areas during project activities. Disruptions to breeding could lead to mortality of eggs and/or juveniles and result in an increased risk of nest parasitism. However, under the action alternatives, project activities would not occur in aspen stands until after the breeding season for most migratory birds (August 1). This Management Requirement would particularly benefit the Williamson's sapsucker, which frequently nests in aspen. Adjacent untreated conifer stands would provide some refuge for displaced woodpeckers while project activities are occurring. The removal of 18.0 acres of forested area or 22.6 acres for Alternative 3 would result in a loss of foraging and nesting habitat for woodpeckers.

Indirectly, hairy woodpeckers and Williamson's sapsuckers could be affected by a reduction in canopy cover and structural diversity within the Analysis Area. Both species require conifer and/or deciduous stands that include large diameter snags and some structural diversity within the stand. Loss of these habitat features is considered one of the largest threats to both of these species.

The following Management Requirements would minimize the amount of habitat lost for hairy woodpeckers and Williamson's sapsuckers:

- *WL 1: To maintain prey habitat, where available and when applicable in light of hazard tree removal, snags greater than 20 inches dbh and snags of any size that have cavities or other evidence of wildlife use will be retained throughout the project area.*

- *WL 3: No trees greater than 24 inches dbh will be removed outside the proposed ski trails, chairlift and water tank areas.*

- *WL 5: To minimize disturbance to nesting birds in non-riparian areas from construction operations associated with the Atoma Area (between April 15 and August 1), surveys will be conducted no more than one week prior to construction activities to identify active nest sites. If an active nest is located, it will be flagged and avoided.*

Implementation of Management Requirements related to Flammulated Owls would also minimize impacts to this species (refer to Flammulated Owl discussion for specific requirements). In aspen stands, tree removal would impact hairy woodpeckers and Williamson's sapsuckers by reducing suitable foraging and nesting habitat. Due to the relatively small size of the impacted area (when compared with the suitable habitat available surrounding the Atoma Area), any impacts would be considered small.

Mule Deer

Under the action alternatives, direct effects to mule deer would include displacement of deer during project activities. Project activities occurring during the late spring and summer months could impact deer transitioning from winter to summer range or deer seeking cover in aspen and conifer stands. However, suitable habitat for mule deer surrounds the Analysis Area and would provide accessible refuge for mule deer during project operations.

Although it is not clear if mule deer fawn in the Atoma Area, the availability of small meadows and aspen located within the project area provide some potential habitat for fawning activity. Management Requirements associated with the action alternatives would minimize potential impacts to mule deer during the fawning season. Included is the following Management Requirement designed for nesting birds that would benefit fawning activity in the project vicinity:

- *WL 4: Project activities will not occur from April 15th through August 1st in riparian and aspen areas to minimize the disturbance to migratory birds, mountain quail, and other wildlife species during the breeding season.*

This time period coincides with mule deer fawning periods which typically occur at this elevation between June and July. Beyond this time period, fawns and does would be mobile and able to disperse to adjacent habitat during project operations.

Indirect effects to mule deer summer range would include the reduction in tree cover in both conifer and aspen stands. Mule deer rely on conifer and aspen stands, particularly on summer and transitional ranges, to provide thermal and security cover.[120] Mule deer tend to prefer conifer stands in early to mid-seral stages due to the relative abundance of understory vegetation typically present in these stands. Mule deer also rely on aspen communities for food, cover, hiding, and protection from severe weather, making it a popular habitat type for them three seasons of the year. The reduction in conifer trees would reduce the overall canopy cover and subsequent thermal protection for mule deer, thereby decreasing the suitability of habitat. However, the retention of live trees in the islands between proposed ski trails as well as the retention of the majority of aspen stands within drainages and along meadow edges would continue to provide shade and cover habitat for mule deer within the Atoma Area. The action alternatives would not result in any loss of any critical winter range habitat.

[120] Carson and Peak, 1987

American Marten

Direct effects to American marten would include displacement of individuals during construction activities. Alternative 2 would result in the direct loss of 17.3 acres of suitable American marten habitat, and Alternative 3 would result in 22.6 acres of direct loss through the clearing of vegetation for the construction of the proposed ski trails, clearing of the proposed lift line(s) and also construction of the snowmaking water tank. Indirectly, marten could be affected from a reduction in canopy cover and structural diversity within the Analysis Area. Marten typically require habitat features associated with late-seral coniferous forests such as dense canopied (60 percent to 100 percent), multi-storied stands with numerous large diameter snags. Trees targeted for removal in the remaining tree islands would be the diseased and snags.

Additionally, the following Management Requirements would continue to provide structural integrity of habitat for marten throughout the Analysis Area:

- *WL 1: To maintain prey habitat, where available and when applicable in light of hazard tree removal, snags greater than 20 inches dbh and snags of any size that have cavities or other evidence of wildlife use will be retained throughout the project area.*
- *WL 2: Large woody debris will be retained, at least three pieces per acre, greater than 12 inches dbh or the largest available, where possible.*
- *WL 3: No trees greater than 24 inches dbh will be removed outside the proposed ski trails, chairlift and water tank areas.*

Implementation of Management Requirements related to flammulated owls would also minimize impacts to this species (refer to flammulated owl discussion for specific requirements).

Macroinvertebrates

Under the action alternatives, the use of ground-based equipment for thinning, ski trails, and lift line clearing could have some impacts on soils and water quality. The direct and indirect effects of these actions could include soil disturbance and erosion, soil compaction, increased runoff, and sediment delivery to the stream channel. It is assumed that any activity that increases erosion, stream bank destabilization, or loss of shading would affect water quality and likely have some negative effects on aquatic insects.

However, the risk of impacts to soil and water would be reduced through implementation of Management Requirements, which are described in Appendix A and include:

- *WA 4: Prior to any grading adjacent to the NDOT right-of-way, a Drainage Report, including a grading plan, and a Drainage Form must be submitted to the Permit office (NDOT) for approval.*
- *WA 5: Rehabilitation of disturbed areas will include installation of appropriate drainage features (such as machine tilling, erosion control matting, mulch, and revegetation) as well as rebuilding top soils with the addition of stockpiled soil organic matter and/or specific soil amendments that create a stable, plant supporting, erosion resistant soil matrix. To maintain long-term soil stability and productivity, native vegetation will be reestablished on graded trails. Seed mixes will be approved by a Forest Service botanist. Monitoring revegetation will occur for at least five years.*

These Management Requirements are designed to minimize soil disturbance and protect stream channels and riparian areas.

According to the watershed analysis (refer to Section 3.10), short-term effects to soil and water quality from ski trail construction, grading, lift line clearing, and installation of the water tank would likely be minimal. In the long term, water quality and soil quality would be maintained. Any effects to macroinvertebrates from project activities would be expected to be minimal, temporary, and confined to relatively small areas.

Migratory Birds

Direct effects to migratory birds could occur from inadvertent trampling or flushing birds from perches and nest sites during project activities associated with both action alternatives. Repeated intrusions during the nesting season could cause birds to minimize singing or stop altogether, decrease defensive behavior at nests, and possibly cause birds to abandon nest sites leading to an overall decline in nesting productivity.[121] Along the Eastern Sierra, the breeding season for many NTMB is generally between March 1st and August 30th depending on species and elevation.[122] Birds occurring at this elevation range typically have ended their breeding cycles by mid- to late-July. In areas outside of aspen stands, ski trail construction and lift line clearing would occur during the breeding season, which could increase the potential for impacts to nesting birds. Additional measures would be taken to minimize impacts to NTMB species and nesting birds in non-riparian areas. Coordination with Forest Service staff would be required to ensure measures are implemented appropriately.

The following Management Requirements would minimize impacts to migratory birds, their breeding seasons, and nests:

- *WL 4: Project activities will not occur from April 15th through August 1st in riparian and aspen areas to minimize the disturbance to migratory birds during the breeding season.*

- *WL 5: To minimize disturbance to nesting birds in non-riparian areas from construction operations associated with the Atoma Area (between April 15 and August 1), surveys will be conducted no more than one week prior to construction activities to identify active nest sites. If an active nest is located, it will be flagged and avoided.*

A total of 36.6 acres of suitable NTMB habitat would be lost as a result of construction activities associated with the Alternative 2. Alternative 3 would result in 37.2 acres of NTMB habitat lost. Table 21 outlines the habitat lost for each alternative by habitat type.

[121] Knight and Temple, 1986
[122] Heath and Ballard, 1999

Table 21. Disturbance by Habitat Type				
Habitat Type	Clearing (acres)	Clearing and Grading (acres)	Grading (acres)	Total (acres)
ALTERNATIVE 2				
Aspen	0.8	0.5	0.0	1.3
Lodgepole Pine	2.0	3.2	0.1	5.4
Montane Chaparral	3.7	2.9	0.0	6.6
Montane Hardwood Conifer	1.3	0.7	0.0	2.0
Red Fir	9.1	7.0	0.8	16.9
Subalpine Conifer	0.0	1.1	2.5	3.6
Sierran Mixed Conifer	0.1	0.1	0.0	0.1
Sagebrush	0.0	0.0	0.3	0.3
White Fir	0.2	0.2	0.0	0.4
Total Alt 2	17.2	15.7	3.7	36.6
ALTERNATIVE 3				
Aspen	0.8	0.5	0.0	1.3
Lodgepole Pine	1.9	4.0	0.1	6.0
Montane Chaparral	3.5	2.9	0.0	6.4
Montane Hardwood Conifer	1.3	0.7	0.0	2.0
Red Fir	9.2	7.0	0.8	17.0
Subalpine Conifer	0.0	1.1	2.5	3.6
Sierran Mixed Conifer	0.1	0.1	0.0	0.2
Sagebrush	0.0	0.0	0.3	0.3
White Fir	0.2	0.2	0.0	0.4
Total Alt 3	17.0	16.5	3.7	37.2

Notes:
*Slight differences in acreage between habitat disturbance and project disturbance is due to GIS shapefiles and rounding.

Indirectly, NTMB could be affected by a reduction in canopy cover, as well as structural and floristic diversity within the Analysis Area. Large reductions in habitat could act as barriers to migratory bird corridors. Habitat fragmentation is considered the major factor for population declines in migratory bird species, particularly when the fragmentation occurs within riparian zones.[123] In addition to the direct loss of habitat associated with the project, increased fragmentation would result from ski trail and lift line construction. Increased fragmentation of habitats could result in secondary impacts to forested stands in the form of edge effects. An indirect biological impact resulting from edge effects could result in increased predation on native fauna within the habitat patch. Nest predators such as *Corvidae* species and brood parasites (brown-headed cowbird, *Molothrus ater*) often are found in increased densities in edge habitats.[124] Creation of new ski runs, lift line alignments, and new facilities would result in increased fragmentation of the habitat and could result in increased nest parasitism and predation on NTMB. The configuration of the proposed ski trails would result in indirect effects to the remaining tree islands in the Atoma Area. It should be noted the existing habitat in the Atoma Area is already fragmented as a result of existing roadways, power lines and hiking trails. This increase in fragmentation would be minor in light of the existing condition of the habitat. Impacts resulting from the increasing fragmentation may be amplified due to already small nature of the existing patches within the Atoma Area.

The habitat surrounding the Atoma Area to the north and west is of high quality for NTMB as it is relatively undisturbed. Due to the inclusion of the Management Requirements as noted above, the relative direct (loss of 36.6 acres for Alternative 2 and 37.2 acres for Alternative 3) and indirect impacts (fragmentation) to habitat in the Atoma Area would be minor. Avoiding impacts to NTMB to the extent possible through implementation of the Management Requirements as noted above would decrease impacts. Any incidental take of NTMB would be warranted if it were to occur outside the breeding season and timelines outlined in Management Requirements *WL 4* and *WL 5*.

3.9.4 Cumulative Effects

3.9.4.1 Temporal and Spatial Extent of Analysis

The spatial extent of the cumulative effects analysis for wildlife and aquatic resources varies by species and is discussed above in the Affected Environment. The temporal bounds for this cumulative effects analysis extends from Mt. Rose Ski Tahoe's inception as a ski area in 1964, through the foreseeable future in which Mt. Rose Ski Tahoe can be expected to operate.

3.9.4.2 Past, Present, and Reasonably Foreseeable Future Actions

The following projects could have cumulative impacts on wildlife and aquatic resources and are analyzed below:

- Mt. Rose Ski Tahoe 2010 MDP Addendum
- The 2008 Atoma Insect Salvage and Fuels Reduction Project
- Private land development within and adjacent to the project area

[123] Hutto, 1995
[124] Whitcomb et al., 1981; Brittingham and Temple, 1983

Cumulative effects to wildlife have the potential to result from the development of the Atoma Area when considered together with vegetation management and fuels reduction projects, wildfires, forest insects such as the pine beetle and fir engraver, disease such as blister rust, increased recreational use of the area, ski trail construction and urban development.

Mt. Rose Ski Tahoe Master Development Plan

Additional recreational pressures on biological resources have occurred in areas surrounding the Analysis Area due to the opening of the Chutes at Mt. Rose Ski Tahoe and increased backcountry ski use of the surrounding area in recent years. Additional projects contained in the Mt. Rose Ski Tahoe 2010 MDP Addendum, some of which have already been approved but unimplemented, will likely result in the continuation of recreational pressures.

Increased human use of these areas may result in compounded pressures on wildlife species by decreasing the suitability of habitat.

In addition to a possible reduction in the total acreage of suitable wildlife habitat as a result of increased recreational pressures, other negative effects may include: habitat fragmentation, creation of increased edge habitat and concomitant increases in associated impacts, and creation of barriers to wildlife migration and daily movement patterns. Each of these effects have the potential to result in a reduction in the numbers and diversity of sustainable wildlife habitats.

Atoma Insect Salvage and Fuels Reduction Project

Ongoing vegetation management and fuels reduction projects, such as the Atoma Insect Salvage and Fuels Reduction Project, alter habitat, specifically for goshawks, flammulated owls, white-headed woodpeckers, hairy woodpeckers, Williamson's sapsuckers, mule deer, and American marten. In the long term, fuels reduction and vegetation management projects reduce the risk of a catastrophic wildfire and the resulting loss of habitat, thereby resulting in a beneficial effect to the quality of habitat for the above species. However, changes to the forest structure from these projects can result in short-term negative impacts to these species, as a result of loss of trees, and modification to habitats and human presence during management activities. The Atoma Fuel Wood Project resulted in the overall decrease of dead wood and tree density with the Analysis Area thereby decreasing the chances for catastrophic wildfire. However, removal of trees within the area may have resulted in decreased suitability of nesting locations for flammulated owls, and foraging habitat for white-headed woodpeckers, hairy woodpeckers, and Williamson's sapsuckers. The Atoma Fuel Wood Project may, over the long term, increase the suitability of summer habitat for mule deer due to an increase in open forested areas that would potentially become suitable for foraging. The degree to which the development of the Atoma Area contributes to the loss of habitat is considered relatively small due to the limited amount of habitat removal associated with the project.

Wildfires

Wildfires are a continuing threat to wildlife species. Past wildfires have resulted in large-scale loss of habitat in the area. Invasive species that out-compete native vegetation provide no forage or cover value. The abundance of shrub regeneration following these fires may also improve habitat for species in some areas. Additionally, standing dead trees and snags have the potential to become new habitat for certain avian species.

Over the past two to three decades, outbreaks of pine beetle and fir engraver have resulted in high levels of mortality of conifer stands in the Carson Range. Much of the dead and down has been

removed through public fuelwood removal and prescribed burning activities.[125] Ongoing mortality of conifer trees continues to occur. When considered together with the development of the Atoma Area, the resulting loss of habitat could cumulatively impact species that depend on conifer stands for nesting, roosting, and foraging. Project implementation would contribute to the loss of forested habitat as a result of construction of the proposed ski trails and chairlift. The degree to which the Atoma Area contributes to the loss of habitat is relatively small in relation to the larger scale impacts resulting from wildfire and disease.

Private Land Development

North of Mt. Rose Ski Tahoe, along the Mt. Rose Highway, private land development has occurred at the Sunridge subdivision (approximately 3 miles north on Mt. Rose Highway) and nearby the Sky Tavern ski area (over 1 mile from Mt. Rose Ski Tahoe). This development has added roads and homes over time in what was previously a primarily natural setting. Although additional residential development would be allowed by Washoe County zoning regulations, no applications are known of at this time. All of these private land developments would cumulatively contribute to the pressures on biological resources in the project area. As is the case with increased recreational pressures, private land development has the potential to result in a possible reduction in the total acreage of suitable wildlife habitat, and other negative effects which may include: habitat fragmentation, creation of increased edge habitat and concomitant increases in associated impacts, and creation of barriers to wildlife migration and daily movement patterns. Each of these effects have the potential to result in a reduction in the numbers and diversity of sustainable wildlife habitats.

3.9.5 Irreversible and Irretrievable Commitments of Resources

Irreversible commitments of resources are those that cannot be regained, such as the extinction of a species or the removal of mined ore. Irretrievable commitments are those that are lost for a period of time such as the temporary loss of timber productivity in forested areas that are kept clear for use as a power line right-of-way or road.

The amount of habitat modification, as well as disturbances during the summer, would irretrievably affect some individual members of various wildlife species, but these impacts are not considered irreversible.

3.10 Watershed, Wetlands, and Soils

3.10.1 Scope of the Analysis

The Analysis Area for watershed, wetlands, and soil resources includes the ski area projects that would result in ground disturbance under Alternative 2 or Alternative 3 and the land acquired through the Galena Resort Land Exchange which would be included in the Forest Plan Amendment. The proposed ski area projects would occur within the Truckee River watershed. Streams and wetlands proximate to the action alternatives were delineated in the field for this analysis. No site-specific soil surveys were completed; however, soils were determined based on best available data from the National Resources Conservation Service.[126]

[125] USDA Forest Service, 2008
[126] NRCS, 2013

The scope of the watershed, wetlands and soils analysis also includes the 3,446 acres of NFS land acquired in the Galena Resort Land Exchange and are, therefore, included in the Forest Plan Amendment. This area was not site specifically surveyed; however, it will be discussed in relation to how precluding commercial development from these lands could impact or benefit these resources.

The temporal scope of this analysis begins in 1964 when Mt. Rose Ski Tahoe first began cutting trees and installing lifts and extends into the future for the duration of Mt. Rose Ski Tahoe's SUP with the Forest Service.

3.10.2 Affected Environment

3.10.2.1 Executive Order 11990

Additional direction regarding wetlands management for the United States Army Corp of Engineers (USACE) and Forest Service is provided by Executive Order 11990, *Protection of Wetlands*. Presidential Executive Order 11990 requires federal agencies to avoid to the extent practicable, long- and short-term adverse impacts associated with the destruction or modification of wetlands. More specifically, the Order directs federal agencies to avoid new construction in wetlands unless there is no reasonable alternative. The Order states further that where wetlands cannot be avoided, the Proposed Action must include all practicable measures to minimize harm to wetlands. As required by the Order and the Clean Water Act (CWA), avoidance and minimization measures must be considered through the planning process.

3.10.2.2 Existing Conditions

Ski Area Projects

The Analysis Area for the proposed projects, as described above, is divided into two parts: the Atoma Area, to the north of the Mt. Rose Highway; and the existing SUP area to the south of the Mt. Rose Highway. The Atoma Area is largely undisturbed despite the Old Mt. Rose Highway running north-south through the area (dividing it nearly in half), and some user created mountain biking trails crisscrossing the area. Vegetation consists primarily of pine forest (*Pinus contort us*) and tobacco brush (*Ceanothus velutinus*). Groundcover is limited outside of tobacco brush; in upland areas, vegetation coverage ranges from 20 percent (sparse pine coverage in sandy soils) to 100 percent, where large mats of tobacco brush dominate the landscape. The existing SUP area includes NFS land and private land that have been developed for skiing, as well as undeveloped private land. Undeveloped private land within this area consists primarily of pine forests with sparse understory and areas of tobacco brush.

Elevations at Mt. Rose Ski Tahoe range from 8,000 to 9,700 feet above mean sea level (amsl). Average annual precipitation at the ski area is approximately 30 inches and occurs primarily in the form of snow during the months of November through March. Mean temperatures in these months range from approximately 27° to 33° Fahrenheit. Mean high temperatures in the summer months (June through August) range from 55° to 62° Fahrenheit.[127]

[127] Western Regional Climate Center, 2014

Watershed

The proposed projects would occur on the frontside of Mt. Rose Ski Tahoe and within the Atoma Area which is within the Truckee subwatershed (Hydrologic Unit Code 8) which encompasses approximately 77,000 acres. The Truckee watershed includes all of Reno and other nearby cities generally resulting in storm water pollutants and sediment from urban development entering the water system.[128] However, other areas of the watershed are in good condition with minimum erosion and good water quality.

Named perennial streams nearest Mt. Rose Ski Tahoe and the Atoma Area are Browns Creek and Galena Creek. The headwaters of Browns Creek are located approximately 0.5 mile east of Mt. Rose Ski Tahoe and the Atoma Area, while Galena Creek flows northwest of Mt. Rose Ski Tahoe and the Atoma Area. There are no known issues with water quality in streams surrounding Mt. Rose Ski Tahoe within the Truckee Watershed.[129]

There are several box spring collections north of the proposed Atoma terrain—located on NFS land and private property (owned by Sky Tavern). This system belongs to the Pine Ridge Water Company, which is a small community water system serving residents that live below the Atoma Area.

Mt. Rose Ski Tahoe holds water rights allowing for the diversion of 100 acre feet of water, and currently utilizes a portion of this to provide snowmaking coverage on existing terrain. Water is currently drawn from a well, providing a flow of 550 gallons per minute, and is stored in a 500,000-gallon steel tank located above the *Galena* trail on private land.

Streams within the Analysis Area

Although no named perennial streams extend in to the Analysis Area, two intermittent stream segments (referred to as Streams 1 and 2) and one perennial stream segment (Stream 3) were delineated within the Analysis Area, totaling 2,120 linear feet of stream. Based on the topography, water from these streams likely flows into Galena Creek approximately 0.5 mile north of Mt. Rose Ski Tahoe and the Atoma Area.

Stream 1 – Intermittent

Stream 1 (the western stream) runs approximately 1,670 feet with widths ranging from 3 to 10 feet at ordinary high-water mark (OHWM) within the Atoma Area. This stream originates as a small stream, fed by a groundwater seep located within an herbaceous wetland; herbaceous vegetation is present and functioning for bank stabilization. The middle portion of the stream flows through an area with overstory vegetation and sparse groundcover. In this area where groundcover is sparse, the stream grows to 10 feet at OHWM, becoming incised for a length of approximately 370 feet and showing evidence of instability and down-cutting. The northernmost segment of this stream returns to the shallow, well vegetated channel and eventually runs dry (refer to Figure 6).

[128] City of Reno, 2010
[129] EPA, 2010

Stream 2 – Intermittent

Stream 2 (the eastern stream) flows approximately 226 feet between two wetland complexes (wetland descriptions are detailed later in this section) within the Atoma Area. This intermittent stream averages approximately 4 feet at OHWM and the banks are well vegetated with native grasses and some overstory vegetation.

Stream 3 – Perennial

The delineated perennial stream segment runs through the southern portion of Mt. Rose Ski Tahoe for approximately 220 feet on private land near the parking lots and the *Enchanted Forest* trail. The stream is very narrow, approximately 1 to 2 feet at OHWM, and runs directly adjacent a mountain maintenance road, with dense stabilizing overstory vegetation lining the banks. The stream flows into a culvert where it meets the road and continues underground through the skier parking lots, continuing northeast downhill.

Description of the Watershed within the Analysis Area

The current condition of the watershed has been modified by ski area development. Tree removal and grading has occurred on NFS land and adjacent private land to support existing ski area infrastructure, parking lots, residential developments and the Mt. Rose Highway. While ski trails and lift disturbances have been revegetated to rehabilitate and stabilize these areas, loss of overstory and varying degrees of revegetation success, have *potential* to result in increased sediment in area streams and wetlands. Additionally, high velocity runoff areas like parking lots can contribute pollutants to streams; however, in this location the land immediately downhill of the Mt. Rose parking lot is not a wetland and no streams are located directly downhill of the parking lots and therefore, pollutant transport to streams and wetlands from the parking lot is unlikely. In addition, evidence of sediment transport was limited to areas directly adjacent the highway, parking lot and ski trails.

The following Management Requirement will minimize potential adverse impacts related to sediment transport:

- *WA 13: Develop an erosion and sediment control plan. Transport of sediment from disturbed areas shall be minimized by straw bales or wattles, avoiding construction altogether during undesirable runoff periods, or other appropriate drainage management measure. Include stockpile, fuel, and staging areas used during construction.*

Mt. Rose Highway operations and maintenance, previous development of the Atoma parking area for the Nordic center in the 1980s, and the Old Mt. Rose Highway alignment potentially contribute sediment to area streams (Streams 1 and 2) in the Atoma Area. Evidence of highway sediment was observed on the north side of the Mt. Rose Highway within 20 feet of the road alignment but was not documented in any of the delineated stream segments at the time of the analysis.

Snowmaking System and Water Rights

Water for the Mt. Rose Ski Tahoe snowmaking system is drawn from wells located on private land and is stored in a 500,000-gallon tank located on private land above the *Galena* trail. Mt. Rose Ski Tahoe covers approximately 86 acres of terrain with snowmaking. Mt. Rose Ski Tahoe does not include additives in the water for the snowmaking process. The majority of the trails accessed by the Ponderosa, Galena, and Lakeview Chairlifts, as well as *Kit Carson Traverse* and *Upper Ramsey's* off of the Northwest Magnum 6 Chairlift have snowmaking capability.

Over the last six years Mt. Rose Ski Tahoe has used an average of 55 acre feet of water annually for snowmaking. During low snow years, annual snowmaking water use rises to compensate for below-average natural snow.[130] Water use remains far below the annual limit of over 386 acre feet per year (approximately 125.7 million gallons) for which Mt. Rose Ski Tahoe has water rights. Annual water use for snowmaking depends on natural snow levels and seasonal weather patterns, but the ski area does not generally make snow after natural snowfall, as it typically provides adequate ground cover for skiing.

Wetlands

A total of seven wetlands totaling approximately 21 acres (approximately 9 acres on NFS land and 12 acres on private land) were identified within or near project disturbance areas (refer to Figure 6). Wetland classification is based on the Cowardin classification system, which classifies wetlands primarily by dominant plant community.[131] Identified wetland type and acreage is presented in Table 22.

Five wetlands were delineated on NFS land north of the Mt. Rose Highway in the Atoma Area. South of the Mt. Rose Highway, on private land, two wetlands—one very small (0.08 acre) and a second large (11.5 acres) wetland complex—dominate the *Ponderosa* and *Enchanted Forest* trails. Two types of wetlands were delineated within the Analysis Area—Palustrine emergent (PEM) and Palustrine shrub-scrub (PSS). The wetlands within Mt. Rose Ski Tahoe and the Atoma Area are primarily groundwater fed through seeps within the existing ski trails, and open meadows. Hydrologic indicators within these wetlands include saturation, water marks, sparsely vegetated concave surface and drainage patterns. Hydric soil indicators include umbric soil matrices exhibiting 10YR 2/1 mineral (A horizon) layer 12 to 16 inches were characteristic of these hydric soils.

Wetlands within the area offer varying degrees of value as wildlife and plant habitat, water storage locations, and water filtration. The wetlands in the Atoma Area generally have deep mineral soils, are well vegetated, and have natural hydrologic flows. These wetlands have the necessary features to function well for habitat and water storage as mineral soil flat wetlands.

Wetlands within the developed portion of Mt. Rose Ski Tahoe on private land have been partially disturbed during trail and lift development and lack depth of soils, vegetation or hydrologic flow, reducing their function and value for habitat and water storage as slope wetlands.

Palustrine Emergent (Herbaceous Wetlands)

Approximately 12.4 acres of PEM wetlands were identified within the Analysis Area. PEM wetlands are dominated by herbaceous emergent vegetation including meadows and fringes of seeps. Typical wetland plant species found in emergent wetlands at Mt. Rose Ski Tahoe include blue joint grass (*Calamagrostis canadensis*), water sedge (*Carex aquatilis*), marsh marigold (*Caltha leptosepala*), globe flower (*Trollius laxus*), marsh marigold (*Caltha leptosepala*), blue bells (*Mertenisa ciliata*), forget-me-not (*Myosotis alpestris*), and monkshood (*Aconitum columbine*).

[130] Peak levels of water use for snowmaking were reached during the 2013/14 season when 92 acre feet of water was used, although that amount was still only 24 percent of the allowable water use.
[131] Cowardin et al., 1979

Palustrine Scrub/Shrub (Shrub Wetlands)

Approximately 8.6 acres of PSS wetlands were identified within the Analysis Area. Scrub/Shrub dominated wetlands consist of woody vegetation less than 20 feet tall and are very common at the ski area. They are usually found at lower elevations with the *Salix eastwoodiae* and *Salix geyeriana* being the dominant species. Other common species include *Veratrum californicum*, *Heracleum lanatum*, and *Aconitum columbianum*.

Table 22 summarizes wetlands delineated within the Analysis Area.

Table 22. Delineated Wetlands within Mt. Rose Ski Tahoe and the Atoma Area

Wetland ID	Wetland Type	Acreage
W-1	PSS	0.3
W-2	PEM	0.4
W-3	PEM	0.4
W-4	PSS	0.2
W-5	PSS	8.1
W-6	PEM	0.1
W-7	PEM	11.5
Total		21.0

Soils

Mt. Rose Ski Tahoe and the Atoma Area (the Analysis Area) are situated at the western border of the Great Basin Physiographic province and the eastern edge of the Sierra Nevada Physiographic province. Although the eastern side of Mt. Rose Ski Tahoe from Slide Bowl to the eastern SUP boundary is composed of steeps and chutes, the topography within and adjacent proposed projects is gentler, generally ranging from 10 to 35 percent slopes.

As indicated in Table 23, two soil map units, consisting of three soil families, were identified within the Analysis Area—Graylock-Temo-Rock complex and Tallac very boulder sandy loam. Graylock soils are found in the mountains derived from granitic rocks. The typical profile includes boulder loamy sand and very loamy sand in the top 40 inches on 30 to 70 percent slopes, resulting in somewhat excessively drained soils. Temo soils are also mountainous soils derived from granitic rocks with boulder coarse sand and gravelly loamy coarse sand to 16 inches where bedrock is generally encountered. These soils are excessively drained. The Tallac family is composed of mountainous soils formed from glaciomarine deposits. These soils are very bouldery sandy loam and very stony/cobbly coarse sandy loam to 42 inches and are well drained. Tallac soils are found on gentle slopes ranging from 4 to 30 percent.[132]

[132] NRCS, 2013

Table 23. Analysis Area Soils	
Soil Map Unit	Acres
1100 Graylock-Temo-Rock outcrop complex 30–70% slopes	
Forest Service	467
Private	601
Sub-Total	*1,069*
1440 Tallac very bouldery sandy loam, 4–30% slopes	
Forest Service	10
Private	68
Sub-Total	*79*
Total	1,147

Surface and subsurface soil erodibility is low to moderate within the Analysis Area, with K-factor (K_w) values of surface soil horizons 0.2 for the Graylock-Temo-Rock complex and 0.04 for the Tallac very boulder sandy loam.[133] Higher erosion risk ratings result from coarse textures, high infiltration rates, and greater runoff potential.[134] The whole soil K-factor (with the *w* subscript) best reflects natural soil conditions in the field because the whole soil factor considers rock fragments which serve to "armor" soil and make them less erodible overall.[135] Soil organic matter can also be related to soil erodibility as organic horizons allow infiltration and provide productive soils for stabilizing vegetation.[136] Maintenance of soil organic matter and surface O and A horizon integrity minimizes erosion, compaction, and hydrology problems within the ski area.

Soils at Mt. Rose Ski Tahoe have been shown to be difficult to stabilize and maintain productivity after disturbance due to slope, large stones and sandy/loamy textures. In 2011 a restoration plan was developed to identify specific design features and restoration techniques to improve soil stabilization and drainage management, and to increase soil organic matter to obtain successful revegetation of native plant species at the resort. The existing condition of ski trails at Mt. Rose Ski Tahoe shows reduced depths of soil organic matter, thereby reducing infiltration capacity and non-cohesive soils. Additionally, drainage diversion structures have had some detrimental impacts on flow regimes at the resort by not allowing for proper infiltration.[137] Ongoing improvements and maintenance is anticipated to improve soil stabilization and drainage management, and to maintain soil organic matter.

[133] Ibid.
[134] NRCS, 2008
[135] McCormick et al., 1982; The K-factor represents the soil's susceptibility to erosion in their plot condition based on soil texture. Soils that are resistant to erosion have low K values (0.02 to 0.15); soils that display moderate erosion potential are in the middle of the range (0.16 to 0.27); and highly erodible soils tend to have values greater than 0.28.
[136] Franzluebbers, 2002; McMullen, 2011
[137] Integrated Environmental Restoration Services, 2011

The Galena Resort Land Exchange

The land acquired through the Galena Resort land exchange is largely undeveloped beyond some limited dispersed recreation such as hiking trails.

3.10.3 Direct and Indirect Environmental Consequences

3.10.3.1 Alternative 1

No operational or infrastructural changes/additions would occur on NFS land within the project area as a result of the No Action Alternative. Therefore, the No Action Alternative would have no direct or indirect environmental impacts to watersheds, wetlands, or soils. On-going ski area construction and maintenance activities such as tree removal, grading, installation of infrastructure and snowmaking have impacted streams, wetlands and soils in the past. Developing ski area infrastructure has resulted in a loss of wetland acreage within the Analysis Area. Similarly, projects have impacts streams riparian vegetation, stream segments have been put into culverts and have been affected by sedimentation from connected graded areas. Finally, vegetation removal (overstory and herbaceous cover) and grading has removed topsoils impacting soil productivity and increased erosion throughout the Analysis Area. Although ski area personnel are more aware today of sensitive resources and environmental regulations are more stringent than in the past, some impacts to these resources would be expected to continue either because they were implemented in the past, or due to ongoing maintenance and operational activities.

Further, without implementation of the Forest Plan Amendment, commercial development and impacts similar to those impacts discussed above may occur within the 3,446 acres of NFS land acquired through the Galena Resort Land Exchange. Due to current environmental regulations, future loss of wetland functions or value would likely be mitigated. These projects would require site specific NEPA analysis prior to approval and implementation.

3.10.3.2 Alternative 2 and Alternative 3

Under Alternatives 2 and 3, the SUP boundary expansion (112 acres) in the Atoma Area would be approved; lift, trails and a skier bridge would be developed for facilitate use of that area; and a Forest Plan Amendment would be implemented precluding commercial development on 3,446 acres of NFS land acquired during the Galena Resort Land Exchange.

It is anticipated that if other commercial developments were allowed within the 3,446 acres of NFS land acquired through the Galena Resort Land Exchange, those projects would have similar impacts as those listed below for ski area development. The Forest Plan Amendment included in both action alternatives would limit development and the associated impacts, reducing impacts to wetland function and value, stream and riparian quality and soil productivity.

Watershed

Under the action alternatives, some tree clearing would occur adjacent to approximately 521 feet of Streams 1 and 2 (both intermittent). However, because of the wide spacing of trees near the bottom terminal (where the lift line crosses Stream 1) only approximately three trees would be removed within this 40-foot segment. The trees are within 10 feet of the stream. Tree clearing would occur adjacent to approximately 481 feet of Stream 1 for development of Trails 3, 4, and 5.

No perennial streams would be directly affected by the proposed projects.

The closest grading would occur approximately 25 feet from the stream channel on Trail 2; generally, grading would occur more than 100 feet from the stream channel.

The following Management Requirement would ensure that adverse impacts to streams would be minimized:

- *WA 16: No grading will occur directly adjacent to stream channels under the Proposed Action.*
- *G 3: Store fuel, oil and other hazardous materials in structures placed on impermeable surfaces with impermeable berms designed to fully contain the hazardous material plus accumulated precipitation for a period at least equal to that required to mitigate a spill.*

Table 24 presents a summary of the lengths occurring within areas designated for tree removal.

Table 24. Tree Clearing Adjacent Intermittent Streams

Project	Feet
Tree Removal for the Lift Line	40
Tree Removal for Trails	480
Total	520

Note: No perennial streams are anticipated to be affected by projects included in the Proposed Action.

Vegetation removal adjacent to stream channels can affect many characteristics including water temperature, bank stability, and habitat function. However, lift and trail construction within the Atoma Area has been designed to minimize these impacts by utilizing natural openings, thereby minimizing tree removal adjacent to streams. Impacts to streams within Trails 4 and 5 would be minimal as riparian vegetation along this stream is primarily herbaceous; therefore, overstory vegetation removal directly adjacent to the streams would be limited. These minor impacts would be localized and would not affect flow characteristics in the area, or in the watershed as a whole.

The following Management Requirements would minimize the impacts associated with construction:

- *WA 3: Existing roads will be used for construction and routine maintenance of the proposed project components.*
- *WA 4: Prior to any grading adjacent to the NDOT right-of-way, a Drainage Report, including a grading plan, and a Drainage Form must be submitted to the Permit office (NDOT) for approval.*

Additionally, where trees are removed adjacent to streams (Trails 4 and 5) and construction is to occur near streams (e.g., proposed Trail D and proposed Trail E), the following Management Requirements would minimize impacts:

- *WA 6: Stumps will be retained where possible and will be ground down to maintain soil integrity and provide for organic matter as the stump decays.*
- *G 5: Construction will take advantage of previous disturbance whenever possible.*

To maintain consistency with Forest Plan Standard and Guidelines:

- 3 – Implement…the State of Nevada non-designated area water quality management plan "Handbook of Best Management Practices;" and
- 5 – Protect soil productivity and water quality by adhering to erosion prevention and control measures presented in "The State of Nevada Water Pollution Control Regulations."

Management Requirements from these documents have been incorporated into this FEIS and would be implemented during and after construction, as appropriate.[138]

The Pine Ridge Water system diversions range from 160 to 500 feet from the nearest proposed Trail, Trail A. Effects to the water source are not anticipated because of the distance between the edge of disturbance for the Atoma Chairlift and trails and the water sources. Additionally, the revegetation would be required on the ski trails to establish soil productivity and stabilizing vegetation. A revegetation plan will be developed and approved by Forest Service specialists and would include at a minimum, appropriate revegetation options, seed mixes and goals for establishing success of revegetation or desirable species.

The following Management Requirement would prevent direct effects to the spring and holding tank during construction:

❖ *WA 2: Fence and avoid the Pine Ridge spring water source during construction to prevent any impacts to the water system. Additionally, the existing vegetative buffer between the proposed development and the water source is to be retained.*

Water Rights

Mt. Rose Ski Tahoe currently holds adequate water rights (386 acre feet or 125,778,650 gallons per year) to supply both the existing and proposed snowmaking coverage areas. The Point of Use will need to be changed with the State of Nevada to include the Atoma Area.

There are no active groundwater rights in the Atoma Area. There once were several active groundwater rights in this area owned by Galena Resorts; however, they have all been cancelled or abrogated and moved into the Washoe County municipal system. No impacts to surrounding water rights are anticipated.

Wetlands

Executive Order 11990

In accordance with Executive Order 11990, the action alternatives were designed to avoid impacts to wetlands. Streams and wetlands within the project area were delineated and the projects included in the action alternatives would not result in any impacts to streams or wetlands.[139] Mowing and tree removal that is proposed within wetland boundaries would occur over a minimum of 2 feet of snow to avoid any impacts to wetlands (refer to Management Requirement *WA 10*).

The Proposed Action includes installation of a 3,600-foot-long chairlift, cleared ski trails, snowmaking lines, re-contouring the area surrounding the Atoma building, a skier bridge and a 5-million gallon water tank. Additionally, a ski trail and guest service facility would be

[138] USDA Forest Service, 1986
[139] 42 Federal Register 26961

constructed on private land to facilitate use of the Atoma Area. During project design, modifications were made to realign the bottom terminal of the proposed chairlift to avoid a large wetland complex in the Atoma Area.

Additionally, grading and a snowmaking line installation under both action alternatives was designed to avoid wetlands. Where possible, trails were aligned outside wetland boundaries; however, due to the topography of the area, some portions (approximately 1.6 acres) of trails (3, 4, 5, A, C and D) would occur within wetland boundaries.

The following Management Requirement would minimize impacts associated with the portions of trails that overlap wetlands:

- *WA 10: To minimize potential impacts to vegetation from skiing and grooming activities, maintenance and operations over wetlands in the Atoma Area—on proposed Trails A, C, D, 3, 4, and 5—will be restricted until 2 feet of snow is established on these trails. This will be included in the Mountain Operations Plan.*

Direct and Indirect Impacts

No ground disturbance would occur within delineated wetland boundaries as the result of implementation of either of the action alternatives. Tree removal within wetlands (approximately 2.3 acres) would leave stumps in place and would occur either over the snow, or by using hand tools. Tree removal along Trails 3 and 5 would be relatively limited due to the relatively widely spaced overstory vegetation. Impacts to wetland vegetation are anticipated to occur due to mowing and tree removal within PSS wetlands to accommodate the lift alignment and proposed Trails A, C, and D.

The following Management Requirements would minimize impacts to wetlands:

- *G 1: Sensitive resources (such as wetlands or cultural sites) would be identified and avoided during construction.*
- *G 2: All personnel will be educated about protection of resources, prior to construction.*
- *WA 14: Prior to any construction, wetlands will be flagged to ensure impacts are avoided. No snowmaking water lines will be installed within wetlands.*
- *WA 17: The chairlift will be designed to span wetlands.*
- *WA 21: Maintain the natural drainage pattern of an area wherever practicable.*

Potential indirect impacts to wetland vegetation are anticipated to occur due to tree removal and snow compaction within both PEM and PSS wetlands from proposed Trails A, C, D, 3, 4, and 5 crossing wetlands (approximately 2.3 acres). These impacts include change in the species composition of the wetlands away from shade tolerant species to more sun tolerant species. In addition, snow compaction from ski trail grooming and skier use may affect the underlying wetland vegetation by increasing frost depth and delaying plant phenological development.[140] Impacts to soil production and decomposition from snow compaction are not anticipated to be noticeable in these mineral wetland soils.

[140] Fahey and Wardle, 1998

Total mowing would occur within approximately 1.6 acres of PSS wetlands to facilitate use of ski trails where shrubs are over 2 feet tall (refer to Table 25). Mowing shrub vegetation can affect wildlife habitat values by changing the available overstory habitat; however, soils and water regimes would be maintained by ensuring that approximately 2 feet of above ground vegetation is maintained. Trimming the shrubs would represent a loss of habitat to some species. Mowing would be accomplished over the snow when at least 2 feet of snow is present, or by using hand tools and would be minimized to the fewest number of times necessary, generally every other year (as decided by the ski area operator and included in the Mountain Operations Plan) to maintain wetland vegetation as skiable terrain (shrubs would remain between approximately 2 and 3 feet tall; refer to Management Requirement *WA 12*).

Table 25. Project Disturbance by Wetland Type

Project	Wetland Type	Acreage
Lift Line Clearing	PSS	0.1
Trail Clearing	PEM	0.7
	PSS	1.5
Total		2.3

Riparian areas were identified as sharing the same line as wetland boundaries for streams within the Analysis Area. To ensure continued compliance with Forest Plan Standards and Guidelines, construction Management Requirements would need to be followed to manage soil and water resources to protect watersheds and preserve water quality.

Soils

In total, approximately 21.5 acres would be graded under the Alternative 2—13.3 acres on NFS land and 8.2 acres on private land. Approximately 22.7 acres would be graded under the Alternative 3—14.5 acres on NFS land and 8.2 acres on private land. A grader would be used to smooth the ground and remove large obstacles to provide for installation of lift towers, ski trails. Front end loaders would be used in facility construction, trenching for snowmaking line installation and excavation related to construction of the snowmaking water tank. In areas where select tree removal would occur (in tree islands between developed trails and where sensitive resources such as wetlands are present), stumps would be ground down and root wads would be left intact to minimize soil disturbance. Existing cleared areas or areas cleared for trails would be utilized for log landings related to the proposed project.

The following Management Requirement would minimize impacts to areas proposed for grading:

- *WA 1: Develop a restoration plan for areas proposed for grading to prevent soil loss and improve revegetation success. Grading plans will include stockpiling top soils. To maintain long-term soil stability and productivity, a site-specific restoration plan will be developed and implemented to reestablish native vegetation on graded trails. Restoration activities may include chipping, seeding, and mulching techniques. All seed mixes will be approved by a Forest Service botanist.*

- *WA 6: Stumps will be retained where possible and will be ground down to maintain soil integrity and provide for organic matter as the stump decays.*

- *WA 7: Remove rock by hand or mechanical where appropriate.*
- *WA 8: Use site specific or spot grading to minimize overall ground disturbance.*
- *WA 18: Limit surface disturbance to the extent practicable while still achieving project objectives. Limit the amount of exposed soil at any one time to the minimum necessary to complete construction practices.*
- *WA 19: Limit operation of equipment when ground conditions could result in excessive rutting, soil rilling, or runoff of sediments direction into waterbodies.*
- *WA 20: Avoid or manage steep sloped areas to minimize instability problems and reduce erosion and sedimentation.*
- *WA 22: Routinely inspect construction sites to verify that erosion and stormwater controls are implemented and functioning as designed and are appropriately maintained.*

Grading results in vegetation removal and soil compaction, reducing infiltration and increased erosion. Following grading activities, soils would be de-compacted by tilling the soils. An application of mulch or wood chips would be applied to the top 12 inches of soil and soil surface and top soils would be re-spread to reestablish soil productivity and successful revegetation. However, grading required for lift towers and terminals, the guest service facility, and the snowmaking water tank, would result in a permanent loss of soils resources. Approximately 1 acre of soils would be lost due to installation of lift towers and terminals and the guest service facility. Approximately 0.5 acre of soils would be lost from the installation of the snowmaking water tank on NFS land.

Table 26. Project Disturbance by Soil Map Unit			
Ownership/Soil Map Unit/Disturbance Type	Project	Alternative 2 Disturbance (acres)	Alternative 3 Disturbance (acres)
NFS LAND			
Map Unit: 1100 Graylock-Temo-Rock outcrop complex 30–70% slopes			
Clearing	Lift	2.2	2.1
	Trail	13.5	13.5
Clearing and Grading	Water Tank	1.3	1.3
	Snowmaking	5.5	5.5
	Trail	4.7	5.9
Re-Grading	Atoma Lot	*0.6*	*0.6*
Sub-total		*27.8*	*28.9*
Map Unit: 1440 Tallac very bouldery sandy loam, 4–30% slopes			
Clearing	Lift	0.1	0.1
	Trail	2.3	2.3
Clearing and Grading	Snowmaking	0.5	0.5
	Trail	0.7	0.7
Sub-total		*3.6*	*3.6*
Total Forest Service		31.4	32.5
PRIVATE LAND			
Map Unit: 1100 Graylock-Temo-Rock outcrop complex 30–70% slopes			
Clearing and Grading	Trail	4.8	4.8
Re-Grading	Snowmaking Connection on Galena	3.4	3.4
Total Private		8.2	8.2
Grand Total		39.6	40.7

Soils within the proposed disturbance areas are mapped as having low to moderate surface and subsurface soil erodibility potential ($K_w \leq 0.22$). The K-factor represents the soil's susceptibility to erosion based on soil texture. Soils that are resistant to erosion have low K values (0.02 to 0.15); soils that display moderate erosion potential are in the middle of the range (0.16 to 0.27); and highly erodible soils tend to have values greater than 0.28.[141] Higher erosion risk ratings result from coarse textures, high infiltration rates, and significant runoff potential.[142] Regardless, grading results in vegetation removal and soil compaction, reducing infiltration and increasing erosion. Because soils at Mt. Rose Ski Tahoe have been shown to be difficult to stabilize and maintain productivity after disturbance, the erosion potential in disturbed areas would be anticipated to increase immediately following disturbance, decreasing as stabilizing soils and vegetation are rehabilitated. Erosion potential in the Atoma Area is expected to be lower than across the existing Mt. Rose Ski Tahoe SUP area, due to shallower slopes where disturbance is proposed to occur.

Project related ground disturbance is proposed to be rehabilitated to maintain long-term soil stability and would include the installation of appropriate drainage features (such as machine tilling, erosion control matting, mulch, and revegetation). Soils would be rebuilt with the addition of stockpiled soil organic matter and/or specific soil amendments. Restoration activities are designed to create a stable, plant supporting, erosion resistant soil matrix.[143] Soil disturbance would occur on approximately 31.5 acres of NFS land and private land from tree removal and grading (19 acres of tree removal and 12.5 acres of tree removal and grading). As discussed in this section and listed in Appendix A, implementation of the Management Requirements would minimize impacts to soils where tree removal and grading occur to ensure soil organic matter and productivity are maintained.

The following Management Requirements would minimize impacts to soils:

- *WA 5: Rehabilitation of disturbed areas will include installation of appropriate drainage features (such as machine tilling, erosion control matting, mulch, and revegetation) as well as rebuilding top soils with the addition of stockpiled soil organic matter and/or specific soil amendments that create a stable, plant supporting, erosion resistant soil matrix. To maintain long-term soil stability and productivity, native vegetation will be reestablished on graded trails. Seed mixes will be approved by a Forest Service botanist. Monitoring revegetation will occur for at least five years.*

- *WA 9: Within wetlands, mowing will be accomplished over the snow when at least 2 feet of snow is present, or by using hand tools and will be minimized to the fewest number of times necessary, generally every other year (as decided by the ski area operator and included in the Mountain Operations Plan) to maintain wetland vegetation as skiable terrain (shrubs will remain between approximately 2 and 3 feet tall).*

- *WA 11: Rehabilitate soils through de-compaction, application of mulch to the top 12 inches of soil and the soil surface and re-spreading of topsoil where available.*

- *WA 12: Rehabilitate disturbed areas after tree removal and snowmaking line installation is complete through de-compaction, application of mulch to the top 12 inches of soil and the soil surface and re-spreading of top soils where available.*

[141] NRCS, 2008
[142] Ibid.
[143] Integrated Environmental Restoration Services, 2011

- *WA 13: Develop an erosion and sediment control plan. Transport of sediment from disturbed areas shall be minimized by straw bales or wattles, avoiding construction altogether during undesirable runoff periods, or other appropriate drainage management measure. Include stockpile, fuel, and staging areas used during construction.*

3.10.4 Cumulative Effects

3.10.4.1 Temporal and Spatial Extent of Analysis

The spatial extent for the cumulative effects analysis of watershed, wetlands, and soil resources within the Truckee River watershed as described in the Affected Environment. The temporal bounds for this cumulative effects analysis of watershed, wetlands, and soil resources extends from Mt. Rose Ski Tahoe's inception as a ski area in 1964, through the foreseeable future in which Mt. Rose Ski Tahoe can be expected to operate.

3.10.4.2 Past, Present, and Reasonably Foreseeable Future Actions

The following projects could have cumulative impacts on watershed, wetlands, and soil resources and are analyzed below:

- Mt. Rose Ski Tahoe 2010 MDP Addendum
- Private Land Development within and adjacent to the project area
- Pine Ridge Water Company water system

Mt. Rose Ski Tahoe Master Development Plan and Private Land Development

Ski area and private land development have resulted in vegetation removal and increased impermeable surfaces in the watershed. Cumulatively, these impacts result in an increase in the intensity of surface runoff and constitute a source of sediment input into the stream system. Similarly, ski area operations, including trail construction and infrastructure, as well as private land development, tend to exhibit cumulative reductions to wetland acreage and function and value as compared to watersheds in undeveloped conditions. These projects contribute to the reduced natural vegetation and wetland coverage within the watershed and as such contribute to increased surface runoff, sedimentation and loss of wetlands function and values. Typical long-term impacts to wetlands from resort development include vegetation and soil removal and re-routing hydrologic flow/inputs resulting in dewatering wetlands and impacts from resort infrastructure. Resort development since the 1960s has caused a decrease in wetland acreages within the Truckee Watershed; however, the proposed projects would not have any impacts to wetlands acreage. Therefore, the Proposed Action would not increase the cumulative loss of wetlands in the watershed.

Ski trails, chairlift installation, guest service facilities and parking lot development have resulted in a loss of top soil and soil organic matter in the Analysis Area—reducing hydrologic function, soil productivity and vegetative growth capacity. In the past, rehabilitation following ground disturbance at Mt. Rose Ski Tahoe has had mixed success. To minimize the potential for future soil movement and to maximize success of revegetation, Mt. Rose Ski Tahoe is implementing a Restoration Plan that outlines strategies to improve soil conditions, stability, and drainage, particularly in areas that have been graded. The goals of the plan are to develop an integrated surface flow strategy and maximize infiltration, stabilize soils to reduce erosion and increase productivity, and to re-establish native vegetation.

Strategies identified within this plan include:

- constructing roadside ditches with infiltration treatments
- applying check dams/wood chips/rocks where necessary
- identifying critical drainage issues and areas to apply soils treatments
- tilling wood chips into the soil
- applying approved/tested seed mixes

These strategies would work to add texture to the soil surface to reduce overland flow, rilling and gullying by getting rid of concentrated drainages and improving revegetative success. Management of surface flow and infiltration would be refined through ongoing use and monitoring via construction permitting and would manage the soils and revegetation within the Atoma Area in the future.

The Pine Ridge Water Company community water system, including the collection boxes and water line connecting both boxes to the community water system, has been providing water to the community near the Atoma Area since the 1940s. As discussed above, grading within the watershed, including ski trails and the parking area has reduced stabilizing top soils and vegetation in the project area; however, the area surrounding the collection boxes continues to have stabilizing overstory and understory vegetation which maintains water quality for this resource. The community water system is expected to continue operating into the foreseeable future and regular maintenance would continue to ensure water quality. Although under either alternative tree clearing and grading would occur approximately 500 feet from the collection boxes, the disturbance would occur downhill of the water system. Therefore, with implementation of Management Requirements no cumulative effects are anticipated on the water quality of the collection boxes. Further, Mt. Rose Ski Tahoe plans to continue working with the owners and administrators of the water system to protect the integrity of the system.

3.10.5 Irreversible and Irretrievable Commitments of Resources

No irreversible or irretrievable commitments of watershed or wetlands resources associated with the Proposed Action have been identified.

Approximately 4.5 acres of soil would be lost by the proposal to install permanent structures such as the water tank, lift infrastructure, the bridge and elevated trail and the guest service facility under the either action alternative. Soil is a very slowly renewable resource, as estimates for rates of soil formation range from 0.0056 cm to 0.00078 cm a year.[144] Globally, rates of soil formation are not keeping pace with erosion, leading to widespread soil loss that, in part, is caused by grading activities such as those associated with ski area development.[145] An irretrievable commitment of soil would occur in areas where tower structures are installed. There would not be an irreversible commitment of soil because permanent structures such as the lift towers could be removed and the soil could be rehabilitated following implementation of restoration activities. In this sense, soil loss from development from these projects is an irreversible and irretrievable commitment of resources.

[144] Alexander, 1988
[145] Wakatsuki and Rasyidin, 1992

3.11 Noise

3.11.1 Scope of the Analysis

The spatial scope of this noise analysis focuses on the proposal to develop the Atoma Area with ski area infrastructure and operate this area as part of the ski area during the winter season. Therefore, the bounds of this analysis include NFS and private land adjacent to Mt. Rose Ski Tahoe and the Atoma Area. Specifically, this section discusses noise characteristics pertaining to existing and proposed conditions for homes on Sky Tavern Ski Trail adjacent Ski Tavern Road.

3.11.2 Affected Environment

The nearest noise receptors to the Atoma Area are approximately nine homes ranging from approximately 1,500 feet to 4,000 feet from the northern boundary of the Atoma Area. These homes are located directly adjacent to the Sky Tavern ski trail and Sky Tavern parking lots, on Sky Tavern Road, approximately 1,000 to 2,000 feet from the Mt. Rose Highway. The homes are approximately 200 feet from ski activities at Sky Tavern Ski Area and approximately 3,000 feet from the Mt. Rose Ski Tahoe parking lots and the nearest ski activities. Currently, during the winter, residents hear noise from operations and maintenance at both Mt. Rose Ski Tahoe and Sky Tavern. Ambient noise includes grooming, snowmaking and snow-mobile equipment, vehicle traffic and human voices. Avalanche control activities can also be heard intermittently throughout the season. During the summer season some noise from lift, facility and trail maintenance activities can be heard. Noise from vehicle use on Mt. Rose Highway is also audible.

Noise levels for common noise sources are provided in the table below. The Atoma Area and the surrounding homes would be considered a quite rural area and would likely have sound levels in the very quiet range of 25 to 30 decibels, with increases in ambient noise from vehicles on the highway depending on how far the home is located from Mt. Rose Highway.

Table 27. Noise Levels (dBA) for Common Noise Sources

Common Noise Source	Sound Level (dBA)	Subjective Evaluation
Human breathing at 3 feet	8 to 10	Just Audible
Quiet rural area or a bedroom at nighttime	25 to 30	Very Quiet
Wind in trees at 10 mph or soft stereo music in a residence	40 to 45	Quiet
Birds at 10 feet or normal conversation at 3 feet	55 to 60	Moderate
Electric shaver at 1.5 feet	+/- 68	
Highway traffic noise level at 200 feet	+/-69	
Vacuum cleaner at 10 feet or a large dog barking at 50 feet	70 to 75	Loud
Alarm clock ringing at 5 feet	+/- 80	
Lawn mower at 5 feet, food blender or garbage disposal at 3 feet	85 to 90	Very Loud
Train pulling hard at 100 feet	+/- 94	
Train siren at 50, motorcycle at 25 feet, car horn at 10 or a chain saw at 2 feet	100 to 110	Extremely Loud
Thunder nearby	+/- 115	
Hard rock band at 16 feet or a jet aircraft at 300 feet during takeoff	120 to 130	Painful
Jet aircraft at 75 feet or a long-range gun at 0 feet	140	Deafening

Source: Acoustic Consulting Services 2003; Rochat and Reiter 2016

In addition to residential use in the area, the other sensitive noise receptor is the Mt. Rose Wilderness. The nearest boundary of the Mt. Rose Wilderness is located approximately 3,000 feet away from the Atoma Area. Visitors to the Mt. Rose Wilderness experience negligible noise due to operations and maintenance of Mt. Rose Ski Tahoe.

3.11.3 Direct and Indirect Environmental Consequences

3.11.3.1 Alternative 1

No changes to noise heard by area residents and visitors in the Mt. Rose Wilderness are expected as a result of approval of the No Action Alternative. Local residents would continue to be able to hear noise from operations and maintenance at Mt. Rose Ski Tahoe and Sky Tavern year-round. In addition, vehicles on Mt. Rose Highway would continue to be heard by residents.

3.11.3.2 Alternatives 2 and 3

Alternatives 2 and 3 include development of ski area infrastructure in the Atoma Area and operation of downhill skiing throughout the area. Because of the location of the Atoma Area, between Mt. Rose Ski Tahoe and Sky Tavern, ski area noise currently exists in the area as discussed in the Affected Environment. However, because the Atoma Area is closer to the nearest residents than operations at the existing Mt. Rose Ski Tahoe, ski area noise from the south (toward Mt. Rose Ski Tahoe) would be expected to increase. The distance from ski area activities from the south (at Mt. Rose Ski Tahoe) would be reduced from 3,800 feet to approximately 1,500 feet. Noise from Sky Tavern, directly adjacent the residential development would not change as a result of these alternatives.

Although vehicle traffic is not expected to occur in the Atoma Area over the long term (outside of maintenance), construction vehicles and machinery would contribute to noise audible to adjacent residents over at least two construction seasons. A construction schedule would be developed to minimize impacts to residents and would include working during daylight hours, and identifying appropriate machinery used within the project site. Regardless, sounds from grading, tree removal, lift and bridge construction are expected to be audible during those construction seasons.

Residents are expected to experience an increase in noise from grooming, snowmaking, snow-mobile equipment and human voices during the winter ski season as the Atoma Area would be closer to homes than Mt. Rose Ski Tahoe. Noise from snowmaking would be expected to contribute to an increase in ambient noise particularly mid-October through December. During this period, area home owners are expected to be able to hear ambient noise from snowmaking infrastructure (sound decibels are shown in Table 28 and can be compared to more common sounds in Table 27). Sky Tavern operations and maintenance would continue to occur nearest the homes contributing ambient noise in the area such as conversations (55 to 60 dBA), snowmobiles (59 to 85 dBA) and vehicles (41 to 71 dBA).

Table 28. Typical Sound Levels from Ski Area Sources			
Source	50 Feet	250 Feet	1,000 Feet
Snowmaking Tower Gun	85 dBA	71 dBA	59 dBA
Snowmobile (1)	85 dBA	71 dBA	59 dBA
Passenger vehicle (1)	67 to 71dBA	53 to 57dBA	41 to 45dBA

Source: Acoustical Consulting Services 2003

Avalanche control activities are not expected to occur within the Atoma Area; therefore, the current intermittent disturbances would be maintained. Visitors to the Mt. Rose Wilderness would be expected to experience a negligible change in noise from operations and maintenance of Mt. Rose Ski Tahoe.

3.11.4 Cumulative Effects

3.11.4.1 Temporal and Spatial Extent of Analysis

The spatial extent for the cumulative effects analysis of noise are the public and private land in the vicinity of Mt. Rose Ski Tahoe's SUP area, including the nine homes in the area and the Mt. Rose Wilderness. The temporal bounds for this cumulative effects analysis of noise extends from Mt. Rose Ski Tahoe's inception as a ski area in 1964, through the foreseeable future in which Mt. Rose Ski Tahoe can be expected to operate.

3.11.4.2 Past, Present, and Reasonably Foreseeable Future Actions

The following projects could have cumulative impacts on noise in the area and are analyzed below:

- Mt. Rose Ski Tahoe 2010 MDP Addendum
- Private Land Development within and adjacent to the project area

Mt. Rose Ski Tahoe Master Development Plan

Historic development on NFS land at Mt. Rose Ski Tahoe has involved clearing of trails, grading, and construction of lifts, roads, and buildings as well as operation of the ski area. Construction and operation of a ski area has resulted in noise from vehicles and machinery, as well as increased visitors and human noise in the area. Previously accepted but unimplemented projects from the 2010 MDP Addendum are not anticipated to change the capacity or acreage of the resort in such a way that the impacts to noise would be discernable.

Grading and expansion of the snowmaking network are discussed in the 2010 MDP Addendum, as approved but unimplemented projects could affect noise in the area; however, these would be localized and short-term impacts. These projects would likely contribute to additional seasonal ambient noise in the area of Mt. Rose Ski Tahoe.

Private Land Development

Private land development has occurred for the Sky Tavern ski area and for homes nearby Sky Tavern. These developments have included a developed recreation site, as well as added roads and homes over time, in what was previously a primarily natural setting. Ski area operations as well as more people and vehicles in the area have contributed to noise in this location. Although

future residential development is allowed by Washoe County zoning regulations in the vicinity of Mt. Rose Ski Tahoe, currently there are no known proposals to develop these lands.

3.11.5 Irreversible and Irretrievable Commitments of Resources

Additional human use and ski area operations would represent small, irretrievable effects to noise in the immediate area. The additional snowmaking system in particular represents minor, irretrievable effects to the noise when it is running mid-October through December. Users of the area would likely expect to hear some ski area infrastructure and visitor noise when in the area of Mt. Rose Ski Tahoe. This commitment of the noise resource is not considered irreversible because ski area infrastructure could be removed and the area could be restored to a natural area.

4. Consultation and Coordination

4.1 Preparers

4.1.1 Interdisciplinary Team Members

The following Interdisciplinary Team (ID Team) members provided direction and assistance during the preparation of this FEIS.

Irene Davidson	District Ranger
Marnie Bonesteel	ID Team leader
Jim Winfrey	NEPA Planner
Maureen Easton	Wildlife Biologist
Sally Champion	Hydrologist
Alyce Branigan	Archeologist
Tim Marshall	Archeologist
Kalie Crews	Archeologist
Nancy Brunswick	Landscape Architect
Amanda Brinnand	Silviculturist
Sierra Brewer	Engineer
Daniel Morris	Recreation

4.1.2 Consultant Team

The use of a third-party consulting firm for preparation of an EIS is addressed in the Code of Federal Regulations at 40 CFR § 1506.5(c). If an EIS is prepared with the assistance of a consulting firm, the firm must execute a disclosure statement:

> *Except as provided in §§1506.2 and 1506.3 any environmental impact statement prepared pursuant to the requirements of NEPA shall be prepared directly by or by a contractor selected by the lead agency or where appropriate under §1501.6(b), a cooperating agency. It is the intent of these regulations that the contractor be chosen solely by the lead agency, or by the lead agency in cooperation with cooperating agencies, or where appropriate by a cooperating agency to avoid any conflict of interest. Contractors shall execute a disclosure statement prepared by the lead agency, or where appropriate the cooperating agency, specifying that they have no financial or other interest in the outcome of the project. If the document is prepared by contract, the responsible Federal official shall furnish guidance and participate in the preparation and shall independently evaluate the statement prior to its approval and take responsibility for its scope and contents. Nothing in this section is intended to prohibit any agency from requesting any person to submit information to it or to prohibit any person from submitting information to any agency.*

Furthermore, the use of a third-party contractor in preparing an EIS is specifically addressed by the Council on Environmental Quality (CEQ) in its "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations" in question #17a. Per CEQ direction:

> *When a consulting firm has been involved in developing initial data and plans for the project, but does not have any financial or other interest in the outcome of the decision, it need not be disqualified from preparing the EIS. However, a disclosure statement in the draft EIS should clearly state the scope and extent of the firm's prior involvement to expose any potential conflicts of interest that may exist.*

Accordingly, disclosure statements were signed by all entities that make up the third-party consulting team. These disclosure statements are included in the Project Record. SE Group has been involved in several other projects at Mt. Rose Ski Tahoe. A disclosure of those projects is contained in the Project Record.

4.1.2.1 SE Group

Kelly Owens	Senior Project Manager/GIS Analyst
Kent Sharp	Principal-in-Charge
Kristen Carey	Environmental Analyst
Scott Prior	Environmental Analyst
Paula Samuelson	Production Specialist

4.1.2.2 Sierra Ecotone Solutions

Garth Alling	Wildlife Biologist

4.1.2.3 Susan Lindström, Ph.D., Consulting Archaeologist

Susan Lindström	Consulting Archaeologist

4.1.2.4 Myers Design Engineering

Ken Myers	Professional Engineer

4.2 Participating Federal, State, and Local Agencies, Organizations, and Individuals

This FEIS has been distributed to individuals who specifically requested a copy of the document and those who submitted comments during scoping. In addition, copies have been sent to the following federal agencies, federally recognized tribes, state and local governments, and organizations representing a wide range of views regarding the Proposed Action. The Forest Service consulted the following individuals, federal, state, and local agencies, tribes and non-Forest Service persons during the development of this FEIS:

4.2.1 Federal, State, and Local Agencies

Nevada Native Plants Society, Conservation Planning

City of Reno

Nevada Division of Environmental Protection

Nevada Heritage Program

Nevada State Clearing House

Nevada State Historic Preservation Office

State of Nevada Department of Wildlife

State of Nevada Department of Transportation

Washoe County Community Development

United States Forest Service Lake Tahoe Basin Management Unit, Forest Supervisor's Office

United States Fish and Wildlife Service

United States Environmental Protection Agency

4.2.2 Tribes

Pyramid Lake Paiute Tribe

Reno-Sparks Indian Colony

Washoe Tribe of Nevada and California

4.2.3 Others

Biggest Little Trail Stewardship, Inc

Friends of Mt. Rose

Pine Ridge Water Company

Snowlands Network

Toiyabe Chapter of the Sierra Club

4.2.4 Individuals

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Tom Stille
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Tom Sullivan
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6. Figures

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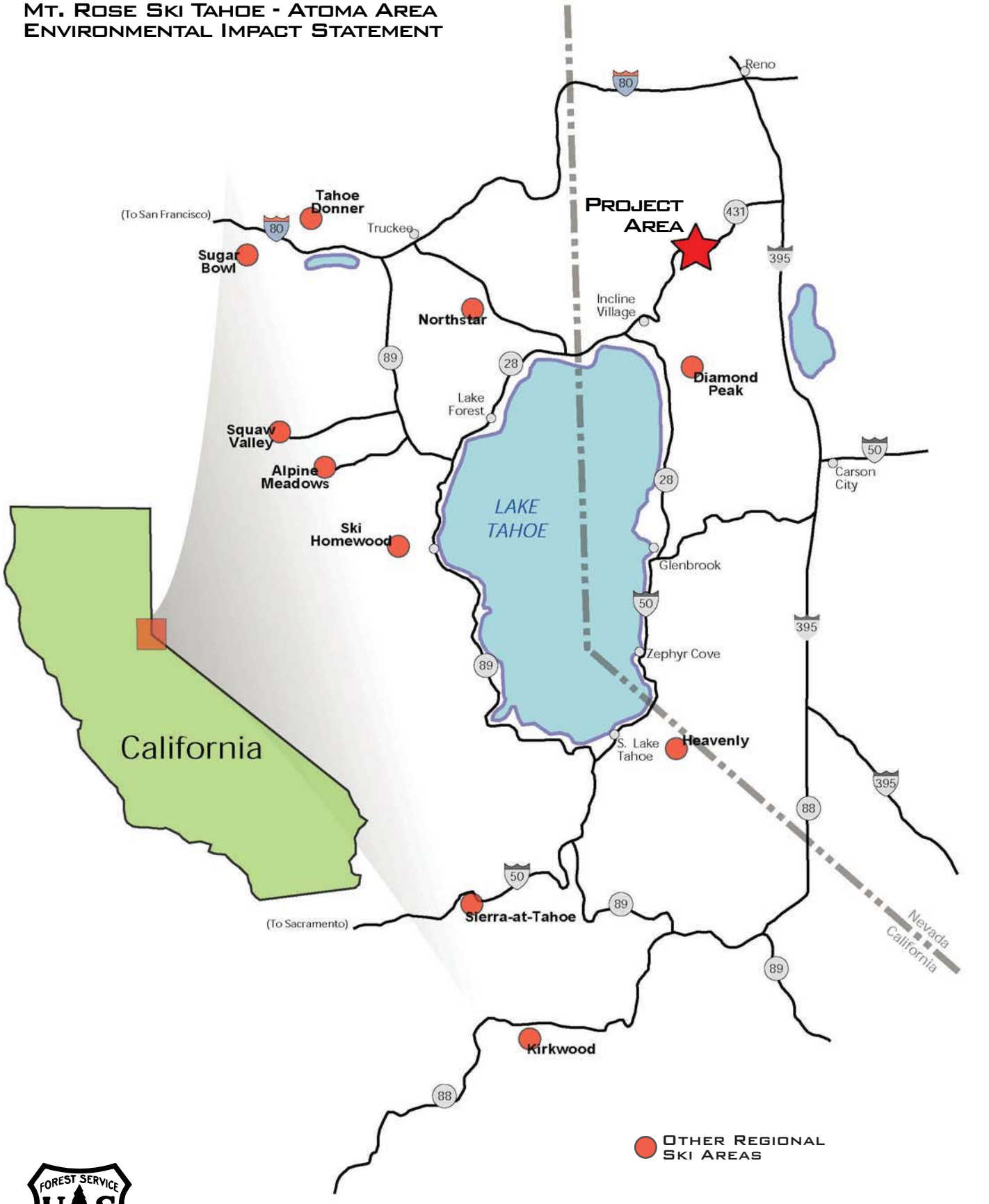
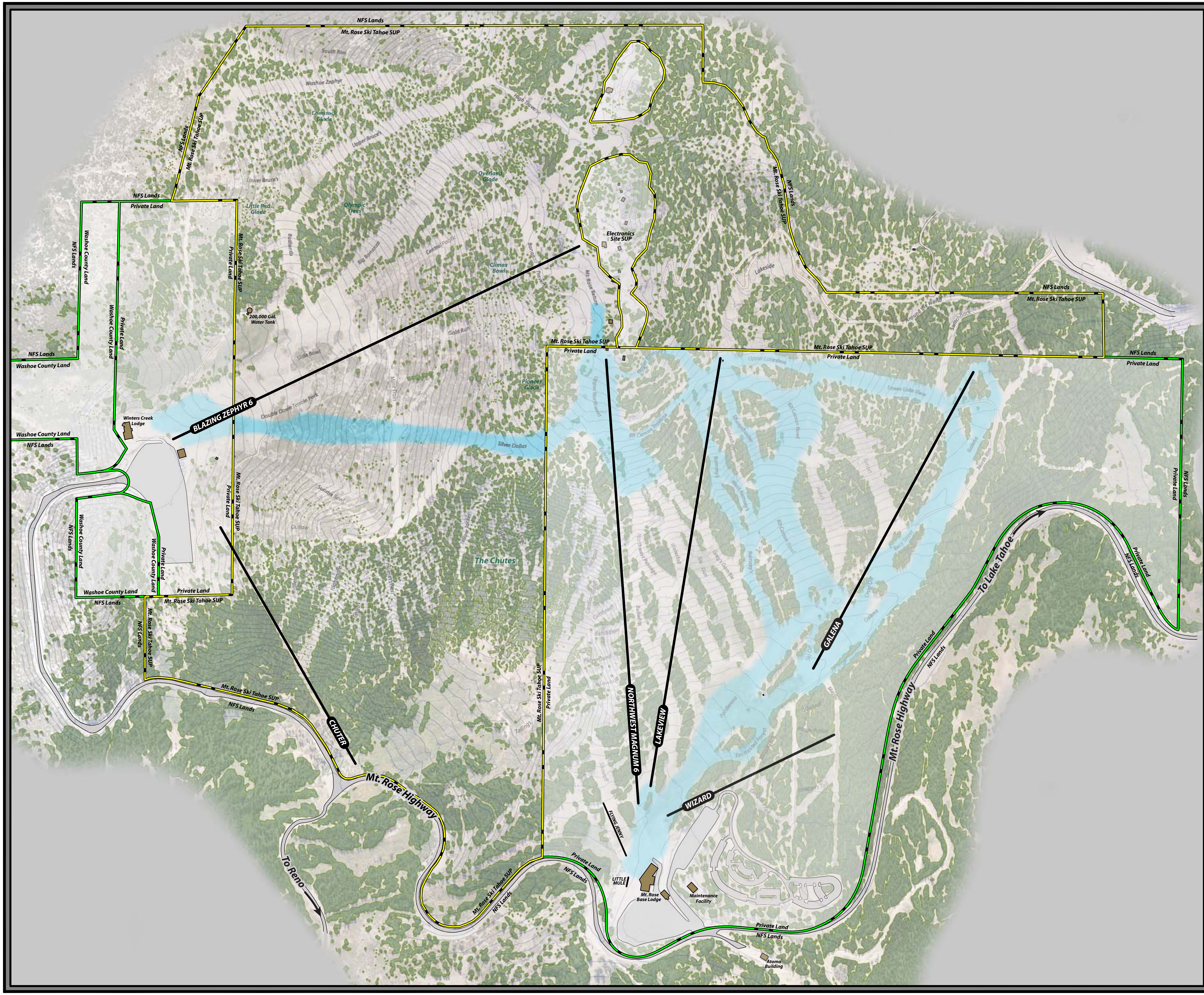
Project Vicinity Map

Mt. Rose Ski Tahoe - Atoma Area
Environmental Impact Statement





Mt. Rose Ski Tahoe - Atoma Area Environmental Impact Statement

Figure 1
Alternative 1 - No Action

Legend:

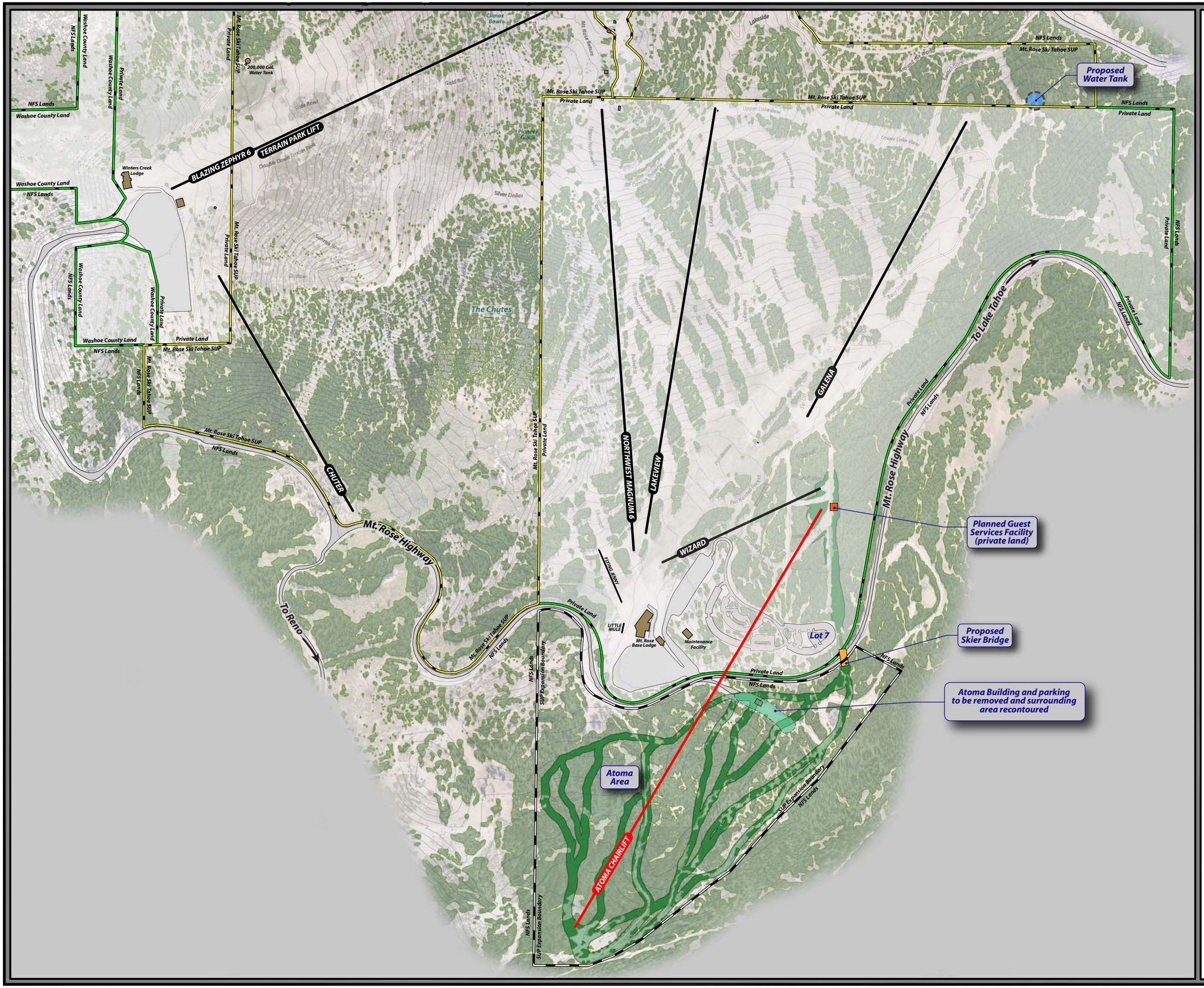
- Existing Trail
- SUP Boundary
- Existing Snowmaking
- Private Boundary
- Existing Lift

Contour Interval: 25'

0 400 800 1600 Feet

Mt. Rose Ski Tahoe - Atoma Area Environmental Impact Statement

Figure 2
Alternative 2
Proposed Action



Legend:

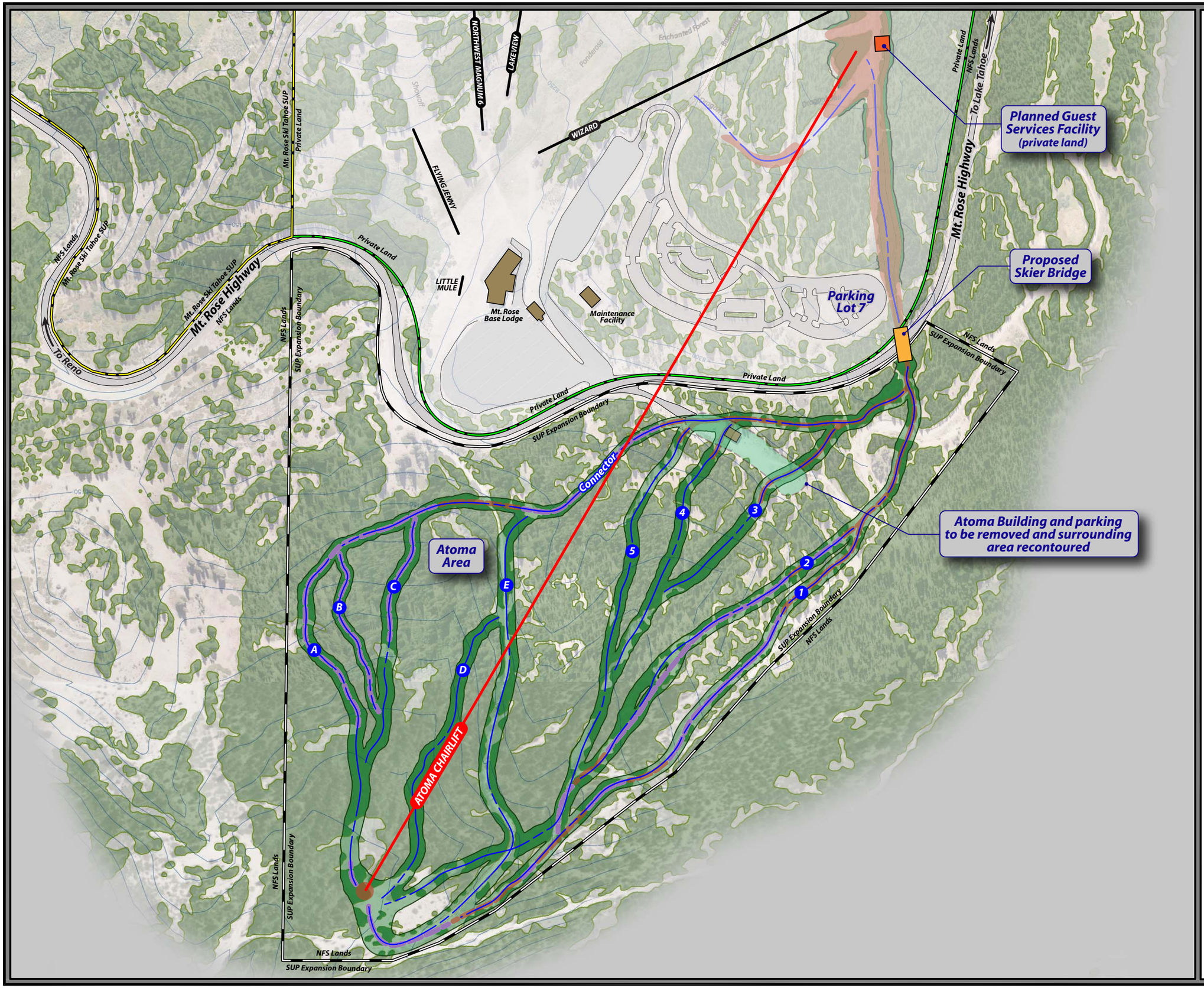
- Existing Trail
- Proposed Trail Clearing
- Existing Lift
- Proposed Lift
- Proposed Water Tank
- SUP Boundary
- Proposed SUP Boundary
- Private Boundary
- Proposed Building Removal and Recontouring
- Proposed Facilities

Contour Interval: 25'

0 400 800 1600 Feet

Mt. Rose Ski Tahoe - Atoma Area Environmental Impact Statement

Figure 3
Alternative 2
Proposed Action
Atoma Detail



Legend:

- Existing Trail
- Proposed Trail Clearing
- Proposed Trail Grading
- Proposed Snowmaking Install Disturbance
- Planned Facilities
- SUP Boundary
- Proposed SUP Boundary Expansion
- Private Boundary
- Existing Lift
- Proposed Lift
- Proposed Building Removal and Recontouring

Note:
Snowmaking coverage is proposed for trails 1, 2, A, B, C, Connector trail (USFS Lands), and planned for the skiway trails on the Rose side of the Mt. Rose Highway (private lands).

Contour Interval: 25'

0 200 400 800 Feet

Mt. Rose Ski Tahoe - Atoma Area Environmental Impact Statement

Figure 4
Alternative 3

Legend:

- Existing Trail
- SUP Boundary
- Proposed Trail Clearing
- Proposed SUP Boundary
- Existing Lift
- Private Boundary
- Proposed Lift
- Proposed Building Removal and Recontouring
- Proposed Water Tank
- Proposed Facilities

Contour Interval: 25'

0 400 800 1600 Feet

Proposed Water Tank

Proposed Skier Bridge

Restroom Building

Atoma Building and parking to be removed and surrounding area recontoured

Atoma Area

BLAZING ZEPHYR 6

TERRAIN PARK LIFT

CHUTER

NORTHWEST MAGNUM 6

LAKEVIEW

GALENA

WIZARD

ATOMA CHAIRLIFT B

ATOMA CHAIRLIFT A

The Chutes

Mt. Rose Highway

To Reno

To Lake Tahoe

Mt. Rose Base Lodge

Maintenance Facility

Lot 7

200,000 Gal. Water Tank

Winters Creek Lodge

Double Dower Terrain Park

Washoe County Land

NFS Lands

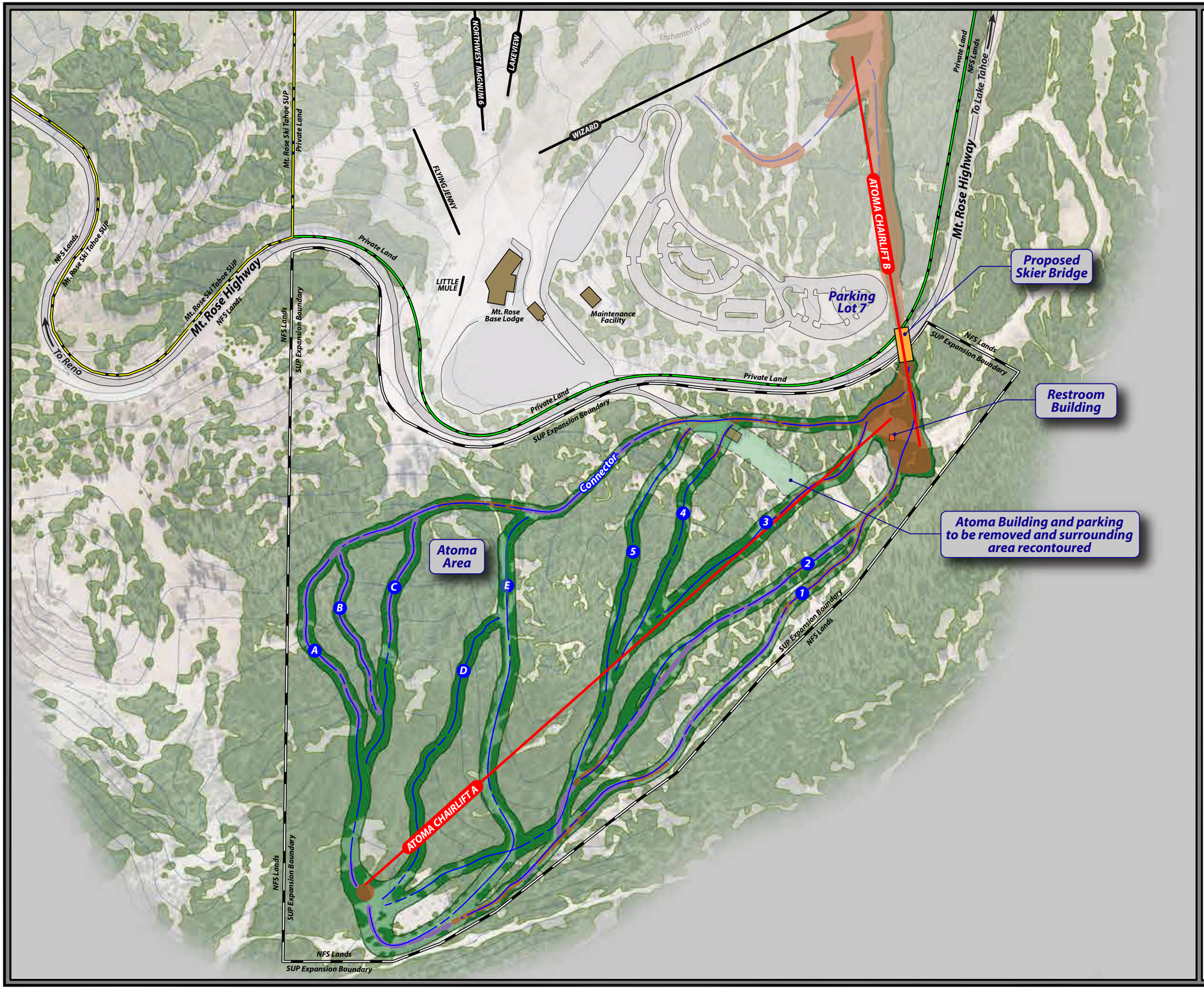
Private Land

Mt. Rose Ski Tahoe SUP

SUP Expansion Boundary

Mt. Rose Ski Tahoe - Atoma Area Environmental Impact Statement

Figure 5
Alternative 3
Atoma Detail



Legend:

- Existing Trail
- Proposed Trail Clearing
- Proposed Trail Grading
- Proposed Snowmaking Install Disturbance
- Planned Facilities
- SUP Boundary
- Proposed SUP Boundary Expansion
- Private Boundary
- Existing Lift
- Proposed Lift
- Proposed Building Removal and Recontouring

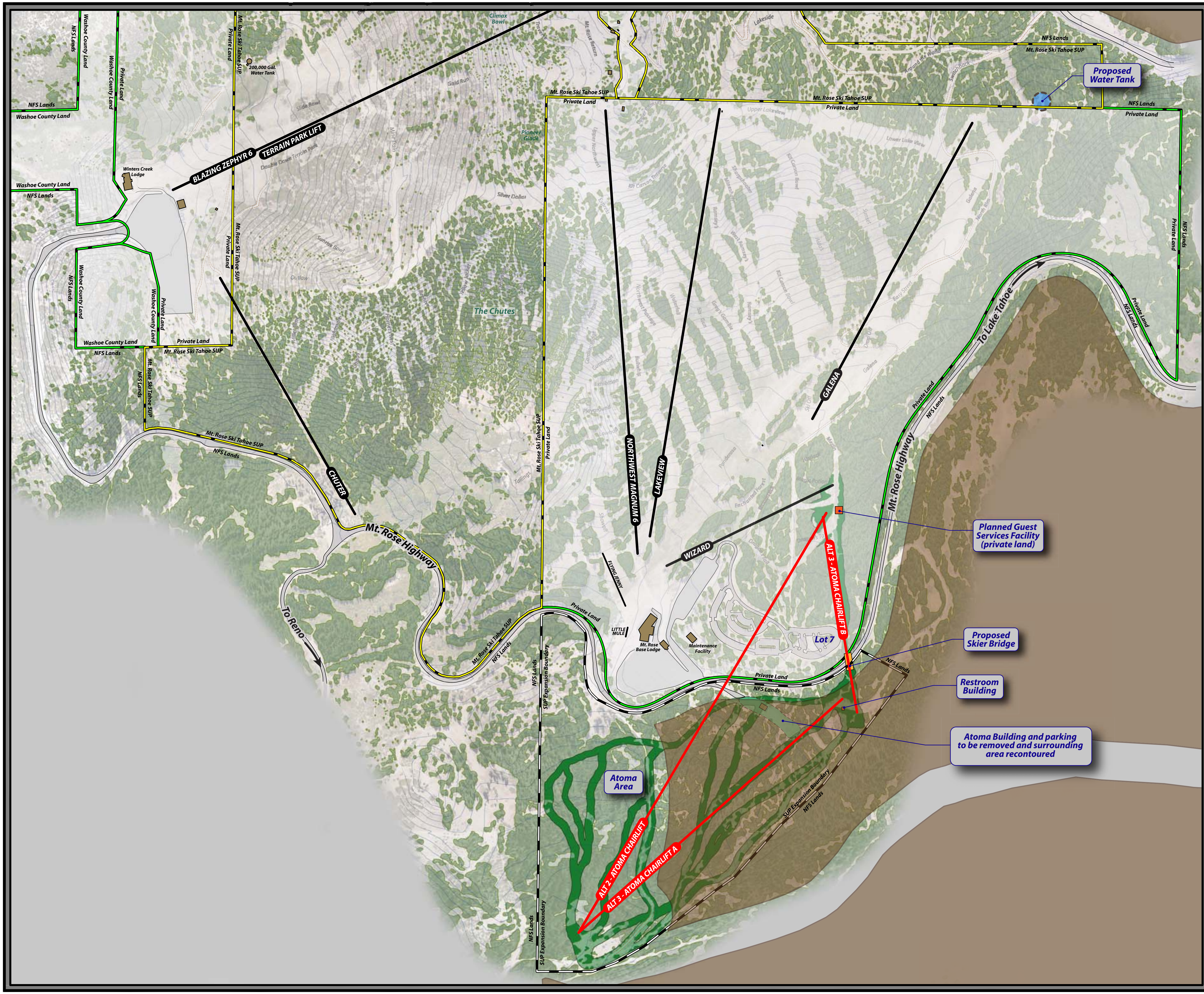
Note:
Snowmaking coverage is proposed for trails 1, 2, A, B, C, Connector trail (USFS Lands), and planned for the skiway trails on the Rose side of the Mt. Rose Highway (private lands).

Contour Interval: 25'

0 200 400 800 Feet

Mt. Rose Ski Tahoe - Atoma Area Environmental Impact Statement

Figure 6
Action Alternatives with Rose Galena IRA Overlay

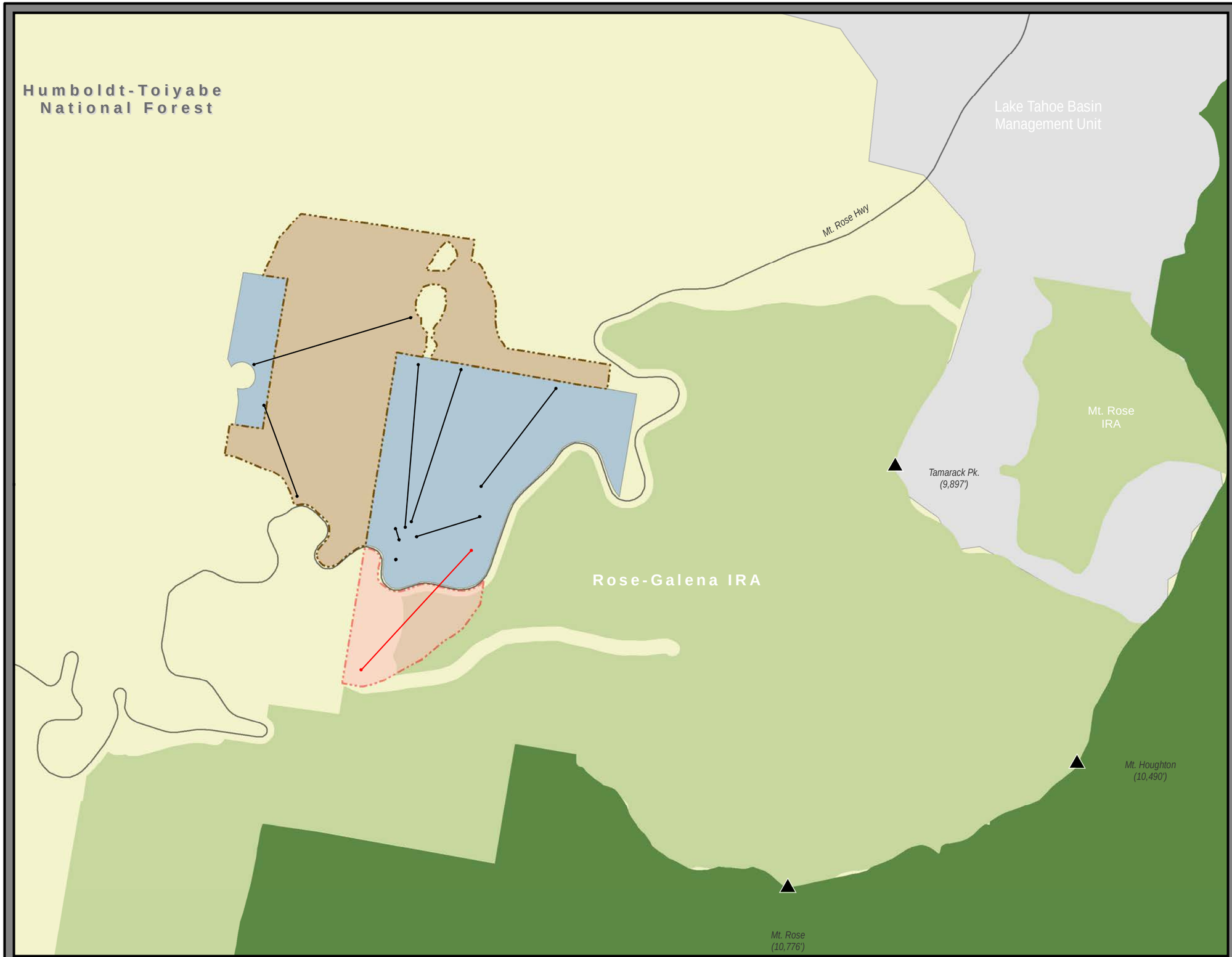


Legend:

- Existing Trail
- SUP Boundary
- Proposed Trail Clearing
- Proposed SUP Boundary
- Existing Lift
- Private Boundary
- Proposed Lift
- Proposed Building Removal and Recontouring
- Proposed Water Tank
- Proposed Facilities
- Rose Galena IRA

Contour Interval: 25'

0 400 800 1600 Feet



Mt. Rose Ski Tahoe - Atoma Area Environmental Impact Statement

Figure 7
Roadless Areas in the Vicinity of Mt. Rose Ski Area

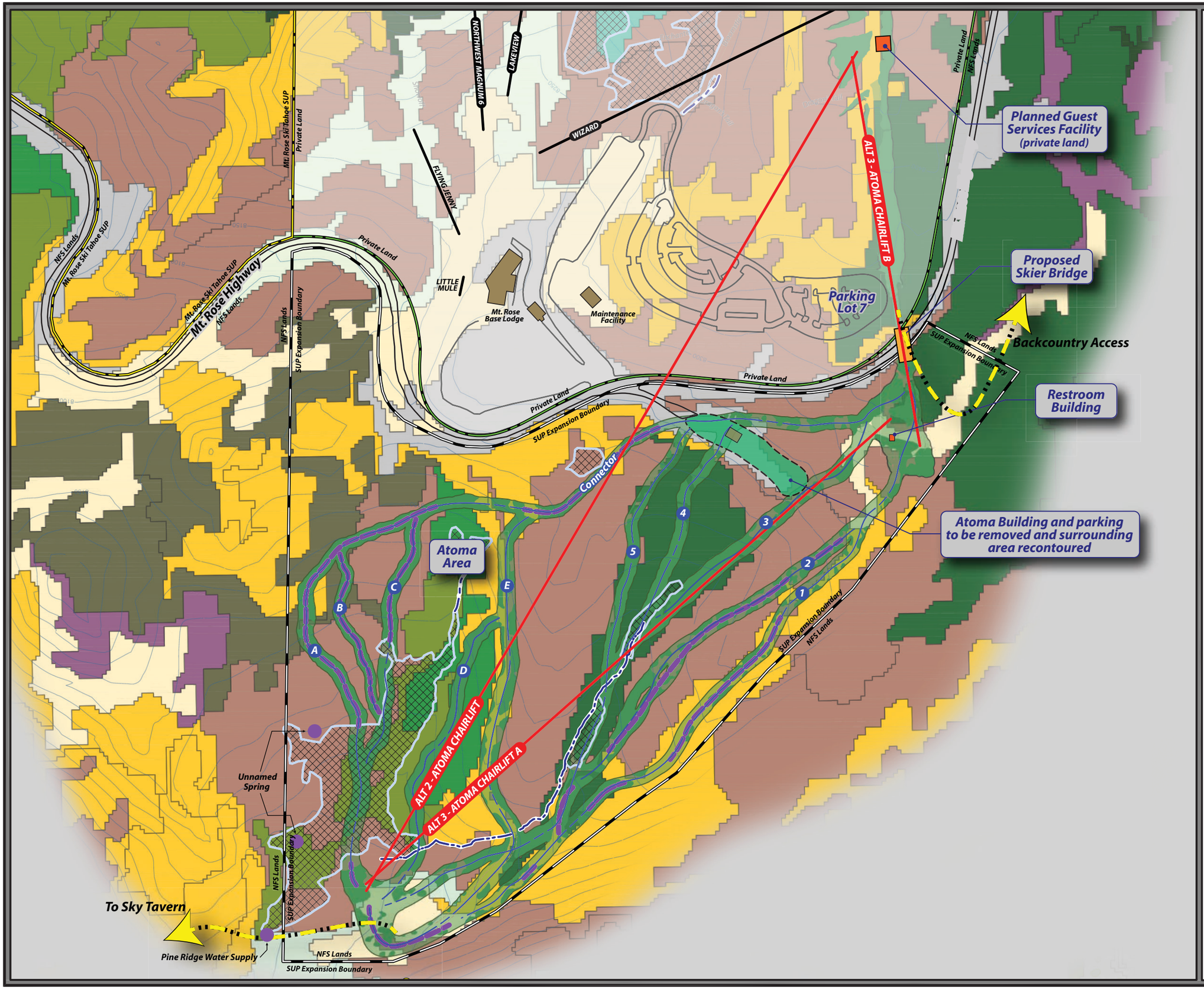
Legend:

- Proposed Lift
- Existing Lifts
- Existing SUP Boundary
- Mt. Rose Wilderness
- Proposed SUP Boundary Expansion
- Inventoried Roadless Area
- Private
- Humboldt-Toiyabe National Forest

0 1,000 2,000 4,000 Feet

Mt. Rose Ski Tahoe - Atoma Area Environmental Impact Statement

Figure 8
Action Alternatives
Atoma Area Detail with resources



Legend:

- Existing Trail
- SUP Boundary
- Proposed Trails
- Proposed SUP Boundary Expansion
- Existing Lift
- Private Boundary
- Proposed Lift
- Planned Facilities
- Proposed Trail Grading
- Proposed Building Removal and Recontouring
- Proposed Snowmaking Install Disturbance
- Delineated Wetlands
- Routes to Exit Permit Boundary
- Delineated Stream

Vegetation Type (by WHR):

ASP	PGS	URB
BAR	RFR	WFR
LPN	SCN	WTM
MCP	SGB	
MHC	SMC	

Contour Interval: 25'

0 200 400 800 Feet

WIZARD

FLYING JENNY

LITTLE MULE

Mt. Rose Base Lodge

Maintenance Facility

Dragon's Tail

ALT 3 - ATOMA CHAIRLIFT B

Mt. Rose Highway

To Lake Tahoe

Bridge Crossing Looking East

Lot 7

Proposed Skier Bridge

Atoma Lift Highway Crossing

To Reno

Atoma Building (to be removed)

ALT 2 - ATOMA CHAIRLIFT

ALT 3 - ATOMA CHAIRLIFT A

8200

8300

8350

8150

Mt. Rose Ski Tahoe - Atoma Area Environmental Impact Statement

Figure 9
Proposed Lift and Skier Bridge Crossing Key Photo Points

Note:
Use Figure 9 to locate visual simulations in Figures 10 and 11

Contour Interval: 25'

0 100 200 400'

North

MT. ROSE HIGHWAY LOOKING WEST, TRAVELING TO LAKE TAHOE.
-SIMULATED VIEW OF THE PROPOSED ATOMA CHAIRLIFT CROSSING THE MT. ROSE HIGHWAY
-VIEWER IS APPROXIMATELY 380 FEET FROM THE CHAIRLIFT CROSSING.

MT. ROSE SKI TAHOE - ATOMA AREA
ENVIRONMENTAL IMPACT STATEMENT

FIGURE 10
VISUAL SIMULATION
PROPOSED LIFT CROSSING OF
MT. ROSE HIGHWAY

NOTE: BOTH THE PROPOSED CHAIR-LIFT AND BRIDGE ARE NOT VISIBLE FROM ONE VIEWPOINT DUE TO THE HIGHWAY ALIGNMENT AND EXISTING TOPOGRAPHY.

Note: these simulations are merely tools to assist the Forest Service, public and reviewing agencies with understanding the massing, scale, and location of the proposed chairlift and skier bridge sufficient for the NEPA process. They are not intended to be precise depictions of either project element.

Mt. Rose Highway looking east
- Simulated view of the proposed skier bridge crossing the Mt. Rose Highway.
- Viewer is Approximately 250 feet from the bridge crossing.

Mt. Rose Ski Tahoe - Atoma Area Environmental Impact Statement

Figure 11
Visual Simulation
Proposed Skier Bridge
Spanning the Mt. Rose Highway

Note: these simulations are merely tools to assist the Forest Service, public and reviewing agencies with understanding the massing, scale, and location of the proposed chairlift and skier bridge sufficient for the NEPA process. They are not intended to be precise depictions of either project element.

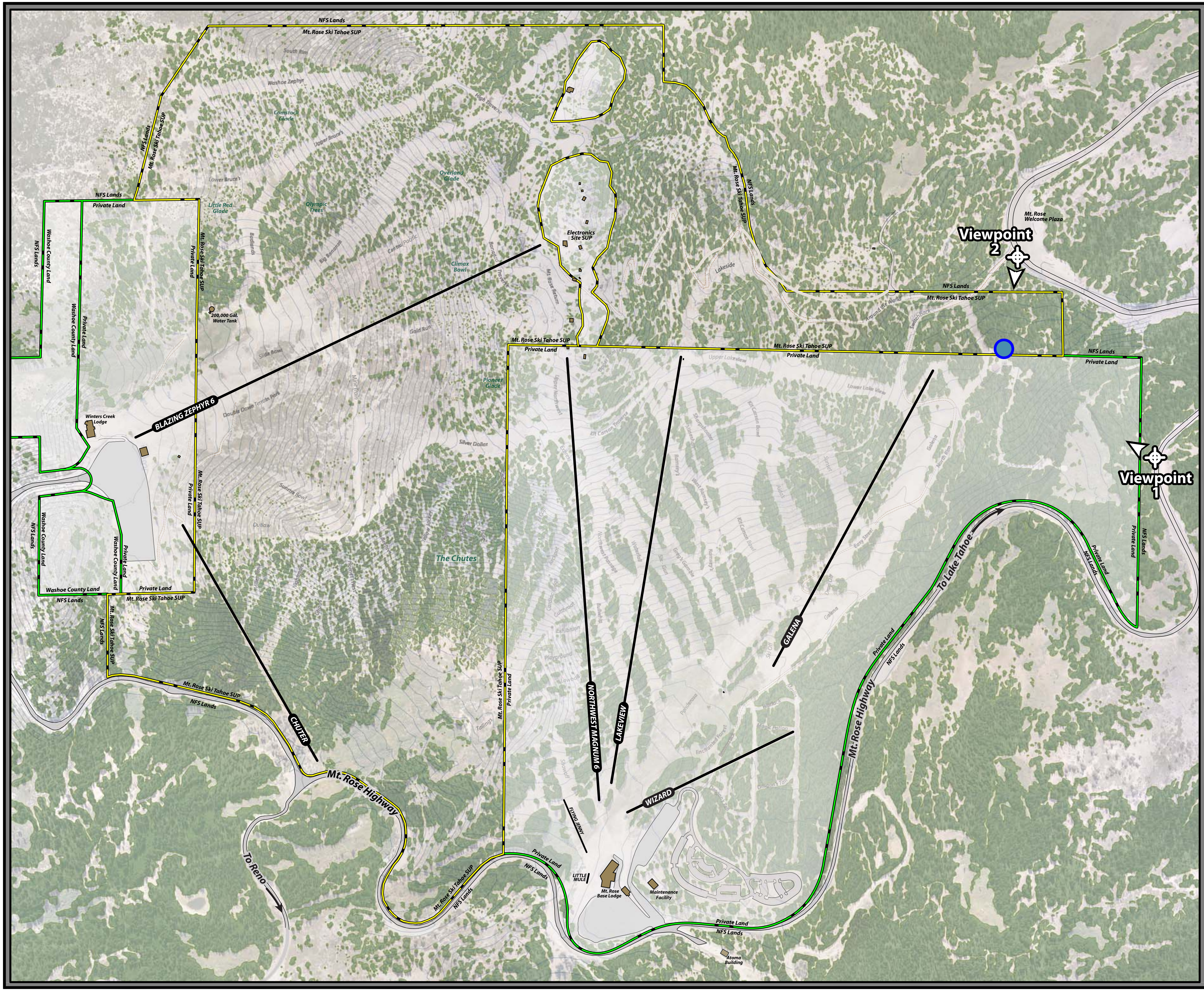
Mt. Rose Highway looking east, traveling to Reno.
- Simulated view of the lift and skier bridge crossing the Mt. Rose highway as proposed under Alternative 3.
- Viewer is Approximately 250 feet from the proposed bridge crossing.

Mt. Rose Ski Tahoe - Atoma Area
Environmental Impact Statement

Figure 12
Visual Simulation
Proposed Lift and Skier Bridge Spanning the Mt. Rose Highway

Mt. Rose Ski Tahoe - Atoma Area Environmental Impact Statement

Figure 13
Proposed Water Tank Key Photo Points

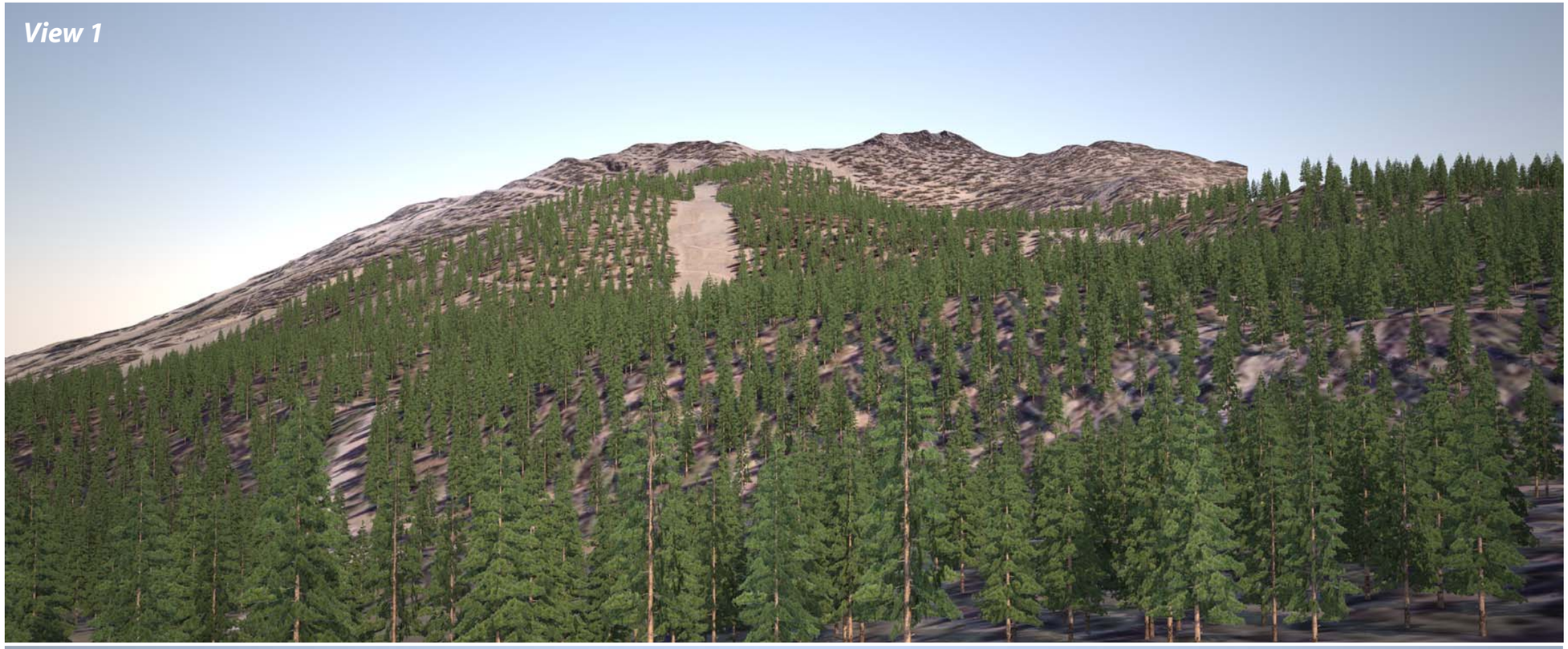


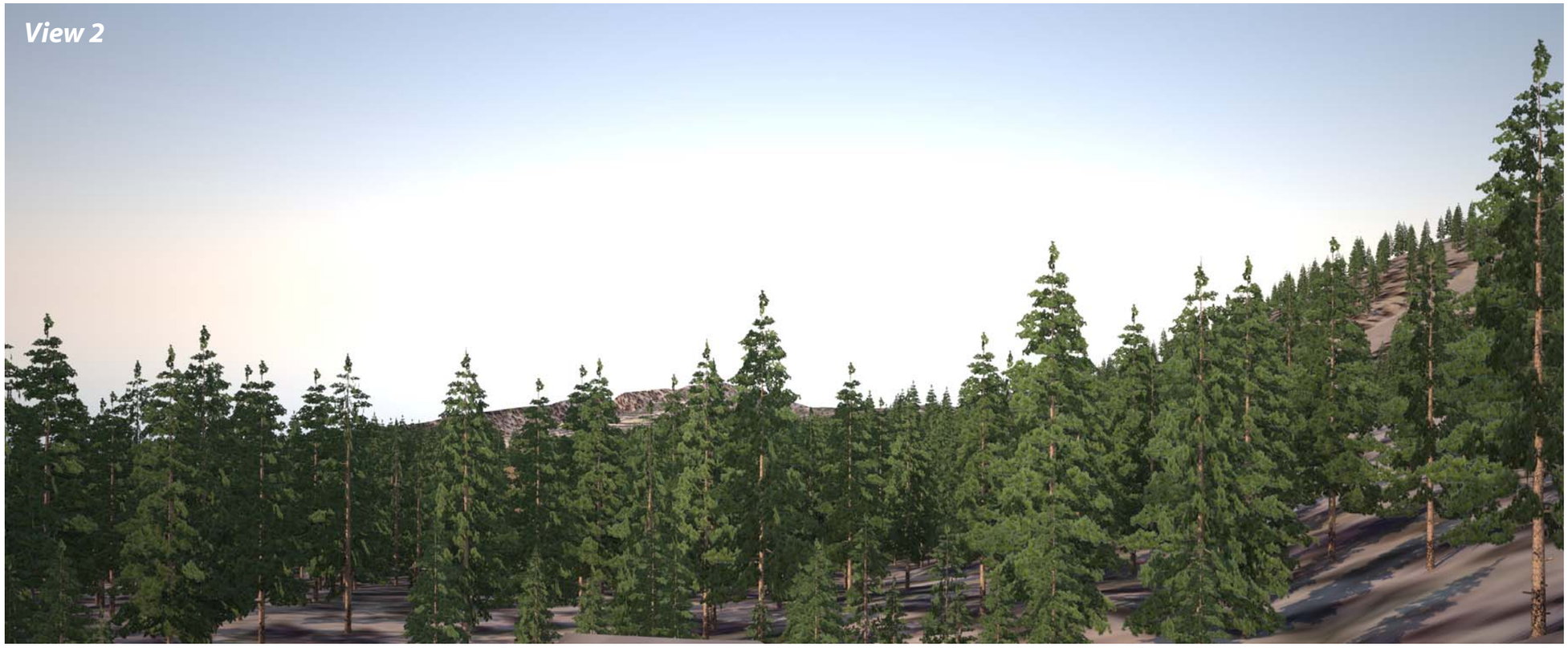
Legend:

- Existing Trail
- SUP Boundary
- Existing Lift
- Private Boundary
- Proposed Water Tank

Contour Interval: 25'

0 400 800 1600 Feet



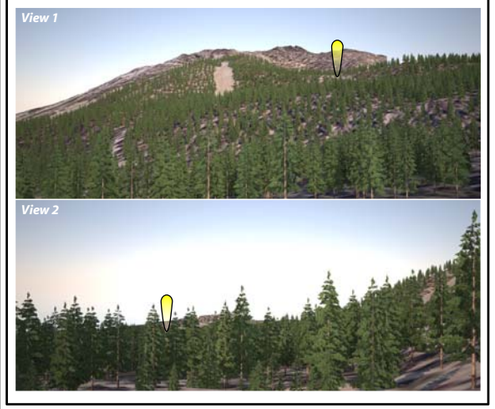


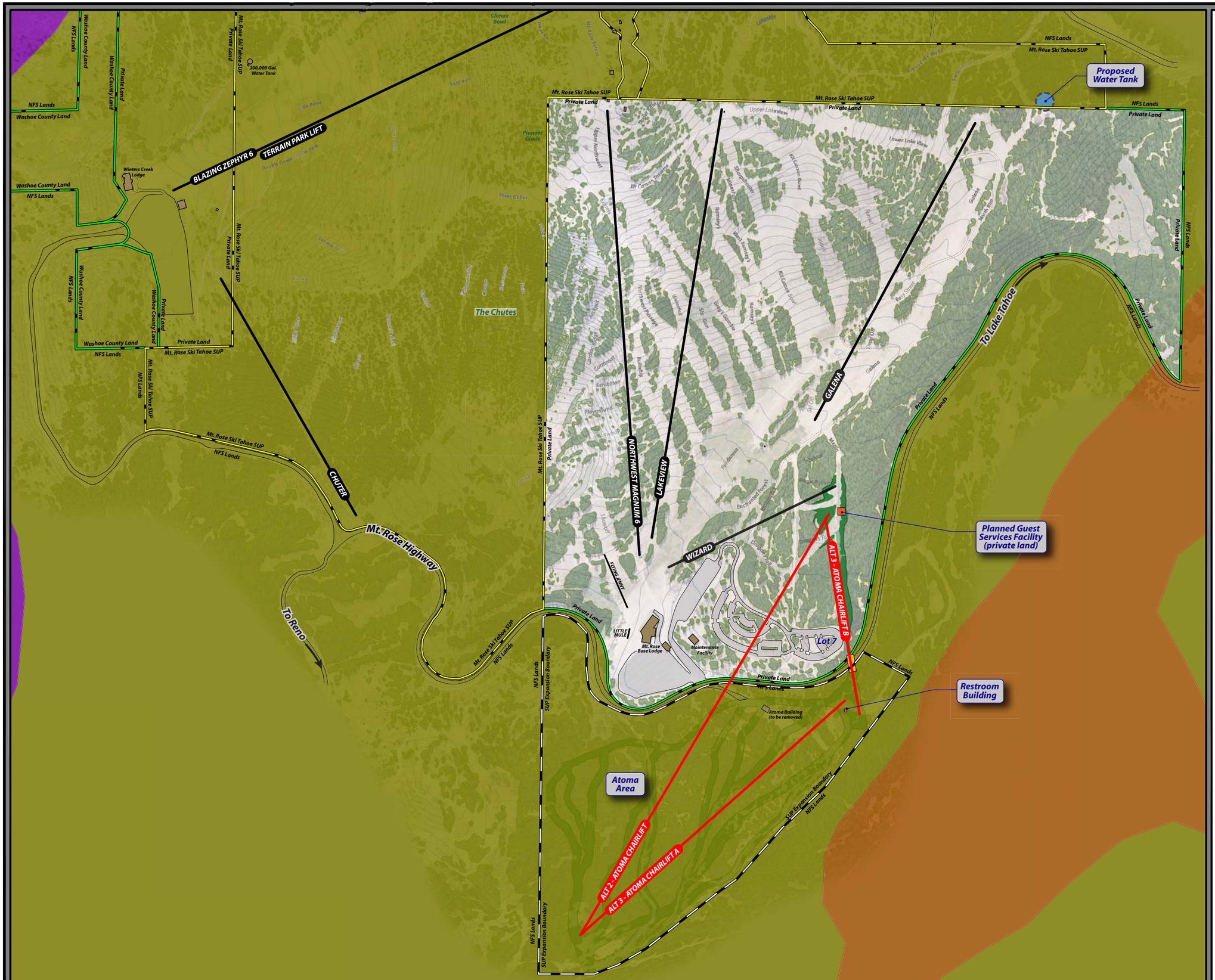
Mt. Rose Ski Tahoe - Atoma Area Environmental Impact Statement

Figure 14
Visual Simulation
Water Tank

Note:
Use Figure 10 to locate visual simulations

Proposed Water Tank Approximate Location





Mt. Rose Ski Tahoe - Atoma Area Environmental Impact Statement

Figure 15
Action Alternatives
VQO Overlay

Legend:

- Existing Trail
- Proposed Trail Clearing
- Existing Lift
- Proposed Lift
- SUP Boundary
- Proposed SUP Boundary
- Private Boundary
- Proposed Facilities
- Proposed Water Tank

VQO Overlay Legend

- Retention
- Partial Retention
- Modification

Contour Interval: 25'

0 400 800 1600 Feet

Humboldt-Toiyabe
National Forest

Lake Tahoe Basin
Management Unit

Mt. Rose Hwy

Mt. Rose
IRA

Tamarack Pk.
(9,897')

Lands acquired in the 1994 Land Exchange that are included in the Forest Plan Amendment

Rose-Galena IRA

Mt. Houghton
(10,490')

Mount Rose
(10,776')

Mount Rose Wilderness

- Whites Canyon
IRA

Mt. Rose Ski Tahoe - Atoma Area Environmental Impact Statement

Figure 16
Forest Plan Amendment

Legend

- Lift
- Lift
- Existing SUP Boundary
- SUP Boundary Expansion
- Lands Acquired in the 1994 Galena Resort Land Exchange that are included in the Forest Plan Amendment
- Inventoried Roadless Area
- Mount Rose Wilderness
- Private Land
- Humboldt-Toiyabe National Forest

The Forest Plan Amendment will restrict any future development of commercial uses on 3,446 acres of NFS land that was acquired in the 1994 Galena Resort Land Exchange

0 0.25 0.5 Miles

Mt. Rose Ski Tahoe - Atoma Area Environmental Impact Statement

Figure 17
Visibility Analysis

Legend

- Mount Rose Summit (Approximate)
- Not Visible from Mount Rose Summit
- SUP Boundary
- SUP Expansion
- Private Boundary
- Proposed Water Tank

0 600 1,200 2,400 Feet

7. Acronyms and Glossary

7.1 Acronyms

(IPaC)	Information, Planning and Consultation System
AASHTO	American Association of State Highway and Transportation Officials
ANSI	American National Standards Institute
APE	Area of Potential Effect
BA	Biological Assessment
BE	Biological Evaluation
BEIG	Built Environment Image Guide
CCC	Comfortable Carrying Capacity
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CWA	Clean Water Act
DEIS	Draft Environmental Impact Statement
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FSH	Forest Service Handbook
FSM	Forest Service Manual
FSVEG	Forest Service Vegetation database
GHG	Greenhouse Gas
GIS	Geographic Information System
gpm	gallons per minute
HTNF	Humboldt-Toiyabe National Forest
ID Team	Interdiscplinary Team
IRA	Inventoried Roadless Area
LRMP	Land and Resource Management Plan
LTBMU	Lake Tahoe Basin Management Unit
MDP	Master Development Plan
MIS	Management Indicator Species
MOU	Memorandum of Understanding
MPB	Mountain Pine Beetle
NAAQS	National Ambient Air Quality Standards
NDOT	Nevada Department of Transportation
NEPA	National Environmental Policy Act
NFMA	National Forest Management Act
NFS	National Forest System
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System

NRHP	National Register of Historic Places
NRCS	Natural Resources Conservation Service
NTMB	Neotropical Migratory Birds
OHWM	Ordinary High Water Mark
PAC	Protected Activity Center
PEM	Palustrine Emergent
PSS	Palustrine shrub-scrub
QMD	Quadratic Mean Diameter
R4	Region 4
RARE	Roadless Area Review and Evaluation
ROS	Recreation Opportunity Spectrum
RSIC	Reno-Sparks Indian Colony
RVD	Recreation Visitor Days
SDI	Stand Diversity Index
SHPO	State Historic Preservation Officer
SIO	Scenic Integrity Objectives
SNFPA	Sierra Nevada Forest Plan Amendment
SOPA	Schedule of Proposed Action
SUP	Special Use Permit
TCP	Traditional Cultural Property
TES	Threatened, Endangered, and Sensitive
THPO	Tribal Historic Preservation Officer
TMDL	Total Maximum Daily Load
TPA	Trees per Acre
U.S.C.	United States Code
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VMS	Visual Management System
VQO	Visual Quality Objective
WHR	California Wildlife Relationships System

7.2 Glossary

Action alternatives: Any alternative that includes upgrading and/or expansion of existing winter and summer recreational development within the area.

Affected environment: The physical, biological, social, and economic environment that would or may be changed by actions proposed and the relationship of people to that environment.

Airshed: A geographical area that, because of topography, meteorology, and climate, shares the same air. The Clean Air Act establishes three air quality classes (I, II, and III), each with defined air quality standards.

> **Class I airsheds** are areas designated for the most stringent degree for protection from future degradation of air quality.
>
> **Class II airsheds** are areas where a moderate amount of development could occur.
>
> **Class III airsheds** are areas where significant development could occur as long as National Ambient Air Quality Standards are not exceeded.

Alternative: One of several conceptual development plans described and evaluated in the EIS.

Analysis Area: The geographical area that was analyzed to predict the possible effect that may be associated with proposed alternatives. This area varies depending on the resource, but often coincides with the SUP boundary.

Canopy: The more-or-less continuous cover of leaves, needles and/or branches collectively formed by the crowns of adjacent trees in a stand or forest.

Clean Water Act: An act that was enacted by the U.S. Congress in 1977 to maintain and restore the chemical, physical, and biological integrity of the waters of the United States. This act was formerly known as the Federal Water Pollution Control Act (33 U.S.C. § 1344).

Comfortable carrying capacity (CCC): Comfortable Carrying Capacity (CCC) is a planning tool used to determine the optimum level of utilization that facilitates a pleasant recreational experience. This is a planning figure only and does not represent a regulatory cap on visitation. CCC is used to ensure that different aspects of a resort's facilities are designed to work in harmony, that capacities are equivalent across facilities, and sufficient to meet anticipated demand. CCC is based on factors such as vertical transport and trail capacities.

Commercial Development: Including (but not limited to) resorts, stores, buildings, structures, facilities, and organizational camps.

Corridor: A linear strip of land identified for the present or future location of transportation or utility rights-of-way within its boundaries. Also, a contiguous strip of habitat suitable to facilitate animal dispersal or migration.

Council on Environmental Quality (CEQ): An advisory council to the President established by the National Environmental Policy Act of 1969. It reviews federal programs for their effect on the environment, conducts environmental studies, and advises the President on environmental matters.

Cover: Vegetation used by wildlife for protection from predators and weather conditions, or in which to reproduce.

Cubic feet per second (cfs): Unit measure of streamflow or discharge, equivalent to 449 gallons per minute or about 2 acre feet per day.

Cumulative impact (effect): The impact on the environment which results from the incremental impact of the action when added to other past, present and reasonable foreseeable future actions regardless of what agency or person undertakes such other actions. Each increment from each project may not be noticeable but cumulative impacts may be noticeable when all increments are considered together.

Direct impact (effect): An effect which occurs as a result of an action associated with implementing the proposal or one of the alternatives, including construction, operation, and maintenance.

Distance zone: One of three categories used in the visual management system to divide a view into near and far components. The three categories are (1) *foreground*, (2) *middleground*, and (3) *background*. See individual entries.

Endangered species: An official designation for any species of plant or animal that is in danger of extinction throughout all or a significant portion of its range. An endangered species must be designated in the *Federal Register* by the appropriate Federal Agency Secretary.

Environmental Consequences: An environmental effect, impact, or consequence is defined as a modification of or change in the existing environment brought about by the action taken. Effects can vary in degree, ranging from only a slightly discernible change to a drastic alteration in the environment. Effects are direct, indirect, or cumulative and may be temporary (short term) or permanent (long term).

Environmental Impact Statement (EIS): A disclosure document required by the National Environmental Policy Act (NEPA) that documents the anticipated environmental effects of a Proposed Action that may significantly affect the quality of the human environment.

Environmental Protection Agency (EPA): The federal agency charged with lead enforcement of multiple environmental laws, including review of Environmental Impact Statements.

Erosion: The detachment and movement of soil from the land surface by wind, water, ice, or gravity.

Erosion control: Materials, structure, and techniques designed to reduce erosion. Erosion control may include rapid revegetation, avoiding steep or highly erosive sites, and installation of cross-slope drainage structures.

Forage: All browse and non-woody plants used for grazing or harvested for feeding livestock or game animals.

Forb: Any non-grass-like plant having little or no woody material on it. A palatable, broadleaved, flowering herb whose stem, above ground, does not become woody and persistent.

Foreground view: The landscape area visible to an observer from the immediate area to 0.5 mile.

Forest Plan: A comprehensive management plan prepared under the National Forest Management Act of 1976 that provides standards and guidelines for management activities specific to each National Forest. The HTNF Forest Plan was approved in 1986.

Forest Service: The agency of the United States Department of Agriculture responsible for managing National Forests and Grasslands.

Forest Supervisor: The official responsible for administering the NFS land in a Forest Service administrative unit who reports to the Regional Forester.

GIS: Geographic information system, a computer mapping system composed of hardware and software.

Glade: Glades are forested areas throughout a ski area, either natural or purposefully thinned, that provide varying levels of challenge, depending on the tree density and slope angle.

Grading: Grading activities includes smoothing the ground and removing large obstacles to provide for installation of lift towers, ski trails, and facility construction, trenching for snowmaking line installation and excavation related to construction of the snowmaking water tank.

Guideline: An indication or outline of policy or conduct that is not a mandatory requirement (as opposed to a standard, which is mandatory).

Habitat type: A classification of the vegetation resource based on dominant growth forms. The forested areas are more specifically classified by the dominant tree species.

Hydric soils: Soils characterized by, or requiring an abundance of moisture, used in the identification of wetlands.

Indirect impact: Secondary consequences to the environment resulting from a direct impact. An example of an indirect impact is the deposition of sediment in a wetland resulting from surface disturbance in the upland.

Instream flow: The volume of surface water in a stream system passing a given point at a given time.

Interdisciplinary Team (ID Team): A group of individuals each representing specialty resource areas assembled to solve a problem or perform a task through frequent interaction so that different disciplines can combine to provide new solutions.

Inventoried Roadless Area (IRA): inventoried tracts of NFS land characterized as having an undeveloped character.

Labor income impacts: Labor income impacts refers to the effect of income from the workforce, when spent in the community.

Management Area (MA): Management areas (MA) are created to manage portions of the forest, based on ecological conditions, historic development, and anticipated future conditions.

Management direction: A statement of multiple-use and other goals and objectives, the associated management prescriptions, and standards and guidelines for attaining them.

Management indicator species (MIS): A representative group of species that are dependent of a specific habitat type. The health of an indicator species is used to gauge function of the habitat on which it depends.

Management practice: A specific activity, measure, course of action, or treatment.

Management Requirements: Specific measures designed to minimize or avoid impacts anticipated to occur as a result of implementation of the action alternatives. Management Requirements are required components of specified action alternatives.

Master Development Plan (MDP): A document that is required as a condition of the ski area term SUP, designed to guide resort planning and development and avoid piecemeal decision making.

Middleground view: The landscape area visible to a viewer from 0.5 mile to about 3 to 5 miles.

Mitigation: Actions taken to avoid, minimize, reduce, eliminate, or rectify the adverse environmental impacts associated with the implementation of an alternative or a portion thereof.

National Ambient Air Quality Standards (NAAQS): Established under the Clean Air Act of 1963, there are primary standards, designed to protect public health, and secondary standards, designed to protect public welfare from known or anticipated air pollutants.

National Environmental Policy Act (NEPA): A law enacted by Congress in 1969 that requires federal agencies to analyze the environmental effects of all major federal activities that may have a significant impact on the quality of the human environment.

National Forest Management Act (NFMA): A law passed in 1976 as an amendment to the Forest and Rangeland Renewable Resources Planning Act that requires the preparation of regulations to guide that development.

National Forest System (NFS) lands: National Forests, National Grasslands, and other related lands for which the Forest Service is assigned administrative responsibility.

National Historic Preservation Act (NHPA): An act that was enacted by the U.S. Congress in 1966 to protect historic sites and artifacts (16 U.S.C. § 470). Section 106 of the Act requires consultation with members and representatives of Indian tribes.

National Register of Historic Places: A listing maintained by the National Park Service of areas which have been designated as historically significant. The register includes places of local and state significance, as well as those of value to the nation in general.

No Action Alternative: The management direction, activities, outputs, and effects that are likely to exist in the future if the current trends and management would continue unchanged. Under NEPA, it means following the current approved Forest Plan management direction and guidance.

Overstory Vegetation: The highest layer of vegetation in a forest, usually forming the canopy. This is typically comprised of the trees in a forest whose crowns make up the highest layer.

Palustrine emergent wetlands (PEM): This wetland class is characterized by the presence of erect, rooted, usually perennial, herbaceous hydrophytic plants.

Palustrine shrub/scrub wetlands (PSS): This type of wetlands is defined as being dominated by a woody vegetation community composed of shrubs and young trees less than 6 feet tall.

Particulates: Small particles suspended in the air and generally considered pollutants.

Preferred alternative: The alternative selected from the range of alternatives which is favored by the lead agency.

Project area: The area encompassed by the development proposal including base area and the permit area.

Proponent: The individual or business who is proposing the development. In this case, the proponent is Mt. Rose Ski Tahoe.

Record of Decision (ROD): A document prepared within 30 days after the final EIS is issued which states the agency's decision and why one alternative was favored over another, what factors entered into the agency's decision, and whether all practicable means to avoid or minimize environmental harm have been adopted, and if not, why not.

Revegetation: The re-establishment and development of self-sustaining plant cover. On disturbed sites, this normally requires human assistance such as seedbed preparation, reseeding, and mulching.

Riparian habitat: Land situated along the bank of a stream or other body of water and directly influenced by the presence of water (e.g., streamsides, lake shores, etc.).

Scenery management system: The USDA Forest Service methodology for classifying the aesthetic values of landscapes are based upon the scenic attractiveness of the landscape, the landscape's visibility and the public's concern about changes in the landscape from a natural condition.

Scoping process: A process that determines the issues, concerns, and opportunities which should be considered in analyzing the impacts of a proposal by receiving input from the public and affected agencies. The depths of analysis for these issues identified are determined during scoping.

Sediment: Solid material, both organic and mineral, that has been transported from its site of origin by air, water, or ice.

Sensitive species: Species which have appeared in the *Federal Register* as proposed additions to the endangered or threatened species list; those which are on an official state list or are recognized by the Regional Forester to need special management in order to prevent them from becoming endangered or threatened.

Special use permit (SUP): A legal document, similar to a lease, issued by the Forest Service. These permits are issued to private individuals or corporations to conduct commercial operations on NFS land. They specify the terms and conditions under which the permitted activity may be conducted.

Special-use permit area: That area of NFS land encompassed within the permit boundary held by Mt. Rose Ski Tahoe and designated for recreational use (e.g., downhill skiing and Nordic skiing). Excludes private land.

Stand: A community of trees or other vegetation, which is sufficiently uniform in composition, constitution, age, spatial arrangement, or condition to be distinguishable from adjacent communities and to thus, form a management entity.

Standard: A standard is a course of action which must be followed; adherence is mandatory.

Surface lift: a cable lift system in which riders' skis/snowboards maintain contact with the snow as they are transported uphill (e.g., a platter lift or T-bar) as opposed to a chairlift, in which they are suspended above the snow.

Threatened species: Any species which is likely to become an endangered species within the foreseeable future and which has been designated in the *Federal Register* as a threatened species.

Total maximum daily load (TMDL): A calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources.

Understory: Low-growing vegetation (herbaceous, brush or reproduction) growing under a stand of trees. Also, that portion of trees in a forest stand below the overstory.

U.S. Army Corps of Engineers (USACE): The federal agency charged with enforcing the Clean Water Act by regulation of dredge and fill activities in waters of the United States, including wetlands.

U.S. Fish and Wildlife Service (USFWS): The agency of the Department of the Interior responsible for managing wildlife, including non-ocean going species protected by the ESA.

Visual management system (VMS): The Visual Management System (VMS) was adopted in 1974 as the primary scenery management direction by the Forest Service to inventory and manage the visual resources of NFS land. The visual management inventory consists of three

steps: landscape character type, variety class, and sensitivity levels overlaid on distance from the viewer. These steps are combined and interpreted to develop Visual Quality Objectives (VQO).

Visual quality: Describes the degree of variety in the landscape, created by the basic vegetative patterns, landform, and water forms. Landscapes with the greatest variety or diversity have the greatest potential for high scenic value or visual quality.

Visual quality objectives (VQO): Visual quality objectives (VQO) assess the existing scenic character of an area in terms of pattern elements (form, line, color and texture) and pattern character (dominance, scale diversity and continuity) to identify the extent to which the scenic character would exhibit contrast with the landscape, or its converse—compatibility. The acceptable limits of change of a particular area are the documented VQO, which serve as management goals for scenic resources.

Water rights: The legal right to use water.

Watershed: The entire area that contributes water to a drainage system or stream.

Wilderness: Under the 1964 Wilderness Act, wilderness is undeveloped federal land retaining its primeval character and influence without permanent improvements of human habitation. It is protected and managed so to preserve its natural conditions.

Winter Range: That part of the home range of a species where 90 percent of the individuals are located during the winter at least five out of ten winters.

8. Index

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V

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APPENDICES

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Appendix A. Management Requirements Common to All Action Alternatives

The Forest Service developed the following Management Requirements for incorporation into the Proposed Action. Management Requirements are composed of mitigation measures, Project Design Criteria, and Best Management Practices, as well as Forest Plan standards and guidelines. Some of these Management Requirements are common and have been found to be beneficial at similar projects on NFS land by ski area managers, while others have been specifically identified by resource specialists for this FEIS. All of the included Management Requirements have been determined to be effective in terms of avoiding, minimizing and/or mitigating impacts on a resource-by-resource basis through formal and informal monitoring by resource specialists within the ID Team. The resource analyses included in Chapter 3 of this FEIS incorporate these Management Requirements.

Table A-1. Management Requirements
GENERAL (G)
G 1: Sensitive resources (such as wetlands or cultural sites) will be identified and avoided during construction.
G 2: All personnel will be educated about protection of resources, prior to construction.
G 3: Store fuel, oil and other hazardous materials in structures placed on impermeable surfaces with impermeable berms designed to fully contain the hazardous material plus accumulated precipitation for a period at least equal to that required to mitigate a spill.
G 4: During construction, contractors are required to provide a wildlife proof container on site for all edible and food related trash in order to minimize wildlife conflicts with wildlife. No food products or food containers can be thrown in the larger roll-off type dumpsters.
G 5: Construction will take advantage of previous disturbance whenever possible.
G 6: A local building permit will be acquired prior to beginning relevant projects.
G 7: A fire precaution plan will be required prior to beginning relevant projects.
AIR QUALITY (AQ) (FEIS SECTION 3.1.2.2)
AQ 1: Site improvements will be installed promptly in order to reduce dust emissions. The area disturbed by clearing, earth moving, or excavation activities will be kept to a minimum at all times, allowing improvements to be implemented in sections.
AQ 2: All areas subject to ground disturbance will be watered as needed to control dust.
AQ 3: A dust abatement plan will be prepared to reduce fugitive dust emissions.
AQ 4: In order to avoid health and safety issues during construction, excavation and grading activities will be suspended when instantaneous gusts of wind in excess of 50 miles per hour are reported, and visible dust persists.
RECREATION (RT) (FEIS SECTION 3.2)
RT 1: Designate Mt. Rose Ski Tahoe's parking lot #7 as a trailhead for winter and summer access for dispersed recreation activities. The Forest Service will require that six parking spaces will be reserved for dispersed recreation users. This will be included in the annual operating plan. No parking fees will be charged.
RT 2: The proposed skier bridge will be open year-round, as operations allow, to provide access across the Mt. Rose Highway into the Atoma Area for dispersed recreationists. The Atoma Area will continue to be accessible to summer dispersed recreation users.

Table A-1. Management Requirements
RT 3: Mt. Rose Ski Tahoe will identify an access corridor for the Atoma Area. A designated winter route and signage will direct dispersed recreationists to adjacent backcountry terrain. The access corridor will provide connection from Sky Tavern to the upper Galena drainage for cross-country skiing and snowshoeing. The uphill access plan will be available on the Mt. Rose Ski Tahoe website.
RT 4: The Atoma Area will continue to remain closed to motorized winter travel per Forest Order 04-17-02-11.
PUBLIC HEALTH & SAFETY (PHS) (FEIS SECTION 3.4)
PHS 1: An operational plan and memorandum of understanding will be developed between Mt. Rose Ski Tahoe and NDOT to define communication and operational protocols for highway maintenance and use of Atoma Area throughout the year. The operational plan will address snow removal protocols that need to be in place during and after storm events to ensure that NDOT is able to perform highway maintenance activities without compromising skier safety. These protocols may include capping and stacking/removing snow and use of trucks, dump trucks and plows rather than blowers, to minimize potential interaction with ski area operations. In addition, a discussion of coordinating with Mt. Rose Ski Tahoe snowcat drivers in emergency situations would likely be included in the plan.
PHS 2: The proposed chairlift and skier bridge highway crossings will be designed to prevent objects from skiers (e.g., skis, poles, shoes, hats, bags, etc.) from falling onto the Mt. Rose Highway. Under Alternative 2, this shall include installation of a net under the chairlift. The net will be designed to allow retrieval of dropped objects, maintenance and for emergency egress to either end of the net. The net would be constructed with materials, and in a manner, that could support the weight of the chair. Mt. Rose Ski Tahoe will post signs and enforce a policy of no tolerance for purposefully dropping/throwing anything from the lift or bridge (e.g., snowballs).
PHS 3: The proposed chairlift and skier bridge shall have vertical clearance from the highway of at least 18 feet to conform to snow removal requirements by NDOT. Included in these design features are accommodation of snowcats, moving loads, snow and ice, and geotechnical investigation and design. In addition to NDOT Structures Manual for height and load capacity design of the proposed skier bridge over the Mt. Rose Highway will conform to American Association of State Highway and Transportation Officials structural design standards. The proposed chairlift will be constructed to be consistent with specifications outlined by the American National Standards Institute.
PHS 4: Consideration shall be given to impact protection for the skier bridge abutments. Guardrails or barriers shall be required depending on lateral clearance from the travel way.
PHS 5: Mt. Rose Ski Tahoe will acquire an occupancy permit for any work performed within the NDOT highway right-of-way.
PHS 6: The proposed connector trail within the Atoma Area (parallels the Mt. Rose Highway) will be located no closer than 120 feet from the shoulder of Mt. Rose Highway to prevent potential conflicts between NDOT's snow removal operations and the occupied ski trail.
VISUAL RESOURCES (VI) (FEIS SECTION 3.5)
VI 1: Adhere to Washoe County Scenic Byway Guidelines when constructing approved trails and infrastructure.
VI 2: Facilities or structures including the bridge, lift terminals and chairs, and the water tank will meet Forest Service solar reflectivity standards. This includes any reflective surfaces (metal, glass, plastics, or other materials with smooth surfaces), that do not blend with the natural environment. Surfaces shall be covered, painted, stained, chemically treated, etched, sandblasted, corrugated, or otherwise treated. The specific requirements for reflectivity are as follows: Facilities and structures with exteriors consisting of galvanized metal or other reflective surfaces will be treated or painted dark non-reflective colors that blend with the forest background to meet an average neutral value of 4.5 or less as measured on the Munsell neutral scale. All facilities or structures will be subject approval by a Forest Service Landscape Architect prior to installation or construction.
VI 3: Facilities or structures including the bridge, lift terminals and chairs, and water tank will meet color guidelines. Bright colors are inappropriate for the forest setting. The colors should be muted, subdued colors that blend well with the natural color scheme. FSH No. 617, "National Forest Landscape Management for Ski Areas, Volume 2, Chapter 7," provides recommended colors for ski areas. Final designs would be reviewed and approved by a Forest Service landscape architect.

Table A-1. Management Requirements
VI 4: Mt. Rose Ski Tahoe will coordinate with NDOT and the HTNF regarding the design and construction of the skier bridge over the Mt. Rose Highway. This includes, but is not limited to, following NDOT's policies and procedures: ▪ Provide a minimum of 3% of the costs of construction towards aesthetics. Costs may be higher to ensure aesthetics of the bridge fit into the forested setting, consistent with HTNF guidelines). ▪ Provide three concepts prepared by a Nevada-licensed landscape architect for NDOT LA section to review and choose a preferred alternative, which would then be incorporated into the permit for further review by all NDOT reviewers and then construction. ▪ Provide additional mitigation above and beyond the 3% for the removal of every tree over a 4 inches diameter. This would be a 2:1 caliper inch replacement either in trees, if there is sufficient room for their 80% mature size, and their establishment *or* the value of those replacement trees added back into the 3% for aesthetic treatment. ▪ Paint or stain of all structural components, including a desert varnish stain of poles, etc. would be required and is not a part of the 3%. ▪ Revegetation per NDOT requirements for all disturbed areas, including staging, etc. are not a part of the 3%.
VI 5: Use the Forest Service's BEIG to guide the design of the skier bridge over the Mt. Rose Highway. Final designs of bridge will be developed with, and approved by, a Forest Service landscape architect.
VI 6: To reduce visual impacts associated with the Atoma Chairlift outside of the ski season, Mt. Rose Ski Tahoe will be required to: ▪ Remove individual chairs that would otherwise hang over the Mt. Rose Highway.
CULTURAL RESOURCES (CU) (FEIS SECTION 3.6)
CU 1: If previously unidentified cultural resources are found, work will be halted immediately within a minimum of 300 feet from the discovery and Forest Service archaeologists will be notified to determine protective measures. Site-specific surveys have been conducted. If undocumented historic and/or prehistoric properties are located during ground disturbing activities or planning activities associated with approved construction activities, they will be treated as specified in 36 CFR § 800.11 concerning Properties Discovered During Implementation of an Undertaking.
BOTANY (BO) (FEIS SECTION 3.7)
BO 1: A revegetation plan will be prepared to address soils, plants, to restore project related ground disturbance. The revegetation plan will be developed in coordination with the HTNF, and will include, at a minimum, appropriate revegetation options, seed mixes and goals for establishing success of revegetation or desirable species.
BO 2: Revegetation activities such as seeding, mulching, wood chips, organic matter, will be completed immediately upon trail construction and grading to minimize impacts to soils and water resources.
BO 3: To protect Shevock's bristle-moss, granitic rocks 5 feet and taller will be avoided during implementation. A qualified botanist (experience with identification of mosses) will survey the site to determine presence or absence of this species.
BO 4: Based on potential habitat present within the project area, an additional plant survey for Galena Creek rockcress (*Boechera rigidissima* var. *demota*) and/or Washoe tall rockcress (*Boechera rectissima* var. *simulans*) shall be performed prior to commencement of construction for the Atoma Area and the water tank area. If either species is detected, individual plants will be flagged and where possible excluded from project activities. For a large group of plants, the perimeter of the population will be determined and flagged to exclude project activities. For both individual and groups of plants, a 50-foot buffer will be applied to maintain rare plant habitat by excluding project activities. The buffer width will be adjusted to fit the configuration of rare plant habitat with respect to topography and the vegetation present at the specific site, as determined by the district botanist.
BO 5: To minimize impacts to *Botrychium*, surveys will be conducted annually during the appropriate blooming period until project implementation. If *Botrychium* is detected, individual plants shall be flagged and avoided during project activities.
BO 6: Prune whitebark pine to remove blister rust, where appropriate.

Table A-1. Management Requirements
BO 7: Plant whitebark pine seedlings to restore and/or regenerate whitebark pine (with locally adapted seed from rust resistant collection areas) where they have been reduced by direct removal, natural and anthropogenic agents, as identified by the Forest Service. Trees infected by pine beetle (or other notable infection) shall be identified concurrently with marking of the trees slated for removal associated with the proposed ski trails and lift line in coordination with the Regional Entomologists. The infected trees shall be removed at the same time as the removal of the trees for the project. Mt. Rose Ski Tahoe will be responsible for this mitigation.
BO 8: Vehicle Wash Station – ground disturbing vehicles and equipment shall be washed prior to entering the project area to remove any invasive species that may be attached to the vehicle or equipment.
BO 9: Any new infestations of noxious weeds that are discovered during implementation will be documented and reported to the Forest Service. Post construction treatment and surveys shall be required to ensure eradication measures are effective.
BO 10: In order to preserve the genetic diversity of the whitebark pine and western white pine in the area, "plus trees" will be left in place where possible (generally between trails) during construction in the Atoma Area. Five needle pines in the area (whitebark pine and western white pine) will be retained wherever possible.
NOXIOUS WEEDS (NW) (FEIS SECTION 3.7)
NW 1: The project area will be surveyed and treated annually post-implementation to initiate early and rapid response to any new noxious or invasive weed infestations that occur following project activities.
NW 2: Before entering the project area, all equipment will be cleaned with a high-pressure power washer of all mud, dirt, and plant parts. Following cleaning, equipment will be inspected for plant parts (e.g., leaves, stems, seeds). Equipment will be cleaned and inspected again prior to re-entry if it leaves the project site. Equipment will be inspected and cleaned again before moving from an area within the project area with known noxious weed species (currently cheatgrass). Inspections will be completed and documented by qualified personnel.
NW 3: All gravel and/or fill material will be certified as weed-free.
NW 4: All seed mixes will be certified as weed-free.
NW 5: For chairlift and trail construction in the Atoma Area, the Atoma Building has been identified as the main staging area for equipment. This area will be re-inspected by qualified personnel prior to commencement of construction for pre-approved use to reduce the risk of introducing noxious weeds into the project area.
NW 6: When invasive plants are grubbed or manually removed, methods that prevent seed spread or re-sprouting will be used. If flowers or seeds are present, the weed will be pulled carefully to prevent seeds from falling and will be placed in an appropriate container for disposal. If flowers and seed heads are not present or are removed and disposed of as described above, the invasive plant may be pulled and placed on the ground to dry out.
NW 7: Fill from re-contouring the Atoma building parking area could be a potential source of weeds if they are determined to be present during re-inspection. This area will need to be monitored during and after project implementation.
FOREST HEALTH, INSECTS AND DISEASE (FH) (FEIS SECTION 3.8)
FH 1: Mt. Rose Ski Tahoe will work with the Forest Service to create and implement vegetation prescriptions for removal of trees and slash to minimize the spread of insects and disease in the Atoma Area.
FH 2: All trees measuring 8 inches dbh or greater that need to be removed shall be identified and marked by the Forest Service prior to felling.
FH 3: In order to allow for tree management for the Atoma Area, no fuelwood or Christmas tree cutting permits will be issued in Atoma Area.
FH 4: All whitebark pine trees, regardless of size, shall be identified and marked by the Forest Service prior to felling.
FH 5: "Plus trees" will be identified and left in place where possible (generally between trails) during construction in the Atoma Area.
FH 6: To reduce the build-up or residual tree mortality by pine engraver beetles (*Ips pini*), and reduce fuel loading the following measures shall occur: Live trees identified for removal will only be cut and removed between August 1 and December 31, to minimize spread of insects. Whole trees shall be removed (after proper permitting) to established

Table A-1. Management Requirements
log landings and slash and logs will be hauled off of NFS land for disposal within six weeks of cutting. Any incidental breakage from whole tree yarding that is 3 inches diameter or greater shall be lopped and scattered within 18 inches of the ground in open areas.
WILDLIFE AND SENSITIVE SPECIES (WL) (FEIS SECTION 3.9)
WL 1: To maintain prey habitat, where available and when applicable in light of hazard tree removal, snags greater than 20 inches dbh and snags of any size that have cavities or other evidence of wildlife use will be retained throughout the project area.
WL 2: Large woody debris will be retained, at least three pieces per acre, greater than 12 inches dbh or the largest available, where possible.
WL 3: No trees greater than 24 inches dbh will be removed outside the proposed ski trails, chairlift and water tank areas.
WL 4: To protect the breeding period for wildlife species, project activities will not occur from April 15th through August 1st in riparian and aspen areas to minimize the disturbance to migratory birds, mountain quail, and other wildlife species.
WL 5: To minimize disturbance to nesting birds in non-riparian areas from construction operations associated with the Atoma Area (between April 15 and August 1), surveys will be conducted no more than one week prior to construction activities to identify active nest sites. If an active nest is located, it will be flagged and avoided.
WL 6 (flammulated owl): Surveys for flammulated owls will be conducted prior to implementation to identify the specific nest trees. Once identified, a 2-acre Protective Activity Center (PAC) will be delineated around each flammulated owl nest site.
WL 7 (flammulated owl): Within the 2-acre PAC there will be no construction activities between April 1 and October 30 to correspond with the migration period for flammulated owls. The only exception will include areas where the chairlift alignment overlaps with the 2-acre protected area. In this area, chairlift tower construction may occur after July 30th. This exception allows lift tower placement to occur when soils are not frozen while still avoiding the critical nesting period for flammulated owls.
WL 8 (flammulated owl): To protect flammulated owls post-implementation, future hazardous trees identified for removal that have cavities or other wildlife habitat characteristics, will be inspected by a biologist no more than a month prior to removal. If flammulated owls are detected, felling will not occur between April 1 and October 30, to coincide with the migratory period for this species.
WL 9 (flammulated owl): To monitor future nesting activity, Mt. Rose Ski Tahoe will fund annual monitoring for flammulated owls by the Forest Service in the Atoma Area as well as within suitable habitat areas within 1 mile of the Atoma Area for a minimum of five years following construction.
WL 10 (flammulated owl): To compensate for the removal of 12 acres of nesting and foraging habitat within the Atoma Area, the Forest Service will identify habitat improvement for flammulated owls at a ratio of 2:1, or approximately 24 acres, within 10 miles of the project area. Habitat improvements may include such activities as thinning overly dense vegetation, installing nest boxes, or snag creation. Mt. Rose Ski Tahoe will be responsible for this mitigation.
WATER RESOURCES, WETLANDS, AND SOIL (WA) (FEIS SECTION 3.10)
WA 1: Develop a restoration plan for areas that are graded to prevent soil loss and improve revegetation success. Grading plans will include stockpiling top soils. To maintain long-term soil stability and productivity, a site-specific restoration plan will be developed and implemented to reestablish native vegetation on graded trails. Restoration activities may include chipping, seeding, and mulching techniques. All seed mixes will be approved by a Forest Service botanist.
WA 2: Fence and avoid the Pine Ridge spring water source during construction to prevent any impacts to the water system. Additionally, the existing vegetative buffer between the proposed development and the water source is to be retained.
WA 3: Existing roads will be used for construction and routine maintenance of the proposed project components.
WA 4: Prior to any grading adjacent to the NDOT right-of-way, a Drainage Report, including a grading plan, and a Drainage Form must be submitted to the Permit office (NDOT) for approval.

Table A-1. Management Requirements
WA 5: Rehabilitation of disturbed areas will include installation of appropriate drainage features (such as machine tilling, erosion control matting, mulch, and revegetation) as well as rebuilding top soils with the addition of stockpiled soil organic matter and/or specific soil amendments that create a stable, plant supporting, erosion resistant soil matrix. To maintain long-term soil stability and productivity, native vegetation will be reestablished on graded trails. Seed mixes will be approved by a Forest Service botanist. Monitoring revegetation will occur for at least five years.
WA 6: Stumps will be retained where possible and will be ground down to maintain soil integrity and provide for organic matter as the stump decays.
WA 7: Remove rock by hand or mechanical where appropriate.
WA 8: Use site-specific or spot grading to minimize overall ground disturbance.
WA 9: Within wetlands, mowing will be accomplished over the snow when at least 2 feet of snow is present, or by using hand tools and will be minimized to the fewest number of times necessary, generally every other year (as decided by the ski area operator and included in the Mountain Operations Plan) to maintain wetland vegetation as skiable terrain (shrubs will remain between approximately 2 and 3 feet tall).
WA 10: To minimize potential impacts to vegetation from skiing and grooming activities, maintenance, and operations over wetlands in the Atoma Area—on proposed Trails A, C, D, 3, 4, and 5—will be restricted until 2 feet of snow is established on these trails. This will be included in the Mountain Operations Plan.
WA 11: Rehabilitate soils through de-compaction, application of mulch to the top 12 inches of soil and the soil surface and re-spreading of top soils where available.
WA 12: Rehabilitate disturbed areas after tree removal and snowmaking line installation is complete through de-compaction, application of mulch to the top 12 inches of soil and the soil surface and re-spreading of top soils where available.
WA 13: Develop an erosion and sediment control plan. Transport of sediment from disturbed areas shall be minimized by straw bales or wattles, avoiding construction altogether during undesirable runoff periods, or other appropriate drainage management measure. Include stockpile, fuel, and staging areas used during construction.
WA 14: Prior to any construction, wetlands will be flagged to ensure impacts are avoided. No snowmaking water lines will be installed within wetlands.
WA 15: The water pipeline for snowmaking will be installed in the same construction season or at the same timeframe as trails will be graded to minimize ground disturbance.
WA 16: No grading will occur directly adjacent to stream channels under the Proposed Action.
WA 17: The chairlift will be designed to span wetlands.
WA 18: Limit surface disturbance to the extent practicable while still achieving project objectives. Limit the amount of exposed soil at any one time to the minimum necessary to complete construction practices.
WA 19: Limit operation of equipment when ground conditions could result in excessive rutting or runoff of sediments direction into waterbodies.
WA 20: Avoid or manage steep sloped areas to minimize instability problems and reduce erosion and sedimentation.
WA 21: Maintain the natural drainage pattern of an area wherever practicable.
WA 22: Routinely inspect construction sites to verify that erosion and stormwater controls are implemented and functioning as designed and are appropriately maintained.

Appendix B.
Traffic Analysis

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Appendix C.
Commenters and Comment Letters on the Draft Environmental Impact Statement

Comment letters on the Draft Environmental Impact Statement were provided by the agencies, organizations, and individuals listed in Table C-1. Letters containing substantive comments are provided as part of this appendix.

Table C-1. Commenters on the Draft Environmental Impact Statement

Comment Letter #	Commenter Name	Organization, if applicable
1	Claire Ashkin	
2	Bill Baringer	
3	Joel Bellin	
4	Lori Bellis	
5	Dick Benoit	Friends of Mt. Rose
6	Bill O'Brien	
7	Jeff Bleam	
8	Lynn Bowering	
9	William Boyer	
10	Faith Bremner	
11	Patricia Brown	
12	Debbie Bulger	
13	Marion Burrowes	
14	Shirley Cabo	
15	Manuel Calderon de la Barca	
16	Sue Gilbert	Nevada Division of Water Resources
17	Lisa Kremer	Nevada Division of Environmental Protection, Bureau of Air Pollution Control
18		Nevada Division of Environmental Protection, Bureau of Water Pollution Control
19	Rebecca Lynn Palmer	Nevada State Historic Preservation Office
20	Carl Heard	
21	Elaine Carrick	
22	Robin Chaffey	
23	Charles Albright	
24	Patricia Charles	
25	Jeffrey Dean	

Table C-1. Commenters on the Draft Environmental Impact Statement		
Comment Letter #	Commenter Name	Organization, if applicable
26	Edie & Denny Lott	
27	Daryl Di Rocco	
28	Julie Dudley	
29	Gail Ferrell	Snowlands Network
30	Frank Forsgren	
31	Kevin Fredericks	
32	Linda Frost	
33	Jamie Gehrman Selby	
34	Dennis Ghiglieri	
35	Alice Grulich-Jones	
36	Corey Hanson	
37	Andrew Hervey	
38	Dan Belanger	
39	Kevin Joell	
40	Dylan Kuhn	
41	Nancyann Leeder	
42	Meg Lent	
43	Marcus Libkind	
44	Marcy Lienau	
45	Cliff Low	
46	Loretta Low	
47	Judy Luce	
48	Eric Martin	
49	Chris Macintosh	
50	Anne Macquarie	
51	Julin Maloof	
52	Kathleen Martyn Goforth	Environmental Protection Agency, Environmental Review Office, Region IX
53	Chris Miles	
54	Peter Millar	
55	William Mitchell and Sarah Corner	
56	Donald Molde	
57	Richard Morissette	

Table C-1. Commenters on the Draft Environmental Impact Statement		
Comment Letter #	Commenter Name	Organization, if applicable
58	Pierre and Ethnea Mousset-Jones	
59	Tina Nappe	
60	Kathryn Sosbe	
61	Lucy O'Brien	
62	Karl Olsen	
63	Bill Peppin	
64	Bill Peppin	
65	Jae Pullen	Nevada Department of Transportation
66	Alan Queiroz	
67	Bill Rolshoven	
68	Bob Rowen	
69	Loren Rupp	
70	Patricia Sakelaris	
71	David Schneider	
72	Jane Schwenk	
73	Thomas Schwenk	
74	Melanie Scott	
75	David von Seggern	
76	Michael Selby	
77	Mike Selby	Pine Ridge Water Company
78	Susan Slagter	
79	Courtney Smith	
80	Peter Snow	
81	Juan Sparhawk	
82	Peter Stanton	
83	Tom Stille	
84	Rose Strickland	
85	David von Seggern and Rose Strickland	Toiyabe Chapter of the Sierra Club
86	Tom Sullivan	
87	Jeanne Tribble	
88	Eric Valentino	
89	Curtis Johnson	Biggest Little Trail Stewardship, Inc.

Table C-1. Commenters on the Draft Environmental Impact Statement		
Comment Letter #	Commenter Name	Organization, if applicable
90	Steven Weiss	
91	Howard Whitaker	
92	Karen Zito	

Date submitted (Pacific Standard Time): 3/29/2018 4:01:30 PM
First name: Claire
Last name: Ashkin

Comments:
United States Forest Service :
As resident of Reno, I treasure the possibilities offered by the proximity of the forest lands nearby. I would like to see the amenities preserved for all to enjoy. I therefore welcome and support the proposed amendment to restrict future commercial development on the 3,446 acres of the Galena lands in the Carson Range. I also support the USFS preferred alternaative #3 which would best protect public safety reduce environmental impact on the Atoma site. It is very important to implement and support public access and recreation areas in both the the Galena and Atoma sites.
I am a very old women with many happy memories of outdoor activities in this region. I would like to think that we can conserve and even enlarge the experiences for others.

Date submitted (Pacific Standard Time): 4/17/2018 6:30:58 PM
First name: Bill
Last name: Baringer

Comments:
Proposed development for Mt. Rose area

Dear Madam/Sir,

I am very concerned about the proposed development for the Mt. Rose area.

I support Alternative 1, the No-Action alternative, as this area should remain free and clear of any expansion of the ski resort.

The north side of Mt Rose should be kept free of commercial development; there should be no further area dedicated to the existing downhill ski area, nor any additional chair lifts.

Please preserve this area for non-motorized, dispersed, backcountry recreation.

Thank you,

--
William Baringer

Date submitted (Pacific Standard Time): 4/16/2018 8:52:01 PM
First name: Joel
Last name: Bellin

Phone:
Comments:
I support the proposed Mt Rose Atoma area expansion.

Date submitted (Pacific Standard Time): 4/12/2018 8:59:25 AM
First name: Lori
Last name: Bellis

Comments:
I strongly support the Forest Plan amendment to preclude commercial development on the remaining undeveloped areas (approximately 3,200 acres) within the 3,446 acres acquired through the 1994 Galena Resort Land Exchange.

I support Alternative 3.

The skier bridge and chairlift over the highway need to align for public safety. This is a 'beginner' skier chairlift, so the potential for skiers to drop things is higher, which creates a roadway and personal safety hazard. Beginner skiers are also more nervous about what's under them, so may not want to ride a chairlift that goes over an open highway, which then diminishes the use in the new Atoma area and reduces the need for this project. Having a second chairlift in the beginner area allows skiers to stay on the Atoma side of the highway until they are ready to back to the main lodge and parking area.

The Atoma area should remain open for non-motorized recreation activities in winter and summer. Cross-country and back-country skiers should have access to this area for free unless they plan on using the lifts.

I appreciate that Mt. Rose Ski area allows access and free parking in their main parking lot year-around and would like to see that continue.

Date submitted (Pacific Standard Time): 2/7/2018 11:22:01 AM
First name: Dick
Last name: Benoit

Comments:
Friends of Mount Rose Comments on Atoma DEIS

Dear Sirs:
Please find attached a word version of the comments the Friends of Mount Rose is submitting to the U S. Forest Service on the Atoma Draft EIS.

Dick Benoit
President-Friends of Mount Rose

[Comment Letter 5]

FRIENDS OF MOUNT ROSE PO Box 8409
Reno, NV 89507

February 7, 2018
Humboldt-Toiyabe National Forest
1200 Franklin Way
Sparks, NV 89431 via: comments-intermtn-humboldt-toiyabe-carson@fs.fed.us

RE: **Mt. Rose Ski Tahoe Atoma Area Expansion Draft Environmental Impact Statement (DEIS)**

On behalf of the Friends of Mt Rose, we are pleased that both action Alternatives 2 and 3 in the DEIS propose a critically important Forest Plan Amendment to prevent future commercial development on the remaining undeveloped 3,446 acres of National Forest Lands acquired in 1994. We do not necessarily approve of lands that were purchased north of the Mt. Rose Highway to prevent a new real estate development now being utilized for commercial purposes but feel that the prevention of all other future commercial development is an acceptable tradeoff. We do not support Alternative 1, no action, which would not provide for this Forest Plan Amendment.

The 11 1/2 year-long effort to protect the area from the 1980s ski-condominium-casino resort culminated in 1994 with the transfer of 3,700 acres of private Redfield land to the US Forest Service. The Friends of Mt Rose, along with many community organizations and citizens supported the public acquisition of nearly 3,700 acres of undeveloped land. As you saw in the DVD that recorded the celebration on the mountain in 1994, the intent of the acquisition of the former Redfield lands was to end the proposed Galena Resort ski development and to preserve forever these lands for public access and dispersed recreational use.

This acquisition effort included then Nevada Senator Richard Bryan, the former land owners and resort developers, the American Land Conservancy who worked tirelessly to complete the transfer, US Forest Service and Bureau of Land Management leaders and staff, local government, and many organizations and citizens. The 3,700 acres were acquired with $27,000,000 from the sale of public lands in southern Nevada, demonstrating the acquisition of the Galena lands was of high public statewide interest.

On a part of the acquired lands there is an existing Special Use Permit (SUP) for the Chutes (131 acres) and the Atoma development as proposed will utilize an additional 113 acres of the acquired lands. Therefore, it is important that the USFS acknowledge the rationale for the public acquisition and the promises of protection made to the public who supported the transfer 23 years ago. With this background, we emphasize that the classification of the remaining 3,446 acres in DEIS's proposed Forest Plan Amendment is a long overdue action by the USFS.

We are pleased the Mt Rose Ski Tahoe and the Forest Service will maintain the traditional summer dispersed recreation and backcountry or cross country ski access. We are also pleased to see the decision to provide winter dispersed recreation by reserving 6 parking spaces at the resort and access over the skier bridge and travel around the developed Atoma area. We prefer Alternative 3 and support the change from an open impoundment to a large water tank to support snow-making and the restroom facility.

The USFS and Mt Rose Ski Tahoe have done a credible job in this DEIS and especially the proposed plan amendment. Thank you for considering our comments.

Sincerely,

Dick Benoit, President

FRIENDS OF MOUNT ROSE PO Box 8409
Reno, NV 89507

February 7, 2018
Humboldt-Toiyabe National Forest
1200 Franklin Way
Sparks, NV 89431 via: comments-intermtn-humboldt-toiyabe-carson@fs.fed.us

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On a part of the acquired lands there is an existing Special Use Permit (SUP) for the Chutes (131 acres) and the Atoma development as proposed will utilize an additional 113 acres of the acquired lands. Therefore, it is important that the USFS acknowledge the rationale for the public acquisition and the promises of protection made to the public who supported the transfer 23 years ago. With this background, we emphasize that the classification of the remaining 3,446 acres in DEIS's proposed Forest Plan Amendment is a long overdue action by the USFS.

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The USFS and Mt Rose Ski Tahoe have done a credible job in this DEIS and especially the proposed plan amendment. Thank you for considering our comments.

Sincerely,

Dick Benoit, President

Date submitted (Pacific Standard Time): 4/19/2018 9:38:03 AM
First name: O'Brien
Last name: Bill

Comments:
No to Mt. Rose Ski Tahoe Expansion

To whom it may concern,

I'm writing to express my opposition to the proposed expansion of the Mt. Rose Ski area into the Atoma area. I am in support of Alternative #1, the no-action alternative. Please do not allow further expansion into public land.

Thank you,

-Bill O'Brien
Reno Resident.

Date submitted (Pacific Standard Time): 4/5/2018 8:27:18 AM
First name: Jeff
Last name: Bleam

Comments:
First I would like to thank the US Forest Service (USFS) for the draft Mt. Rose EIS and support the proposed amendment to the Forest Plan to restrict all future commercial development on 3,446 acres of acquired Galena lands in the Carson Range. I support the USFS preferred Alternative #3, which best protects public safety and reduces environmental impacts to the Atoma site.
I also strongly support all proposed actions to maintain public access to and dispersed recreation uses, both winter and summer, of the 3,446 acres of acquired Galena lands as well as to the Atoma expansion site.

These lands are very important to me as an wildlife photographer in that the protection of habitat is arguably the most important factor in maintaining boidiversification. Also, having access to this area will allow me to continue documenting the species in the area.

Date submitted (Pacific Standard Time): 4/19/2018 12:47:41 PM
First name: Lynn
Last name: Bowering

Comments:
While I fully support the Forest Plan amendment to preclude commercial development on the remaining 3,446 acres acquired through the 1994 Galena Resort Land Exchange, I am extremely disappointed the protection of this land is being offered as a condition of supporting the Atoma Expansion at the Mt Rose Ski Area.

I ski through this area to access skiing in the Galena Creek drainage and beyond. It is imperative that unrestricted public access is permanently guaranteed to the general public regardless of the choices made by paying guests.

Date submitted (Pacific Standard Time): 4/16/2018 5:35:36 PM
First name: william
Last name: boyer

Comments:
Mt Rose Ski Tahoe - Atoma Area Project

Hi, just wanted to voice my support of the Atoma Area Project at Mt Rose Ski Area. I think that the project should be allowed to move forward, and that it is a nice use of underutilized land. However, I would like to see the area continue to have public access allowed, with proper uphill/downhill right of ways, etc.

Thank You

-Will Boyer

Date submitted (Pacific Standard Time): 4/15/2018 5:11:47 PM
First name: Faith
Last name: Bremner

Comments:
Draft Mt. Rose EIS

I strongly support the proposed amendment to the Forest Plan to prohibit future commercial development on 3,446 acres of NFS land acquired through the 1994 Galena Resort Land Exchange, except for the Atoma Area and the Chutes. The Reno-Sparks community, along with the state's congressional delegation, fought long and hard in the 1980s and 1990s to protect this land and preserve it for passive recreation and wildlife. I want future generations, including my nieces and their little ones, to enjoy Mt. Rose the way I did when I was young, growing up in Reno. It's such a special place. Please keep it that way.

Also, please adopt Alternative 3 as outlined in the draft EIS. This alternative does the best job of protecting public safety and reducing environmental impacts to the Atoma site.

Thank you

Faith Bremner
Falls Church, VA

Date submitted (Pacific Standard Time): 4/13/2018 5:28:04 PM
First name: Patricia
Last name: Brown

Comments:
Comments for Draft Mt. Rose EIS

April 13, 2018

Tricia Brown
Reno, NV 89503

William Dunkelberger, Supervisor

Humboldt-Toiyabe National Forest

1400 Franklin Way

Sparks, NV 89431

Dear Mr. Dunkelberger,

I am writing in strong support of the proposed amendment to the Forest Service plan to restrict all future commercial development on the 3,446 acres of acquired Galena lands in the Carson Range. I support the USFS preferred alternative #3.

I have been a member of Friends of Mt. Rose since our first meeting in 1983. I am thankful that the citizens of Nevada have been able to experience the beauty of this area all these years. I have hiked and skied there since I moved to Reno in 1975 and hope to continue to enjoy Mt. Rose in it's natural beauty.

Thank you for taking the time to consider my concerns.

Tricia Brown

Date submitted (Pacific Standard Time): 4/16/2018 8:21:32 PM
First name: Debbie
Last name: Bulger

Comments:
Mt. Rose Ski Tahoe Expansion

RE: Mt Rose Ski Tahoe Expansion

Please note that I support the NO ACTION alternative.
There should not be any commercial development on the north side of the Mt. Rose Highway.

With the lack of snow this year and increasingly warming weather due to Climate Change, it is
not an appropriate use of public land to expand this ski resort.

The visual impact of chair lifts and other ski infrastructure would be gross and intrusive.
The area north of the highway should be preserved for non-motorized, backcountry recreation.

Debbie Bulger
Santa Cruz, CA

Date submitted (Pacific Standard Time): 4/16/2018 3:56:25 PM
First name: Marion
Last name: Burrowes

Comments:
Mt Rose Ski Tahoe - Atoma Area Project

I support Alternative 1 - No Action. The north side of the Mt Rose Highway should be kept free of commercial development, including a ski area.

Sent from my iPhone

Date submitted (Pacific Standard Time): 4/1/2018 3:17:18 PM
First name: Shirley
Last name: Cabo

Comments:
Restrict all future comercial development on 3446 areas of acquired Galena lands in Carson Range.

Date submitted (Pacific Standard Time): 4/18/2018 1:50:48 PM
First name: Manuel
Last name: Calderon de la Barca

Comments:
Dear Forest Service,
I support the No-Action alternative, i.e. Alternative 1. I am a backcountry skiing enthusiast, and would favor keeping this area preserved for non-motorized backcountry recreation.
If the ski area expansion is allowed, I support implementing the following measures to reduce the impact on backcountry recreation:
Prohibit any further commercial development of the Atoma Area north of the Mt Rose Highway.
Require public access to the Atoma Area by the non-paying public, including parking in the ski resort parking lot, access over the ski bridge, use of any restrooms on public land, and designated uphill and downhill routes through the Atoma Area resort area.
Require continued public access to any national forest land being used as a commercial ski area.
Sincerely,
Manuel Calderon de la Barca.

E2018-108 (DEIS - Mt. Rose Ski Tahoe Atoma Area Expansion Project - Washoe County)

DATE: January 26, 2018
Division of Water Resources – Sue Gilbert

_____No comment on this project _____X____Proposal supported as written

AGENCY COMMENTS:
General:

All waters of the State belong to the public and may be appropriated for beneficial use pursuant to the provisions of Nevada Revised Statutes (NRS) Chapters 533 and 534 and not otherwise.
Water for Construction Projects
Ensure that any water used on this project is provided by an established utility or under permit or waiver issued by the State Engineer's Office with a manner of use acceptable for suggested projects water needs.

E2018-108 (DEIS - Mt. Rose Ski Tahoe Atoma Area Expansion Project - Washoe County)

My only suggestion for this would be to make sure that they contact Washoe County Department of Air Quality regarding this proposed project since we do not have jurisdiction but they do. Their contact information can be found at https://www.washoecounty.us/health/programs-and-services/air-quality/index.php.

Thanks, Lisa

Lisa Kremer, P.E.
Chief, Bureau of Air Pollution Control
Nevada Division of Environmental Protection
901 South Stewart Street, Suite 4001
Carson City, NV 89701
p: 775.687.9336
lkremer@ndep.nv.gov
www.ndep.nv.gov

[Comment Letter 18]

DATE: 1/30/2018

TO: Nevada State Clearinghouse, DCNR

FROM: Nevada Division of Environmental Protection, Bureau of Water Pollution Control

SUBJECT: State Clearinghouse Comments for E2018-108 (DEIS – Mt. Rose Ski Tahoe Atoma Area Expansion Project – Washoe County)

Disclaimer: The Nevada Division of Environmental Protection (NDEP), Bureau of Water Pollution Control (BWPC) does not have authority for projects occurring on Tribal Lands.

The NDEP, BWPC has received the aforementioned State Clearinghouse item and offers the following comments:

The project may be subject to BWPC permitting. Permits are required for discharges to surface waters and groundwaters of the State (Nevada Administrative Code NAC 445A.228). BWPC permits include, but are not limited to, the following:

- Stormwater Industrial General Permit
- De Minimis Discharge General Permit
- Pesticide General Permit
- Drainage Well General Permit
- Temporary Permit for Discharges to Groundwater's of the State
- Working in Waters Permit
- Wastewater Discharge Permits
- Underground Injection Control Permits
- Onsite Sewage Disposal System Permits
- Holding Tank Permits

Please note that discharge permits must be issued from this Division before construction of any treatment works (Nevada Revised Statute 445A.585).

For more information on BWPC Permitting, please visit our website at: https://ndep.nv.gov/water/water-pollution-control/permitting .

Additionally, the applicant is responsible for all other permits that may be required, which may include, but may not be limited to:

- Dam Safety Permits - Division of Water Resources
- Well Permits - NDEP
- 401 Water Quality Certification - U.S. Army Corps of Engineers
- 404 Permits - Local Health or State Health Division
- Air Permits - Local Government
- Health Permits
- Local Permits

Thank you for the information and the opportunity to comment.

USDA United States Department of Agriculture
Forest Service
Humboldt-Toiyabe National Forest
1200 Franklin Way
Sparks, NV 89431
775-331-6444

2016-4104

[Comment Letter 19]

#21063

File Code: 2360
Date: NOV 09 2015

RECEIVED
NOV 13 2015
STATE HISTORIC PRESERVATION OFFICE

Ms. Rebecca Palmer
State Historic Preservation Officer
Department of Conservation and Natural Resources
901 South Stewart Street Ste. 5004
Carson City, NV 89701

Dear Ms. Palmer:

Enclosed for your review is the "Mt. Rose Ski Tahoe Atoma" report (R2014041702432) prepared for the Humboldt Toiyabe National Forest (HTNF) Carson City Ranger District by Susan Lindstrom, Consulting Archaeologist. As part of the 2010 Mt. Rose Ski Tahoe Master Plan, the project sponsor (Mt. Rose Ski Tahoe) is proposing to develop a 112-acre parcel of National Forest System (NSF) lands located across State Route 431 from the main base facility. Plans include a new intermediate ski "pod" (i.e., a new chairlift and associated trails) accessed by a skier bridge over the highway.

This report presents the results of the effort to consult, identify and evaluate historic resources, and avoid adverse effects to heritage properties following 36CFR regulations. Archaeological field work was carried out in three phases. An initial reconnaissance of the Atoma Pod was conducted in July 2011, at which time the project area was inspected using a mixed survey strategy and resources were briefly described and mapped. A supplemental survey was performed in August 2011, with the addition of proposed water tank area in August 2011. This work was followed in 2014 by a more intensive examination of selected areas within the project area and full recordation of all heritage resources. Combined, the three phases are considered to be a Class III intensive field survey.

Archival research and field survey disclosed nine archaeological sites or site complexes and four isolated finds: the Old Mt. Rose Highway linear complex (WA-8383/04170104445) with five branching roads (26WA8383/04170104445-1 through 5); a 19th-century wood camp (26WA-3250/04170104359), four arborglyph sites (26WA-3249/04170104358, 26WA9875/04170104008, WA-9876/04170104009, and WA-9877/04170114010); a 19th-century debris scatter and prehistoric lithic scatter (26WA-9879/04170114012); a prehistoric lithic scatter and 20th-century historic debris scatter (26WA-9880/04170114013); a downed and abandoned utility (telephone) line (26WA-9878/04170114011); and four isolates, to include two projectile points (MRA-IF-1 and IF-2), a single arborglyph (MRA-IF-3), and a rock cairn (MRA IF-4).

With the exception of two unevaluated heritage properties (WA-3250/04170104359 and WA-9879/04170114012), all other resources inventoried within the project APE are recommended ineligible for listing in the National Register (WA-3249/04170104358, WA-8383/04170104445, WA-9875/04170114008,WA-9876/04170114009, WA-9877/04170114010, WA-9878/04170114011, WA-9880/04170114013). Although these ineligible resources may be directly

or indirectly impacted by the project, a finding of "no adverse effect to historic properties" is recommended due to their ineligibility.

WA-9879/04170114012 and WA-3250/04170114359 are left unevaluated for listing on the NRHP and a finding of "no effect to historic properties" is recommended with the following conditions: The project sponsor will be required to avoid these two unevaluated resources. Design criteria will be added stating that the sites will be avoided in the field. The sites will be fenced prior to construction and a qualified archaeologist will be in the field when any construction occurs within or near the two areas. No indirect impacts to site setting will occur, as the immediate surroundings will remain an open and gladed forest environment with no modern intrusions. Although the project may introduce increased public access into the general area, the low profile and low visibility of surface manifestations at both sites serves to conceal them from public view, as well, the use of the area is during ski season, and they will be snow covered.

Consultation with the Washoe tribe, including site visits, was initiated during the scoping phase of the project starting in 2011. Regular contact as the project advanced has been maintained, and the consultation is ongoing which includes meetings and site visits

If undocumented historic and/or prehistoric properties are located, project activities will cease in the area of the find and the project sponsor should consult a qualified archaeologist for recommended procedures.

We ask for your concurrence of NRHP eligibility determinations, and comment on avoidance measures proposed for sites WA-9879/4170114012 and WA-3250/4170104359. If you have any questions, please contact Kalie Crews 775-884-8108 at kcrews@fs.fed.us, or Alyce Branigan 775-352-1255 at aabranigan@fs.fed.us.

Sincerely,

WILLIAM DUNKELBERGER
Forest Supervisor

cc: Tim Marshall, Marnie Bonesteel

Enclosures

Corrections were made by the USFS for FS site numbers in Report R2014041702432. Maps within the reports were inserted as .jpegs and could only be hand corrected in the hard copies. Electronic copies could not be changed. GIS shapefiles were received as points, lines and polygons. Points and lines were buffered to five meters. The following two tables provide corrected FS site number information.

Previously Documented Heritage Resources Within the Project APE

State No/FS No.	*Description/Correction*	*Other IDs*
26WA3249/ 4170104358	Basque arborglyphs (130 trees, most with multiple carvings)/Photographs for this site form are labeled 26WA9878 in Volume 2. Hand corrections were made in the report. The electronic copy and the GIS were corrected.	--
26WA3250/ 4170104359	Cabin foundation, hearth, artifact scatter (19th century) Wood Camp/this number is correct throughout.	--
26WA8383/ 4170104445	Old Mt. Rose Highway/This site number has been hyphenated throughout report to differentiate branch roads. Number 4170104445 is applied to the road, branches of the road, and features.	USFS-LTBMU 05-19-663

Newly Documented Heritage Resources Within the Project APE

State No/FS No.	*Description/Corrections*
26WA9875/4170114008	Arborglyphs/This number appears as 4170104008 throughout the report. It is hand corrected in the hard copy, the electronic copy has been corrected
26WA9876/4170114009	Arborglyphs/ This number appears as 4170104009 throughout the report. It is hand corrected in the hard copy, the electronic copy has been corrected
26WA9877/4170114010	Arborglyphs/ This number appears as 4170104010 throughout the report. It is hand corrected in the hard copy, the electronic copy has been corrected
26WA9878/4170114011	Abandoned Utility Line/ This number appears as 4170104011 throughout the report. It is hand corrected in the hard copy, the electronic copy has been corrected
26WA9879/4170114012	19th Century Wood Camp /This number appears as 4170104012 throughout the report. It is hand corrected in the hard copy, the electronic copy has been corrected
26WA9980/4170114013	Prehistoric Lithic Scatter-20th century historic debris/ This number appears as 4170104013 throughout the report. It is hand corrected in the hard copy, the electronic copy has been corrected

Date submitted (Pacific Standard Time): 4/19/2018 7:50:55 PM
First name: Heard
Last name: Carl

Phone:
Comments:
Mt rose proposal

I am a resident of Carson amd love the area please accept my support for option 3. I hope the area can be preserved as noncommercial forever

Carl Heard, MD
Carson City NV

Sent from my Verizon, Samsung Galaxy smartphone

Date submitted (Pacific Standard Time): 3/28/2018 10:49:17 AM
First name: Elaine
Last name: Carrick

Comments:
Thank you USFS for your draft to restrict commercial development & to keep public access to these wonderful natural areas. I support your amendment & Alternative #3. I have hiked, skied, & snow shoed on these lands & would like future generations to enjoy our public land as much as I have. Thank you!
Elaine Carrick

Date submitted (Pacific Standard Time): 4/16/2018 7:18:27 PM
First name: Robin
Last name: Chaffey
Organization:
Title:
Official Representative/Member Indicator:
Address1:
Address2:
City:
State:
Province/Region:
Zip/Postal Code:
Country:
Email:
Phone:
Comments:
Proposed Mt. Rose Ski Tahoe Expansion

Please note that I support Alternative 1, the No-Action alternative. The north side of Mt Rose should be kept free of commercial development, including a ski area, chair lifts, and ski runs. Preserve this area for non-motorized, dispersed, backcountry recreation.

If the ski area expansion is allowed, please implement the following measures to mitigate the impact on backcountry recreation:

* Prohibit any further commercial development of the Atoma Area north of the Mt Rose Highway.

* Require public access to the Atoma Area by the non-paying public, including parking in the ski resort parking lot, access over the ski bridge, use of any restrooms on public land, and designated uphill and downhill routes through the Atoma Area resort area.

* Require continued public access to any national forest land being used as a commercial ski area.

Respectfully,

Robin Chaffey
Sparks, NV 89431

Date submitted (Pacific Standard Time): 4/12/2018 10:19:03 PM
First name: Albright
Last name: Charles

Comments:
Mt Rose EIS

I strongly support the proposed EIS for Mt Rose and future development there. Please keep it open to public use and out of developers hands. Thanks.

Charles Albright
Reno, Nevada 89503

Date submitted (Pacific Standard Time): 4/18/2018 5:08:47 PM
First name: Patricia
Last name: Charles

Phone:
Comments:
mt.rose ski area expansion project

I am sending this letter to demonstrate continuing support for saving the Mt. Rose area from future commercial use. I enjoy skiing and hiking on and around Mt. Rose at least twice a week during all seasons of the year.

Regarding the proposed Mt. Rose expansion I strongly support the amendment to the Forest plan to restrict all future commercial development on 3,446 acres of acquired Galena lands in the Carson Range. In order to accomplish this, I support the USFS preferred Alternative #3 as it best protects public safety and reduces environmental impacts to the Atoma site.

Furthermore, I strongly support all proposed actions to maintain public access to and dispersed recreation uses, both winter and summer, of the 3,446 acres of acquired Galena lands as well as to the Atoma expansion site.

Mt. Rose is a treasure in our area. The alternative which best preserves the entire area is Alternative 3 and the proposed amendment to the plan (to restrict all future commercial development on 3,446 acres of acquired Galena lands in the Carson Range).

Thank you for your consideration,
Patricia Charles
Reno, NV 89509

Date submitted (Pacific Standard Time): 4/18/2018 5:57:23 PM
First name: Jeffrey
Last name: Dean

Phone:
Comments:
I am a strong supporter of alternative 3 both for the preserving from future development the vast majority of the public lands purchased in the 80's and to help the viability of the Mt. Rose ski area.

Thank You,
Jeffrey Dean

Date submitted (Pacific Standard Time): 4/16/2018 5:25:30 PM
First name: Edie
Last name: Denny Lott

Comments:
Mt Rose Ski Tahoe - Atoma Area Project

My spouse and I are Truckee residents who frequently cross country ski off the Mt Rose Hightway. It is a stunningly beautiful area that should be spared further development! Is a very high altitude area making it very sensitive to any development. We
support Alternative 1 - No Action. The north side of the Mt Rose Highway should be kept free of commercial development, including a ski area.
? ?Please keep Mt Rose the great place that it is!!
Sincerely,
Edie and Denny Lott
Truckee, CA 96161

Date submitted (Pacific Standard Time): 4/17/2018 8:12:35 AM
First name: Daryl
Last name: Di Rocco

Comments:
I am in favor of the expansion of the resort as proposed by MRST. I am an avid backcountry enthusiast as well as an environmental enthusiast. MRST has proven to be an advocate for respectful use of public forest land and can be trusted to develop this relatively small area in a responsible manner.

-Daryl Di Rocco, M.D.

Date submitted (Pacific Standard Time): 3/30/2018 3:50:38 PM
First name: Julie
Last name: Dudley
Organization:
Title:
Official Representative/Member Indicator:
Address1:
Address2:
City:
State:
Province/Region:
Zip/Postal Code:
Country:
Email:
Phone:
Comments:
Draft Mt. Rose EIS Comments

Dear Mr. Dunkelberger,

As a resident of the Truckee Meadows, I would like to thank the USFS for the draft Mt. Rose EIS and express my strong support for the proposed amendment to the Forest Plan to restrict all future commercial development on 3,446 acres of acquired Galena lands in the Carson Range.

I support the USFS preferred Alternative #3 which best protects public safely and reduces environmental impacts to the Atoma site. I strongly support all proposed actions to maintain public access to and dispersed recreation uses, both winter and summer, of the 3,446 acres of acquired Galena lands as well as to the Atoma expansion site.

Mt. Rose is a treasure to local residents like me. Not only for its scenic beauty, which anyone can view daily from most locations in our valley, but also for recreation purposes - past, present and future.

Thank you for taking the time to read my comments.

Best regards,

Julie Dudley
Reno, NV 89510

Date submitted (Pacific Standard Time): 4/16/2018 5:23:44 PM
First name: Gail
Last name: Ferrell
Organization:
Title:
Official Representative/Member Indicator:
Address1:
Address2:
City:
State:
Province/Region:
Zip/Postal Code:
Country:
Email: gail@snowlands.org
Phone:
Comments:
Mt Rose Ski Tahoe - Atoma Area Project

I support Alternative 1 - No Action. The north side of the Mt Rose Highway should be kept free of commercial development, including a ski area.

However, if the Atoma project is approved, XC-ski access should be allowed as this is an historical area for cross country skiing.
Additionally, there is demand for track skiing which would include skate skiing. If the Atoma project is approved, then a set track for Skate skiing should be set within the Atoma boundary.

No additional commercial or development should be allowed in the 1994 Galena Acquired lands regardless of which alternative is adopted. The "No commercial use or any development " clause should have been included in the last H-T Forest Plan and it was omitted. It is time for the H-T to incorporate that language into the current Forest Plan, regardless of which alternative is selected in the FEIS.

Regards,

Dr. Gail Ferrell

Director, Snowlands Network

www.snowlands.org <http://www.snowlands.org/>

Date submitted (Pacific Standard Time): 4/17/2018 11:59:09 PM
First name: Gail
Last name: Ferrell
Organization:
Title:
Official Representative/Member Indicator:
Address1:
Address2:
City:
State:
Province/Region:
Zip/Postal Code:
Country:
Email:
Phone:
Comments:
Mt Rose Ski Tahoe - Atoma Area Project

I support Alternative 3 -

If the Atoma project is approved, XC-ski access should be allowed as this is an historical area for cross country skiing.
Additionally, there is demand for track skiing which would include skate skiing. If the Atoma project is approved, then a set track for Skate skiing should be set within the Atoma boundary.

No additional commercial or development should be allowed in the 1994 Galena Acquired lands regardless of which alternative is adopted. The "No commercial use or any development " clause should have been included in the last H-T Forest Plan and it was omitted. It is time for the H-T to incorporate that language into the current Forest Plan, regardless of which alternative is selected in the FEIS.

Regards,

Dr. Gail Ferrell

Date submitted (Pacific Standard Time): 4/18/2018 7:11:59 PM
First name: Frank
Last name: Forsgren
Organization:
Title:
Official Representative/Member Indicator:
Address1:
Address2:
City:
State:
Province/Region:
Zip/Postal Code:
Country:
Email:
Phone:
Comments:
Comments on draft Mt Rose Expansion EIS

April 18, 2018

William Dunkelberger, Supervisor

Humboldt-Toiyabe National Forest

1400 Franklin Way

Sparks, NV
<https://maps.google.com/?q=1400+Franklin+Way+%0D%0A+%0D%0A+%0D%0A+Sparks,+NV++89431&entry=gmail&source=g> 89431
<https://maps.google.com/?q=1400+Franklin+Way+%0D%0A+%0D%0A+%0D%0A+Sparks,+NV++89431&entry=gmail&source=g>

via email: comments-intermtn-humboldt-toiyabe-carson@fs.fed.us <mailto:comments-intermtn-humboldt-toiyabe-carson@fs.fed.us>

Mr Dunkelberger,

Thank you for preparing the USFS draft Mt Rose EIS and taking public comment. I have been skiing in the Galena Bowls and Galena Creek backcounty for more than 30 years and have seen the remarkable increase in backcountry use over that time. The area's unique combination of proximity, accessibility, and elevation make it the premier backcountry ski area in the Reno-Tahoe area. It is also popular with summer users, especially hikers headed to Mount Rose. The acquired Galena land and the Atoma expansion site are worthy of further protections including actions to maintain all-season, non-motorized public access and dispersed recreation use, which I fully and strongly support.

I strongly support the proposed amendment restricting all future commercial development on all the acres of acquired Galena lands in the Carson Range. In addition, I support USFS preferred Alternative #3 to reduce environmental impacts and protect public safety while allowing responsible expansion of the ski resort.

I appreciate your consideration,

Frank Forsgren

Date submitted (Pacific Standard Time): 4/18/2018 11:36:46 PM
First name: Kevin
Last name: Fredericks

Comments:
Climate change should not be leveraged as a meaningful basis for decision in this proposal. Global climate change is certain, but its effect on local precipitation and temperature can not be modeled effectively enough to provide a basis for consideration in this type of proposal.

Several certainties can be addressed: The Galena Creek to Mt. Rose Summit bike trail should not be inhibited by this project. Requiring bicyclists to use the highway is dangerous and unnecessary. It is very important that beginner skiers feel safe, so it would be counterproductive to build the chairlift over an active highway. The Mt. Rose administration feels that this new area is an important resource for beginners, so it is in everybody's best interest to locate the chairlift above the proposed bridge.

Date submitted (Pacific Standard Time): 4/16/2018 3:10:48 PM
First name: Linda
Last name: Frost

Comments:
Mt Rose Ski Tahoe - Atoma Area Project

I support Alternative 1 - No Action. The north side of the Mt Rose Highway should be kept free of commercial development, including a ski area.

Sent from my iPhone

Date submitted (Pacific Standard Time): 4/17/2018 11:18:14 AM
First name: Jamie
Last name: Gehrman selby
Organization:

Comments:
I am a resident at Sky Tavern Area and live on Sky Tavern Rd. I am generally in support of the Atoma project and feel that it will add much needed beginner terrain for skiers. I believe if done correctly, the trails could also be used in the summer for hiking and bike riding.

Several residents on Sky Tavern Rd get our water from the springs that are adjacent to the Atoma project. I want to ensure that ALL our spring boxes are properly accounted for. The current map is missing our upper spring collection boxes. The homeowners have been working with MT Rose Ski to protect our water sources. I would like to make sure that protection is offically included in this project. Thank you

Date submitted (Pacific Standard Time): 2/8/2018 11:04:06 AM
First name: Dennis
Last name: Ghiglieri
Organization:
Title:
Official Representative/Member Indicator:
Address1:
Address2:
City:
State:
Province/Region:
Zip/Postal Code:
Country:
Email:
Phone:
Comments:
Comments on Mt Rose Ski Atoma Draft EIS

Dennis Ghiglieri
619 Robinson Ct
Reno, NV 89503

February 8, 2018

William A. Dunkelberger, Supervisor
Humboldt-Toiyabe National Forest
1200 Franklin Way
Sparks, NV 89431
comments-intermtn-humboldt-toiyabe-carson@fs.fed.us

Dear Supervisor Dunkelberger,

I am pleased to offer the following comments on the Mt. Rose Ski Atoma Draft Environmental Impact Statement. As a lifelong Nevadan and Reno resident, I've been visiting and recreating in this area since I was a small boy. The area that is being considered for the Atoma expansion is where my family would stop on the old Mt Rose highway for picnics and play or to let the car cool-down before we would continue up the steep road to spend time at Lake Tahoe. I've hiked and skied in the area and also spent time with the Nevada Native Plant Society visiting the type Washoe Pine that grows close to the proposed lift terminal at the bottom of the proposed Atoma expansion area. I enjoy hiking and botanizing along the old and new trails and spending time along Galena Creek and its surrounding meadows and forests, waterfalls, and springs.

I strongly support, the proposed Forest Plan Amendment included in both Alternatives 2 and 3 that will prevent future development of commercial uses on the remaining 3,446 acres of land acquired by the USFS in 1994. Also, the USFS and Mt. Rose Ski Tahoe accommodation of dispersed recreation around the Atoma expansion area during winter and within the expansion area during summer is very welcome.

After reviewing the DEIS, I support Alternative 3. Additionally, I support the modifications to the original 2013 plan that 1) removed the proposed forest "glading" in the Atoma expansion, 2) replaced the dam and water impoundment with a constructed water tank, and 3) improved safety for ski lift riders and highway travelers by requiring a net capable of supporting a chair lift in an accident.

Alternative 3, with a lift that services the Atoma Area skiers with a shorter ride and many fewer bridge crossings is an improvement over the single lift configuration in Alternative 2. Further, the addition of an Atoma side restroom is a necessary improvement for the overall skier experience. Also, the alignment of the return chairlift over the skier bridge is a substantial improvement reducing the visual impacts from a separate chairlift. It also eliminates chairlift exposure over the highway and most of the parking lot to lift riders.

When the USFS acquired the nearly 3,700 acres from the Galena Resort in 1994, the promise was that the entire area would be protected from commercial development. Now, nearly 24 years later I strongly support the USFS proposed Plan Amendment to prevent further commercial encroachment onto these remaining acquired lands.

Thank you for the opportunity to comment.

Sincerely,

Dennis Ghiglieri

Date submitted (Pacific Standard Time): 3/28/2018 10:49:43 AM
First name: Alice
Last name: Grulich-Jones

Comments:
I want to thank the US Forest Service (USFS) for the draft Mt. Rose EIS.
I strongly support this proposed amendment to restrict all futurecommercial development on 3,446 acres of acquired Galena lands in the Carson Range.

I support the USFS preferred Alternative #3 because this best protects public safety and reduces environmental impact to the site.

This area, the 3,446 acres of acquired Galena lands as well as to the Atoma expansion site, should remain open to the public and free of charge for recreational use year round.

As a hiker, birder, volunteer with several local organizations and long time full-time Tahoe resident, I utilize, enjoy and take care of many areas throughout Tahoe including Mt Rose.

Thank you for your consideration.

Date submitted (Pacific Standard Time): 4/19/2018 12:26:24 PM
First name: Corey
Last name: Hanson

Comments:
Mt Rose Ski Tahoe - Atoma Area Project

I support Alternative 1 - No Action. The north side of the Mt Rose Highway should be kept free of commercial development, including a ski area.

Date submitted (Pacific Standard Time): 4/13/2018 7:52:47 PM
First name: Andrew
Last name: Hervey

Comments:
I am writing to voice my concern about the proposed developments in the Atoma area. The proposed plan to to restrict future commercial developments of the Galena lands within the Carson range is a necessary addition to the protection of the area.
After years of use from my childhood to now, my late teens, the Mount Rose area has always been a place of great beauty that is perfect for hiking and bird-watching. I fear that the commercial development in Atoma would cause an influx of traffic through the area, disturbing and uprooting the wildlife. This change could damage the health of the Mount Rose nature which is an irreplaceable part of Nevada and it's heritage. Although it may not be too intrusive, the visitors to a more commercialized area could remove what so many have grown up with, and will grow up with in the future.

Thank you for the consideration of this and all other comments,
Andrew Hervey

Date submitted (Pacific Standard Time): 4/19/2018 7:09:54 AM
First name: Dan
Last name: Belanger

Comments:
Mt Rose/Galena creek

William Dunkelberger, Supervisor

Humboldt-Toiyabe National Forest

1400 Franklin Way <x-apple-data-detectors://6>

Sparks, NV 89431 <x-apple-data-detectors://6>
via email

Mr Dunkelberger,

As a regular user of the Galena Creek backcountry, I would like to express my support for the USFS Preferred Alternative 3 from the Mt Rose draft EIS for the expansion of the ski area. Specifically, I strongly support the amendment of the Forest Plan to prohibit commercial use of the remaining area outside of the proposed ski area expansion into the Atoma area.

As a regular visitor to this area for over 30 years I have seen the number of users increase steadily. This location is unique in the Tahoe area for the high elevation access it provides backcountry skiers, and has become a hugely popular access point for hikers in the summer. I feel it is critical to preserve this pristine area for the non-motorized uses that local residents and area visitors alike have come to appreciate.

Thank you for your consideration,

Daniel Belanger

Sent from my iPhone

Date submitted (Pacific Standard Time): 4/16/2018 8:31:16 AM
First name: Kevin
Last name: Joell

Comments:
Mt Rose Expansion EIS

Hi,

I would like to submit comments on the Mt Rose Expansion EIS. I fully support either the one lift alternate or the FS preferred two lift alternate to allow Mt Rose to expand their terrain and provide quality recreation experiences near Reno.

-I would like to request that during construction, care is taken around the new Tamarack Lake Trail and that TAMBA or myself is consulted about any re-routes or re-construction needs on the trail because of the expansion work.

-If there is any way to include surveys and approval of Phase 2 of the Tamarack Lake Trail proposal with this project, that would be amazing. Phase 2 was a parallel trail to Tamarack Lake through the Atoma area that would allow for loops from Sky Tavern or the "Tree Cutting" highway pullout trailhead. It is very close to the expansion boundary.

-Although I like the idea of no commercial development on FS lands in this area, I hope that this does not prevent special use permits for fundraising events like GalenaFest that will want to utilize the Tamarack Lake Trail. Perhaps the boundary could start at the trail and go up from there.

Thanks very much!
Kevin Joell

Date submitted (Pacific Standard Time): 4/17/2018 7:59:34 PM
First name: Dylan
Last name: Kuhn

Comments:
Mt Rose Ski Tahoe - Atoma Area Project

I'm a frequent backcountry user of the Mount Rose area. My position is essentially the same as the Snowlands position, a preference for the No Action alternative. If another alternative is selected, it should include assurances of development limitations and public access.

Thank You,
Dylan Kuhn
Reno, Nevada

SNOWLANDS POSITION

The position of Snowlands is to oppose expansion of the resort. We therefore are supporting Alternative #1, the No-Action alternative. While the proposed expansion mitigates somewhat the impact of a downhill resort taking over use of public land, the lifts will be installed within one-quarter mile of a populat backcountry tour. It is not know whether or not the lifts will be visible from the Galena Creek drainage.

If one of the action alternatives (2 or 3) is selected and the expansion approved, Snowlands would like to see the following mitigation measures implemented:

* Permanent protection for the 3,446 acres north of the highway
* Continued free public access to the Atoma area (including those accompanied by dogs)
* Designated uphill an downhill routes for the non-paying public
* Public access to any restrooms on public land
* Continued public access to public forest service land being operated as part of a Special Use Permit, contingent upon safety concerns

Date submitted (Pacific Standard Time): 3/28/2018 6:11:33 PM
First name: Nancyann
Last name: Leeder

Comments:
Mt. Rose is a tremendous asset to Reno, NV. I and my extensive family (3 sons and wives, 11 grandchildren, and 11 great-grandchildren) travel to Mt. Rose to hike, snow shoe, cross country ski, snow play, watch the stars, enjoy the trees & flowers & wildlife & scenery.

So thank you USFS for the draft Mt. Rose EIS. I strongly support the Forest Plan to restrict all future commercial development on 3446 acres of acquired Galena lands in the Carson Range. I support the USFS preferred Alternative #3 for its best protection of public safety as well as its reduction of environmental impacts to the Atoma site.

I also strongly support all proposed actions to maintain year-round public access to and dispersed recreation uses of the 3446 acres of acquired Galena lands and the Atoma expansion site.

Date submitted (Pacific Standard Time): 4/19/2018 10:16:18 AM
First name: Meg
Last name: Lent

Comments:
re: expansion of Mt. Rose ski resort - OPPOSED

Hello:

I am writing to expansion of the Mt. Rose Ski Resort, the "No-Action" alternative.

Why is expansion of a private resort being considered on public lands?

From what I've read, the ski lifts will be installed within one-quarter mile of a popular backcountry tour. We need to protect the wild places of this region, not fill them up with more mechanical apparatus that disturbs both public access, use, and the natural wild state of public lands.

As a resident of Nevada, I am opposed to expansion of the Mt. Rose Ski Area onto our public lands.

Thank you,

Meg Lent

Verdi, NV

Date submitted (Pacific Standard Time): 4/19/2018 12:36:11 PM
First name: Marcus
Last name: Libkind

Comments:
I am in favor of Alternative 3 for the Mt. Rose Atoma Expansion provided that the following is included in the Final Decision.

1. Most important, the permanent protection from future development and permanent designation as non-motorized of 3446 acres north of the highway. This must be cast in concrete in the Decision and not simply proposed for a future amendment to the Forest Plan. I say this because these lands should have been designated as such when the land was acquired by the FS but that never happened.

2. Assurance that there will always be parking for non-resort patrons to park in order to access the lands to the north of the highway.

3. Both downhill and uphill access from the parking across resort and FS lands to the lands to the north of the highway including use of the bridge over the highway.

4. Use of any toilets constructed on the north side of the highway by non-resort patrons.

5. Access to uphill travel at the resort both prior and following the opening and closing of the resort.

If the FS is does not include the above, then I support Alternative 1, No Action.

Respectfully yours,

Marcus Libkind

Date submitted (Pacific Standard Time): 4/19/2018 1:20:11 PM
First name: Marcy
Last name: Lienau

Comments:
Mt Rose Ski Tahoe Area Expansion

I stand with the snowlands position, please do what the federal government promised to and never allow commercial development on this parcel. But, if you still choose to do so, I hope there will still be public access to this beautiful area.

SNOWLANDS POSITION

The position of Snowlands is to oppose expansion of the resort. We therefore are supporting Alternative #1, the No-Action alternative. While the proposed expansion mitigates somewhat the impact of a downhill resort taking over use of public land, the lifts will be installed within one-quarter mile of a popular backcountry tour. It is not know whether or not the lifts will be visible from the Galena Creek drainage.

If one of the action alternatives (2 or 3) is selected and the expansion approved, Snowlands would like to see the following mitigation measures implemented:

* Permanent protection for the 3,446 acres north of the highway
* Continued free public access to the Atoma area (including those accompanied by dogs)
* Designated uphill an downhill routes for the non-paying public
* Public access to any restrooms on public land
* Continued public access to public forest service land being operated as part of a Special Use Permit, contingent upon safety concerns

Thank-you for your time and consideration.

Sincerely,
Marcy Lienau

Date submitted (Pacific Standard Time): 4/12/2018 2:10:10 PM
First name: Cliff
Last name: Low

Comments:
Dear USFS, thank you for the Mt Rise EIS draft. My husband and I strongly support restrictions on all future commercial development on the 3446 acres of Galena lands in the Carson Range.

We also support alternative 3.

We are avid hikers in this area and enjoy the beauty and solitude it affords. Pls keep public access open and protect these valuable acres. Thank you!

Date submitted (Pacific Standard Time): 4/12/2018 2:10:10 PM
First name: Loretta
Last name: Low

Comments:
Dear USFS, thank you for the Mt Rise EIS draft. My husband and I strongly support restrictions on all future commercial development on the 3446 acres of Galena lands in the Carson Range.

We also support alternative 3.

We are avid hikers in this area and enjoy the beauty and solitude it affords. Pls keep public access open and

Date submitted (Pacific Standard Time): 4/6/2018 8:05:46 PM
First name: Loretta
Last name: Low

Comments:
I support preventing ALL commercial development on the approximately 3500 acres. Please leave this land for public use and enjoyment. Loretta Low

Date submitted (Pacific Standard Time): 4/16/2018 7:52:38 PM
First name: Judy
Last name: Luce

Comments:
Mt Rose Ski Tahoe - Atoma Area Project

I support Alternative 1 - No Action. The north side of the Mt Rose Highway should be kept free of commercial development, including a ski area.

Judy Luce

Date submitted (Pacific Standard Time): 4/18/2018 10:37:23 AM
First name: Eric
Last name: M

Comments:
Support for Mt Rose expansion USFS preferred alternative 3

William Dunkelberger, Supervisor
Humboldt-Toiyabe National Forest
1400 Franklin Way
Sparks, NV 89431
via email

Mr Dunkelberger,

As a regular user of the Galena Creek backcountry, I would like to express my support for the USFS preferred alternative 3 from the Mt Rose draft EIS for the expansion of the ski area. Specifically, I strongly support the amendment of the Forest Plan to prohibit commercial use of the remaining area outside of the proposed ski area expansion into the Atoma area.

As a regular visitor to this area for over 30 years I have seen the number of users increase steadily. This location is unique in the Tahoe area for the high elevation access it provides backcountry skiers, and has become a hugely popular access point for hikers in the summer. I feel it is critical to preserve this pristine area for the non-motorized uses that local residents and area visitors alike have come to appreciate.

Thank you for your consideration,

Eric Martin
Reno, NV 89509

Date submitted (Pacific Standard Time): 4/16/2018 4:23:11 PM
First name: Chris
Last name: MacIntosh

Comments:
I support Alternative # 1, the No-Action alternative. Please keep the north side of Mt Rose free of commercial development, including a ski area, chair lifts, and ski runs. Preserve this area for non-motorized, dispersed, backcountry recreation.

If the ski area expansion is allowed, please implement the following measures to mitigate the impact on backcountry recreation:

Prohibit any further commercial development of the Atoma Area north of the Mt Rose Highway.
Require public access to the Atoma Area by the non-paying public, including parking in the ski resort parking lot, access over the ski bridge, use of any restrooms on public land, and designated uphill and downhill routes through the Atoma Area resort area.
Require continued public access to any national forest land being used as a commercial ski area.

I support recreational, human-powered, backcountry recreation (such as snow-showing and cross-country skiing) and would like to maintain the pleasure of this type of recreation near the Mt. Rose ski resort.

Date submitted (Pacific Standard Time): 4/16/2018 3:19:45 PM
First name: Anne
Last name: Macquarie

Comments:
I support the No-Action alternative. The north side of Mt Rose should be kept free of commercial development, including a ski area, chair lifts, and ski runs. Please preserve this area for non-motorized, dispersed, backcountry recreation.

Date submitted (Pacific Standard Time): 4/16/2018 8:37:52 PM
First name: Julin
Last name: Maloof

Comments:
I am writing to object to the proposal to expand the Mt. Rose ski area into the Atoma area. I am an avid backcountry skier and often ski through the Atoma area. This side of the highway should be left undeveloped with access available for backcountry users. Even though the current proposal allows backcountry access through the area it will fundamentally change the experience for backcountry users. I favor Alternative # 1 (no change).

If the current plan is approved it is critical that clear and safe paths through the expansion exist for backcountry users, and that backcountry users will be allowed to use ski area parking and restroom facilities.

Date submitted (Pacific Standard Time): 4/16/2018 12:00:00 AM
First name: Kathleen
Last name: Martyn Goforth
Organization: Environmental Protection Agency (EPA)
Title: Manager
Official Representative/Member Indicator:
Address1: 75 Hawthorne Street
Address2:
City: San Francisco
State: CA
Province/Region: 94105-3901
Zip/Postal Code: 94105-3901
Country: United States
Email: gerdes.jason@epa.gov
Phone: 415-972-3521
Comments:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY *[Comment Letter 52]*
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

April 4, 2018

Mr. William A. Dunkelberger
Forest Supervisor
Humboldt-Toiyabe National Forest
1200 Franklin Way
Sparks, Nevada 89431

Subject: Draft Environmental Impact Statement for the Mt. Rose Ski Tahoe Atoma Area Expansion, Washoe County, Nevada (EIS No. 20180003)

Dear Mr. Dunkelberger:

The U.S. Environmental Protection Agency has reviewed the Draft Environmental Impact Statement for the Mt. Rose Ski Tahoe Atoma Area Expansion (Proposed Action) pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act.

The EPA supports the many avoidance and conservation measures proposed by the Forest Service, such as realigning the bottom terminal of the proposed chairlift to avoid a large wetland complex in the Atoma Area and incorporating the existing road network into the ski trail design, to reduce the impacts associated with proposed project activities. Based on our review of the DEIS, we have rated the Proposed Action as Lack of Objections (LO) (see enclosed "Summary of EPA Rating Definitions").

Please note that some of the proposed project activities, such as the construction of the skier bridge over the Mt. Rose Highway and the new snowmaking coverage on five new trails in the Atoma Area, could result in impacts to waters of the U.S., which may require a permit pursuant to Section 404 of the Clean Water Act (CWA). The DEIS states that five wetlands were delineated on Forest Service land north of the Mt. Rose Highway in the Atoma Area, including approximately nine acres within or near project disturbance areas. The DEIS does not disclose whether the U.S. Army Corps of Engineers was consulted on the wetlands delineation conducted for the Proposed Action, nor does it include Section 404 of the CWA in Table 1: "Permits Associated with the Action Alternatives". We suggest that the Final EIS explain how the extent of jurisdictional waters would be verified and how the Forest Service would ensure that proposed project activities comply with the permit requirements of Section 404 of the CWA.

EPA appreciates the opportunity to review this DEIS, and we are available to discuss our comments. When the Final EIS is released for public review, please send one hard copy and one CD to the address

above (mail code: ENF-4-2). If you have any questions, please contact me at 415-972-3521, or contact Jason Gerdes, the lead reviewer for this project. Mr. Gerdes can be reached at 415-947-4221 or gerdes.jason@epa.gov.

Sincerely,

Kathleen Martyn Goforth, Manager
Environmental Review Section

Enclosure: Summary of EPA Rating Definitions

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment

Date submitted (Pacific Standard Time): 4/17/2018 8:13:58 AM
First name: chris
Last name: miles

Comments:
While I think expansion is a viable and possible action for MT Rose I hesitate to endorse the project due to concerns about already large number of individuals traveling the Mt Rose highway. The expansion will lead to congestion issues on the highway and inevitable road projects to expand the highway itself which will ruin the area. The proposed expansion area is South facing and will require constant snow making to ensure consistent snow cover. With the diminishing snowfall amounts and irregular winters we have been seeing expansion of a ski are seems like its a losing battle. Mt Rose will use more water to make snow for an area where it will just melt away sooner that the rest of the mountain. Do we really need to continue expanding into roadless areas in this way? I say leave the area alone.

Date submitted (Pacific Standard Time): 4/24/2018 12:00:00 AM
First name: Peter
Last name: Millar

Comments:
Peter Millar
Reno Nevada

Resident 14 years.

In enthusiastic support of alternative 3.

I am an avid user of the Mt. Rose area for lift-serviced skiing as well as backcountry skiing, snowshoeing, and other recreational activities. I also greatly enjoy engagement with friends, family and visitors from outside the area, for non-winter activities such as hiking and general touring, perhaps on the way to and from the lake.

I consider the Mt. Rose area to be a big part of what attracts myself, friends and family to this great area.

I believe the natural value of this area will be enhanced by preservation as non-development, while allowing for limited growth of the ski area.

Thank you for this opportunity to comment, and for the hard work in putting a good plan together.

Again, I am submitting my opinion in support of Alternative 3.

Thank you.

Peter Millar, Reno, NV

Date submitted (Pacific Standard Time): 4/18/2018 12:00:00 AM
First name: William
Last name: Mitchell

Comments:

April 7th 2018

Mr William A. Dunkelberger
Forest Supervisor
1200 Franklin Way
Sparks, NV 89431

Re: Mt Rose Ski Tahoe Atoma Area Expansion Project

Dear Mr. Dunkelberger,

This letter is to address our concerns for the Mt Rose Ski Tahoe Atoma Area Expansion Project published in the DEIS January 19th 2018. Our names are William Mitchell and Sarah Corner and we live at 1285 Sky Tavern Road, Reno, Nevada, 89511. We are the closest residential property to the proposed project and are writing to inform you that we are in full support of Alternative 1 NO ACTION. In this letter we outline a few of our concerns regarding this matter; the lack of consultation; the use of Sky Tavern Road by Mt Rose Ski Area; the assumption regarding audible noise; our concerns about potential trespassing and maintaining our privacy; environmental justice and dispersed recreation; the 2001 Roadless Rules Act; the lack of attention to the short-term and long-term effects of our water supplies; the endangerment of species such as the whitebark pine; the outcome of speaking with Nevada State Historical Officer when discussing this areas historical values; and the need to address the already overburdened Mt Rose Hwy. I hope we can clearly articulate our concerns and contentions as to why we are *against* the expansion of Mt Rose Ski Area below.

Lack of Consultation
Firstly, we would like to point out that the DEIS states that the Forest Service consulted with various groups, organisations and individuals including that of William Mitchell (p. 77). We would like to make it clear that at NO TIME was William Mitchell *consulted* about these proposed action plans, nor did he receive a copy of the DEIS as published in the DEIS.

Sky Tavern Road
The DEIS states that " existing roads such as the old Mt Rose Highway, Atoma Road and Sky Tavern Road would also facilitate construction and maintenance of the proposed lift and trail networks" (p. 21). This is another great concern to us as we were never consulted about this proposition of Mt Rose utilising Sky Tavern Road. Sky Tavern Road is a privately owned, operated, and maintained at the cost of those who live on it. It is a one-lane road with two-lane traffic that is already overburdened and has erosion and grading issues. We do not give Mt Rose permission to utilise our road and would like it to be clear that more traffic would cause problems, especially in the winter season. Furthermore, we have the right to our peace and quiet and in no way are we interested in our road being used as a thoroughfare for a commercial venture we simply do not agree with. We also would like to make it clear that we are not represented by the Sky Tavern Road User Association or by the self-appointed president of that association with regards to these matters.

Noise Pollution
The DEIS mentions our residential community regarding noise pollution. "[N]oise pollution was not considered necessary for detailed analysis in this DEIS. The nearest noise receptors to the Atoma Area are nine homes that are approximately 4,000 feet to the northwest. They are located adjacent to the Sky Tavern Ski trail, on Sky Tavern Road. These homes are a mix

of full-time and part-time residents and are not expected to experience a noticeable change in noise audible from the ski area as a result of implementation of the proposed projects" (p. 56). This statement is entirely untrue. As already stated, we live in the closest residential dwelling to the Atoma Area, no more than 0.3 miles (528 yards/ 1584 feet) to the northwest boundary and to the loading area for the proposed Atoma Chairlift. Not only was the distance of our dwelling to the Atoma Area measured incorrectly, but the assumption that we will not hear noise is a mistake. Audible noise will most certainly be a factor, and one that should be considered, not brushed off. On any given day throughout the winter season we can hear numerous activities from Mt Rose Ski Tahoe including, but not limited to, snow-cats, snow-mobiles, cars, horns, people yelling, bombs going off during avalanche control, and especially the running noises of snow-making machines both day and night. If this expansion is just over 500 yards from our house, believe me, we will hear it. Furthermore, whether or not people live part-time or full-time in their homes should be of little consideration when discussing whether noise would be audible from their property.

Potential Trespassing and Privacy

How can Mt Rose safe-guard us from potential trespassers from ticketed skier and boarders ducking ropes? How can they guarantee our privacy? We did not buy land here to be so close to commercial property, especially one that inspires to produce 2,000 more skiers per hour. Furthermore, the mention of an "access corridor" that will "provide connection from Sky Tavern to the upper Galena drainage" (p. 65, 66) concerns us as it has potential to funnel people onto our property.

Environmental Justice and Displaced Recreation

Former President Clinton's 1994 Environmental Justice order required all federal agencies to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. The order also required agencies to adopt policies, practices and procedures to consider environmental justice in decision making. Our concern is that those making decisions about Mt Rose Ski Area's expansion are not considering how disproportionately high Mt Rose's affects are on social, economic and environmental justices and that their statistical analysis and racial categorising is Eurocentric and dated.

In the DEIS report (p. 53), environmental justice is touched upon by using outdated census material from 2012 as well as lumping together low-income issues as equal to minority populations. This way of researching and analysing data is archaic as using racial categories in this way lacks real contextual and complicated data on ethic changes to better reflect *all people's* lives and livelihoods. In the late 1990's, American federal policies for collecting data require that multi-ethnic responses be allowed in all (federal) data collection efforts and encourage data creators to provide as much data as possible. Our concern is that these kinds of statements are sweeping, but are merely ways to help justify the expansion of Mt Rose Ski Area and lack foundation based on thoughtful research and statistical analysis away from racial categorizing and does not focus on the reality of low-income families in the Reno/Tahoe/Carson area.

Then in another breath, the DEIS claims that, "the area is popular with Reno residents and largely consists of backcountry skiing and hiking use. As the population of Reno increases, so *[will]* the use of NES land in this area for dispersed recreation" (emphasis added). Skiing and snowboarding are two of the most prestigious and privileged sporting activities in the world, which mean that access to these sporting activities from low-income families is not as realistic as is assumed.

The proposed Atoma Area is a space that is used by skiers, snowboarders, snowshoers, backpackers, hikers, mountain bikers, campers, and walkers; it is a space that is free to use by all. The Atoma Area is also a space that school groups utilise such as the Tahoe Expedition Academy (TEA) based out of Truckee bringing students for annual educational camping experiences. When those proposing that the Atoma Area will be "a more well-rounded recreational experience" if/when developed, we tend to see how the true benefit is that of Mt Rose financially than benefiting the general public. Is taking away a major recreational resource, and ticketing $120 a day or more, really the best way to utilise this space? We do not believe it is. Furthermore, Mt Rose also proposes to allow non-ticked users to "co-exist" in the Atoma Area, but how is this possible? Let's be realistic as fencing, roping and boundary lines almost guarantees lack of accessibility without money.

The 2001 Roadless Rules Act

In 1999 Former President Clinton directed the forest service to develop regulations that would provide appropriate, and *consistent*, long-term protection for IRA's… prohibit[ing] road construction, reconstruction and timber harvest for multiple use management (p. 69 emphasis added). However, transforming this area into a ski area WOULD mean that roads were being altered and reconstructed as trails begin to form and trees are cut down.

Environmental pollutants

Environmental pollutants are an issue, of course. From everyday equipment usage, residual from machinery, oils from lift drives, snow-mobiles, snow-cats, snow-making machines and equipment, wax from skies and boards, and everyday garbage that is, intentionally or not, discarded by the general public in these spaces. Garbage and waste are already an issue. We pick up garbage every day in the Atoma Area that has blown over from the Main Lodge and Parking Lots. Therefore, if Mt Rose expands their acreage basically to our doorstep, what will their every day pollutants mean for our property, our neighbourhood and our waterways?

Waterways

Waterways and their preservation are of great concern to the Sky Tavern Road community, especially when discussing the impact of the construction and then everyday maintenance of the Mt Rose Ski Area. There are several box spring collections north of the proposed Atoma Area owned by the Pine Ridge Water Company, a small community water system serving residents below the area on Sky Tavern Road. As acknowledged in the DEIS, "[t]he Pine Ridge Water Storage Spring source and water tank is 200 feet from the nearest proposed Trail A. Effects to the water source are *not anticipated* because of the distance between the edge of disturbance for the Atoma Area chairlift and trails and the water source" (p. 166, emphasis added).

How can this statement be publicised in this document and why is the contamination of our water not taken seriously? Of course the disturbance in the area will affect the streams and everything downhill/downstream from the disturbances, most notably the Pine Ridge Water Supply! The quality and safety of our drinking water most definitely *should be anticipated* and of the upmost importance? The fact that it is casually and lazily addressed in this DEIS is surprising and almost shameful.

Moreover, the DEIS made a claim that "the current condition[s] of the watershed [are already] affected by the ski area development" because, for example as "parking lots have been paved, high velocity runoff areas like parking lots can contribute to pollutants (such as tar and oil) to streams" (p. 160). This seems to contradict the previous claim that runoffs, disturbances and everyday operations of a ski area would not be affecting water supplies and/or sources. So our question is, who makes these determinations as to what distances are

safe from drinking water sources? What are the parameters for disturbances to be found to have "little to no affect" on the current waterways and wetlands, springs and drainages that feed into our water supplies and the spring collection system used on Sky Tavern Road? These two claims in the DEIS are contradictory and fail to consider the reality of the short-term and long-term damage to our communities drinking water, our vegetation and wildlife. Not to mention the unforeseen quantities of aquifers that feed personal wells on private land such as ours.

Endangered Species
The whitebark pine is a candidate for the Endangered Species List yet Mt Rose proposes to cut a majority of the whitebark in the proposed Atoma Area down. How is this responsible?

Historical Values
We also wonder what the outcome of talking with the Nevada State Historical Officer when discussing this areas historical value? As the DEIS states, "[a]rchival Research and the initial field of reconnaissance in 2001 disclosed a number of potentially significant cultural resources within the Atoma Area of the IRA" (p. 73). So, we would like to know more about how the "consultation is ongoing with the necessary federally recognised parties as part of the NEPA and Section 106 process".

Overburdened Mt Rose Hwy
From our perspective, as everyday travellers of the Mt Rose Highway from Sky Tavern Road to Incline Village, there is a growing concern for increased traffic at the turnoff into the Main Parking Lot of Mt Rose Ski Area. Traffic jams are a result of long lines trying to turn into the resort and backing up traffic who wish to pass. Adding a turning lane, or passing lane, at this location would surely help eliminate some of these issues which seem in need of addressing before adding acreage to increase skier and boarder volumes.

To conclude, we disagree that "opportunities for solitude and primitive recreation" (p. 72) are limited in the proposed Atoma Area as we find solace in this area on a daily basis, often for hours. The Atoma area was gifted to remain an open and public space to be enjoyed by all, why can this not continue to be honored?

We thank you for your time and we hope that you take into consideration what we have said. We hope that you take our concerns very seriously. Please feel free to contact us regarding any of these matters at any time. Our contact details are; email: babajuukes@yahoo.com, phone: 775 722 1175.

Best regards,

William Mitchell

Sarah Corner

Date submitted (Pacific Standard Time): 3/28/2018 3:52:36 PM
First name: Donald
Last name: Molde

Comments:
I support the amendment to the Forest Plan and Alternative #3 to protect the Galena lands from future commercial development. This has been a long-standing and successful conservation effort in Northern Nevada. We want to keep it as is.

Date submitted (Pacific Standard Time): 4/17/2018 1:40:57 PM
First name: Richard
Last name: Morissette

Comments:
Mt Rose Ski Tahoe - Atoma Area Project

I support Alternative 1 - No Action. The north side of the Mt Rose Highway should be kept free of commercial development, including a ski area.This area is easily accessible to all for backcountry winter use.

Richard Morissette
Minden, NV

Date submitted (Pacific Standard Time): 3/23/2018 9:12:47 PM
First name: Pierre
Last name: Mousset-Jones

Comments:
Mt Rose ski area atoma expansion EIS

William Dunkelberger, Supervisor
Humboldt-Toiyabe National Forest
1400 Franklin Way
Sparks, NV 89431

Mr. Dunkelberger,

I am writing to you concerning the EIS for the proposed Mt Rose Ski area Atoma expansion.

In principal I support the proposed plan which will enhance the beginner and intermediate ski runs that Mt Rose can offer to its clients. I think Alternative 3 makes the most sense ensuring that the ski lift passes over the bridge providing skier access over the Mt Rose highway to the Atoma area. This will be much safer for the cars passing below the lift and for the lift occupants, if problems arise while riding the lift.

I strongly support the proposed amendment to the Forest plan to restrict all future commercial development on the 3,446 acres of acquired Galena lands in the Carson Range. This area is now a prime recreational location for all kinds of summer and winter outdoors activities for the local population, and it must stay that way.

My family has skied and hiked in the area since 1968, my children and their children visit the area frequently, as do all my friends. It is a public resource which must be protected from development.

Thank you for this opportunity to comment on this EIS.

Yours sincerely
Ethnea Mousset-Jones

William Dunkelberger, Supervisor
Humboldt-Toiyabe National Forest
1400 Franklin Way
Sparks, NV 89431

Mr. Dunkelberger,

I am writing to you concerning the EIS for the proposed Mt Rose Ski area Atoma expansion.

In principal I support the proposed plan which will enhance the beginner and intermediate ski runs that Mt Rose can offer to its clients. I think Alternative 3 makes the most sense ensuring that the ski lift passes over the bridge providing skier access over the Mt Rose highway to the Atoma area. This will be much safer for the cars passing below the lift and for the lift occupants, if problems arise while riding the lift.

I strongly support the proposed amendment to the Forest plan to restrict all future commercial development on the 3,446 acres of acquired Galena lands in the Carson Range. This area is now a prime recreational location for all kinds of summer and winter outdoors activities for the local population, and it must stay that way.

My family and I have skied and hiked in the area since 1968, my children and their children visit the area frequently, as do all my friends. It is a public resource which must be protected from development.

Thank you for this opportunity to comment on this EIS.

Yours sincerely

Dr. Pierre Mousset-Jones
Professor Emeritus

Date submitted (Pacific Standard Time): 3/27/2018 12:00:00 AM
First name: Tina
Last name: Nappe

Comments:

[Comment Letter 59]

March 24, 2018

William Dunkelberger, Supervisor
Humboldt-Toiyabe National Forest
1400 Franklin Way
Sparks, NV 89431

Dear Mr. Dunkleberger:

Re: Mt. Rose Ski Tahoe – Atoma Area

While not having been party to the many years discussion on expanding use of the property and natural resources in question, I have some concerns about the proposal and oppose using acquired lands for commercial use.

* When land is purchased and transferred to the Forest Service, is there any limitation on the use that land into the future? Can this land be sold or commercialized as proposed in this instance?

* While natural resources are briefly discussed, will additional wells be developed or will the proposed pond by capturing more water impact vegetation elsewhere? Let's remember that less and less snow is falling in the Sierras impacting the health of forests.

*While this proposal is for the purpose of improving ski opportunities, many ski facilities, recognizing that skiing is becoming more vulnerable to climate change, are opting to expand use of those facilities in the winter by snowboarding and in the summer with bicycling, zip lines, and disc golf in accordance with US Forest Service Policy of 2014. (Disc golf requires off trail stations and can be especially damaging i.e. Squaw Valley) Does this proposal while focused on skiing also encompass these other uses?

*While the EA states that there are existing trails on Forest Service land, the new ski operation may promote their leading to greater impacts on vegetation and wildlife. Will the ski operator be responsible for maintaining the trails, signage, and trash? Presumably to keep lifts and shops and restaurants open, the ski operator will promote hiking and biking on these and other trails.

*Can the Forest Service require the developer use Sustainable Slopes Initiative practices, minimize carbon emissions, and with other ski developments contribute to a Ski Conservation Fund?

*The Forest Service is primarily concerned with sensitive or endangered species. However, it is our more common species that become vulnerable with every tree that is cut and every recreationist using the forest. A species like bears, for instance, which require a lot of room and privacy, can be impacted. What was the wildlife impact, especially with year round recreation?

I appreciate that the Forest Service has drafted a Mt. Rose EIS and support restrictions including eliminating commercial use on any acquired lands in the Carson Range. We are destroying so much of the Carson Range with urban development. I support Alternative 3 which protect public safety and reduced impacts to the Atomic site. Dispersed recreation restricted to trails and protection of vegetation and wildlife should be priorities.

Sincerely,

Tina

Tina Nappe
615 Robinson Court
Reno, NV 89503

Date submitted (Pacific Standard Time): 4/18/2018 11:35:55 AM
First name: Kathryn
Last name: Sosbe

Comments:
RE: RE: Humboldt Toiyabe DRAFT EIS Mt. Rose Ski Tahoe Expansion

Dear Forest Supervisor Bill Dunkelberger and Forest Service Staff:

While the EIS focuses on ski expansion, one has to view this project as a potential year round recreation expansion including snowboarding, hiking, zip lining, hiking and biking trails, etc. Does this EIS cover these additional recreation activities or will each activity be subject to an EA? This question is relevant because availability of sufficient annual snow fall to provide skiing is becoming problematical forcing ski resorts to focus on other activities. This EIS seems incomplete and even misleading. I would like to see projections on snow fall over the next 30 years.

I see no effort to inventory or recognize natural resources in this EIS. The increase in trails, ski lifts, public use must have an impact on natural resources. I see no effort to recognize those resources or provide mitigation. Clearly this expansion will have an impact on wildlife food resources and harassment of wildlife with increased public use. Are there riparian areas which need to be protected?

What are the policies on acquired lands? Surely they are not purchased with the goal of privatizing the property or limiting public use or wildlife values.

Some thoughts:

1. Acquired lands need to be specifically noted on Forest Service maps. Generally these lands are acquired with public funds and need to used for public benefits. Those benefits should be recognized in the EIS's and EA's. I would hope that wildlife preservation, scenic values, and watershed protection would be among those values.

2. I support the no action alternative, but it appears this project is too far down the track to seriously consider that option.

3. The ski resort should be responsible for building and maintaining public facilities and signage on adjoining Forest Service land. The expansion will draw many more visitors; the Forest Service lacks the capacity to build and maintain facilities. I assume that the Ski Resort will be promoting the entire recreational area including trails outside the Ski resort.

4. I support protection of the 3,000+ acres in the Atoma area. How will this designation be noted in perpetuity?

5. How much access will the nonpaying public have to the lands within the ski resort area?

PS. I believe this is the second time I have written this letter. Below I have included an article which indicates to me that this EIS is incomplete.

Kathryn Sosbe

Office of Communication, U.S. Forest Service

August 23, 2017 at 3:45pm

The 122 ski areas that operate all or partially on lands managed by the U.S. Forest Service <https://www.fs.fed.us/> have long acted as developed gateways to introduce visitors to other recreation activities and benefits, such as hiking, access to cool, clean water or wildlife watching.

Traditionally, most ski areas that operate on Forest Service lands through permits were limited by law and policy to Nordic and downhill skiing. In the off seasons, guests could hike or bike around the areas, but unless permit holders had private land they could not offer zip lines or other warm-weather sports.

Today, five ski areas that use the White River National Forest <https://www.fs.usda.gov/whiteriver> - the most visited national forest in the nation - have or will soon offer year-round, natural resourced-based fun. Vail in Colorado became the first to offer expanded recreation in 2016 along with Heavenly in California, both Vail Resorts properties. Vail, for example, offers zip lines, adventure courses, a 3,400-foot alpine coaster, and climbing wall, among others, as approved activities under their Forest Service special-use permit. As guests move through the activities, they are exposed through signage and talks by nature interpreters that help connect them more to the 'whys' of federal lands.

Officials at one ski resort that expects to begin summer activities next year estimated they would see an additional 150,000 guests just in the first year.

"Ski areas have a significant investment in facilities and infrastructure, capital investments and organization. They wanted better use of that investment in a more year-round manner," said Jim Bedwell, who recently retired as director of recreation for the agency's Rocky Mountain Region. "We recognized those needs but also see that these ski areas, as with many of our special uses, are a way to connect perhaps nontraditional, diverse audiences with national forests. They provide us within a small area the opportunity to reach out and connect one-on-one to many people."

That change did not come easily.

In 2007, the Forest Service denied Vail Resorts request to amend its special-use permit to allow for an alpine coaster and other expanded summer activities. Though intrigued, the agency didn't have a choice. Those types of activities Vail sought to offer did not fit within the legal parameters that federal law allowed.

It took an act of Congress, which passed the Ski Area Recreational Enhancement Opportunity Act of 2011, followed by the collective work of agency land managers, partners and the public to develop policy. Now, summer is looking different on many ski areas that use Forest Service-managed lands, but the change is not turning federal lands into large amusement parks.

Proposed activities are scrutinized based on the degree to which they are natural-resource based, encourage outdoor recreation and enjoyment of nature, and harmonize with the natural environment, all requirements of the 2011 law. It also means that not just any zip line is approved. It's all how that line blends with the natural surrounding and how much the user can see and understand about that area.

"We are seeing visitors that this is their first time on a national forest. It is a gateway and facilitated experience into the outdoors," said Daniel Cressy, who has a three-fold job as regional landscape architect, accessibility coordinator and recreation planner for the agency's Rocky Mountain Region. "We talk a lot about activities and the actual development of infrastructure. We make sure that construction features blend into the natural settings as much as possible. What we build on the landscapes speaks to our values. You create memories here, and that's one of our products."

Date submitted (Pacific Standard Time): 4/16/2018 8:51:07 PM
First name: Lucy
Last name: O'Brien

Comments:
I write to support Alternative 1, the No-Action alternative. Keep the Atoma area for human-powered recreation, not chairlifts.

Date submitted (Pacific Standard Time): 4/16/2018 3:23:15 PM
First name: Karl
Last name: Olsen

Comments:
I am in favor of the proposed Atoma project. I am a Mt Rose passholder (for over a decade) and a backcountry skier. The proposed project will provide valuable beginner terrain for the local community, while having a minimal impact on public use of nearby lands -- the proposed terrain expansion area is generally flat to gently-sloping, and not terrain that winter recreationalists typically seek out for skiing or even sledding.

Date submitted (Pacific Standard Time): 4/19/2018 12:03:04 AM
First name: bill
Last name: peppin

Comments:
Mt Rose Ski Tahoe - Atoma Area Project dEIS comments, RESUBMITTED due to being lost by the USFS

I had sent in a comment letter on the dEIS for the Atoma area ski expansion of the Mount Rose resort. This letter was, apparently lost, as it does not appear in the list of letters received. So at this late date, barely before the deadline for submittal, I tender the following comments. The original information was incomplete as I understood it, and so I modify my statement on which of the dEIS alternatives I support; they are Alternatives 2 and 3.

As a long-time resident of Reno, spanning the 1982 - 1994 time frame, and leading up to the land exchange, negotiated by the American Land Conservancy, and spearheaded politically by Senator Richard Bryan, we finally believed that the residents of the region, principal users of the 3500-odd acres of land to the U.S. Forest Service, had secured this area, known by many locally, from any further commercial development. It was our stated goal to be sure that such developments of these lands would be made illegal by state or federal law: the area is one of the more outstanding wild areas so close to a metropolitan center, featuring high canyons, valleys that become carpeted with multicolored wildflowers including the Mount-Rose Rose (a truly beautiful plant endemic to the area.)

I was disturbed to understand that, somehow, the USFS had worked a section of the No Action Alternative that would have allowed commercial development of this land. This we opposed specifically for years, knowing how special the land was, and how it ought to be set aside, that anybody can walk anywhere on it without the worry about crossing into private property, or property restricted by (whatever) commercial development the Very Rich People can come up with to sully the area. After all the work we did, I adamantly OPPOSE any concession in the dEIS allowing commercial development on the area: after all, we compromised with the USFS, grudgingly, that some hundreds of acres would be ceded from the property to the Mount Rose Ski Resort, in return for what we thought was the guarantee of maintaining the rest of the property obtained in the 1994 land exchange strictly for noncommercial, public use.

Sincerely yours
William A. Peppin
Santa Rosa, CA 95401

Date submitted (Pacific Standard Time): 3/27/2018 12:00:00 AM
First name: William A.
Last name: Peppin

Comments:

[Comment Letter 64]

23 March 2018

William Dunkelberger, Supervisor
Humboldt-Toiyabe National Forest
1400 Franklin Way
Sparks, NV 89431

Dear Mr. Dunkelberger;

I lived and worked in Reno from 1974 to 2014 before retiring from Spectir LLC of Reno and moving to Sonoma County to be with relatives and friends. As a hiker, climber, skier, I spent quite a bit of time in the area of the 3,446 acres of acquired Galena lands in the Carson Range. I worked for years with concerned citizens, including the Friends of Mount Rose, as we mounted an effort to defeat the wildly-inappropriate Galena Resort proposal, offered by, among others, the Alpine Meadows Ski Corporation. The sacrifices that would have been made by that development, including buildover of de-facto wildlands, would have altered irrevocably one of the more marvelous and spectacular such mountain lands close to a population center. As a result, shepherded in part by the lengthy efforts of Senator Richard Bryan, a substantial acreage of these lands, slightly more than 3,446 acres, were set aside as an undeveloped area, and was subsequently added in part to the Mount Rose wilderness area. This area is an all-seasons wonderland, which supports cross-country and randonnee skiing in my experience from as early as September to as late as June in some years. It also supports some great wildflower walks in the Galena Creek Canyon, accessed by the trail to the Mount Rose summit. Some truly spectacular wildflower gardens would have been sacrificed, had the resort gone forward. We described further the impacts that the added traffic would have had on residents of Incline Village, who must use the Mount Rose highway for travel into Reno for work at residences at either end. We mentioned that one of their snowmaking ponds was located in an avalanche path mapped by their own expert, Hans Frutiger, posing a potential disastrous flood potential on Galena Fan should an avalanche cycle such as occurred in 1986 send a major avalanche into the pond. To our relief, our recommendation to eliminate such an open pond in the proposed Atoma development was heeded by the Mount Rose owners.

In my opinion, the undeveloped skiing is as good as any other comparable site in the lower 48 states near a major population center, including some world-famous areas for such activities in Idaho, Montana, Wyoming, Utah and Colorado.

I am not so easy with the relatively-small ceding of some few hundred acres of the lands we fought so long and hard to maintain in their natural state, since it potentially opens the door for other business proposals in the future to seek access to the lands for profit. I have seen how developers, flush with money, can sweep into an area like ours, and dazzle locals with the idea of more revenue from business interests. But I am persuaded that the plan as presently proposed does provide, if not a permanent protection of the status of the 3,446 acres, a close to our long effort, now stretching back more than 30 years, to give final protection of these marvelous lands, for the rich enjoyment of all the citizens of Reno, Washoe County, and citizens from any location.

Please be sure to understand that these lands are a precious, invaluable asset to the quality of life in the Reno area, and that the preservation of these lands in a natural state is, without doubt, the best possible use of this area. I thank the USFS for their efforts on the Draft Mt. Rose EIS and strongly support the proposed amendment to the Forest Plan to restrict all future commercial development on 3,446 acres of acquired Galena lands in the Carson Range.

Sincerely yours,

William A. Peppin

William A. Peppin
1107 Meridian Circle
Santa Rosa, CA 95401
707 543 8055

Date submitted (Pacific Standard Time): 4/3/2018 12:00:00 AM
First name: Jae
Last name: Pullen
Organization: Nevada Department of Transportation
Title: Engineering Services Manager
Official Representative/Member Indicator:
Address1: 310 Galletti Way
Address2:
City: Sparks
State: NV
Province/Region:
Zip/Postal Code: 89431
Country: United States
Email: jpullen@dot.nv.gov
Phone: 775-834-8300
Comments:

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

District II
310 Galletti Way
Sparks, Nevada 89431
(775) 834-8300 FAX (775) 834-8319

[Comment Letter 65]

March 29, 2018

BRIAN SANDOVAL
Governor

RUDY MALFABON, P.E., *Director*

USDA Forest Service
Attn: William A. Dunkelberger, Forest Supervisor
1200 Franklin Way
Sparks, NV 89431
Comments-intermtn-humboldt-toiyabe-carson@fs.fed.us

RE: DEIS for the Mt. Rose Ski Tahoe Atoma Area Expansion Project

Mr. Dunkelberger,

The Nevada Department of Transportation District II (NDOT) appreciates the opportunity to review the Draft Environmental Impact Statement (DEIS) scope for the Mt. Rose Ski Tahoe's *Atoma Area Expansion* project (documents dated January 2018). A summary of the three alternatives are below:

- Alternative 1: No action- no amendment needed.
- Alternative 2: Special use permit (SUP) amended to expand ski boundary by 112 acres to incorporate a portion of the Atoma Area. This includes eleven new ski trails (novice & beginner skiers), 3,500-ft chairlift circulating up to 2,000 skiers/hr, 130-ft ski bridge over State Route 431 (Mount Rose Highway), and a snowmaking facility.
- Alternative 3: All components described are the same as Alternative 2, except the design would place the chairlift directly above the proposed skier bridge. In order to accommodate this design, a two-lift configuration and one additional acre of clearing and grading are needed.

NDOT supports community development and its positive impact on the community. If NDOT's safety and operational concerns are addressed as the project progresses, amending the SUP is feasible and encouraged. After careful consideration of DEIS Alternative 2 and 3, NDOT supports the preliminary design concept for Alternative 3 compared to Alternative 2. Aligning the chairlift directly above the skier bridge minimizes the operational and safety impacts on Mt. Rose Highway. Primary concern with a chairlift operation over a highway is the necessary mitigation to prevent objects from falling onto vehicles and bicyclists. Placing a net to catch falling objects is a common practice. However, the netting may accumulate snow and/or change the snow fall characteristics over the roadway. Additionally, chairlift maintenance operations would have less impact highway operations. Placing the skier bridge under the chairlift appears to be the most reasonable solution. Considering public safety, Alternative 3 is the preferred alternative.

Please see NDOT's comments regarding Alternative 3 for Mount Rose Ski Tahoe's special-use authorization application from their accepted master development plan (MDP) to improve the quality of the ski area's recreational offerings on National Forest System (NFS) land:

Nevada Department of Transportation (NDOT) has five roadway system types. Mount Rose Highway (2-lane) is classified as a "State Route". State routes are generally functionally classified higher than "Local" and include secondary state routes, primary county routes and other roadways that connect cities and towns with the primary highway system. In addition, State Route 431, Mount Rose Highway, is designated as a Scenic Byway. In 2016, the annual average daily traffic (AADT) was approximately 4,800.

1. Ski chairlift facility over State Route 431 (Mount Rose Highway) comments:

    a) Additional information requested for the structure:
        i) What is the height of the chairlift over Mount Rose Highway?
        ii) What is the distance of the chairlift piers to Mount Rose Highway?
    b) Additional information requested for the maintenance operations:
        i) With the proposed design, what are the traffic impacts for emergency and routine maintenance?
    c) Visibility of the chairlift system will be noticed by the highway users. NDOT recommends buy-in from local jurisdictional stakeholders on the proposal's aesthetics.

2. Skier bridge facility over State Route 431 (Mount Rose Highway) comments:

    a) Draft environmental impact statement (DEIS) alternatives only consider a bridge crossing. Have other alternatives, such as a tunnel, been considered? While a bridge may be the best solution, NDOT would like to know if other proposals were considered and their positives and negatives.
    b) Bridge structure design considerations:
        i) What are the bridge load capabilities?
        ii) NDOT is concerned with drainage impacts. Additional information on the proposed structure drainage (stormwater runoff/dust control/icicle forming prevention) would be helpful.
        iii) What are the bridge pier locations and their proximity to Mount Rose Highway?
        iv) What is the vertical clearance of the structure (for vehicles)?
        v) Based on federal requirements, structure lighting may be needed.
        vi) What design concepts are being considered to mitigate pedestrians and objects from falling from the bridge onto the roadway?
        vii) Are there any proposals to run utilities on the bridge structure?
        viii) Based on federal requirements, a ventilation may be needed for the structure.
        ix) Proposed bridge location is on a horizontal curve. What was the design considerations for identifying this location?
            (1) During winter weather, structures may present additional roadway safety concerns. Weather phenomena created from structure may occur such as snow accumulation, wind tunnel effects, shadowing- resulting in ice on the roadway, accumulation of moisture, etc. Ice formations at the ingress and egress locations where vehicles pass under the bridge may be problematic on a roadway curve.
            (2) Placing a bridge over a highway may decrease sight distance. Additional review and justification for the placement of the bridge structure is needed. Ideally, placing the structure on a roadway tangent would be preferred.

    c) Mt Rose Ski/NDOT maintenance operation comments:

i) For Mt. Rose Ski skier bridge operations, how does the operations affect the highway (prevention of snow/ice/soils from falling onto the road)?
ii) Bridge maintenance responsibilities need to be clearly defined by all parties and agreed upon (executed maintenance agreement) prior to any NDOT permit issuance. Routine operations/ maintenance, repair/replacement and emergency response duties are critical to the public safety of Mt. Rose Ski patrons, and the traveling public.
iii) The structure's potential impact to the NDOT's winter snow operations is not clear. Additional information and discussion is necessary to determine how both parties may successfully complete their operations.

d) Providing the construction phases on Mount Rose Highway would be helpful.

e) As a Scenic Byway, what design considerations were considered?

3. Mt. Rose Ski encroachments into NDOT right-of-way. All encroachments (temporary and permanent) shall require a permit. For existing permitted facilities, design changes will require a new permit application. The permit application shall be signed by the facility owner.

   a) Identifying all driveways/access (utility/maintenance/public) onto Mount Rose Highway within the corridor. All driveways must be permitted by NDOT. Preliminary discuss of access is needed prior to a permit application submittal.
   b) Identify all necessary utilities within the NDOT right-of-way for the proposal.
   c) When considering the increase in traffic (pedestrian/bicycle/motor vehicle) generated with the site expansion, a traffic study may be necessary for an NDOT permit. Will traffic be consistent between winter and summer activities provided by the expansion?
   d) Confirmation that the proposal provides adequate parking off NDOT right-of-way. For public safety, it is important that the proposal does not influence parking in the right-of-way.
   e) Identifying the locations and number of tree removals needed for the proposal.

4. There is a concern that the proposed snow-making operation may impact Mount Rose Highway. With the increase in snow making capabilities, how will those operations affect Mount Rose Highway (ice and snow on roadway) and what mitigations are in place to prevent the snow from accumulating on the roadway?

5. NDOT would like more information regarding emergency operations and the elements needed for immediate response. This includes, but it not limited to, power, equipment, response protocols, communications, access, and infrastructure.

<u>Comments specific to the NDOT permitting process are below:</u>

6. Existing occupancy permits are personal; however, the upkeep and repair responsibilities shall transfer to the property owner's successor. Actual work being performed in the NDOT right-of-way cannot be transferred without prior written approval from NDOT. If the property changes use, the new property owner will need to apply for a new occupancy permit for access to the state highway.

7. An occupancy permit is required for facilities within the NDOT right-of-way. Please see the *Terms and Conditions Relating to Right of Way Occupancy Permits* (2017 edition) booklet available online at nevadadot.com. Contact the Permit Office at (775) 834-8330 for more information regarding an occupancy permit.

8. NDOT may require a performance or cash bond, to ensure the successful and timely completion of improvements, as a guarantee that the work will be completed accordance with the terms of the occupancy permit. Performance bonds provided to other public agencies may be used in lieu of this requirement at the discretion of the District Engineer. Evidence of this bond should be submitted with permit.

9. For any non-permanent activities or temporary traffic control such as placement of cones, static signs, and portable electronic signs within NDOT right-of-way will require a temporary permit. Please submit temporary permit applications at least 4 weeks prior to the scheduled activity or work. Contact the Permit Office for more information.

10. The applicant is encouraged to coordinate with the Permit Office early for any required occupancy permit (access management, hydraulic design and drainage facilities, maintenance agreements, roadway abandonment, intersection control evaluation, leases, etc.). NDOT's permit processing time may vary based on project complexity; however, the processing time is approximately forty-five (45) working days. This does not include any revision time needed to make necessary changes in the design. Significant design applications may take more than one revision, please allow adequate planning and schedule ahead.

11. An effective strategy to minimize delay is taking advantage of the Permit Office's Pre-Permit process. Preliminary plans and associated engineering documents may be submitted in advance for NDOT review and comment. This service does not require a processing fee. Please contact the Permit Coordinator, Paula Diem, at (775) 834-8330 for any questions or comments regarding the pre-permit process.

12. Applicant is encouraged to coordinate with NDOT on the traffic impact study and seek NDOT's acceptance of the study early in the development planning process. NDOT Permit Office will require an NDOT acceptance letter for any traffic impact study submitted with a permit application. For questions and comments, please contact Mr. O.J. Oujevolk at the Traffic Office, (775) 834-8304.

13. Prior to any grading adjacent to NDOT right-of-way, a drainage report, including a grading plan, and a Drainage Form must be submitted to the Permit Office. Please contact the Permit Office for more information.

14. Applicant is responsible for mitigating any project site drainage within the property. Drainage facilities within NDOT right-of-way is not recommended. Any proposal with facilities within the NDOT right-of-way will require a license or lease.

15. It is the permit applicant's responsibility to perform title research and identify if the state has purchased access and abutters rights for the parcel where an access is proposed. Any break in the access control will need to be processed through the state surplus property committee. This process can be quite lengthy, and success is not guaranteed.

16. Any truck haul operations that access the state highway system will require a temporary permit and coordination with NDOT Permit Office at (775)834-8330.

17. If the needed temporary traffic control is not available from the NDOT Standards, site specific temporary traffic control shall be provided. A temporary traffic control plan (TCP) shall be prepared and signed by an American Traffic Safety Services Association (ATSSA) Traffic Control Supervisor or a Professional Traffic Operations Engineer, certified by ITE.

18. Applicant shall be responsible into perpetuity for all maintenance of plants, shrubs and trees and related irrigation systems installed on NDOT right-of-way. All shrubs and plant material placed within the right-of-way must be low profile. The shrub and plant height shall be two feet or lower

from existing ground and shall be maintained to ensure adequate sight distance for the traveling public. All trees must have a four (4) inch caliper or less at maturity.

19. A minimum onsite stacking length of 50 feet of as required by NDOT and an adequately sized turnaround outside the gate is required prior to any locked gate. Vehicle stacking at a gate shall not back up into the adjacent street right-of-way.
20. The Nevada Revised Statutes (NRS) prohibits advertising within NDOT right-of-way. Please refer to NRS 405.110 Unlawful advertising on or near a highway or on bridge. Signs for advertising will not be allowed within NDOT right-of-way. Please ensure sign base, post and sign edge is outside of NDOT right-of-way.
21. The property owner must provide adequate parking on the property. NDOT does not issue permits for long term parking for business use. Per the Nevada Revised Statutes 484B.457, if operations impact safety and/or traffic flow, NDOT may install "NO PARKING" signs along this section of roadway.
22. The state defers to municipal government for land use development decisions. Public involvement for community development related improvements within the NDOT right-of-way should be considered during the municipal land use development public involvement process. Significant public improvements within the NDOT right-of-way developed after the municipal land use development public involvement process may require additional public involvement. It is the responsibility of the permit applicant to perform such additional public involvement. We would encourage such public involvement to be part of a municipal land use development process.

NDOT reserves the right to incorporate further changes and/or comments as the proposal advances. I look forward to working with you and your team, and completing a successful project. Please feel free to contact me at (775)834-8300, if you have any further questions or comments.

Sincerely,

DocuSigned by:
Jae E Pullen
DC6D2FB6D946439...

Jae E. Pullen, P.E., PTOE
Engineering Services Manager

03/29/2018

JEP:tms

Enclosure ()

CC:

Thor Dyson, NDOT District Engineer
Mike Fuess, NDOT District ADE, Maintenance
Ruth Borrelli, NDOT Chief of Right-of-Way
Jessen Mortenson, NDOT Chief Structures Engineer
Steve Cook, NDOT Environmental Services Chief
Charles Wolf, NDOT Chief Hydraulic Engineer
Ryan Hornback, NDOT District Special Projects
Brad Burge, NDOT District Maintenance Manager
Richard Oujevolk, NDOT Traffic
Paula Diem, NDOT Permit Coordinator
Marnie Bonesteel, mbonesteel@fs.fed.us
File

Date submitted (Pacific Standard Time): 3/29/2018 9:49:23 PM
First name: Alan
Last name: Queiroz

Comments:
Comments on proposed amendment to the Forest Plan regarding Galena lands and Atoma site

Dear Mr. Dunkelberger:

I strongly support the proposed amendment to the Forest Plan to restrict future commercial development on the 3,446 acres of acquired Galena lands. I also support the USFS preferred Alternative #3, which I believe best protects public safety and reduces environmental impacts for the Atoma site. I am in favor of all proposed actions that would maintain public access and dispersed recreation uses for the 3,446 acres of acquired Galena lands and for the Atoma site.

My wife and I, and our two young children (ages 10 and 7) frequently use the Mt. Rose area for various activities including hiking, birdwatching, looking at flowers, snowshoeing, and cross-country skiing. We have also obtained Christmas trees there. We would be extremely disappointed to lose a big part of this wonderful natural area to development that would be better placed elsewhere.

Alan de Queiroz
Reno, NV 89509

Date submitted (Pacific Standard Time): 4/16/2018 4:32:54 PM
First name: Bill
Last name: Rolshoven

Comments:
I approve the project for expansion. Please
Be sure the uphill vehicles turning left into the main ski resort parking lot still have more than adequate vision uphill to downhill traveling vehicles. The overpass should not block vision

Date submitted (Pacific Standard Time): 4/10/2018 9:22:10 AM
First name: Bob
Last name: Rowen

Phone:
Comments:
Mt. Rose Ski Resort has acted as a positive member of the community in its approach to this expansion, including through proactively seeking input from the local community several years ago. As a result of that active community participation, the proposals include important provisions - specifically with regard to continued nonmotorized public access to the Atoma area - that should result in the expansion being a net positive, allowing the resort the ability to meet its perceived needs while not foreclosing the public from continued use of public lands.

Critically important to the public approval of this project are the provisions allowing continued nonmotorized public access to the Atoma lands, including free parking and access, including to skiers with dogs. I have often skied in the lands covered by this expansion, as well as traversed them to access lands higher up the Galena creek drainage. These lands provide important winter recreation opportunity for a couple of reasons.

First, when storms render the higher areas off the Mt. Rose highway inhospitable or dangerous, these areas remain accessible and relatively safe. The statement (on page 74) that the Atoma terrain is "used mainly to access steeper terrain on NFS land to the north of the Atoma Area" discounts the importance of the area itself and the adjoining last south of Galena Creek. My use of the area has been on the terrain itself, as well as the adjoining terrain south/west of Galena Creek, and that is where I have seen other users.

Second, oddly and inappropriately, winter recreation off the Mt. Rose highway is largely characterized by motorized recreation impacts. For instance, it is hard to escape the noise of snowmobiles when skiing or snowshoeing in the Tahoe meadows. (The highway noise is, in fact, insignificant compared to the snowmobile noise.) The lands east of the highway summit are thus important for nonmotorized winter recreation because they are isolated from this noise. Higher up on this east side (i.e. off Tamarack Peak) the territory is relatively steep and, though well-suited to backcountry skinning, does not provide much opportunity for gentle touring. The relatively gentle lands accessed in the Atoma area and through the Atoma area are, therefore, important to providing a decent mix of recreational opportunity off the Mt Rose highway.

All of the provisions for continued public access should be made explicit conditions for approval and confirmed in writing as irrevocable commitments by Mt. Rose Ski Resort. This will ensure that the provisions continue without argument as circumstances change. There should be no flexibility for Mt. Rose Ski Resort to revisit how to best address the public needs in the future: the provisions for continued public access need to be in writing and firm. (They could always be renegotiated with public comment.) I do not hereby imply any criticism of Mt. Rose Ski Resort, but merely acknowledge that circumstances can change in the future and there is no excuse for not putting in clear writing the assumptions and expectations upon which public approval for the Atoma expansion is provided.

This project does remove from public use the hundred or so acres that will be devoted to use by ticketed customers during the ski season. That is a material loss of public terrain. On the other hand, snowmaking and grooming (snow compaction) of ski resort runs can benefit nonticketed individuals who also access these areas. Accordingly, approval of this project should also be conditioned on Mt. Rose Ski Resort continuing to allow public access to all terrain leased from the Forest Service, on terms where such access does not impact the safety of resort operations (and resort operations do not impact the safety of such use.) Mt. Rose Ski Resort has proven to be a good member of the community in not trying to prohibit such use when it does not

impact resort operations. Such continued access should be made explicit in all Forest Service ski area operating permits and should also be an explicit condition to approval of this project.

A few further comments:

The DEIS inadequately characterizes the nature of this land when it says (on page 72) "A GIS evaluation of the IRA for ROS classification determined that 1 percent of the IRA is Primitive and 76 percent is Semi-Primitive Non-Motorized. As a result, opportunities for solitude and primitive recreation in the Atoma Area are limited." The ROS classifications refer to summer characteristics. In winter, they do not apply. In particular with the high snows in the Sierra, most forest roads cease to exist and areas that are accessible become highly inaccessible. Adults die in winter in circumstances and locations where a lost child would be in little danger in summer. In winter, portions of the Atoma area are primitive.

I fully support the Forest Plan amendment to preclude (further) commercial development on the 3,446 acres acquired through the 1994 Galena Resort Land Exchange.

The choice between alternative 2 and 3 (one lift or two lifts) does not appear to impact these concerns. Whichever alternative allows for a larger corridor for continued public access is preferable in this respect.

Lastly, I wish to express some concern that the resort's customer base and the community might be better -- and more profitably -- served by, instead, adding groomed Nordic track in this Atoma area. Such a use would have far less cost and would largely be reversible, and so there seems to be a lot of merit to the resort and the Forest Service fully exploring such alternative before committing to the current planned development. There have been many substantial changes to the sport of Nordic skiing and its public appreciation since the demise of the former Atoma Nordic area. This is especially true with respect to the sport of skate skiing, which barely existed at that time. There is adequate space to create an attractive skate skiing track in the Atoma area, and there is local demand for such an area, especially considering the more reliable snow at the resort with "Tahoe's highest base." I hope the Resort and the Forest Service have fully explored this alternative?especially the Resort, which has a significant financial stake in this matter.

Date submitted (Pacific Standard Time): 3/23/2018 10:11:10 AM
First name: Loren
Last name: Rupp

Comments:
I would like to share some thoughts on the proposed expansion of the Mt Rose ski area across highway 431 to the old Atoma cross country ski area. As an avid skier myself, and I find value in both downhill lift-served skiing, as well as cross-country and backcountry skiing opportunities. Reading over the draft Mt Rose expansion plan, I am impressed with the limited scope of the plan, and specifically the allowance of cross country skiing and other non-motorized users without buying a lift ticket.

However I do have several concerns, especially in consideration of the long-term trends and potential impacts for other recreation in this area. First, I am not convinced that Mt. Rose needs this expansion to complement their existing terrain. Mt Rose currently possesses some of the best beginner/novice terrain in the Tahoe area. I feel that their claim of a lack of 'low intermediate' terrain is somewhat exaggerated. While it is a bit of a jump from the Galena chair up to Lakeview, there are good intermediate trails down such as Kit Carson, Ramsey's and Around the World. As a ski instructor myself I have led students across this transition off the novice slopes and I can attest that it is a reasonable progression that is similar to most other ski resorts in the Tahoe area. Additionally, the realignment of the Wizard chairlift a few years ago has virtually eliminated any potential conflict between novice skiers and more expert skiers returning to the base form the upper mountain.

Second, there are obvious issues with constructing both a skier bridge and chairlift across a major highway. The potential for disruption to traffic includes items dropped on the roadway from the chairlift, potential height restrictions due to the clearance of the bridge and of course disruptions to traffic during the construction of both. For these reasons, I would lean towards supporting the '2-lift' alternative in the plan. I will note that while there are a few examples of skier bridges and lifts crossing roads in the US, none involve a major state highway, and such an action would be unprecedented and untested.

Finally, while these issues could probably be overcome, I feel the project is in opposition to the current trends of the ski industry in general and the Mt. Rose area specifically. As the population ages, the weather gets more unpredictable and downhill skiing gets more and more expensive, a greater number of people have turned toward cross-country and backcountry experiences for their snowsport excursions. This trend has been accelerating in recent years, with sales of cross country equipment rising while sales of downhill gear has been flat . The Outdoor Recreation Participation Topline Report shows that cross country skiing is the second fastest growing outdoor activity in the country, right behind stand up paddle boarding with a 13% annual growth over the last three years. https://outdoorindustry.org/wp-content/uploads/2017/04/2017-Topline-Report_FINAL.pdf These trends should clearly not be ignored when making long term plans for recreation management.

The Atoma area used to be a fine cross-country ski area before it was put out of business by the explosion of downhill skiing in the 70's and 80's. As the popularity of resort skiing has waned, downhill ski areas are now struggling to put people on the mountain. With plans to reinstate a cross country ski area and lodge at Incline Lake, the Atoma area could quite conceivably be incorporated into a longer-term vision for an expanded cross-country destination for the Mt. Rose area. However expansion of the Mt Rose downhill area would be permanent and probably irreversible. Why should we proceed with propping up a dying downhill sport when soon people might be clamoring for more cross-country skiing opportunities?

Human-powered recreation should take priority over other commercial enterprises on National Forest lands. It is less impactful to the environment, and many users report it more rewarding to be in the quiet woods on a self-powered adventure. In recognition of the trends of skiing and snow sports in this country I vote 'NO' on the Mt. Rose expansion plan.

Date submitted (Pacific Standard Time): 4/13/2018 12:55:35 PM
First name: PATRICIA
Last name: SAKELARIS

Comments:
I strongly support the proposed amendment to the Forest Plan to RESTRICT all future commercial development on 3,446 acres of acquired Galena lands in the Carson Range.

I firmly support USFS Alternative #3.

Please SAVE our natural land and keep it natural and keep Mt. Rose 'Recreational area RECREATIONAL.

Date submitted (Pacific Standard Time): 4/18/2018 7:40:52 PM
First name: David
Last name: Schneider

Comments:
Mt Rose expansion ??

I support Alternative 1

If expansion has to occur; Please mitigate its effect on backcountry access

Thank You
David Schneider, O.D.

Date submitted (Pacific Standard Time): 4/2/2018 9:00:23 AM
First name: Jane
Last name: Schwenk

Comments:
I am writing to express my strong support for the USFS plan to restrict future commercial development in the Galena area. I also support the USFS Alternative plan #3 to protect the site environmentally and for the enjoyment of the public.

As the Reno area grows in population and the necessary infrastructure that comes with this growth, it is even more crucial to set aside lands that will remain undeveloped and wild. My family and I consider the Galena forests and trails the sanctuary we need to cope with an increasingly busy valley. This land provides outdoor recreation year around for many of us seeking of stay connected with our natural environment.

Please do all you can to protect it from further development.

Date submitted (Pacific Standard Time): 3/30/2018 12:17:45 PM
First name: Thomas
Last name: Schwenk

Comments:
We live in Saddlehorn, just 10-15 minutes from this precious natural area near Galena and Mt. Rose. We use this area frequently for hiking, running and snowshoeing. It is critical that this area remain open for public use. We appreciate the Forest Service EIS, and strongly support the proposed amendment to restrict commercial development of the Galena and Mt. Rose land. This public access should also apply to the proposed Atoma development. Access to these lands is a major contributor to the quality of life, and therefore property values, in the SW Reno area.

Date submitted (Pacific Standard Time): 4/8/2018 7:54:57 PM
First name: Melanie
Last name: Scott

Comments:
Regarding Mt Rose ski area changes. First, thank you for the draft Mt Rose EIS, and the detailed and diligent work that went into it.

I am in full support of the proposed amendment to the Forest Plan to restrict all future commercial development on 3,446 acres of acquired Galena lands in the Carson Range.

As far as ski trail expansion near the Mt Rose ski area, I support Alternative #3, which best protects public safety and reduces envrionmental impacts to the Atoma expansion site.

I have lived in Reno since the 70s. My family and I continue to enjoy the Mt Rose area in all seasons, hiking, birding, cross-country skiing. Many years I have led or been a participant with Nevada Native Plants society field trips in and around Mt Rose and Tahoe Meadows. Ski trail expansion that also allows for non-motorized recreational use is reasonable, and acceptable, while protecting the area from all commercially-directed development. It is understood that balancing human recreational use with preservation of ecological systems is not a static process.
My one concern is whether at some time the NFS will want to construct a warming hut on the Atoma side. I anticipate this to be a regular request over time.
Thank you for your consideration of this and all comments.
Sincerely,
Melanie Scott

Date submitted (Pacific Standard Time): 4/10/2018 8:47:01 PM
First name: DAVID
Last name: SEGGERN

Comments:
Mt. Rose ski expansion

I am commenting on the Mt. Rose Ski Tahoe Atoma Area Expansion draft EIS.

I commend the USFS for deliberating carefully on this EIS and incorporating comments from the conservation community in the draft EIS. It is important to recognize the history of this area with respect to protection of resources for the enjoyment of all. The Mt. Rose area serves tens of thousands of outdoor enthusiasts in western Nevada and elsewhere through all seasons.

I support the preferred Alternative #3 and the proposed amendment to the Forest Plan that would be associated with it.

I note that some of the maps in the draft EIS are oriented with south at the top, and no obvious indication of that fact on the map. I don't understand why the maps were so oriented. Please correct the map orientations or put a prominent north arrow on the current maps in the final EIS.

David von Seggern

Date submitted (Pacific Standard Time): 4/16/2018 4:20:04 PM
First name: Michael
Last name: Selby

Comments:
Mt Rose Ski Tahoe - Atoma Area Project

Dear Mr. Dunkleberger,

As a neighbor whose water system is directly effected by this development, I must say Mt. Rose Development Corporation have been more than generous in helping mitigate any potential negative impact to our water collection system. Most, if not all of the neighbors on Sky Tavern Rd are in favor of this development as it improves the over all recreational offerings in our area. Furthermore, we still have the entire Mt. Rose Wilderness area if we want to access public land unfettered by development. Though I know there are those with opposing views I think this planned expansion will benefit the most people in a multiple use scenario.

We have been pleasantly reminded often as this development has coalesced what a good neighbor Mt. Rose has been to us who live close to the ski area. Furthermore, as a skier and pass holder at Mt. Rose for over twenty-five years, I can attest to the care and energy they have put into taking care of the environment through direct damage mitigation measures, recycling, erosion control, water testing etc.

In conclusion, we welcome them and their well thought-out development plans in Atoma. They are good stewards of our public lands. With a degree in Environment Science I would be happy to discuss more details if you think it pertinent. Let me know if you have any questions.

Mike

Michael Selby, Ed.D.

Date submitted (Pacific Standard Time): 4/17/2018 6:36:41 AM
First name: Mike
Last name: Selby
Organization: Pine Ridge Water Co
Title: Spokesperson

Comments:
Our water company members are generally in favor of this development but do want to make sure we have no negative impacts on our water system. I have noticed for instance that our upper spring box collection point is not indicated on your sitemap. It should be indicated several hundred feet up the hill along the project's Eastern Border up toward where Trail A cuts back Northwestward and there there will be some disturbance of the ground due to snow making installation, trail clearing etc. We want to make sure this collection point is protected and would like it place on the project map. Also, we noticed there was practically no mention of mitigation for our water system in your DEIS. Mt. Rose Development has been closely working with us on potential mitigation measures to be taken in order to protect the integrity of our water system. We would like these mitigation measures to be included in your final draft. Please contact me for more info.

Date submitted (Pacific Standard Time): 4/18/2018 6:01:54 PM
First name: Susan
Last name: Slagter

Comments:
I support alternative #3. Public access to the new Atoma addition should be maintained. No further development of the USFS lands should be allowed beyond the Mt. Rose ski area expansion.

Date submitted (Pacific Standard Time): 4/19/2018 7:34:15 AM
First name: Courtney
Last name: Smith

Comments:
Mt Rose expansion Draft EIS

Bill,

I've skied in the Galena Creek backcountry since the late 1970s. I think its time to update the Forest Plan to reflect the spirit of the 1994 land exchange. I would like to express my support for the USFS Preferred Alternative 3 from the Mt Rose draft EIS for the expansion of the ski area. Specifically, I strongly support the amendment of the Forest Plan to prohibit commercial use of the remaining area outside of the proposed ski area expansion into the Atoma area.

The number of of recreational users has really increased since the 1970s. This location is unique in the Tahoe area for the high elevation access it provides backcountry skiers, and has become a hugely popular access point for both skiers and hikers in the summer. The Mt. Rose trail has been rerouted and made more attractive by cutting through this area. This is one of the most popular trails on the Toiyabe in the Reno area. I feel it is critical to preserve this pristine area for non-motorized uses.

Sincerely,

Courtney

Courtney Smith
Independence, CA 93526

Date submitted (Pacific Standard Time): 4/19/2018 9:00:31 PM
First name: Peter
Last name: Snow

Comments:
Mt Rose Ski Tahoe Area Expansion

I oppose the expansion project at the Mt rose ski area. Please no. There will be no wild places left anywhere for future generations. Anything to make a buck I guess.

Thank you

Peter Snow

Date submitted (Pacific Standard Time): 4/3/2018 12:00:00 AM
First name: Juan
Last name: Sparhawk

Comments:

[Comment Letter 81]

March 31, 2018

Mr. William A. Dunkelberger
Forest Supervisor
1200 Franklin Way
Sparks, NV 89431

Regarding: Project 41487 Humboldt-Toiyabe National Forest, Washoe County Nevada, Carson Ranger District.

Dear Mr. Dunkelberger:

This matter was first raised in 2013 and was addressed with concerns about the area originally designated as Wilderness Land in the Humboldt-Toiyabe National Forest. This area also encompasses protected wetlands for the Pine Ridge Water Company Spring that provides pristine water for Seven homes on Sky Tavern Rd. My concern is that if a permit is granted to expand the Mt. Rose Ski Tahoe Atoma area it will cause harm to the Spring Water that serves our homes. Nothing has been brought forward to mitigate the issue of the damage of the expansion on the natural Spring water system to make sure the encroachment on the Wetland water does not damage the natural pure water system we currently enjoy. Clean Water is Gold in Nevada!

The Mt. Rose Ski Tahoe Company for the most part have been good neighbors, but to damage a water system that is in place without protections or alternatives to its negative consequences is of great concern to me.

I have copied U.S. Senator Dean Heller who is from Reno and was involved in our designated Spring and water system for his review and comments.

Thank you,

Juan A. Sparhawk
1185 Sky Tavern Rd.
Reno, NV 89511
775 846-4663 solarjas@msn.com

Date submitted (Pacific Standard Time): 4/16/2018 3:09:30 PM
First name: Peter
Last name: Stanton

Comments:
I am both a Mt. Rose season pass holder and regular backcountry user in the areas north and south of SR 431 (Mt Rose Highway).

I support Alternative 1, the No-Action alternative. The north side of Mt Rose Highway should be kept free of commercial development, including a ski area, chair lifts, and ski runs. Preserve this area for non-motorized, dispersed, backcountry recreation.

If the ski area expansion is allowed, please implement the following measures to mitigate the impact on backcountry recreation:

Prohibit any further commercial development of the Atoma Area north of the Mt Rose Highway.

Require public access to the Atoma Area by the non-paying public, including parking in the ski resort parking lot, access over the ski bridge, use of any restrooms on public land, and designated uphill and downhill routes through the Atoma Area resort area.

Require continued public access to any national forest land being used as a commercial ski area.

Date submitted (Pacific Standard Time): 4/3/2018 12:23:27 PM
First name: Tom
Last name: Stille

Comments:
Mt Rose support email

Hello,

Thank you for working on this important area for Truckee Meadows residence.

I am in strong support for Alternative #3.

Tom Stille
Landscape Architect

River School Farm
7777 White Fir Street
Reno, NV 89523

Dancing River Community Co-Housing
Own and Live next to the Truckee River
Check out www.riverschoolfarm.org/drc
775 690-4261

Date submitted (Pacific Standard Time): 3/27/2018 12:00:00 AM
First name: Rose
Last name: Strickland
Organization:
Title:
Official Representative/Member Indicator:
Address1: P.O. Box 8409
Address2:
City: Reno
State: NV
Province/Region:
Zip/Postal Code: 89507
Country: United States
Email:
Phone:
Comments:

[Comment Letter 84]

Rose Strickland
PO Box 8409
Reno, NV 89507

March 22, 2018

Bill Dunkelberger, Spvr.
Humboldt-Toiyabe National Forest
1200 Franklin Way
Sparks, NV 89431

Re: comments on the draft EIS on proposed Mt. Rose Ski Tahoe Atoma Area Expansion

Dear Spvr. Dunkelberger,

As one of the many Reno citizens who participated in the community effort to "save" our treasured Mt. Rose from a proposed ski resort/casino development in the 1980's and 1990's, I am submitting these comments on the draft Mt. Rose Ski Tahoe Atoma Area Expansion draft Environmental Impact Statement (dEIS). I commend the USFS for developing a focused dEIS and the two action alternatives in response to the proposal to expand the Mt. Rose Ski area across the Mt. Rose Highway, while also honoring and respecting the public acquisition and donation of these acquired Galena lands to the Humboldt-Toiyabe National Forest in 1994. I strongly support the proposed amendment to the Forest Plan, the modifications to the original expansion proposal, and Alternative 3 which best addresses substantive public concerns.

1. Proposed Amendment to the Forest Plan: I strongly support the proposed Forest Plan Amendment in both action alternatives, "Land acquired through the 1994 Galena Resort Land Exchange located within Management Area 2 (Carson Front), with the exception of the proposed Atoma Area and the Chutes. Standard - Commercial development shall not be permitted on 3,446 acres of NFS land in the area known as the Galena Land Exchange with the exception of the proposed Atoma Area (112 acres) and the Chutes (131 acres) already in the Mt. Rose SUP."

It took our community over a decade to successfully oppose the ski resort/casino development proposal in these high elevation, scenic, watershed lands in the Carson Range. Nevadans, working with the American Land Conservancy and federal and state agencies across the State, successfully raised funds through the sale of public lands in Southern Nevada to purchase the private Galena lands from its owners and dedicate them to the US Forest Service for public uses.

2. Addressing Scoping Issues and Environmental Impacts: The public raised many scoping issues about the expansion proposal, including its potential impacts on public health and safety, recreation, scenic and cultural resources, and wildlife, plant, watershed and soils resources, as well as continued public recreational access to the acquired Galena lands. I support the modifications (Section 1.4.1) to the original proposal which were made to minimize its negative impacts on the human and biological environment, including public health and safety.

3. Alternative 3: One of my greatest concerns with the expansion was the isolation of the Galena area from the main Mt. Rose Ski area (across a very busy and dangerous highway in the winter), especially for the most vulnerable young skiers. I appreciate the US Forest Service addition of Alternative 3, including the restroom on National Forest lands, to enhance the skiing experience for youngsters and

their parents as well as the stacking of the ski lift over the skier bridge in order to reduce impacts on the scenic quality of the Mt. Rose Highway area as well as the requirement for the construction of the skier bridge before any additional construction disturbances would be allowed on the Atoma expansion site. Therefore, I strongly support the preferred Alternative 3.

4. Additional comments:

a. Restoration: While the dEIS mentions the USFS removal of the Atoma building and re-contouring of its parking area, it does not address the restoration of other parts of the acquired lands on which scars remain from the ski resort/casino proposal. These would include the removal of the road, west of the Atoma building, which was used to access the well sites, the well pads and casings and the unnatural piles of boulders from construction activities. Please add these to the Preferred Action.

b. Volunteer opportunities: In addition, I strongly urge the Humboldt-Toiyabe National Forest to develop management plans and projects on the remaining 3,446 acres of acquired Galena lands which provide opportunities for public engagement and participation in land and resource management on the most popular and heavily used national forest lands in Northern Nevada. These might include the assistance of volunteers to help counter the threats to forest health, including attacks by pine beetles and white pine blister rust on whitebark and Western white pine conifers, efforts to reduce or eliminate invasive noxious species, and volunteer projects to enhance recreational access, including construction and maintenance of trails, as well as restoration of overused areas.

Thank you for considering my comments on the dEIS. I look forward to working with the US Forest Service to better manage and protect the lands and resources of the acquired Galena Lands in the Carson Ranger District of the Humboldt-Toiyabe National Forest.

Sincerely,

Rose Strickland

Toiyabe Chapter of the Sierra Club
PO Box 8096
Reno, NV 89507

February 2, 2018

William A. Dunkelberger, Supervisor
Humboldt-Toiyabe National Forest
1200 Franklin Way
Sparks, NV 89431 via: comments-intermtn-humboldt-toiyabe-carson@fs.fed.us

re: Sierra Club comments on Mt. Rose Ski Tahoe Atoma Area Expansion draft EIS

Dear Spvr. Dunkelberger,

On behalf of the Toiyabe Chapter of the Sierra Club and our 6,500 members in Nevada and the Eastern Sierra, many of whom recreate in the proposed expansion area in both the summer and winter, I am pleased to provide these comments on the draft Environmental Impact Statement (dEIS) for the Mt. Rose Ski Tahoe Atoma Area Expansion proposal.

We strongly appreciate and support the proposed Forest Plan Amendment in both Alternative 2 and Alternative 3 that would restrict any future development of commercial uses on 3,446 acres of the acquired Galena lands transferred to the USFS in 1994. Protecting these lands for dispersed recreation, free of commercial development, has been the goal of the Sierra Club and many other community organizations and citizens, since the original Galena Resort was proposed in the early 1980's.

We support Alternative 3, the Forest Service preferred alternative, because of the addition of the restroom facility on the Atoma site, as well as the two-lift configuration of chair-lifts, both of which will enhance the recreation experience of young ski learners and reduce impacts of the skier bridge and the stacked chair lift on the scenic quality of the Mt. Rose Highway and area. Our research shows that the additions of the restroom and the chair that just services the Atoma area will greatly reduce the need for repeated long flat approaches and crossings of the skier bridge (see attachment) for Atoma skiers.

We thank the Forest Service and the Mt. Rose Ski Tahoe for including provisions in the dEIS which would continue traditional dispersed winter and summer public uses of the Atoma (SUP) area, including the use of the skier bridge, some reserved parking spaces, and public access to this popular area. This recognition and accommodation of continuing dispersed recreation uses greatly improves the proposed expansion and helps to mitigate the loss of the Atoma area to dispersed public recreational uses during the winter.

In addition, we appreciate the modifications (Section 1.4.1) made to the original design, including adding a net under the chairlift which crosses the Mt. Rose Highway, eliminating the proposed tree removal for glading, and changing the snowmaking impoundment to a water tank. All of these changes improve public safety for recreationists, for those traveling the Mt. Rose Highway, and residents who live below the ski area who would have been subject to flooding from dam failure of the proposed water impoundment for snow making water. And, we support the management requirements common to all action alternatives in Appendix A.

We agree with the US Forest Service that the skier bridge over the Mt. Rose Highway is the essential element of the proposed Special Use Permit (SUP) expansion and should be built before any construction disturbances would be allowed in the Atoma area.

There is a question of whether the chair lift over the skier bridge would also have a net, similar to that shown in Figure 10 for Alternative 2. Figure 12 does not show such a net for Alternative 3. Please clarify in the final EIS.

We do have a concern about public safety due to the proximity of the Connector Trail to the Mt. Rose Highway. How does the Forest Service and Mt. Rose Ski Tahoe plan to prevent Atoma skiers from crossing the highway as a shortcut to get to the main base lodge, especially in low snow years where snow berms are not present?

Also, Figure 16, "the 1994 Galena Resort Land Exchange," is not accurate as it does not show that the 131 acres of the Chutes is part of the Galena Resort Land Exchange, as well as currently in the SUP area. Please correct this error in the final EIS.

Although it has taken over four years to develop the dEIS, we believe that the Forest Service and Mt. Rose Ski Tahoe have both done a very good job of addressing community concerns, public safety, and public access issues about the proposed expansion of the SUP to the Atoma area.

Thank you for considering our comments. We look forward to your responses to our questions.

Sincerely,

David von Seggern /s/

David von Seggern, Chair
Toiyabe Chapter of the Sierra Club

Rose Strickland /s/

Rose Strickland, Chair
Public Lands Committee

(attachment)

Attachment: Sierra Club Comments **Feb 1, 2017**

Mt. Rose/Atoma Expansion DEIS-lift comparing chairlift ride distance and ski bridge crossings Between Alternative 2 and Alternative 3 in the Draft EIS

Return to Wizard lift after X number of runs on Atoma runs	3500 ALT. 2 ALT 2. single 3500' lift	Number of times skiiers must ski to and cross over hwy bridge	Total distance of chairlift ride to access Atoma (ft)	3000 1650 ALT. 3 ALT 3. Atoma Lift A 3000'	ALT 3. Return to Wizard Lift Lift B 1650'	Number of times skiiers must ski to and cross over hwy bridge	Total distance of chairlift ride to ski on Atoma trails (ft)	Difference between Alt3 vrs Alt2 in total length of chair lift rides (ft)	Difference between Alt3 vrs Alt2 in number of times skiiers must ski to and cross over hwy bridge
1	1	1	3,500	1	1	1	4,650	1,150	0
2	2	2	7,000	2	1	1	7,650	650	-1
3	3	3	10,500	3	1	1	10,650	150	-2
4	4	4	14,000	4	1	1	13,650	-350	-3
5	5	5	17,500	5	1	1	16,650	-850	-4
6	6	6	21,000	6	1	1	19,650	-1,350	-5
7	7	7	24,500	7	1	1	22,650	-1,850	-6
8	8	8	28,000	8	1	1	25,650	-2,350	-7
10	10	10	35,000	10	1	1	31,650	-3,350	-9
								Negative value means Alt 3 has shorter lift ride distance	Negative value is number of fewer hwy bridge crossings for Alt 3

Date submitted (Pacific Standard Time): 4/16/2018 3:19:45 PM
First name: Tom
Last name: Sullivan

Comments:
I support Alternative 1, the No-Action alternative. The north side of Mt Rose should be kept free of commercial development, including a ski area, chair lifts, and ski runs. Preserve this area for non-motorized, dispersed, backcountry recreation.

Date submitted (Pacific Standard Time): 4/19/2018 2:49:27 PM
First name: Jeanne
Last name: Tribble

Comments:
Mt. Rose Extension Project

Dear USFS,

Thank you for allowing public comment on the Mt. Rose Extension Project. As a local and a pass holder I love Mt. Rose Ski Tahoe. However, I am also a backcountry skier who recognizes how quickly our open spaces are being swallowed up in development. We depend on the Forest Service to protect our natural spaces and places.

Based on the information available on this topic I would prefer to see the area left alone. However, if permission is granted, please put in place permanent protections for the Atoma Area north of the Mt. Rose highway, allowing continued public access to Forest Service land. Alpine skiing is a sport for the privileged. The Forest Service has made winter play available to all. Please insure it stays that way.

Thank you,

Jeanne Tribble

Sent from Mail for Windows 10

Date submitted (Pacific Standard Time): 4/19/2018 10:17:22 AM
First name: Eric
Last name: Valentino

Comments:
Comments: Mt. Rose Ski Tahoe - Atoma Area Project

Dear Supervisor William A. Dunkelberger,

I'm writing you to express my comments about the proposed Mt. Rose Ski Area development plan, Mt. Rose Ski Tahoe - Atoma Area EIS.

In general, I support Alternative 1, the No-Action alternative. I would agree that the Atoma area should be kept free of commercial development, including a ski area, chair lifts, and ski runs. Definitely preserve this area for non-motorized, dispersed, backcountry recreation! As a backcountry skier and frequent user of the Galena drainage and surrounding areas, I would prefer that these areas remain as untouched and tranquil as possible. This view is also consistent with the current rules restricting the use of snowmobiles in the area.

Also as a downhill skier who has skied at Mt. Rose ski area many times, I am hard pressed to understand why the ski area would need to expand north of the highway just to support intermediate and beginner skiers. It seems like there's already enough of that terrain accessed off of the Pondelena lift at the ski area. Are skier numbers increasing so that this facility is overwhelmed? Ski resort trends seem to indicate otherwise. The proposal is for a quad chair lift - this portends a heavy use profile which could be undesirable for this more fragile area. It also seems as though the trail widths of 40 to 70 feet are a bit incongruous to serving beginner and intermediate skiers, who generally need more open area to make turns in.

With regard to the other alternatives, if the development is approved, I definitely support the multiple shared use with backcountry skiers and show shoeers. This would include permanent protection for the 3,446 acres north of the highway and continued free public access to the Atoma area (including those accompanied by dogs). The backcountry users (non-paying public) should be granted designated uphill and downhill routes for the continued public access to forest service land being operated as part of a Special Use Permit, and public access to any restrooms on public land.

Thank you for your consideration.
Eric Valentino
Menlo Park, California.

Date submitted (Pacific Standard Time): 4/15/2018 8:28:44 PM
First name:
Last name:
Organization:
Title:
Official Representative/Member Indicator:
Address1:
Address2:
City:
State:
Province/Region:
Zip/Postal Code:
Country:
Email: poedunknv@gmail.com
Phone:
Comments:
Biggest Little Trail Stewardship Comments on EIS Mt. Rose Ski Tahoe Atoma Expansions

William Dunkelberger
Supervisor
Humboldt-Toiyabe National Forest

Please see attached comment letter.

Curtis Johnson

--

The Biggest Little Trail Stewardship / formerly Poedunks. Our mission is to build, maintain, and advocate sustainable multi-use trails in the greater Reno area. We accomplish this mission by doing trail maintenance and construction, mountain clean ups, actively promoting new trails and fostering a healthy honest relationship with land managers and other trail groups.

Check us out at: http://bltsnv.org

or email us at: poedunknv@gmail.com

2018 Poedunk Officers & Directors:
Curtis Johnson - President
Randy Collins - VP

Paul Miers - Treasurer
Kimberlee Orenstein - Secretary
PJ Etcheverry- Director

William Dunkelberger, Supervisor
Humboldt-Toiyabe National Forest
1400 Franklin Way
Sparks, NV 89431
comments-intermtn-humboldt-toiyabe-carson@fs.fed.us

Dear William,

The Biggest Little Trail Stewardship (BLTS), Inc. (formally Poedunks, Inc.) is a Nevada non-profit corporation with a mission to build, maintain and advocate for sustainable trails throughout the greater Reno community. The BLTS Board of Directors voted to send a letter of strong support to Alternate #3 in the EIS Mt. Rose Ski Tahoe Atoma Expansions.

We strongly support **the proposed amendment to the Forest Plan** to restrict all future commercial development on the 3,446 acres of acquired Galena lands in the Carson Range. We support all proposed actions to maintain public access to and dispersed recreation uses, both winter and summer, in the 3,446 acres of acquired Galena lands, as well as, to the Atoma expansion site We believe the USFS preferred Alternative #3 best protects public safely and reduces environmental impacts to the Atoma site.

We thank you for the opportunity to give input on such an important issue in our local area.

Sincerely,

Curtis Johnson-President
poedunknv@gmail.com
775 232-8483

Date submitted (Pacific Standard Time): 4/18/2018 4:59:10 PM
First name: Steven
Last name: Weiss

Comments:
proposed expansion of the Mt Rose Ski area

TO:

Mr. William Dunkelberger, Supervisor

Humboldt-Toiyabe National Forest

1400 Franklin Way

Sparks, NV 89431
via email

Dear Mr. Dunkelberger,

I am a frequent user of the Galena Creek backcountry and I would like to express my support for the USFS Preferred Alternative 2 from the Mt Rose draft EIS for the expansion of the Mt. Rose ski area. In particular, I strongly support the amendment of the Forest Plan to prohibit commercial use of the area outside of the proposed ski area expansion into the Atoma area.

I have seen the number of users of the Galena Creek backcountry increase steadily for over 30 years. This location is unique in the Tahoe area for the high-elevation access it provides backcountry skiers and snowshoers, and has become a hugely popular access point for hikers in the summer. I feel it is critical to preserve this area for the non-motorized uses that local residents and area visitors alike have come to appreciate.

Thank you for your consideration,

Steve Weiss

Steven I. Weiss

Reno, Nevada, USA

Date submitted (Pacific Standard Time): 4/17/2018 10:22:42 AM
First name: Howard
Last name: Whitaker

Comments:
Mt Rose Ski Tahoe - Atoma Area Project

I support Alternative 1 - No Action. The north side of the Mt Rose
Highway should be kept free of commercial development, including a ski area.

Howard Whitaker

Date submitted (Pacific Standard Time): 4/18/2018 9:27:58 AM
First name: karen
Last name: zito

Comments:
Mt Rose Ski Tahoe - Atoma Area Project

To Whom It May Concern,

I support Alternative 1 - No Action. The north side of the Mt Rose Highway should be kept free of commercial development, including a ski area

My parents are residents of Incline Village, Nevada and I am an avid backcountry snowboarder. Most weekends I visit them and I spend wonderful time split boarding in the backcountry trails on Mount Rose every other weekend of the winter season, and sometime mid-week, if scheduling permits. This is one of the few areas that I feel comfortable heading out on my

I am DEVASTATED by the news that this lovely area on Mount Rose might be destroyed for development for commercial use. There are already TONS of commercial ski areas in Lake Tahoe. This area that is proposed for takeover for commercial use is actively serving a large population of backcountry skiers who are having more and more difficulty finding places to go that are easy to access, but beautiful and high quality. We need to keep some of these pristine areas that can be easily accessed by back country skiers. As John Muir said, "Everybody needs beauty as well as bread, places to play in and pray in, where nature may heal and give strength to body and soul alike. "

Furthermore, and perhaps even more importantly, although I am not an expert on the local flora and fauna, there is no doubt that this will impact environment health and integrity and also the dwindling habitat for the wild creatures that live in the area.

Please, please, please do not let this project proceed. I am happy to provide further input, comments, or to work on the behalf of saving this beautiful wild area.

Most sincerely yours,
With all my passion for the natural world, Karen Zito

Appendix D.
Response to Comments

As is required by United States Department of Agriculture (USDA) Forest Service (Forest Service) National Environmental Policy Act (NEPA) regulations, public involvement occurred throughout the Environmental Impact Statement (EIS) process (Forest Service Handbook [FSH] 1909.15 Chapter 11.5). A Notice of Availability (NOA) for the Draft Environmental Impact Statement (DEIS) was published in the Federal Register on January 19, 2018, initiating the DEIS comment period that remained open until April 19, 2018. Notification of the DEIS's availability was mailed to approximately 100 interested individuals, government officials (including tribal contacts), public agencies, and other organizations, including 13 federal agencies as specifically directed under NEPA. This letter was specifically designed to summarize the contents of the DEIS and elicit public comments on the DEIS and the proposed Forest Plan amendment during the 90-day comment period and provide instructions for public involvement and resources for additional information.

Additional information was available on Humboldt-Toiyabe National Forest (HTNF) website (https://www.fs.usda.gov/project/?project=41487) and comment submissions were accepted via this website. Comments were also accepted from the following sources: email, letter, public meetings, fax, and phone. During the DEIS comment period, the HTNF received 92 comment submittals. All comment letters were reviewed for substantive comments, and contact information for each commenter was entered into a master database.

A total of 31 substantive comments were identified from the letters ranging from questions about developing a ski area in an Inventoried Roadless Area to clarification of impacts to human and biological resources and requests for collaboration with the administrators of the Pine Ridge water system and project design criteria from Nevada Department of Transportation. Resource comments included hydrology, noise, health and safety, environmental justice, recreation and traffic. These comments provide the foundation on which this response to comments document is based. Comments were grouped further by subcategory and theme in order to facilitate the recording and response process. Similar comments were combined to be representative of common themes that were expressed by numerous individuals. Comments that resulted in an update to a particular component of the analysis between the DEIS and FEIS are in the response.

A list of those who submitted comments on the DEIS are provided in Appendix C of the FEIS. Per FSH 1909.15, Chapter 20, 25.1, copies of comment letters are also included as part of Appendix C.

1.0 ENVIRONMENTAL JUSTICE

1.1 ***Former President Clinton's 1994 Environmental Justice order required all federal agencies to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. The order also required agencies to adopt policies, practices and procedures to consider environmental justice in decision making. Our concern is that those making decisions about Mt Rose Ski Area's expansion are not considering how disproportionately high Mt Rose's affects are on social, economic and environmental justices and that their statistical analysis and racial categorizing is Eurocentric and dated.***

In the DEIS report (p. 53), environmental justice is touched upon by using outdated census material from 2012 as well as lumping together low-income issues as equal to minority populations. This way of researching and analyzing data is archaic as using racial categories in this way lacks real contextual and complicated data on ethic changes to better reflect all people's lives and livelihoods. In the late 1990's, American federal policies for collecting data require that multi-ethnic responses be allowed in all (federal) data collection efforts and encourage data creators to provide as much data as possible. Our concern is that these kinds of statements are sweeping, but are merely ways to help justify the expansion of Mt Rose Ski Area and lack foundation based on thoughtful research and statistical analysis away from racial categorizing and does not focus on the reality of low-income families in the Reno/Tahoe/Carson area. [Comment Letter 55]

Response

The census data in Section 3.1.2.3 (*Environmental Justice*) of the FEIS has been updated to include 2017 data. There are no minority populations or low-income populations identified within any of the U.S. Census Bureau census block areas that would be affected by the proposed action alternatives. Minority populations and low-income populations were evaluated in accordance with the criteria and direction provided by the U.S. Environmental Protection Agency (USEPA) in *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses* (1998).

Then in another breath, the DEIS claims that, "the area is popular with Reno residents and largely consists of backcountry skiing and hiking use. As the population of Reno increases, so [will] the use of NFS land in this area for dispersed recreation" (emphasis added). Skiing and snowboarding are two of the most prestigious and privileged sporting activities in the world, which mean that access to these sporting activities from low-income families is not as realistic as is assumed.

The proposed Atoma Area is a space that is used by skiers, snowboarders, snowshoers, backpackers, hikers, mountain bikers, campers, and walkers;it is a space that is free to use by all. The Atoma Area is also a space that school groups utilize such as the Tahoe Expedition Academy (TEA) based out of Truckee bringing students for annual

educational camping experiences. When those proposing that the Atoma Area will be "a more wellrounded recreational experience" if/when developed, we tend to see how the true benefit is that of Mt Rose financially than benefiting the general public. Is taking away a major recreational resource, and ticketing $120 a day or more, really the best way to utilize this space? We do not believe it is. Furthermore, Mt Rose also proposes to allow non-ticked users to "co-exist" in the Atoma Area, but how is this possible? Let's be realistic as fencing, roping and boundary lines almost guarantees lack of accessibility without money. [Comment Letter 55]

Response

There are no restrictions in the action alternatives or agency selected alternative that restricts public use and access in this area. Management Requirement *RT 1* provides parking and access across the skier bridge for winter and summer use to access the backcountry for dispersed recreation activities, with no cost for parking. Management Requirement *RT 3* requires Mt. Rose Ski Tahoe to develop a corridor in the Atoma Area with designated winter routes and signage to access the backcountry, as well as develop an uphill and downhill access plan in the Mt. Rose Atoma Area for non-ticketed skiers. Refer to Table A-1 in Appendix A for more information.

2.0 CONSTRUCTION ACCESS

2.1 The DEIS states that" existing roads such as the old Mt Rose Highway, Atoma Road and Sky Tavern Road would also facilitate construction and maintenance of the proposed lift and trail networks" (p. 21). This is another great concern to us as we were never consulted about this proposition of Mt Rose utilizing Sky Tavern Road. Sky Tavern Road is a privately owned, operated, and maintained at the cost of those who live on it. It is a one-lane road with two-lane traffic that is already overburdened and has erosion and grading issues. We do not give Mt Rose permission to utilize our road and would like it to be clear that more traffic would cause problems, especially in the winter season. Furthermore, we have the right to our peace and quiet and in no way are we interested in our road being used as a thoroughfare for a commercial venture we simply do not agree with. We also would like to make it clear that we are not represented by the Sky Tavern Road User Association or by the self-appointed president of that association with regards to these matters. [Comment Letter 55]

Response

The FEIS has been updated to clarify that access to the Atoma Area would use the Old Mount Rose Highway from the Mt. Rose Highway near the Mt. Rose Ski Tahoe parking lots (refer to description of Alternative 2 in Section 2.3.2.4 [*Trail Construction in the Atoma Area*]). This road is labeled Sky Tavern Road in Google maps, but to clarify, access to the Atoma Area would be limited to the length of road from the Mt. Rose Highway to the proposed bottom terminal location of the Atoma Lift or Atoma Lift A. The trail labeled E on Figure 5 shows this access road.

3.0 CULTURAL RESOURCES

3.1 We also wonder what the outcome of talking with the Nevada State Historical Officer when discussing this areas historical value? As the DEIS states, "[a]rchival Research and the initial field of reconnaissance in 2001 disclosed a number of potentially significant cultural resources within the Atoma Area of the IRA" (p. 73). So, we would like to know more about how the "consultation is ongoing with the necessary federally recognized parties as part of the NEPA and Section 106 process." [Comment Letter 55]

Response

Consultation with the Nevada State Historic Preservation Office (SHPO) on the cultural resource identification efforts, cultural resource evaluations and project effects determination for the Mt. Rose Ski Tahoe – Atoma Area Environmental Impact Statement Heritage Resource Inventory and Evaluation Reports is ongoing. SHPO concurrence will be completed before a final record of decision is signed.

4.0 GENERAL COMMENTS ON THE EIS

4.1 There is a question of whether the chair lift over the skier bridge would also have a net, similar to that shown in Figure 10 for Alternative 2. Figure 12 does not show such a net for Alternative 3. Please clarify in the FEIS. [Comment Letter 85]

Response

A net is not proposed to be constructed under Atoma Chairlift B as part of Alternative 3. This has been clarified throughout the FEIS by adding the following language, "A safety net is not anticipated to be installed under either chairlift in Alternative 3. Chairlift A is a traditional chairlift that travels over trees and ski trails, and operations and maintenance would be similar to any other chairlift at the resort. Chairlift B would run directly over the bridge, which would allow retrieval of dropped objects, maintenance, and for emergency egress."

4.2 Also, Figure 16, "the 1994 Galena Resort Land Exchange," is not accurate as it does not show that the 131 acres of the Chutes is part of the Galena Resort Land Exchange, as well as currently in the SUP area. Please correct this error in the FEIS. [Comment Letter 85]

Response

Clarification has been added to the figure to more accurately represent the information that was being conveyed—the Forest Plan Amendment. Therefore, the name of the shapefile that was "1994 Galena Resort Land Exchange" in the DEIS has been renamed as "Lands acquired in the 1994 Galena Resort Land Exchange that are included in the Forest Plan Amendment." As discussed throughout the FEIS, the Proposed Forest Plan Amendment would include restricting commercial development on 3,446 acres of National Forest System (NFS) land, stating:

> *"Land acquired through the 1994 Galena Resort Land Exchange located within, Management Area 2 (Carson Front), with the exception of the proposed Atoma Area and the Chutes).*

Standard – Commercial development shall not be permitted on 3,446 acres of NFS land in the area known as the Galena Land Exchange, with the exception of the proposed Atoma Area (112 acres) and the Chutes (131 acres) already in the Mt. Rose SUP."

4.3 I note that some of the maps in the DEIS are oriented with south at the top, and no obvious indication of that fact on the map. I don't understand why the maps were so oriented. Please correct the map orientations or put a prominent north arrow on the current maps in the FEIS. [Comment Letter 75]

Response

All of the figures in the FEIS have north arrows to help the reader orient the graphic. The maps are oriented with the top of the mountain at the top of the page to help the reader understand the direction of movement of the chairlifts and down the trails.

4.4 Restrict all future commercial development on 3446 areas of acquired Galena lands in Carson Range. [Comment Letters 8, 14 37, 64]

Response

As discussed throughout the FEIS, the Proposed Forest Plan Amendment would include restricting commercial development on 3,446 acres of NFS land, stating:

"Land acquired through the 1994 Galena Resort Land Exchange located within, Management Area 2 (Carson Front), with the exception of the proposed Atoma Area and the Chutes).

Standard – Commercial development shall not be permitted on 3,446 acres of NFS land in the area known as the Galena Land Exchange, with the exception of the proposed Atoma Area (112 acres) and the Chutes (131 acres) already in the Mt. Rose SUP."

5.0 PROJECT DESIGN CRITERIA & MITIGATION MEASURES

5.1 Also, we noticed there was practically no mention of mitigation for our water system in your DEIS. Mt. Rose Development has been closely working with us on potential mitigation measures to be taken in order to protect the integrity of our water system. We would like these mitigation measures to be included in your final draft. Please contact me for more info. [Comment Letter 77]

Response

Direct effects to the Pine Ridge water system are not anticipated, because the spring sources are between 160 and 500 feet from proposed project activities, would be fenced and avoided during construction, and the vegetation buffer would be maintained between Trail A and the spring. Refer to Management Requirement *WA 2* included in Table A-1 of Appendix A, which states "Fence and avoid the Pine Ridge spring water source during construction to prevent any impacts to the water system. Additionally, the existing vegetative buffer between the proposed development and the water source is to be maintained." Section 3.10.4 (*Cumulative Effects*) under Section 3.10 (*Watershed, Wetlands, and Soils*) of the FEIS has been updated to include the operation, maintenance, and potential future upgrades to the system. Any future improvement to the water system would be considered under a separate decision. Further, Mt. Rose Ski Tahoe

plans to continue working with the owners and administrators of this water system to protect the integrity of the system.

5.2 ***If the ski area expansion is allowed, please implement the following measures to mitigate the impact on backcountry recreation:***
Prohibit any further commercial development of the Atoma Area north of the Mt Rose Highway. Require public access to the Atoma Area by the non-paying public, including parking in the ski resort parking lot, access over the ski bridge, use of any restrooms on public land, and designated uphill and downhill routes through the Atoma Area resort area. Require continued public access to any national forest land being used as a commercial ski area as well as all lands included in the Forest Plan Amendment. [Comment Letters 1, 2, 4, 7, 8, 9, 15, 22, 23, 24, 30, 35, 40, 41, 43, 44, 49, 51, 68, 71, 73, 78, 82, 87, 88]

Response

Refer to the proposed Forest Plan Amendment discussion in Section 1.6 (*Alternative 2*) that restricts commercial development on 3,446 acres of NFS land. Management Requirements for Recreation (*RT 1* and *RT 2*) provide non-ticketed users public access to the Atoma Area and requires parking and access across the skier bridge (refer to Table A-1 in Appendix A). Further, *RT 3* states, "Mt. Rose Ski Tahoe will identify an access corridor for the Atoma Area. A designated winter routes and signage will direct dispersed recreationists to adjacent backcountry terrain. The access corridor will provide connection from Sky Tavern to the upper Galena drainage for cross-country skiing and snowshoeing. The uphill access plan will be available on the Mt. Rose Ski Tahoe website." Section 3.2 (*Recreation*) discusses continued public access throughout the Atoma Area and on lands included in the Forest Plan Amendment. Use of the restrooms would be determined by Mt. Rose Ski Tahoe's maintenance and operations schedule and would be identified in their annual operating plan.

The current project is limited in scope to the HTNF; therefore, access to other NFS land being used as a commercial ski area is beyond the scope of this analysis.

6.0 RECREATION

6.1 ***I support the proposed plan which will enhance the beginner and intermediate ski runs that Mt Rose can offer to its clients. I think that Alternative 3 makes the most sense ensuring the ski lift passes over the bridge providing skier access over the Mt Rose highway to the Atoma area. This will be much safer for the cars passing the lift and for the lift occupants, if problems arise while riding the lift. I strongly support the proposed amendment to the Forest Plan to restrict all future commercial development on the 3,446 acres of acquired Galena lands in the Carson Range. This area is now a prime recreational location for all kinds of summer and winter outdoors activities or the local population, and it must stay that way. [Comment Letters 1, 4, 5, 7, 10, 11, 20, 21, 24, 25, 28, 30, 34, 35, 38, 41, 43, 45, 48, 54, 56, 58, 59, 66, 70, 72, 74, 78, 79, 83, 84, 89]***

Response

Refer to Section 2.6 (*Agency Selected Alternative*) of the FEIS.

6.2 Please note that I support Alternative 1, the No-Action alternative. The north side of Mt Rose should be kept free of commercial development, including a ski area, chair lifts, and ski runs. Preserve this area for nonmotorized, dispersed, backcountry recreation. [Comment Letters 2, 6, 12, 13, 15, 26, 32, 36, 40, 42, 47, 49, 50, 51, 55, 57, 60, 61, 71, 82, 86, 88, 91]

Response

Impacts to dispersed recreation were discussed in Section 3.2.3 (*Direct and Indirect Environmental Consequences*) of the FEIS, and were considered in the decision-making process. Refer to the discussion in the draft ROD for my rationale for the selection of Alternative 3.

6.3 I am generally in support of the Atoma project and feel that it will add much needed beginner terrain for skiers. I believe if done correctly, the trails could also be used in the summer for hiking and bike riding. [Comment Letters 3, 9, 23, 27, 33, 39, 62, 63, 67, 76]

Response

At this time, hiking and biking trails have not been identified as part of the action alternatives and do not meet the Purpose and Need. Management Requirement *RT 1* would ensure the adequate use of the existing parking facilities for dispersed winter and summer recreation, "Designate Mt. Rose Ski Tahoe's parking lot #7 as a trailhead for winter and summer access for dispersed recreation activities. The Forest Service will require that six parking spaces will be reserved for dispersed recreation users. This will be included in the annual operating plan. No parking fees will be charged." Refer to Table A-1 in Appendix A.

6.4 While I fully support the Forest Plan amendment to preclude commercial development on the remaining 3,446 acres acquired through the 1994 Galena Resort Land Exchange, I am extremely disappointed the protection of this land is being offered as a condition of supporting the Atoma Expansion at the Mt Rose Ski Area. [Comment Letter 8]

Response

I considered impacts of expanding ski area development into the Atoma Area during the decision-making process, as is detailed in the *Decision and Rationale for the Decision* discussion in the draft ROD.

6.5 I am a frequent user of the Galena Creek backcountry and I would like to express my support for the USFS Preferred Alternative 2 from the Mt Rose draft EIS for the expansion of the Mt. Rose ski area. In particular, I strongly support the amendment of the Forest Plan to prohibit commercial use of the area outside of the proposed ski area expansion into the Atoma area. [Comment Letter 90]

Response

I considered all of the alternatives analyzed in the FEIS during the decision-making process. Refer to the *Decision and Rationale for the Decision* discussion in the draft ROD.

6.6 The statement (on page 74) that the Atoma terrain is "used mainly to access steeper terrain on NFS land to the north of the Atoma Area" discounts the importance of the area itself and the adjoining land south of Galena Creek. My use of the area has been on the terrain itself, as well as the adjoining terrain south/west of Galena Creek, and that is where I have seen other users. [Comment Letter 68]

Response

The statement from the DEIS that the commenter is referring to says, "While no official Forest Service system trails are located within the Atoma Area, the area does receive dispersed recreational use year-round, including camping, hiking, mountain biking, cross-country skiing, and backcountry skiing (used mainly to access steeper terrain on NFS land to the north of the Atoma Area)." The portion of the sentence that reads "used mainly to access steeper terrain on NFS land to the north of the Atoma Area," is referring specifically to backcountry skiing, which occurs on the steeper terrain on NFS land to the north of the Atoma Area. The other uses listed here acknowledge uses within the Atoma Area.

6.7 Cross country ski access should be allowed in the Atoma Area as this is a historical area for cross country skiing. Additionally, there is demand for track skiing which would include skate skiing. [Comment Letters 4, 29, 68, 69]

Response

Mt. Rose Ski Tahoe and ski area planners developed the plan for the Atoma Area based on goals and needs identified in the Mt. Rose Ski Tahoe 2010 MDP Addendum. At this time, a cross country ski trail has not been identified as part of the action alternatives and does not meet the Purpose and Need.

6.8 How can Mt Rose safe-guard us from potential trespassers from ticketed skier and boarders ducking ropes? How can they guarantee our privacy? We did not buy land here to be so close to commercial property, especially one that inspires to produce 2,000 more skiers per hour. Furthermore, the mention of an "access corridor" that will "provide connection from Sky Tavern to the upper Galena drainage" (p. 65, 66) concerns us as it has potential to funnel people onto our property. [Comment Letter 55]

Response

Appropriate ski area boundary signage would be located along the boundary of the Atoma Area, with an access point at an appropriate location to facilitate the existing use routes of backcountry skiers to Sky Tavern. Leaving the ski area boundary at any location that is not an access point is illegal and punishable by fines and could result in losing their ski pass. Furthermore, the Atoma Area is designed for lower ability-level skiers, who generally stay on groomed trails with known lift access. Backcountry skier use to access Sky Tavern is expected to remain similar to existing levels.

7.0 WATERSHED, WETLANDS, AND SOILS

7.1 ***Our water company members are generally in favor of this development but do want to make sure we have no negative impacts on our water system. I have noticed for instance that our upper spring box collection point is not indicated on your sitemap. It should be indicated several hundred feet up the hill along the project's Eastern Border up toward where Trail A cuts back Northwestward and there will be some disturbance of the ground due to snow making installation, trail clearing etc. We want to make sure this collection point is protected and would like it place on the project map. [Comment Letter 77]***

Response

The Pine Ridge water system has been added to Figure 8 (*Action Alternatives – Atoma Area Detail with Resources*). Further, Table A-1 in Appendix A includes Management Requirement *WA 2*, "Fence and avoid the Pine Ridge spring water source during construction to prevent any impacts to the water system. Additionally, the existing vegetative buffer between the proposed development and the water source is to be retained."

7.2 ***The DEIS does not disclose whether the U.S. Army Corps of Engineers was consulted on the wetlands delineation conducted for the Proposed Action, nor does it include Section 404 of the CWA in Table 1: "Permits Associated with the Action Alternatives". We suggest that the FEIS explain how the extent of jurisdictional waters would be verified and how the Forest Service would ensure that proposed project activities comply with the permit requirements of Section 404 of the CWA. [Comment Letter 52]***

Response

In the *Wetlands* discussion under Section 3.10.3.2 (*Alternative 2 and Alternative 3*) of the DEIS, it states that wetlands were delineated and will be avoided. The lower lift terminal was intentionally re-located to a dry area to avoid wetlands. Also, snowmaking lines will not be installed in any wetland. The project has been designed to avoid any wetland impacts; therefore, a 404 permit is not required by the U.S. Army Corps of Engineers.

7.3 ***Waterways and their preservation are of great concern to the Sky Tavern Road community, especially when discussing the impact of the construction and then everyday maintenance of the Mt Rose Ski Area. There are several box spring collections north of the proposed Atoma Area owned by the Pine Ridge Water Company, a small community water system serving residents below the area on Sky Tavern Road. As acknowledged in the DEIS, "[t]he Pine Ridge Water Storage Spring source and water tank is 200 feet from the nearest proposed Trail A. Effects to the water source are not anticipated because of the distance between the edge of disturbance for the Atoma Area chairlift and trails and the water source" (p. 166, emphasis added).***

How can this statement be publicized in this document and why is the contamination of our water not taken seriously? Of course the disturbance in the area will affect the streams and everything downhill/downstream from the disturbances, most notably the

Pine Ridge Water Supply! The quality and safety of our drinking water most definitely should be anticipated and of the upmost importance? The fact that it is casually and lazily addressed in this DEIS is surprising and almost shameful.
Moreover, the DEIS made a claim that "the current condition[s] of the watershed [are already] affected by the ski area development" because, for example as "parking lots have been paved, high velocity runoff areas like parking lots can contribute to pollutants (such as tar and oil) to streams" (p. 160). This seems to contradict the previous claim that runoffs, disturbances and everyday operations of a ski area would not be affecting water supplies and/or sources. So our question is, who makes these determinations as to what distances are safe from drinking water sources? What are the parameters for disturbances to be found to have "little to no affect" on the current waterways and wetlands, springs and drainages that feed into our water supplies and the spring collection system used on Sky Tavern Road? These two claims in the DEIS are contradictory and fail to consider the reality of the short term and long-term damage to our communities drinking water, our vegetation and wildlife. Not to mention the unforeseen quantities of aquifers that feed personal wells on private land. [Comment Letter 55]

Response

The FEIS has been updated to more precisely identify the distance between the Pine Ridge water system and the nearest proposed disturbance. The DEIS identified the approximate distance from the nearest water source in the Pine Ridge Water system. For clarity, the FEIS includes a distance range from the diversion points to the nearest trail, between 160 and 500 feet. Additionally, Appendix A includes Management Requirements to maintain the integrity of the water system. The system will be avoided and fenced during construction and a vegetative buffer will be retained between Trail A and the spring source. Mt. Rose Ski Tahoe plans to continue working with the owners and administrators of this water system to protect the integrity of the system.

The FEIS has also been updated to clarify the existing condition of the watershed. The FEIS states, "The current condition of the watershed has been modified by ski area development. Tree removal and grading has occurred on NFS land and adjacent private land to support existing ski area infrastructure, parking lots, residential developments and the Mt. Rose Highway. While ski trails and lift disturbances have been revegetated to rehabilitate and stabilize these areas, loss of overstory and varying degrees of revegetation success, have *potential* to result in increased sediment in area streams and wetlands. Additionally, high velocity runoff areas like parking lots can contribute pollutants to streams; however, in this location the land immediately downhill of the Mt. Rose parking lot is not a wetland and no streams are located directly downhill of the parking lots and therefore, pollutant transport to streams and wetlands from the parking lot is unlikely. In addition, evidence of sediment transport was limited to areas directly adjacent the highway, parking lot and ski trails."

To further clarify the limited potential for impacts to water resources from this project, refer to the *Watershed* discussion under Section 3.10.3.2 (*Alternative 2 and Alternative 3*), which states, "No perennial streams would be directly affected by the proposed projects." Additionally, the *Wetlands* discussion in Section 3.10.3.2 states, "Streams and wetlands within the project area were delineated and the projects included in the action alternatives would not result in any impacts to streams or wetlands." Refer to Management Requirements for Watershed, Wetlands

and Soils (*WA*), as well as *G 3* and *G 5*, which identify further protocols to minimize potential for impacts to water resources (see Table A-1 in Appendix A). Furthermore, under *Water Rights* in this section, groundwater is discussed; no impacts to surrounding water rights are anticipated.

Mt. Rose Ski Tahoe is committed to working with the Pine Ridge Water Company to ensure the quality and safety of the drinking water. Currently, Mt. Rose Ski Tahoe and the Pine Ridge Water Company are coordinating to improve operations and maintenance of the collection system. These plans and improvements will continue to develop as the Water Company finalizes registration with the State of Nevada.

8.0 INVENTORIED ROADLESS AREA

8.1 ***In 1999 Former President Clinton directed the forest service to develop regulations that would provide appropriate, and consistent, long-term protection for IRA's ... prohibit[ing] road construction, reconstruction and timber harvest for multiple use management (p. 69 emphasis added). However, transforming this area into a ski area WOULD mean that roads were being altered and reconstructed as trails begin to form and trees are cut down. [Comment Letter 55]***

Response

Under either Alternative 2 or Alternative 3, no new roads would be constructed or reconstructed within the Rose-Galena IRA. Additionally, as detailed under the *Consistency with the 2001 Roadless Rule* discussion, removal of timber incidental to the implementation of management activity is consistent with the roadless rule. (DEIS p. 77 and FEIS p. 79) Finally, Management Requirement *WA 3* in Table A-1 of Appendix A states, "Existing roads will be used for construction and routine maintenance of the proposed project components."

8.2 ***The DEIS inadequately characterizes the nature of this land when it says (on page 72) "A GIS evaluation of the IRA for ROS classification determined that 1 percent of the IRA is Primitive and 76 percent is Semi-Primitive Non-Motorized. As a result, opportunities for solitude and primitive recreation in the Atoma Area are limited." The ROS classifications refer to summer characteristics. In winter, they do not apply. In particular with the high snows in the Sierra, most forest roads cease to exist and areas that are accessible become highly inaccessible. In winter, portions of the Atoma area are primitive. [Comment Letter 68]***

Response

The commenter points out that the Recreation Opportunity Spectrum (ROS) classification should not be relied upon to characterize the winter landscape as many motorized routes become infrequently used in the winter; however, none of the roads in the Atoma Area are open for public travel on the motor vehicle use map. In addition, there is a winter closure to oversnow vehicles in this area as well. The Atoma Area does not provide a primitive recreation opportunity because it does not meet the definition provided in the ROS.

The language in the FEIS has been updated to clarify that the Atoma portion of the IRA does not meet the definition of *Primitive* in the ROS, which is, *"The area is 3 miles or more from all roads and trails with motorized use and generally 5,000 acres or greater in size. The setting is essentially an unmodified natural environment with some evidence of trails. Motorized use is*

prohibited. The social setting provides for less than 6 parties encountered on trails and less than 3 parties visible from campsites. Capacities range from 0.5 to 1.0 RVD/acre/year. Onsite controls are extremely limited with most regulation accomplished off-site. Typical activities include hiking, horse packing, fishing, hunting and camping. The compatible VQO is preservation."

As discussed in the FEIS, "the Rose-Galena IRA is 3,710 acres in size and is bordered on the southeast edge by the Mt. Rose Highway. The Atoma Area in particular is in close proximity to both the Mt. Rose Highway and Sky Tavern Road and currently has a small building and parking area located within the Project Area. In addition, a number of trails exist throughout the area adding to the modified setting. These trails are used by both hikers and mountain bikers, and portions are included as part of the Galena fest mountain bike race. The Forest Plan has assigned the VQO of Partial Retention within the Atoma portion of the IRA. Refer to the Section 3.5 (*Visual Resources*) of the FEIS for additional discussion of appropriate sites within this VQO, but for clarity, Partial Retention allow for more change from natural than a VQO of retention as is stated in the ROS for primitive. The ROS would not be impacted by ski area development in the Atoma Area because adjacent development in that area, roads and existing use levels."

9.0 ENGINEERING, DESIGN AND OPERATIONS COMMENTS

9.1 Additional information requested for the structure:

i) What is the height of the chairlift over Mount Rose Highway?

ii) What is the distance of the chairlift piers to Mount Rose Highway? [Comment Letter 65]

Response

To meet clearance regulations, the chairlift would be approximately 38 to 45 feet above the road; however, the exact height and location of the towers will be determined in conjunction with the bridge design following a final Record of Decision.

b) Additional information requested for the maintenance operations:

i) With the proposed design, what are the traffic impacts for emergency and routine maintenance? [Comment Letter 65]

Response

Bridge construction and maintenance will adhere to standard NDOT protocol and applicable safety requirements. Bridge maintenance is expected to occur bi-annually and would follow procedures in the AASHTO Manual including an initial inspection followed by bi-annual routine inspections. The State of Nevada has approximately 1,050 bridges on the State highway system; they have significant experience maintaining bridges and traffic patterns (Nevada Bridge Inspection Program, NDOT Structures Manual).

c) Visibility of the chairlift system will be noticed by the highway users. NDOT recommends buy-in from local jurisdictional stakeholders on the proposal's aesthetics. [Comment Letter 65]

Response

A visual analysis is included in Section 3.5 (*Visual Resources*) of the FEIS. Management Requirement *VI 6* requires Mt. Rose Ski Tahoe to remove the individual chairs outside the ski

season, where it spans the highway. Management Requirement *VI 4* requires Mt. Rose Ski Tahoe to coordinate with NDOT and the HTNF regarding the design and construction of the skier bridge. Refer to Table A-1 in Appendix A.

c) Bridge structure design considerations:

i) What are the bridge load capabilities? [Comment Letter 65]

Response

Management Requirement *PHS 3* requires the skier bridge to conform to NDOT Structures Manual for height and load capacity design and American Association of State Highway and Transportation Officials structural design standards. Load capacities would be designed to accommodate snowcats, moving loads, snow and ice and geotechnical investigations and design. Refer to Table A-1 in Appendix A.

ii) NDOT is concerned with drainage impacts. Additional information on the proposed structure drainage (stormwater runoff/dust control/icicle forming prevention) would be helpful. [Comment Letter 65]

Response

Prior to any grading adjacent to the NDOT right-of-way, a Drainage Report, including a grading plan, and a Drainage Form must be submitted to the Permit office (NDOT) for approval. Refer to Management Requirement *WA 4* in Table A-1 in Appendix A.

iii) What are the bridge pier locations and their proximity to Mount Rose Highway?

iv) What is the vertical clearance of the structure (for vehicles)? [Comment Letter 65]

Response

The proposed chairlift and skier bridge shall have vertical clearance from the highway of at least 18 feet to conform to snow removal requirements by the NDOT (refer to Management Requirement *PHS 3* in Table A-1 of Appendix A). The locations of the piers will be determined in the design phase.

v) Based on federal requirements, structure lighting may be needed. [Comment Letter 65]

Response

Comment noted. If lighting is required on the bridge, lights will be dark sky compliant.

vi) What design concepts are being considered to mitigate pedestrians and object from falling from the bridge onto the roadway? [Comment Letter 65]

Response

The agency selected alternative (Alternative 3) aligns the skier bridge and the chairlift vertically in the same location. If an object falls from the lift, it would land on the bridge. A plan will be developed for response to purposeful throwing of items off the lift or bridge per Management Requirement *PHS 2* (see Table A-1 in Appendix A).

vii) Are there any proposals to run utilities on the bridge structure? [Comment Letter 65]

Response

A waterline for snowmaking is proposed to be located on the bottom of the bridge structure.

viii) Based on federal requirements, a ventilation may be needed for the structure. [Comment Letter 65]

Response

Comment noted. Specific details of the alternatives are discussed in Section 2.3 (*Alternatives Considered in Detail*) of the FEIS. Additional details will be finalized when engineering is completed for the selected alternative. Regardless, Management Requirements have been identified in the FEIS to ensure that construction, operations, and maintenance of the bridge and chairlift under any action alternative is consistent with pertinent laws, regulations, and policy (refer to Table A-1 in Appendix A). Specifically, *PHS 3* requires that the chairlift will be constructed to be consistent with the NDOT structures manual for height and load capacity design, the American Association of State Highway and Transportation Officials design standards, and the American National Standards Institute specifications.

9.2 i) For Mt. Rose Ski skier bridge operations, how does the operations affect the highway (prevention of snow/ice/soils from falling onto the road)?

ii) Bridge maintenance responsibilities need to be clearly defined by all parties and agreed upon (executed maintenance agreement) prior to any NDOT permit issuance. Routine operations/ maintenance, repair/replacement and emergency response duties are critical to the public safety of Mt. Rose Ski patrons, and the traveling public.

iii) The structure's potential impact to the NDOT's winter snow operations is not clear. Additional information and discussion is necessary to determine how both parties may successfully complete their operations. [Comment Letter 65]

Response

Management Requirement *PHS 1* ensures that an operational plan and memorandum of understanding is developed between Mt. Rose Ski Tahoe and NDOT to define communication and operational protocols (refer to Table A-1 in Appendix A). These management requirements would be an element of any project decision. Finally, a site plan review is anticipated to occur as part of the occupancy permit for work in the NDOT right-of-way.

9.3 Draft environmental impact statement (DEIS) alternatives only consider a bridge crossing. Have other alternatives, such as a tunnel, been considered? While a bridge may be the best solution, NDOT would like to know if other proposals were considered and their positives and negatives. [Comment Letter 65]

Response

Yes, other design options (such as a tunnel) were considered. Refer to Section 2.5 (*Alternatives and Design Options Considered but Eliminated from Detailed Analysis*) of the DEIS for options considered and reasons they were dismissed.

9.4 Proposed bridge location is on a horizontal curve. What was the design considerations for identifying this location?

(1) During winter weather, structures may present additional roadway safety concerns. Weather phenomena created from structure may occur such as snow accumulation, wind tunnel effects, shadowing- resulting in ice on the roadway, accumulation of moisture, etc. Ice formations at the ingress and egress locations where vehicles pass under the bridge may be problematic on a roadway curve.

(2) Placing a bridge over a highway may decrease sight distance. Additional review and justification for the placement of the bridge structure is needed. Ideally, placing the structure on a roadway tangent would be preferred. [Comment Letter 65]

Response

As discussed in Section 2.5.1 (*Alternate Lift/Trail Configurations for the Atoma Area*), the natural terrain gradients in the Atoma Area, although suitable for lower-level skiing and riding, present challenges from a trail planning perspective. Early in the planning process, and prior to a formal proposal presented to the HTNF, Mt. Rose Ski Tahoe and ski area planners considered numerous other lift and trail designs for the Atoma Area. However, the plan included in the Mt. Rose Ski Tahoe's 2010 MDP Addendum (Alternative 2) and Alternative 3 are most capable of meeting the Applicant's stated Purpose and Need while minimizing or avoiding resource impacts to the extent possible, including wetlands, cultural resources, soils, and overstory vegetation. Alternate lift/trail configurations for the Atoma Area did not make use of the natural topography in a way that provided an adequate amount of additional terrain for lower-level skiers. The current terrain proposal also provides some variety (narrower, more natural terrain) when compared to existing lower-ability level terrain.

Management Requirement *PHS 1* ensures that an operational plan and memorandum of understanding is developed between Mt. Rose Ski Tahoe and NDOT to define communication and operational protocols (refer to Table A-1 in Appendix A). The operational plan will address snow removal protocols that need to be in place during and after storm events to ensure that NDOT is able to perform highway maintenance activities without compromising skier safety. These protocols may include capping and stacking/removing snow and use of trucks, dump trucks and plows rather than blowers, to minimize potential interaction with ski area operations. In addition, a discussion of coordinating with Mt. Rose Ski Tahoe snowcat drivers in emergency situations would likely be included in the plan.

d) Providing the construction phases on Mount Rose Highway would be helpful. [Comment Letter 65]

Response

Construction phasing within the highway right-of-way has not been developed at this time; however, construction within the Mt. Rose Highway right-of-way would be included in the application for the occupancy permit as is required by that permit.

e) As a Scenic Byway, what design considerations were considered? [Comment Letter 65]

Response

Impacts to the scenic byway are expected to be minimized by natural vegetation and grades, revegetation plans, and forest service design and construction standards such as color and reflectivity, are provided in the Built Environmental Image Guide. Refer to Management Requirements *VI 1–6* in Table A-1 of Appendix A for more detail.

9.5 NDOT would like more information regarding emergency operations and the elements needed for immediate response. This includes, but it not limited to, power, equipment, response protocols, communications, access, and infrastructure. [Comment Letter 65]

Response

Management Requirement *PHS 1* has been updated to specifically identify that the operational plan and memorandum of understanding developed between Mt. Rose Ski Tahoe and NDOT will include emergency operations and elements needed for immediate response. Refer to Table A-1 in Appendix A.

9.6 There is a concern that the proposed snow-making operation may impact Mount Rose Highway. With the increase in snow making capabilities, how will those operations affect Mount Rose Highway (ice and snow on roadway) and what mitigations are in place to prevent the snow from accumulating on the roadway? [Comment Letter 65]

Response

Management Requirement *PHS 1* has been updated to specifically identify that the operational plan and memorandum of understanding would include specifics on snowmaking plans (refer to Table A-1 in Appendix A). Except where the ski trails cross the highway on the bridge, trails are generally greater than 100 feet from the highway edge to allow for adequate space and mitigation measures to be implemented to minimize potential ice and snow on the roadway.

9.7 If the needed temporary traffic control is not available from the NDOT Standards, site specific temporary traffic control shall be provided. A temporary traffic control plan (TCP) shall be prepared and signed by an American Traffic Safety Services Association (ATSSA) Traffic Control Supervisor or a Professional Traffic Operations Engineer, certified by ITE. [Comment Letter 65]

Response

Comment noted. Mt. Rose Ski Tahoe will plan accordingly and implement the requirements under an encroachment permit when it is time to do so.

9.8 Applicant shall be responsible into perpetuity for all maintenance of plants, shrubs and trees and related irrigation systems installed on NDOT right-of-way. All shrubs and plant material placed within the right-of-way must be low profile. The shrub and plant height shall be two feet or lower from existing ground and shall be maintained to ensure adequate sight distance for the traveling public. All trees must have a four (4) inch caliper or less at maturity. [Comment Letter 65]

Response

Comment noted. Mt. Rose Ski Tahoe will comply with the encroachment permit requirements when they apply for the permit.

9.9 A minimum onsite stacking length of 50 feet of as required by NDOT and an adequately sized turnaround outside the gate is required prior to any locked gate. Vehicle stacking at a gate shall not back up into the adjacent street right-of-way. [Comment Letter 65]

Management Requirement *PHS 1* ensures that an operational plan and memorandum of understanding will be developed between Mt. Rose Ski Tahoe and the NDOT to define communication and operational protocols for highway maintenance and use of Atoma Area. This includes capping and stacking protocols. Refer to Table A-1 in Appendix A.

9.10 The Nevada Revised Statutes (NRS) prohibits advertising within NDOT right-of-way. Please refer to NRS 405.110 Unlawful advertising on or near a highway or on bridge. Signs for advertising will not be allowed within NDOT right-of-way. Please ensure sign base, post and sign edge is outside of NDOT right-of-way. [Comment Letter 65]

Response

Comment noted. The bridge will be constructed per the Forest Service's Built Environment Image Guide, see the discussion under Section 3.5.2.1 (*Visual Management System and the 1986 Forest Plan*) of the FEIS. The U.S. is separated into provinces, and this area is in the North Pacific Provence where guidelines for the built environment in this zone emphasize muted earth tones, structures that appear solid and substantial, and make use of battered stone, wood, or even colored and textured concrete.

9.11 The property owner must provide adequate parking on the property. NDOT does not issue permits for long term parking for business use. Per the Nevada Revised Statutes 484B.457, if operations impact safety and/or traffic flow, NDOT may install "NO PARKING" signs along this section of roadway. [Comment Letter 65]

Response

Comment noted. Parking is provided at the Mt. Rose Ski Tahoe main lodge and access to the Atoma Area would only be across the skier bridge or return chairlift.

9.12 The state defers to municipal government for land use development decisions. Public involvement for community development related improvements within the NDOT right-of-way should be considered during the municipal land use development public involvement process. Significant public improvements within the NDOT right-of-way

developed after the municipal land use development public involvement process may require additional public involvement. It is the responsibility of the permit applicant to perform such additional public involvement. We would encourage such public involvement to be part of a municipal land use development process. [Comment Letter 65]

Response

Comment noted. Mt. Rose Ski Tahoe would apply for an encroachment permit following a Record of Decision. This permit requirement is included in Table 1 (*Permits that may be applicable with the Action Alternatives*) under Section 1.11 (*Applicable Permits*) of the FEIS.

3. Mt. Rose Ski encroachments into NDOT right-of-way. All encroachments (temporary and permanent) shall require a permit. For existing permitted facilities, design changes will require a new permit application. The permit application shall be signed by the facility owner.

a) Identifying all driveways/access (utility/maintenance/public) onto Mount Rose Highway within the corridor. All driveways must be permitted by NDOT. Preliminary discuss of access is needed prior to a permit application submittal.

b) Identify all necessary utilities within the NDOT right-of-way for the proposal. [Comment Letter 65]

Response

Comment noted. Mt. Rose Ski Tahoe would apply for an encroachment permit following a Record of Decision. This permit requirement is included in Table 1 (*Permits that may be applicable with the Action Alternatives*) under Section 1.11 (*Applicable Permits*) of the FEIS.

c) When considering the increase in traffic (pedestrian/bicycle/motor vehicle) generated with the site expansion, a traffic study may be necessary for an NDOT permit. Will traffic be consistent between winter and summer activities provided by the expansion? [Comment Letter 65]

Response

A traffic analysis was completed and included in the FEIS as Appendix B. There is no additional parking or summer activities proposed as part of the expansion.

d) Confirmation that the proposal provides adequate parking off NDOT right-of-way. For public safety, it is important that the proposal does not influence parking in the right-of-way.

e) Identifying the locations and number of tree removals needed for the proposal. [Comment Letter 65]

Response

Trees will be accounted for prior to removal. Management Requirement *VI 4* states, "Mt. Rose Ski Tahoe will coordinate with NDOT and the HTNF regarding the design and construction of the skier bridge over the Mt. Rose Highway." This includes, but is not limited to, following NDOT's

policies and procedures which are included in *VI 4*, "Provide additional mitigation above and beyond the 3% for the removal of every tree over a 4 inches diameter. This would be a 2:1 caliper inch replacement either in trees, if there is sufficient room for their 80% mature size, and their establishment *or* the value of those replacement trees added back into the 3% for aesthetic. Revegetation is required per NDOT requirements for all disturbed areas, including staging, etc. are not a part of the 3%." Refer to Table A-1 in Appendix A.

9.13 Comments specific to the NDOT permitting process are below:

6. ***Existing occupancy permits are personal; however, the upkeep and repair responsibilities shall transfer to the property owner's successor. Actual work being performed in the NDOT right-of way cannot be transferred without prior written approval from NDOT. If the property changes use, the new property owner will need to apply for a new occupancy permit for access to the state highway.***
7. ***An occupancy permit is required for facilities within the NDOT right-of-way. Please see the Terms and Conditions Relating to Right of Way Occupancy Permits (2017 edition) booklet available online at nevadadot.com. Contact the Permit Office at (775) 834-8330 for more information regarding an occupancy permit.***
8. ***NDOT may require a performance or cash bond, to ensure the successful and timely completion of improvements, as a guarantee that the work will be completed accordance with the terms of the occupancy permit. Performance bonds provided to other public agencies may be used in lieu of this requirement at the discretion of the District Engineer. Evidence of this bond should be submitted with permit.***
9. ***For any non-permanent activities or temporary traffic control such as placement of cones, static signs, and portable electronic signs within NDOT right-of-way will require a temporary permit. Please submit temporary permit applications at least 4 weeks prior to the scheduled activity or work. Contact the Permit Office for more information.***
10. ***The applicant is encouraged to coordinate with the Permit Office early for any required occupancy permit (access management, hydraulic design and drainage facilities, maintenance agreements, roadway abandonment, intersection control evaluation, leases, etc.). NDOT's permit processing time may vary based on project complexity; however, the processing time is approximately forty-five (45) working days. This does not include any revision time needed to make necessary changes in the design. Significant design applications may take more than one revision, please allow adequate planning and schedule ahead.***
11. ***An effective strategy to minimize delay is taking advantage of the Permit Office's Pre-Permit process. Preliminary plans and associated engineering documents may be submitted in advance for NDOT review and comment. This service does not require a processing fee. Please contact the Permit Coordinator, Paula Diem, at (775) 834-8330 for any questions or comments regarding the pre-permit process.***
12. ***Applicant is encouraged to coordinate with NDOT on the traffic impact study and seek NDOT's acceptance of the study early in the development planning process.***

NDOT Permit Office will require an NDOT acceptance letter for any traffic impact study submitted with a permit application. For questions and comments, please contact the Traffic Office, (775) 834-8304.

13. ***Prior to any grading adjacent to NDOT right-of-way, a drainage report, including a grading plan, and a Drainage Form must be submitted to the Permit Office. Please contact the Permit Office for more information.***
14. ***Applicant is responsible for mitigating any project site drainage within the property. Drainage facilities within NDOT right-of-way is not recommended. Any proposal with facilities within the NDOT right-of-way will require a license or lease.***
15. ***It is the permit applicant's responsibility to perform title research and identify if the state has purchased access and abutters rights for the parcel where an access is proposed. Any break in the access control will need to be processed through the state surplus property committee. This process can be quite lengthy, and success is not guaranteed.***
16. ***Any truck haul operations that access the state highway system will require a temporary permit and coordination with NDOT Permit Office at (775)834-8330. [Comment Letter 65]***

Response

Comment noted. Mt. Rose Ski Tahoe would apply for an encroachment permit following a Record of Decision and all components of this permitting process would be fulfilled. This permit requirement is included in Table 1 (*Permits that may be applicable with the Action Alternatives*) under Section 1.11 (*Applicable Permits*) of the FEIS. Regarding comment item #12 in the list above, a traffic study has been completed and reviewed by NDOT. Refer to Section 3.1.2.1 (*Traffic*) for additional details.

10.0 NOISE

10.1 ***The DEIS mentions our residential community regarding noise pollution. "[N]oise pollution was not considered necessary for detailed analysis in this DEIS. The nearest noise receptors to the Atoma Area are nine homes that are approximately 4,000 feet to the northwest. They are located adjacent to the Sky Tavern Ski trail, on Sky Tavern Road. These homes are a mix of full-time and part-time residents and are not expected to experience a noticeable change in noise audible from the ski area as a result of implementation of the proposed projects" (p. 56). This statement is entirely untrue. As already stated, we live in the closest residential dwelling to the Atoma Area, no more than 0.3 miles (528 yards/ 1584 feet) to the northwest boundary and to the loading area for the proposed Atoma Chairlift. Not only was the distance of our dwelling to the Atoma Area measured incorrectly, but the assumption that we will not hear noise is a mistake. Audible noise will most certainly be a factor, and one that should be considered, not brushed off. On any given day throughout the winter season we can hear numerous activities from Mt Rose Ski Tahoe including, but not limited to, snow-***

cats, snow-mobiles, cars, horns, people yelling, bombs going off during avalanche control, and especially the running noises of snow-making machines both day and night. If this expansion is just over 500 yards from our house, believe me, we will hear it. Furthermore, whether or not people live part-time or full-time in their homes should be of little consideration when discussing whether noise would be audible from their property. [Comment Letter 55]

Response

Comment noted. The EIS has been updated to reflect this information. Refer to Section 3.11 (*Noise*) in the FEIS. Residents are expected to experience an increase in noise from grooming, snowmaking, snow-mobile equipment, and human voices during the winter ski season as the Atoma Area would be closer to homes than Mt. Rose Ski Tahoe.

11.0 PUBLIC HEALTH AND SAFETY

11.1 We do have a concern about public safety due to the proximity of the Connector Trail to the Mt. Rose Highway. How does the Forest Service and Mt. Rose Ski Tahoe plan to prevent Atoma skiers from crossing the highway as a shortcut to get to the main base lodge, especially in low snow years where snow berms are not present? [Comment Letter 85]

Response

Appropriate ski area boundary signage would be located along the southern boundary of the connector trail. Leaving the ski area boundary at any location that is not an access point is illegal and punishable by fines and could result in losing their ski pass. Further, due to the topography of the area, skiers would have to walk uphill and across the highway to get back to the parking lots or day lodge (which is a considerable distance away) and is likely to deter many of the lower ability-level skiers this area is designed to accommodate. If crossing the highway does become an issue, Mt. Rose Ski Tahoe will work with NDOT to provide appropriate signage.

11.2 Environmental pollutants are an issue, of course. From everyday equipment usage, residual from machinery, oils from lift drives, snow-mobiles, snow-cats, snow-making machines and equipment, wax from skies and boards, and everyday garbage that is, intentionally or not, discarded by the general public in these spaces. Garbage and waste are already an issue. We pick up garbage every day in the Atoma Area that has blown over from the Main Lodge and Parking Lots. Therefore, if Mt Rose expands their acreage basically to our doorstep, what will their every day pollutants mean for our property, our neighborhood and our waterways? [Comment Letter 55]

Response

Under any of the alternatives, the equipment maintenance facility would be maintained on the south side of the Mt. Rose Highway. In addition, bearproof trash receptacles will be provided at the lift terminals under either alternative. Equipment (including vehicles and lift components) is maintained to manufactures specification and includes daily visual inspections to prevent environmental impacts. Wax from skis and snowboards that wears off during use is immeasurable and is not expected to have environmental impacts. Appropriate trash receptacles will be provided at the top and bottom terminals of lift in the Atoma Area and upkeep will be the responsibility of

Mt. Rose Ski Tahoe. Trash and debris will continue to be collected across the mountain annually. Changes in operation resulting from ski area development in the Atoma Area is not expected to result in an increase in environmental pollutants.

12.0 TRAFFIC

12.1 ***From our perspective, as everyday travelers of the Mt Rose Highway from Sky Tavern Road to Incline Village, there is a growing concern for increased traffic at the turnoff into the Main Parking Lot of Mt Rose Ski Area. Traffic jams are a result of long lines trying to turn into the resort and backing up traffic who wish to pass. Adding a turning lane, or passing lane, at this location would surely help eliminate some of these issues which seem in need of addressing before adding acreage to increase skier and boarder volumes. [Comment Letter 55]***

Response

A traffic analysis was completed at the location referenced by the commenter. It was determined that an exclusive left turn lane is not required on Mt. Rose Highway at the base area intersection based on the 45 miles per hour posted speed limit. Refer to Section 3.1.2.1 (*Traffic*) and Appendix B (*Traffic Analysis*) of the FEIS for more information.